User's Guide

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FormCalc SST for QuickBooks User's Guide

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The many people who have contributed to the development of FormCalc SST and this document, with assistance, comments, and criticisms; but especially to our software testers...those brave souls who always seem willing to "go boldly where no one has gone before" by testing early releases of software long before it has "jelled" into something we're proud to show to the world.

Others:

Dr. Peter Below
Edward H. Russell, Synchronicity Research
EC Software, for the best Help & documentation software anywhere.

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Welcome to FormCalc SST for QuickBooks

FormCalc SST Is...

FormCalc SST is a spreadsheet-based calculator for QuickBooks forms—Invoices, Purchase Orders, Sales Order, or any form where QuickBooks Items are used. FormCalc SST lets you set up spreadsheet formulas to do calculations involving various fields on the form, then applies those calculations "on the fly" as it processes the entire form. It can do math involving several columns at once, produce column subtotals and totals columns, access the form's header and footer fields, and much more.

"Big deal", you might say, "doesn't QuickBooks already have a calculator?" Well, it does, but the simple calculator in QuickBooks forms only works *within* a single field on the form, not between fields. And it only supports addition, subtraction, multiplication, and division. FormCalc SST lets you do calculations involving multiple fields, and gives you date math, if-then logic, advanced built-in spreadsheet functions like COUNT and AVERAGE, and many other sophisticated calculation and formatting options—just like a full-fledged spreadsheet.

How is FormCalc SST Different from FormCalc (the old / original version)?

FormCalc SST is a completely redesigned product. It is based on the general concept of the old FormCalc for QuickBooks product, but it has the added benefits and greater flexibility offered by spreadsheet calculation capabilities, a wide range of results formatting possibilities, better file handling, data file sharing on networks, and more.

Is the old FormCalc still available? Yes! It is still a good choice if your needs are simple—you only want to add, subtract, multiply, or divide numbers in two columns on an invoice, say, or total a column or two.

How Does FormCalc SST Work?

Setting up and using FormCalc SST is fairly simple:

1. **You may customize your QuickBooks form** if desired, adding fields and/or columns to hold results calculated by FormCalc SST. (Optional; not always necessary.)

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2. **FormCalc SST takes a "snapshot" of the form.** It gathers information about the form's layout and builds a spreadsheet representation of it.
3. **You enter spreadsheet formulas** on the snapshot worksheet to define the calculations you want done, then save the FormCalc SST file.
4. In QuickBooks you fill out forms as usual, then **press a hotkey to invoke FormCalc SST to do the calculations you have defined.** FormCalc SST builds a spreadsheet from the form's data "on the fly", applies your formulas to it, and writes the results back to the form in QuickBooks, where you may save it, print it, etc., just as you have always done.

Results calculated by FormCalc SST are saved as part of the form's normal data. Your accountant or others do not need to have FormCalc SST to see those results when they view or edit the form.

Specifications & Requirements

FormCalc SST has these computer hardware and software requirements:

- Works with *all* Microsoft Windows editions of QuickBooks—Simple Start, Pro, Premier, Enterprise Solutions, etc.— including *all* international versions: U.S., Canadian, UK, and Australian.
- Works with old QuickBooks versions for Microsoft Windows too, including many which are not compatible with most QuickBooks add-ons.
- Microsoft Windows XP or a later version of Microsoft Windows.
- 10 mb hard drive space.
- Memory: any computer with enough memory to run QuickBooks has enough memory for running FormCalc SST.

This list may change as new FormCalc SST versions are released. An up-to-date list of specifications and requirements can be found on the FormCalc SST Downloads page of our Web site.

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Revised: 11/15/2017

About this Help system

This Help system is designed to be used on-screen. It is extensively cross-linked to help you find what you need by clicking on a link to jump from any topic to a related topic.

The Basics

Visual Cues

The following type styles and images are used throughout this help system to convey special meaning:

File > Open	Indicates a series of menu selections. (The ">" character separates the individual menu items to be selected.) This example means to select **File** from the main menu, then select **Open** from its submenu.
Ctrl-R	Indicates a key or keys to be pressed. This example means to press the "R" key while holding down the Ctrl (Control) key.
Downloads	Links preceded by a small "earth" graphic are links to a Web page on the Internet. Clicking on the link will open the page in your Web browser.
`c:\Program Files`	This type style describes a file or folder "path", such as the location of a file on your hard drive.
Show hints	This type style is used when describing text in a window or dialog, either in FormCalc SST, or QuickBooks, or another program such as a Web browser.

Getting help while working in FormCalc SST

- To open this Help system while working in FormCalc SST, select **Help** from the main menu, or press the *F1* key, or click on one of the Help buttons which are available in many pop-up windows.

Getting the printable *FormCalc SST User's Guide...it's FREE!*

The ***FormCalc SST User's Guide*** is a PDF version of this Help system. Unlike on-screen Help, the PDF file is formatted for printing on your printer, which makes it a much better choice than printing out individual Help topics. There are two ways to get the file:

- Download it from the FormCalc SST Downloads page on our Web site:

  http://www.goflagship.com/dnloads/sstdownld.htm

- Purchase the Flagship Software CD. For a nominal price, it gets you current installation files for all our software products, the ***FormCalc SST User's Guide*** file, and product videos from our Web site, all on CD. It's available from our Online Orders page:

  http://www.goflagship.com/orders/onlineorders.htm

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Errors and Omissions

This Help system is in an almost continuous state of being updated as FormCalc SST development moves forward. Therefore the information and descriptions herein do not necessarily represent the features or operating characteristics of the current release of FormCalc SST. While the information is basically correct, it is certain to contain errors and omissions. Some features present in FormCalc SST may not be described here at all, while other features which are described may no longer a part of the FormCalc SST product or may not yet be included in it.

If you have any questions or doubts about the accuracy of any information in this document, please contact us for clarification and/or correction of the information.

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How to get the software ...try it ...and buy it

How to Get the FormCalc SST Software

When you install the FormCalc SST software, it will work in trial mode for up to 30 days for **FREE**. To continue using it beyond the trial period, you must purchase a FormCalc SST software license. Said differently, the "trial mode" version of FormCalc SST is *identical* to the fully licensed version —not crippled or limited in any way, except that it will expire in 30 days if you don't purchase a license to "unlock" the software as the fully licensed product.

If the trial expires before you get a chance to fully try out FormCalc SST, we can send you a temporary license to extend the trial another 30 days. Just email us at support@goflagship.com and ask for a trial extension.

To get the FormCalc SST installer:

Download it from our Web site

1. Go to the FormCalc SST Downloads page of our site and download the FormCalc SST installer (the actual name of the installer file is `sstsetup.exe`):

   http://www.goflagship.com/sst_download.html

2. Run the file you downloaded (`sstsetup.exe`) to install FormCalc SST on your computer.
3. Start FormCalc SST.

...and you're on your way!

Please Try FormCalc SST First ...Before Buying a License!

This is important because software license codes are *not* returnable for refund. You need to be sure you want FormCalc SST before purchase a license.

Why try FormCalc SST before buying it?

- The 30-day trial is **FREE**.
- The trial period lets you actually get FormCalc SST fully set up and working in *your* environment—with your version of QuickBooks, your accounting records, and your computer hardware—before purchasing a software license(s).
- You have full access to our technical support resources during the trial period.
- The trial period lets you be certain you want a FormCalc SST license before purchasing one.

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How to Buy FormCalc SST

If you followed our recommendation to try FormCalc SST before buying it, you already have FormCalc SST installed on your computer. If that's the case, there's little left to do to convert the trial mode installation to the licensed version.


If you don't yet have FormCalc SST installed on your computer see How to Get the FormCalc SST Software, above, before continuing.

To license your installed copy of FormCalc SST:

1. Purchase a FormCalc SST software license.

   Go to the FormCalc SST Purchasing page and click on any **Buy FormCalc SST** button to get current prices, or to order.

   
   http://www.goflagship.com/sst_pricing.html

   After you have purchased a license, you will receive a User ID and Registration Code by e-mail. This code is your unique, personalized "key" for unlocking the FormCalc SST trial version to use as the full registered version.

2. Enter your Registration Code into FormCalc SST.

   - Start FormCalc SST.
   - Select **Help > Enter Registration Code...** from the main menu, to open the FormCalc SST Registration window.
   - Enter your User ID and Registration Code in the spaces provided.
   - Click the *Register* button to complete the registration process.

See also:

Contacting Flagship Technologies

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Getting technical support

Here are ways to get assistance with your questions or problems related to using FormCalc SST*.

1. Consult this Help system (free)

It *really does* have answers to many of the support questions we are asked. If you don't find the answer by casually browsing topics, be sure to try the Index and Search tabs!

While working in FormCalc SST you can open the Help system by using the **Help** item in the main menu or by pressing the *F1* key.

2. Search the FormCalc SST Discussion Forum on our Web Site (free)

We have an online forum dedicated to FormCalc SST support, where you can ask questions, get answers, and view the questions/answers posted by others. You'll find it here in our list of forums:

http://www.goflagship.com/forums/

Most likely, your question has already been asked by someone else and answered in the forum. So the fastest way to get an answer is often to search the forum topics: click on the Search link, found toward the top of every forum page.

3. Ask a Question in the Discussion Forums (free)

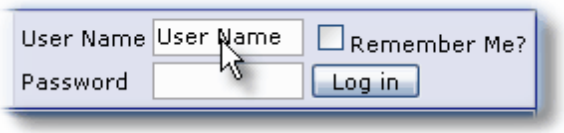
http://www.goflagship.com/forums/

If you've searched in the forum and not found the answer you want, then by all means ask your question there. It's easy: just click on the *New Thread* button, then type your question in the message editor window provided.

You must be registered with the forums and logged in before you can post a message:

- *If you have not yet registered,* click on the Register link in the forum menu, then answer the registration questions. Understand that this just registers you with the forum; this is not the same as registering your FormCalc SST software product!

- *If you are already registered,* you may need to log in to the forums. Do that by typing your forum User ID and Password in the box provided above the forum menu. If you check the box beside Remember Me?, the forum software will store a "cookie" on your computer so you won't have to log in each time you visit.)



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4. Email Technical Support (free)

If you don't find an answer in the discussion forums, send an email to Flagship Technologies technical support at: support@goflagship.com. We make an effort to always reply within one business day and usually reply within a couple hours.

> We reserve the right to post your emailed support questions and answers in our online discussion forums for the information benefit of other users. (We omit or disguise any of your information which we believe may be confidential.)

We are glad to answer any of your questions related to general program operation, problem solving techniques, and program bugs or problems, at no charge. However we cannot provide help with complex spreadsheet design and setup for free. In those cases we may ask you to purchase a support incident, described farther below.

5. Telephone and Remote Login Support (fee applies)

Our support by email and Web forums is provided for free. Telephone support and logging into your computer remotely are both more costly for us to provide, and for that reason we charge a fee for them. You can get telephone support and/or remote login support as part of a purchased support incident, as described next.

6. Support Incident (fee applies)

Need help designing and setting up FormCalc SST spreadsheet formulas to do the calculations you want? Or help with customizing your QuickBooks forms and setting up FormCalc SST to work with them? These kinds of activities are beyond the scope of what we can provide for free, but we're glad to do them for you for a fee. Purchasing a support incident gets you our expert assistance with solving a particular QuickBooks form calculation problem using FormCalc SST.

"What is a 'support incident' ?"

It is a block of our time dedicated to solving your QuickBooks/FormCalc SST design and/or setup problem. We will work with you by email and telephone to gather information about your QuickBooks forms and the calculations you want to do, design a solution for you, then work with you to get it installed and working on your computer—including logging into your computer remotely if necessary. Support incidents don't have to happen "all at once". They often involve several email or telephone contacts, carried out over the course of a couple days or more.

You may purchase a support incident on our Web site at: http://www.goflagship.com/support.html.

"How do I get started?"

In all cases, support incidents should begin with an email to support@goflagship.com describing what you want to do—preferably including a detailed explanation, notes, and screenshots of your QuickBooks form. We will determine whether what you want done is feasible and, if so, will give you the go-ahead to purchase a support incident.

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*All prices and support policies are subject to change. See our Web site for current pricing and policies.

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Contacting Flagship Technologies

FormCalc SST Web site:	http://www.goflagship.com/sst.html
Postal address:	Flagship Technologies, Inc. 14976 Monroe Rd. 1039 Madison, MO 65263
Web site:	http://www.goflagship.com
Discussion & technical support forums:	http://www.goflagship.com/forums/
Email addresses:	info@goflagship.com (sales and non-technical questions) support@goflagship.com (technical support)
Telephone:	660-291-3000 ...for sales and ordering questions

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Windows and Menus

This section provides a quick introduction to the FormCalc SST main window and data windows (spreadsheet tabs), plus terms which are important in FormCalc SST related to QuickBooks forms.

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About QuickBooks forms and FormCalc SST

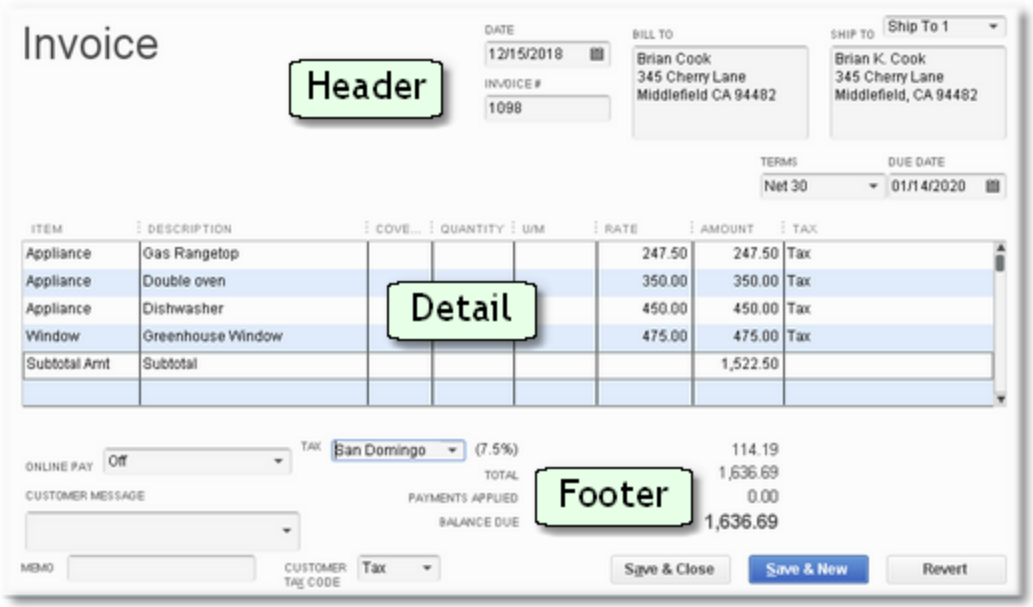
Form is a word used often in this Help system as a generic term for "QuickBooks data entry window". An Invoice is a form...a Sales Receipt is a form...an Estimate is a form...and so on.

FormCalc SST Works With These QuickBooks Forms...

FormCalc SST works with QuickBooks form which (1) use Items and (2) have form customization as an option:

Form Areas: Header, Detail, Footer

All QuickBooks forms basically have three main areas: (1) Header fields, (2) a Detail (line-items) area consisting of columns, and (3) Footer fields.



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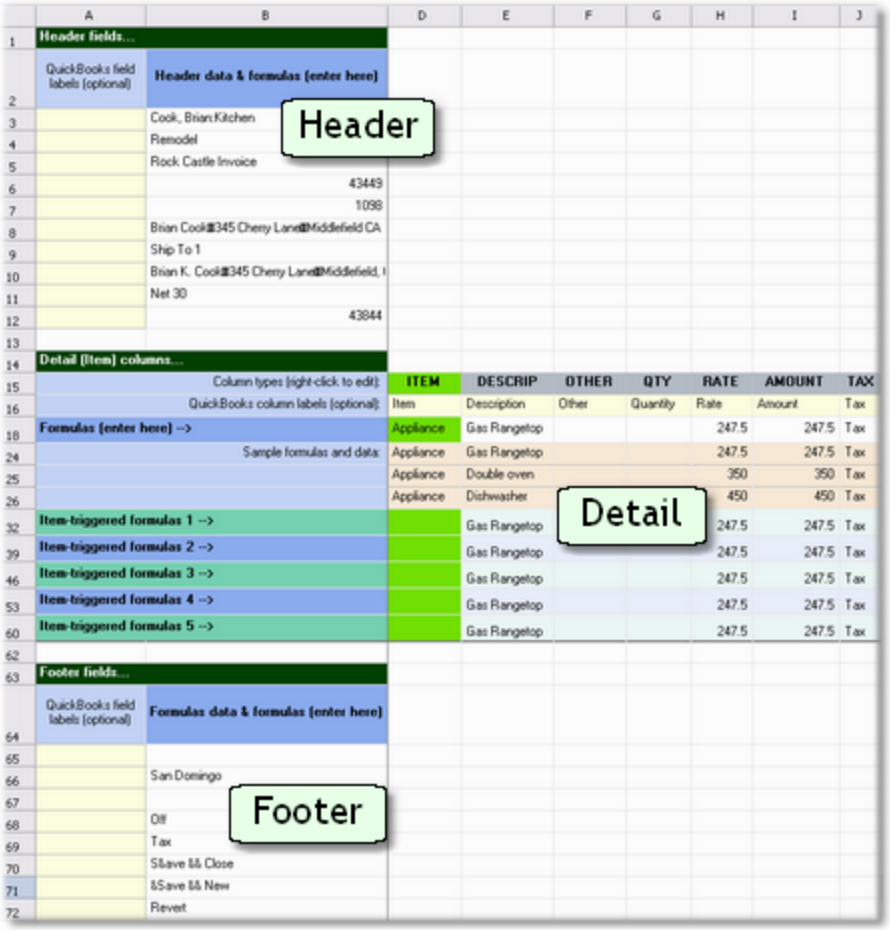
Form areas described...

Header fields	Everything above the Detail (columns) area.
Detail (columns) **area**	The block of columns in the center part of the form, where you may enter Items and Item-related data (quantity, price, amount, etc.).
Footer fields	Everything below the Detail (columns) area.

As you can see below, FormCalc SST's representation of a QuickBooks form has the same three areas:



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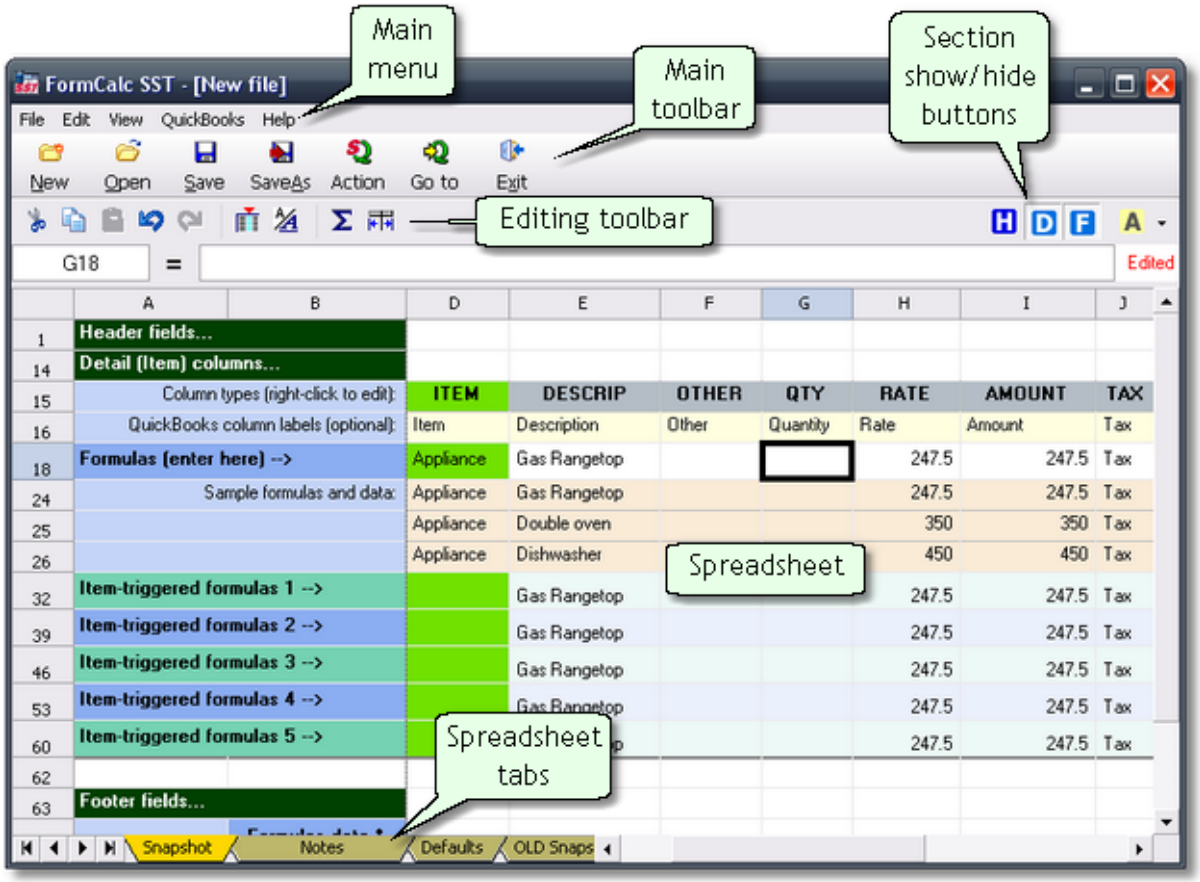
The main window

Here is a quick guide to the FormCalc SST main window.

The FormCalc SST Main Window



Main menu

The main menu gives you access to nearly all program commands.

Main toolbar & buttons

Buttons on the main toolbar give you quick access to program-wide commands, such as opening or saving a file.

Right-click on the toolbar to customize it.

Editing toolbar

This smaller toolbar gives you access to common editing commands, as shown here:

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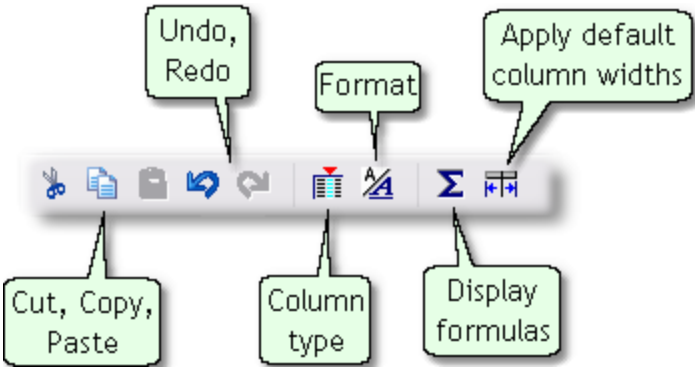
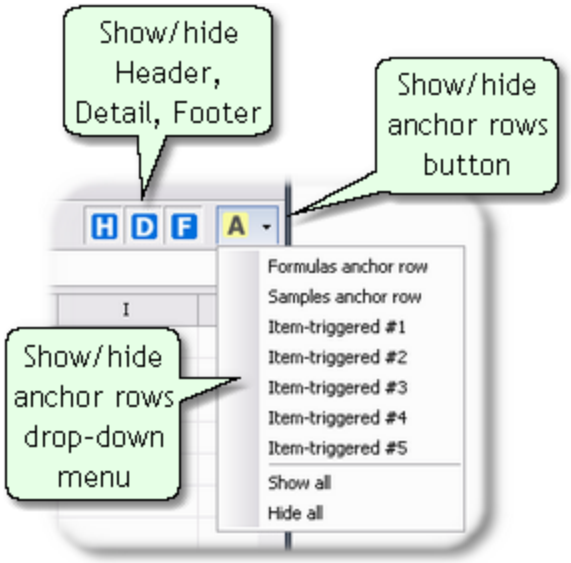


Section show/hide buttons

Buttons in this area let you show or hide the Header, Detail, and Footer sections of the FormCalc SST, as well as anchor rows within the Detail section:



Spreadsheet

The main working part of FormCalc SST is a spreadsheet, similar to other spreadsheets like Microsoft Excel, with columns identified by letters (A, B, C...) and rows identified by numbers (1, 2, 3...).

Spreadsheet tabs

Spreadsheet consists of five tabs or pages, described in the Tabs topic.

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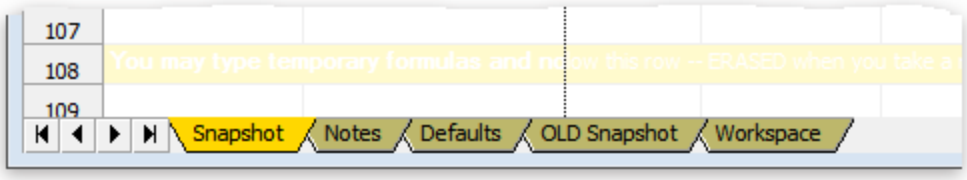
Tabs

FormCalc SST Spreadsheet Tabs

FormCalc SST is essentially a spreadsheet connected to some powerful behind-the-scenes software which controls both the spreadsheet and its interaction with QuickBooks. The spreadsheet consists of five tabs or "pages", described below.



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QuickBooks tabs and their purposes

Snapshot

This is the main tab (page) you will work with in FormCalc SST. It is where FormCalc SST puts a (spreadsheet-representation) copy of your QuickBooks form when it takes a snapshot of the form. It is also where you will enter spreadsheet formulas for performing calculations when your QuickBooks forms are processed.

Notes

This page is for your own use, such as for keeping notes on your calculations, sample formulas, etc. Whatever is on this page is preserved when you save the FormCalc SST file, and is never overwritten (unlike the Snapshot page, which is erased whenever you take a new snapshot).

Defaults

This page contains default data which FormCalc SST uses to create a new file when you choose **File > New**.

The Defaults tab is not user editable.

OLD Snapshot

When FormCalc SST is preparing to take a snapshot of a QuickBooks form, it first copies the Snapshot page to the OLD Snapshot page. This preserves a copy of formulas from the prior snapshot—all of which are *erased* by taking a new snapshot—so that you may recover them by Copying individual formulas to the Windows clipboard from the OLD Snapshot page, then Pasting them into cells on the Snapshot page.

Workspace

This page is for FormCalc SST's use in processing a QuickBooks form. It holds the formulas used in the most recent form processing run. For that reason, it can sometimes be useful to technical support for debugging purposes.

Changes to the Workspace page *do not* cause a "File has changed...Save the file?" prompt to be displayed as you exit FormCalc SST. So instructions from technical support may specifically ask you to save the file after a processing run—to be sure the Workspace page's changes is included—before sending the file to us for analysis of a problem.

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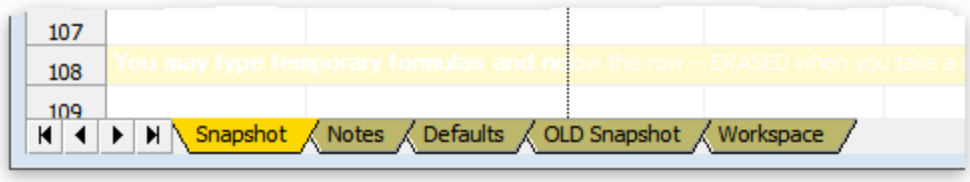
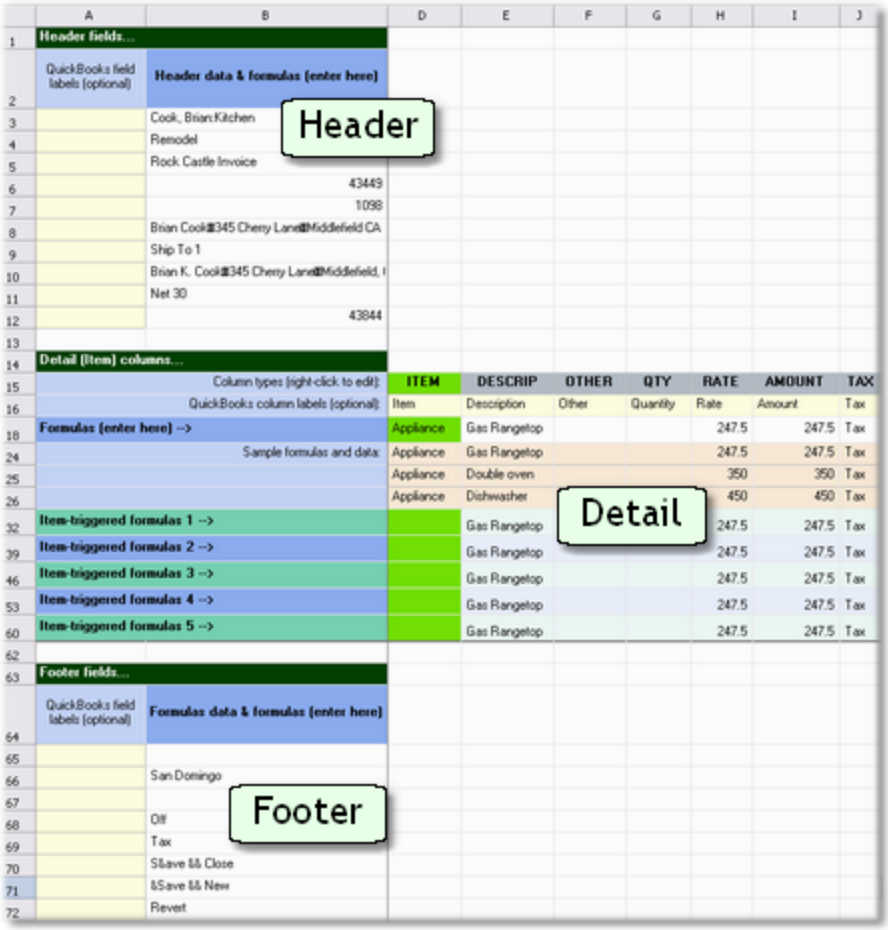
The Snapshot tab

You will use the Snapshot tab most often.



After taking a snapshot of the QuickBooks form, it displays three sections corresponding to the Header, Detail, and Footer sections of the QuickBooks form.



Header and Footer Sections

Header and Footer sections have the same layout. Here's an example Header section (the Footer section is basically the same):

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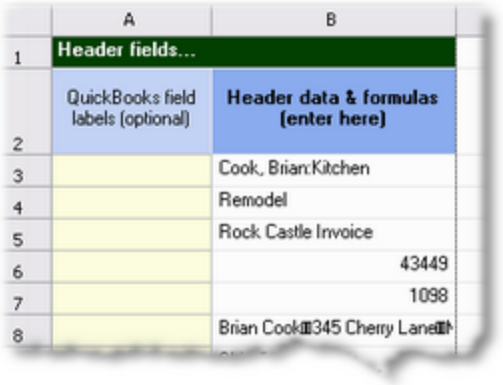

QuickBooks field labels

You can use these cells to label the sample header (or footer) fields brought in from QuickBooks, after FormCalc SST has taken a snapshot of a QuickBooks form. Labeling field is completely optional, but is especially useful for knowing "which field is which" if any of your formulas refer to header (or footer) fields.

Header data & formulas

These cells in this column represent the header (or footer) fields of the QuickBooks form for which the snapshot was taken. They contain data copied from the form during the snapshot. However, you may enter formulas in these cells, to calculate results which will appear in the corresponding header (or footer) fields when you process a QuickBooks form.

Some cells may not have data. These may correspond to empty fields, or to other QuickBooks controls such as buttons which appear on the form. Some cells may contain strange-looking data; for instance, dates may be brought into FormCalc SST as numbers like 41653. Don't worry, numbers like these are simply the way FormCalc SST (and other spreadsheets) store dates and times internally.

> You can make "date/time" numbers such as these look like dates or times by formatting them—something you may want to do for easier reading and to remind you that these cells actually hold dates or times, not just numbers.
>
> The topic Dates, times and date calculations gives an overview of date and time handling.

Detail Section

This is the most important part of the snapshot page for most users. You may enter formulas here to be applied to each Item row, and you may also enter Item-triggered formulas here—formulas to be applied only when certain Item names are encountered on forms.

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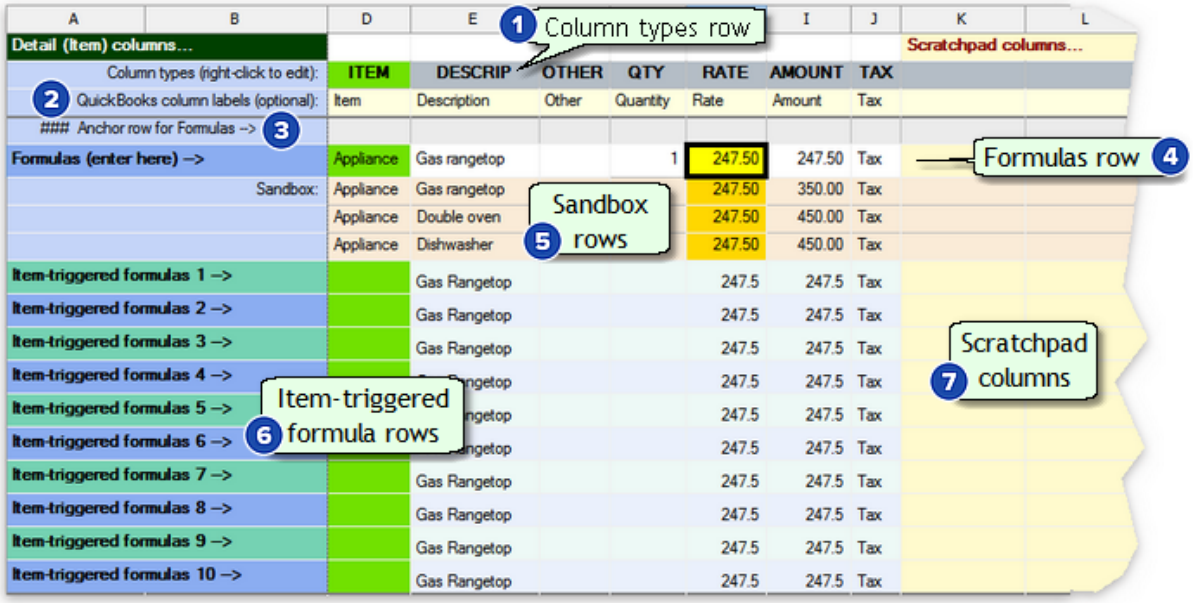

1 Column types

You must indicate the column type of every column in which a formula is to be entered. FormCalc SST needs this information to properly format calculated results for the QuickBooks columns to which they will be written. For example, the Quantity and Rate columns accept no more than five decimal places, so FormCalc SST must limit the number of decimal places in results written to those columns.

To indicate the type for a column, right-click in a Column types cell in that column, to display a pop-up menu, then select the appropriate column type from the menu.

- When you select a column type, if the *QuickBooks column labels* cell (immediately below the Column type) is empty, FormCalc SST will fill it with a sample label for the column.
- You *must always* indicate the Item column, even though no formulas may be entered there, because FormCalc SST needs to know its location to properly navigate the QuickBooks form.

2 QuickBooks column labels

Just like the field labels in the Header and Footer areas, you can use the cells on this row to label columns, to make it easier to work with them. Labeling columns is optional, but usually you should enter labels which match the column names shown in QuickBooks form. (FormCalc SST does not use the labels for any purpose—they are only for your own information.)

3 ### Anchor row for Formulas -->

Every row on which formulas can be entered in the Detail section has one or more anchor rows available. The screenshot above shows where the anchor row for the Formulas row is located.

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Anchor rows are easier to use than to explain, so we will leave a detailed explanation of them for later. For now, think of them is being available to allow entering formulas which can refer to the "prior row" of the QuickBooks form. For example, you can build a formula calculates a running total on successive rows of the QuickBooks form, by adding an amount from the anchor row to an amount from the current row.

By the way, anchor rows are all labeled with "###" at the beginning of their name, to make it easy to distinguish them from other row types.

4 Formulas

Immediately after taking a snapshot of a QuickBooks form, this row contains example data gleaned from the form. But you may overwrite any of that data by entering a formula in place of it. The columns in which you enter formulas will have their calculated results applied to a QuickBooks form (Invoice, Estimate, Sales Receipt, etc.) when FormCalc SST processes the form.

For many FormCalc SST users, this is the most-used row of the entire Snapshot page, because it lets you define formulas which will be applied to every row of a QuickBooks form where an Item has been entered (with the exception of Item-triggered formula rows, described below).

- Cells in which you have entered formulas are highlighted with a yellow background.
- If a formula has an error in it, the cell will be highlighted with a red background.

5 Sandbox

These three rows are meant to give you immediate feedback about formulas you enter on the Formulas row. As soon as you have entered a formula there it is automatically replicated to these rows, showing how the formula will work when multiple rows of QuickBooks data are processed.

You can change data in any cells on these rows which do not contain formulas, which lets you play "what-if" with your formulas, to see how they will work with different data values.

These rows have a tan background by default, to remind you that they are only samples.

6 Item-triggered formulas

FormCalc SST lets you have up to ten rows containing different sets of formulas which get applied only when specific Item names are encountered on a QuickBooks form; hence the name "Item-triggered formulas".

To use these rows, enter formulas on them just as you would on the Formulas row; but additionally, enter an Item name in the column you have designated as the Item column. When a matching Item name is encountered on the QuickBooks form, the formulas associated with the matching Item name on the Snapshot page will be applied to that row of the QuickBooks form. Item names are matched in either of these two ways:

- **Exact match,** which occurs when an Item name in FormCalc SST exactly matches an Item name in QuickBooks (except that differences in capitalization are ignored).

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- **Wildcard match,** which occurs if you have used wildcard characters in an Item name in FormCalc SST and a matching Item name is encountered in QuickBooks. FormCalc SST supports ***** and **?** as wildcard characters: ***** matches any number of characters in an Item name, and **?** matches any single character. See the Item-triggered formulas topic for examples.

Item-triggered rows have many important uses; the most common ones being for subtotaling or totaling columns on a form—to calculate the total shipping weight for an invoice, or the total count of boxes or pallets shipped, etc.—or to calculate specific taxes or fees at specific locations on a QuickBooks form.

Item-triggered rows are also responsible for FormCalc SST's most advanced capability: the ability to treat an area of your QuickBooks form as a mini-spreadsheet, which allows doing a variety of spreadsheet calculations on the form's rows within that area, such as complex tax or management-information calculations.

Item-triggered rows are shown in alternating colors to help distinguish them from each other.

6 Scratchpad columns

The Scratchpad is an area on the FormCalc SST Snapshot tab, to the right of the columns which represent the QuickBooks form's native columns, consisting of ten blank columns colored with a light yellow background.

You can enter formulas in the Scratchpad columns which refer to the native QuickBooks columns, and also, formulas entered in the native columns can refer to cells in the Scratchpad.

The Scratchpad lets you do things like create subtotals and totals of native columns, or do other intermediate calculations, *without adding custom field columns to the QuickBooks form* (Invoice, Sales Receipt, etc.). And because it can reduce the number of columns needed on a QuickBooks form, in many cased it speeds up processing calculations on the form.

Before the Scratchpad feature was available, calculating the total shipping weight for an Invoice, for example, required adding a blank custom field column to the Invoice for FormCalc SST's use.

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Steps for Using FormCalc SST

Here are the basic steps involved in using FormCalc SST. For simple calculations you may be able to follow these steps directly. If your needs are more complex, refer to the More Things to Know and Formulas Reference sections for additional details.

If you have questions, or problems with these steps, please contact technical support at support@goflagship.com.

1. QuickBooks: *Open the form you want to work with*

FormCalc SST works with all QuickBooks forms which (1) use Items and (2) have form customization as an option:

In some cases you may want to customize the form to add fields or columns for holding additional data or calculated results.

2. QuickBooks: *Enter some data on the form*

Fill out the form as you normally would, selecting a Customer or Vendor and entering *at least three* Item rows.

Whatever data is on the form will be used as sample data in FormCalc SST.

3. FormCalc SST: *Take a snapshot of the form*

Important!

Before taking the snapshot, be sure the QuickBooks form has the *Customer Message* (or *Vendor Message*) field in the footer area of the form. If it doesn't, customize the form so that this field appears in the form's footer area. FormCalc SST uses this field for navigating the form, so it is *absolutely required*.

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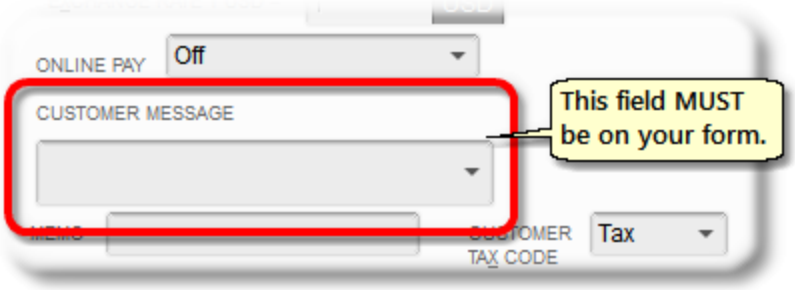

1. **Start the FormCalc SST program.**
2. **Click the *Action* button** in the main toolbar.

This will cause the focus to switch to QuickBooks, where a *Choose an action...* pop-up window will be displayed over QuickBooks.

3. **Click the *New Snapshot* button** in this window, **then *avoid typing or moving the mouse*** while FormCalc SST works.

   FormCalc SST will visit each of the form's fields, gathering data about the form, and building a spreadsheet representation of it on the Snapshot tab in FormCalc SST.

   Finally, the focus will switch back to the Snapshot tab in FormCalc SST, where the snapshot data will be visible.

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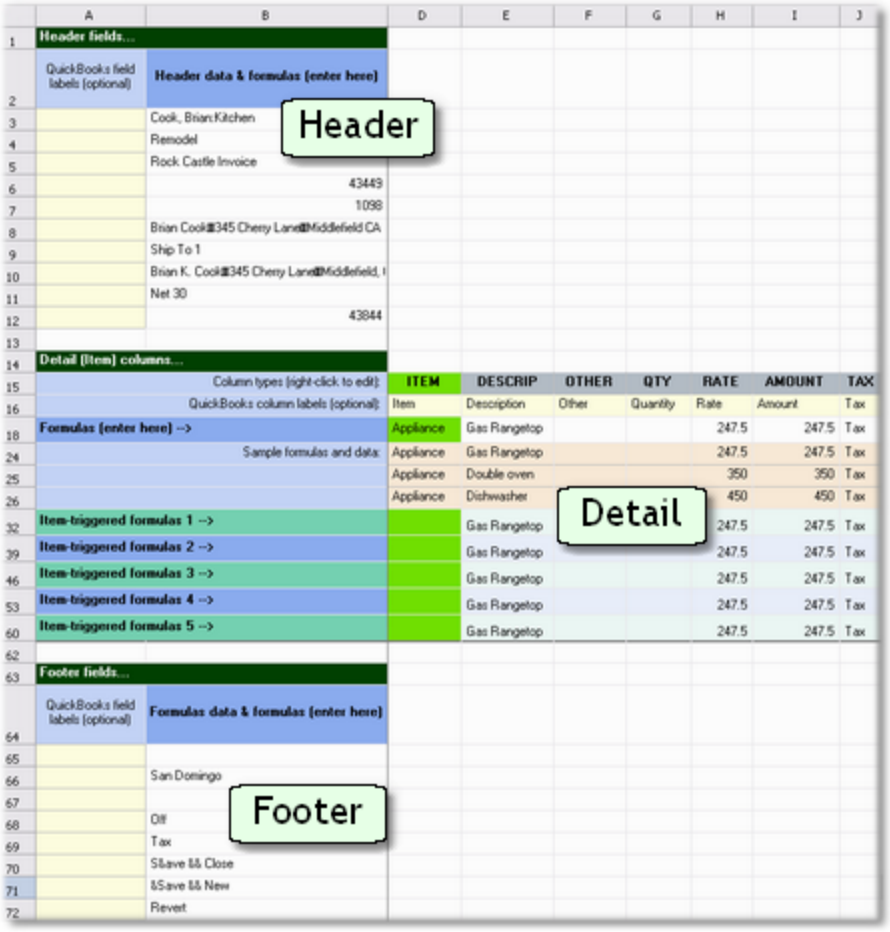

4. FormCalc SST: *Assign column types*

Right-click cells on the Column types row in the Detail section, and choose a column type appropriate for each column. You must *at least* choose a type for the *Item* column and for any column where you will enter formulas.

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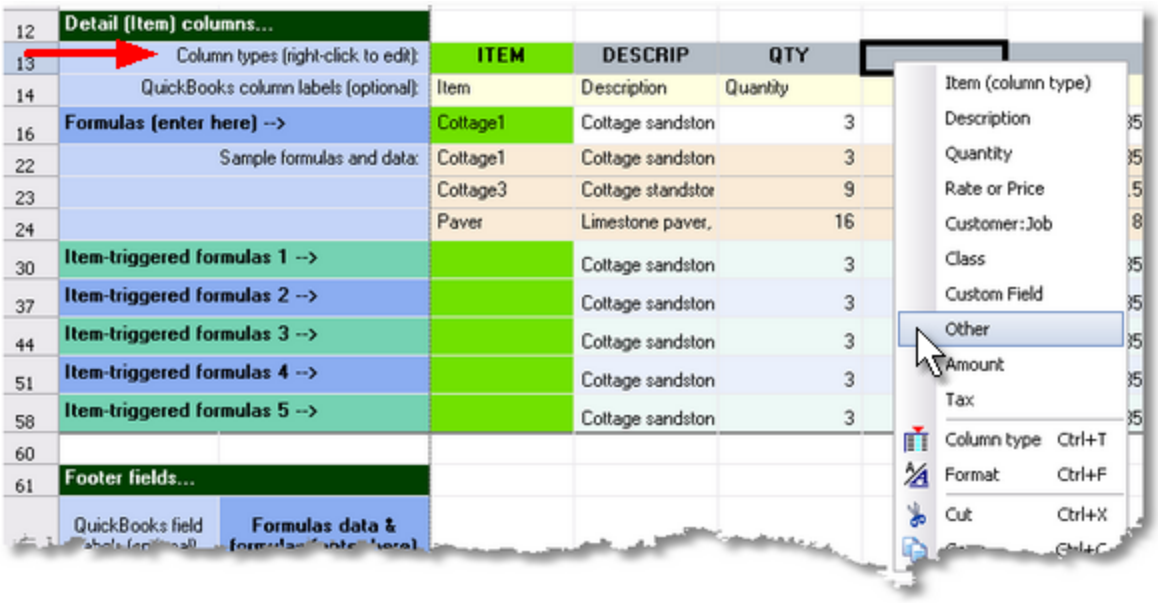

You may also want to enter field labels for some or all fields, to match the field names in QuickBooks. Doing that can reduce confusion as you work with fields and enter formulas.

5. FormCalc SST: *Enter spreadsheet formulas*

Formulas you enter in FormCalc SST will be used to calculate results when processing your QuickBooks forms later. You can enter formulas in the cells shown here:

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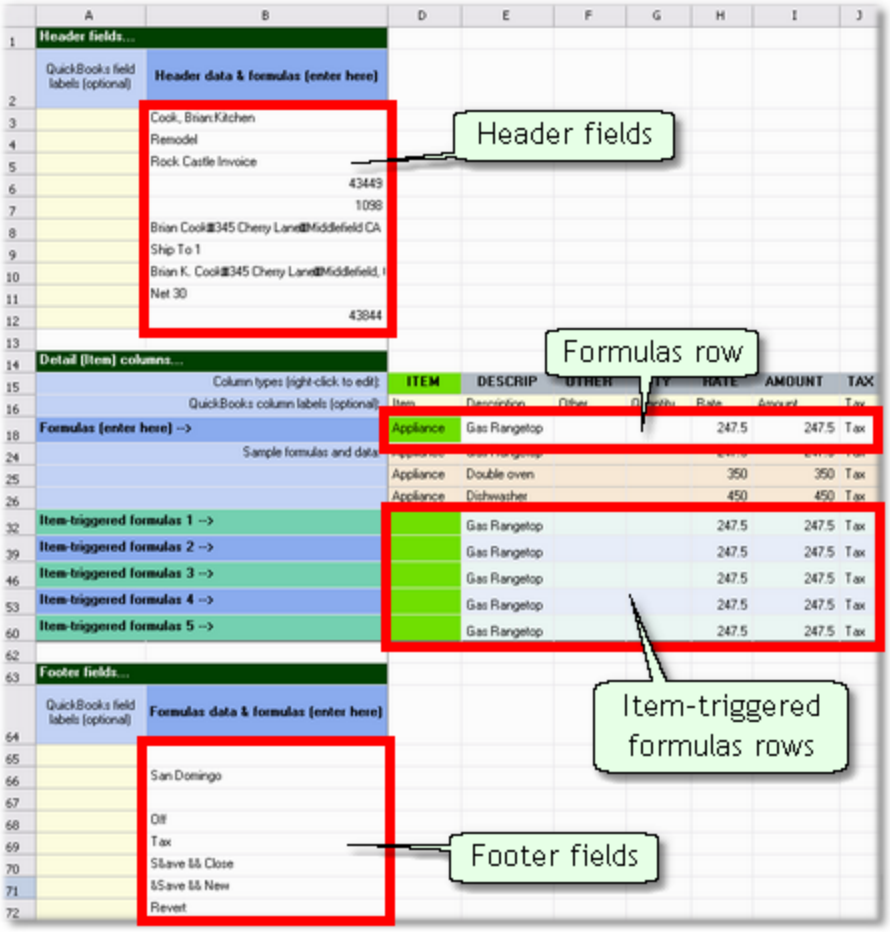

Here's an example formula:

```
=SUM(E19,B7:B9)
```

Things to know:

=	**All formulas begin with an equal sign.** This is what distinguishes formula cells from cells containing text and data.
SUM( )	Formulas often include one or more built-in function such as SUM(), which sums whatever is between its parentheses. For a full list of operators and functions, see the Formulas reference section.
E19	This is a reference to a single cell, E19.
B7:B9	This is a reference to a range of cells, from B7 through B9. A range reference consists of two cell references separated by a colon (:)

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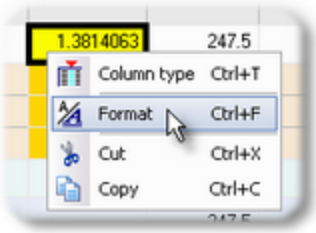
Which cells can formulas refer to?

Header formulas	Can refer to other Header cells and to Footer cells.
Formulas row formulas (in the Detail area)	Can refer to Header cells, Footer cells, other cells on the Formulas row, and cells on the Formulas row's anchor row.
Item-triggered formulas (in the Detail area)	Can refer to Header cells, Footer cells, other cells on the *same* Item-triggered formula row (i.e., not to cells on other Item-triggered rows), and to cells on the Item-triggered row's anchor rows. (Item-triggered rows have several anchor rows, to support the mini-spreadsheet feature.)
Footer formulas	Can refer to other Footer cells and to Header cells.

See the Formulas and cell references section for more details about formulas.

6. FormCalc SST: *Format the results*

If the format of calculated results in a formula cell doesn't match what you want to see in QuickBooks, right-click it and choose *Format* from the pop-up menu.



This will open the *Format data or results* window, where you can choose the formatting options you want.

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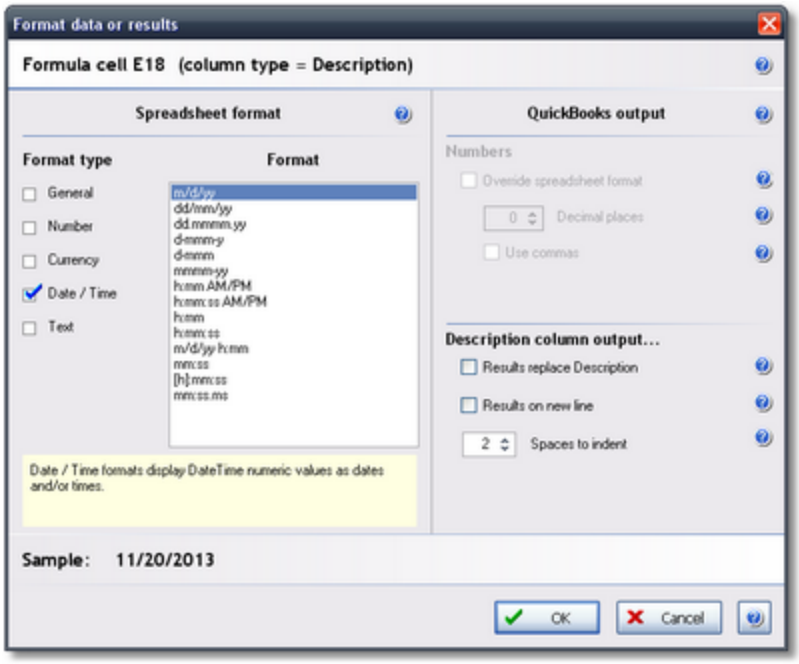

See the Formatting data and calculated results topic for more details.

7. FormCalc SST: *Save the file often!*

Don't forget to save your FormCalc SST file as you're working on it, so you don't lose any of your formulas or other changes. You can use the Save button in the main toolbar:

8. QuickBooks: *Test your FormCalc SST setup*

1. In QuickBooks, **open or click on the form you want to process,** if you are not already working in that form.
2. **Press the FormCalc SST hotkey**—the *F11* key unless you have changed it in Preferences.

   The *Choose an action...* window will pop up over QuickBooks.

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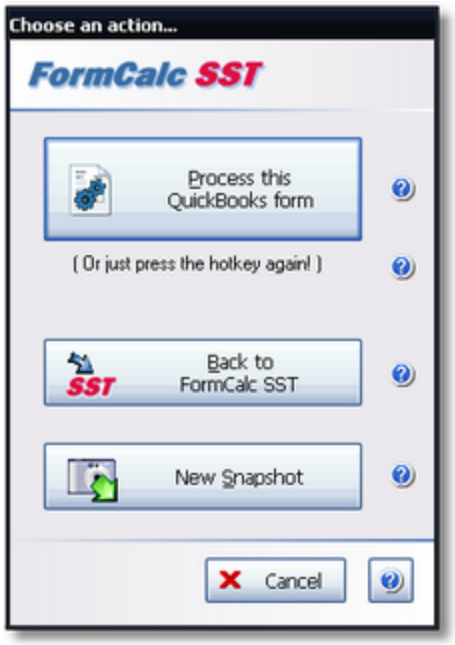

3. **Click the *Process this QuickBooks form* button...or press the hotkey a second time.**

   Pressing the hotkey a second time is quicker for most users.

   FormCalc SST will visit the form's fields, gathering data for calculations and inserting calculated results in the fields and columns corresponding to the cells where you entered formulas.

   If the results were not what you intend, change or adjust formulas and formatting in FormCalc SST, then try processing the form again.

   The Revert button found on most QuickBooks forms is handy for returning the form to its original state, prior to FormCalc SST's calculations.

   If you change the layout of your QuickBooks form—change column or field order, or add or remove columns or fields—then you'll have to take a new snapshot. (You can retrieve formulas from the prior snapshot by Copying them from the OLD Snapshot tab and Pasting them into the appropriate cells in the Snapshot tab.

9. Use your FormCalc SST setup for data entry!

Once you have a FormCalc SST file set up for a particular QuickBooks form, the work is done. All that's left to do is use it!

Using FormCalc SST to process forms adds just one step to your data entry cycle. Instead of: enter data on a form, save the form...and repeat, your data entry cycle will be: enter data on a form, invoke FormCalc SST to do calculations, save the form...and repeat.

Most users have only one FormCalc SST file, for working with a single QuickBooks form such as an Invoice. FormCalc SST loads the most recently used file when it starts up, so having the correct file loaded is automatic in most cases.

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However, you may have several files, for working with different forms...or for working with several different *customers'* forms if you provide bookkeeping services to others. In those cases, be sure you have the correct FormCalc SST file loaded before processing forms.

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Problem Solved! How-To Examples

This section contains step-by-step examples of using FormCalc SST to solve different kinds of calculation problems, to help you apply FormCalc SST's wide range of flexible calculation abilities to your own QuickBooks forms.

Want even more examples? Our Web site often has new examples you won't find here, because it may be updated at any time while this Help system is only updated when a new FormCalc SST version is released. For the most complete set of FormCalc SST examples, go to Problem Solved!™ page on our Web site:

http://www.goflagship.com/sst_probsolv.html

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Customizing QuickBooks forms (adding fields)

This example demonstrates:

- How to add fields to a QuickBooks form

Adding Fields to a QuickBooks Form

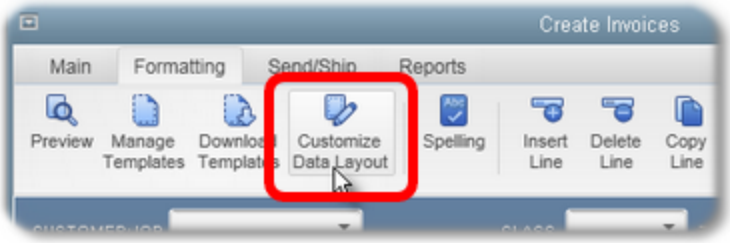
Often you may need to add fields to a QuickBooks form to hold data used by FormCalc SST formulas, or to hold results calculated by FormCalc SST. The details of customizing different forms differs slightly, but overall the process follows these steps:

1. **Open the form** you want to customize.

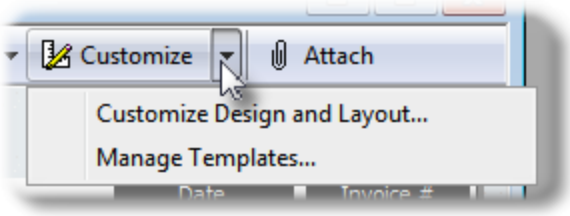
   In this example, we will work with the Invoice form (**Customers > Create Invoices**).

2. **Click on the form's customize command.**

   In QuickBooks 2014 you'll find the command in the form's menu/ribbon bar (**Formatting > Customize Data Layout**):



   In older versions, the customize command or button may be in a different location, such as:



   The Additional Customization window will open. Notice the Header, Columns, and Footer tabs. These are the main tabs you'll be interested in to customize the form for use with FormCalc SST.

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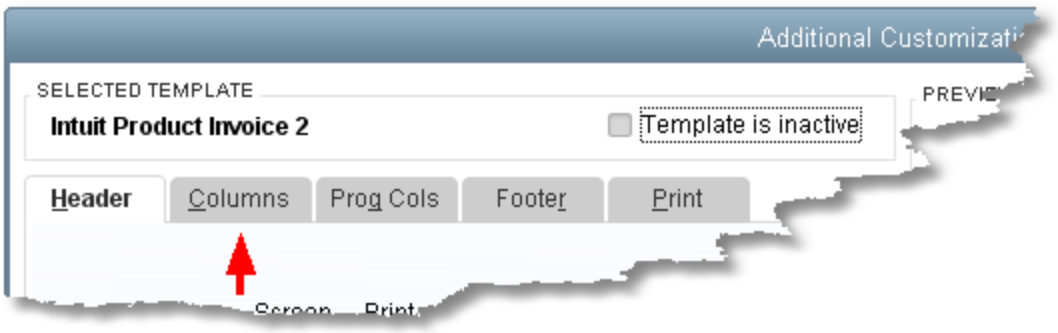

Header tab Lets you control which fields appear in the form's header, including custom fields defined in the Customer or Vendor list (depending on whether the form is Customer-oriented or Vendor-oriented).

Columns tab Lets you control which columns appear in the form's detail area, including custom fields defined in the Item list.

Footer tab Lets you control which fields appear in the form's footer, including custom fields defined in the Customer or Vendor list (depending on whether the form is Customer-oriented or Vendor-oriented).

3. **Click on the tab you want to work with** (Header, Columns, or Footer).
4. **Select fields to include** by check marking their boxes in the *Screen* column.

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➔ The Other 1 and Other 2 fields are spare fields you can use for nearly any purpose. They are handy for holding data or calculation results when working with FormCalc SST on a QuickBooks form, but *their contents are not available on QuickBooks reports!* So when calculating something that you may want to see on a report, use custom fields instead.

⚠ FormCalc SST requirement: The form *must* have the *Message* field enabled on the Footer tab! (See the instructions below.)

The *Screen* column controls which fields/columns appears in the form's window in QuickBooks, while the *Print* column controls which appear on printed copies of the form. Often you may have fields/columns you want to include in the form's window (*Screen*) but which do not want to include on copies printed for your customers (*Print*).

5. **You may change the order of fields** (in the Columns tab only) by changing column numbers in the *Order* column.

   For instance, if a column is at position 5 and you want it at position 3, change its number from 5 to 3. The other columns will be automatically renumbered to accommodate the change.

6. **You may rename fields** by entering new names in the Title column.

7. **Click OK** to close the Additional Customization window.

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How do I get *custom fields* to show on my forms?

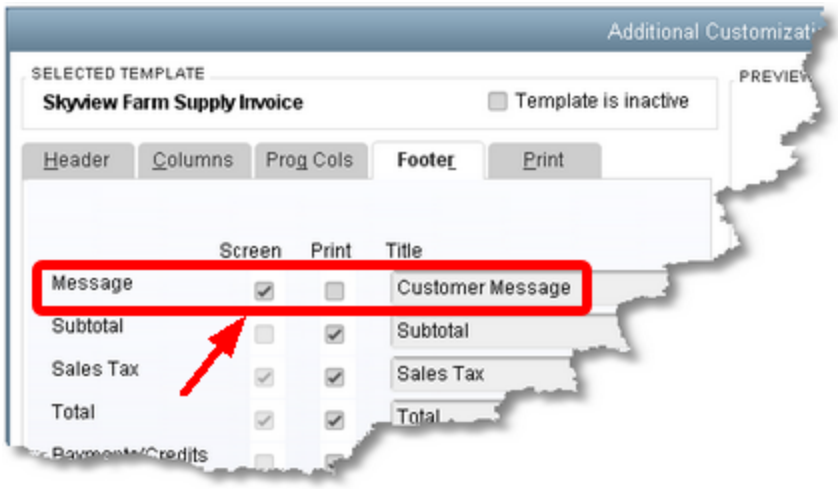
Custom fields—the fields you can define in the Item, Customer, and Vendor lists—can also appear on QuickBooks forms. However, you have to *define* custom fields before they are available to include during the form customization steps described above.

See Defining and using custom fields for details.

You MUST Include the Customer (or Vendor) Message Field!

FormCalc SST places only one requirement on your QuickBooks forms: they must have a *Customer Message* (or *Vendor Message*) field. FormCalc SST uses that field for form navigation.

So when customizing forms, be sure to include the *Message* field on the Footer tab, as shown below, by checkmarking the box in the *Screen* column. Checkmarking the *Print* column box, which causes fields to show on printed copies, is optional.



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Defining and using custom fields

This example demonstrates:

- Why you may want to use custom fields
- How to add custom fields to a Customer, Vendor, or Item list
- How to populate custom fields with data

Why Use Custom Fields?

Defining custom fields in QuickBooks lists (the Item list, Customer list, or Vendor list) has at least two benefits:

1. **They make more fields available** on your forms (via form customization)—more places for holding data and calculated results.
2. **They let you *individualize* forms for each Item, Customer, or Vendor.** Data specific to an Item, Customer, or Vendor is automatically pulled into custom fields on a form when you select from those lists, and that data can be used in FormCalc SST formulas to customize the form's text, messages, or calculated results.

Adding Custom Fields to a List

Item list

1. **Open the Item list** by choosing `Lists > Item list` from the QuickBooks main menu.
2. **Select an Item to edit** and **open the Edit Item window.**

   To do this, click on the Item you want to edit, then choose `Edit Item` from the *Item* button's menu at the bottom of the Item list window.

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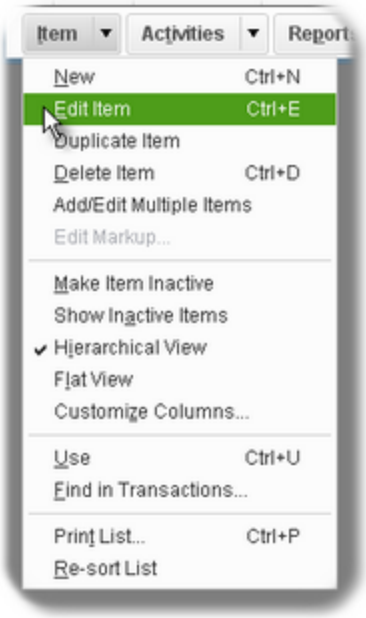
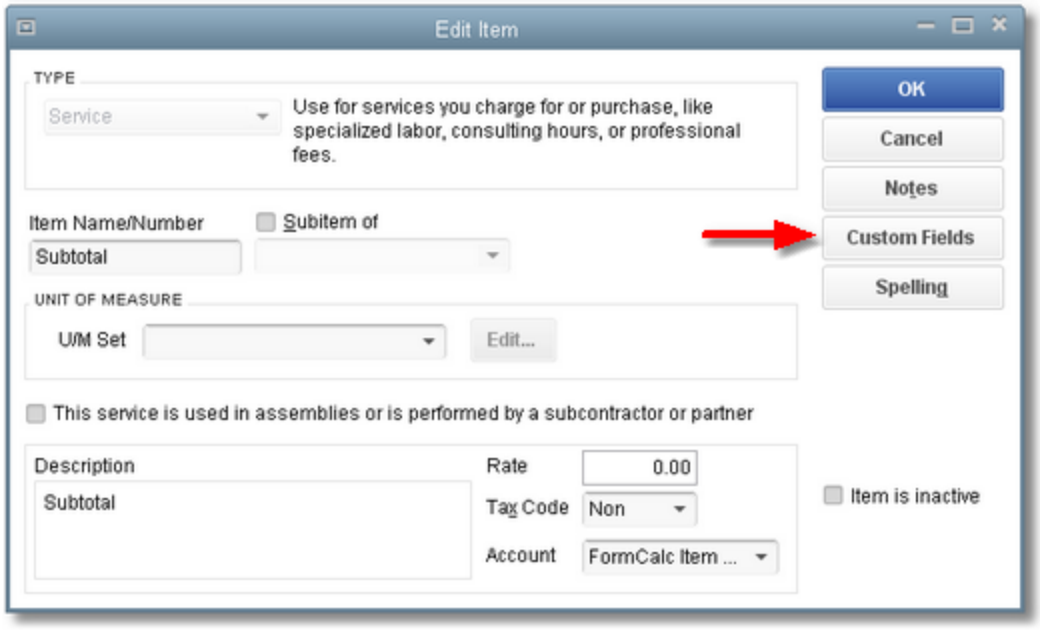


The *Edit Item* window will open.



3. Click on the Custom Fields button.

The *Custom fields* dialog will open.

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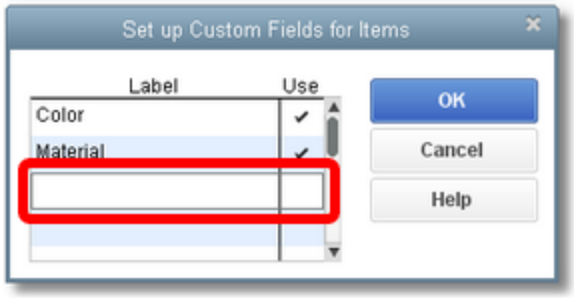
4. **Click on the Define Fields button.**

   The *Set up Custom Fields for Items* dialog will open.



5. **Add one or more custom field names to the list.**

   Custom fields you add here are added to *all* Items, not just the one you are currently editing.

6. **Click OK** to close the dialog.

Customers or Vendors

The steps for defining custom fields in the Customers list and Vendors list are the same. Here are steps for the Customers list.

1. **Open the Customer Center** by selecting `Customers > Customer Center` from the QuickBooks main menu.
2. **Edit a customer** by right-clicking on a customer name in the left pane, then selecting Edit Customer:Job from the pop-up menu.

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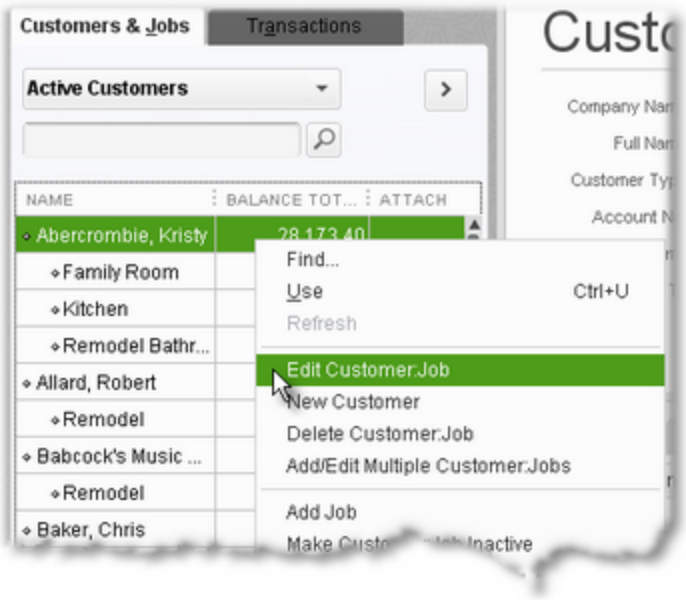
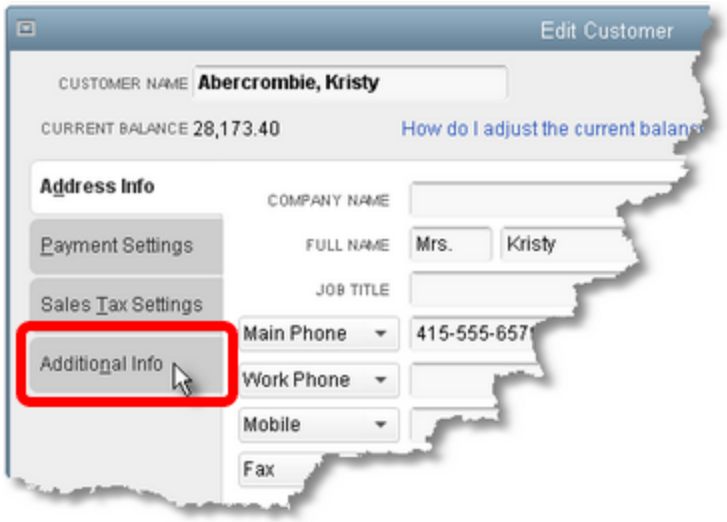


The *Edit Customer* window will open.

3. **Click on the Additional Info tab** of the Edit Customer window.



4. On the Additional Info tab, **click on the Define Fields button.**

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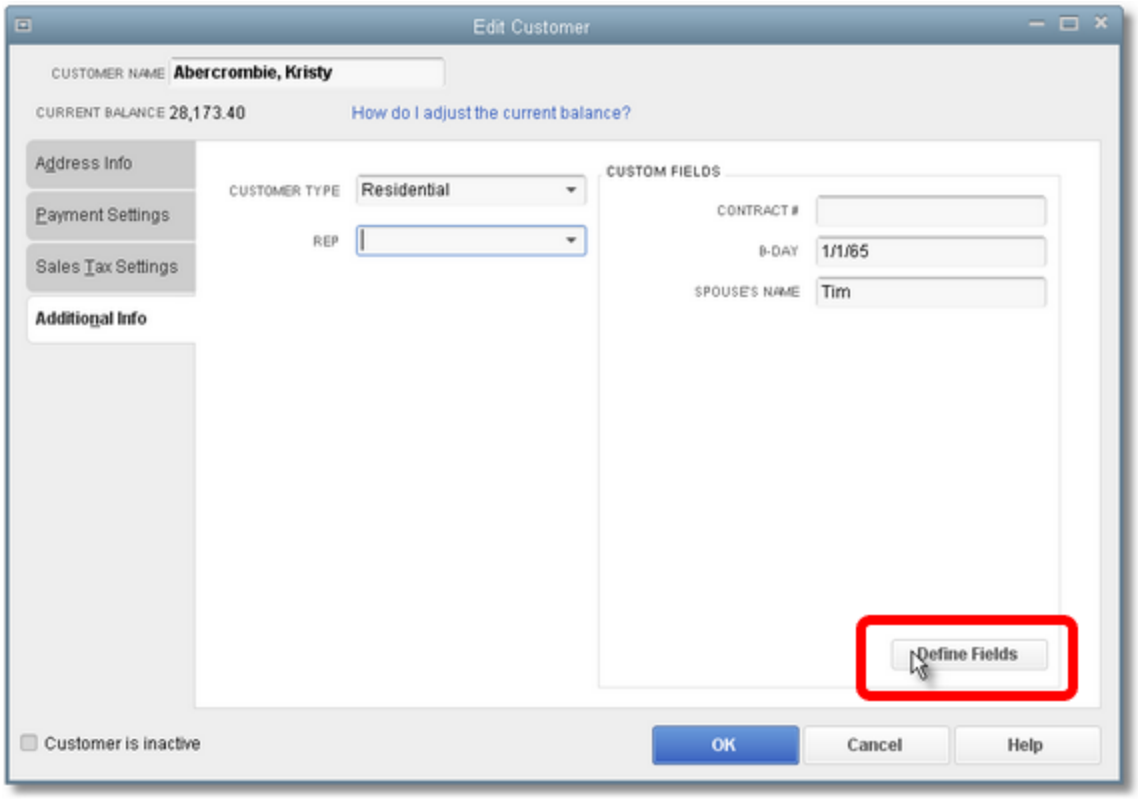
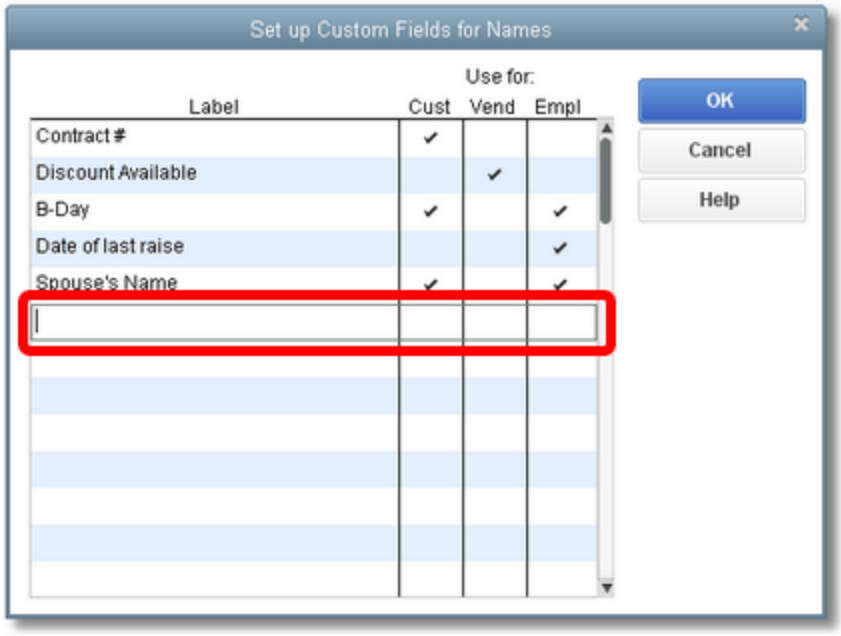


The *Set up Custom Fields for Names* window will open.



5. Add one or more custom field names to the list.

Custom fields you add here are added to *all* Customers, not just the one you are currently editing.

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6. **Click OK** to close the dialog.f

Populating Custom Fields (Adding Data)

To be useful for calculations on QuickBooks forms, custom fields need to contain data.

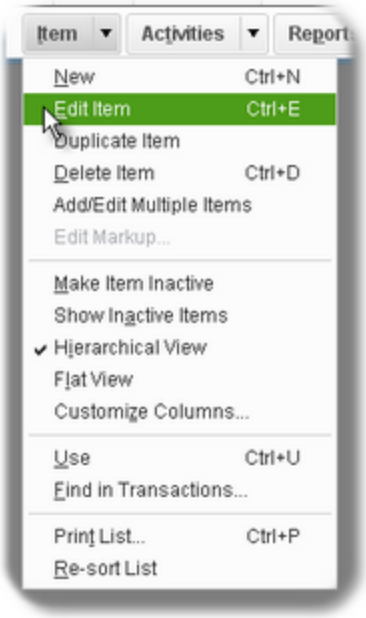
Here are the steps for adding data to custom fields in the Items list. (The steps are basically identical if you are working with the Customer list or Vendor list.)

1. **Open the Item list.**

   Choose **Lists > Item list** from the QuickBooks main menu.

2. **Select an Item to edit** and **open the Edit Item window.**

   To do this, click on the Item you want to edit, then choose **Edit Item** from the *Item* button's menu at the bottom of the Item list window.



   The *Edit Item* window will open.

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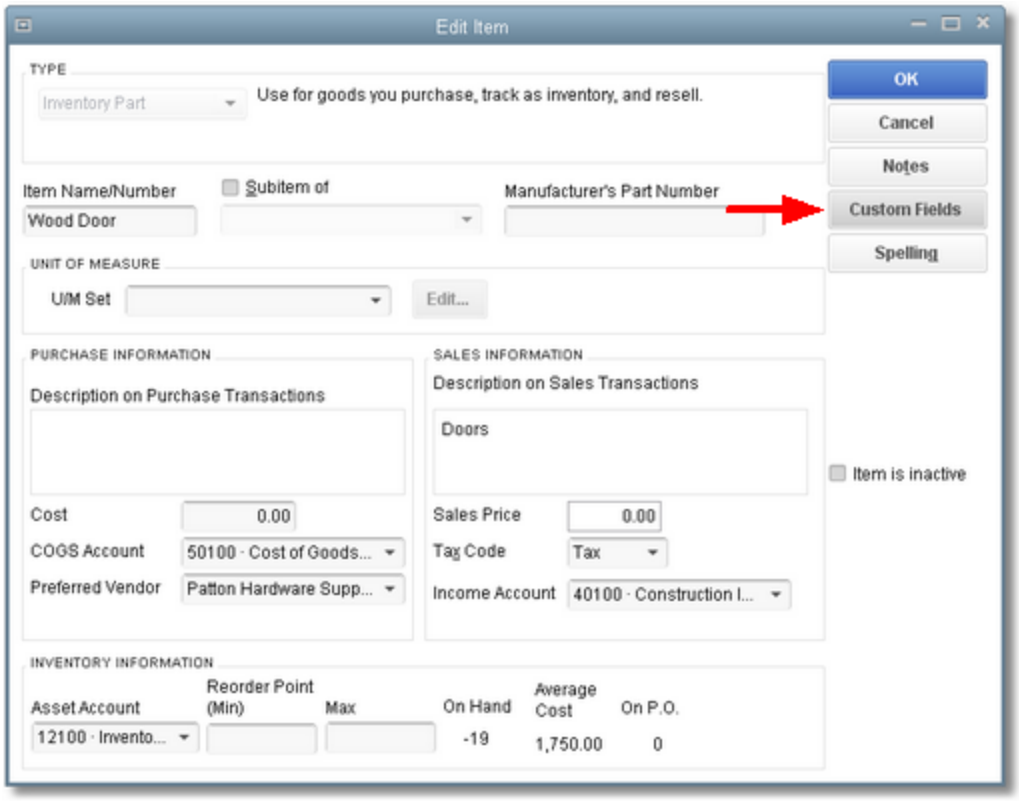

3. Click on the Custom Fields button.

The *Custom fields* dialog will open.

4. Enter data for any or all of the custom fields, as appropriate for the Item.

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5. **Click OK** to close the *Custom fields* dialog.
6. **Repeat these steps** for all Items which need data in their custom fields.

Including Custom Fields in a Form

After defining a custom field and populating it with data, you still have to include it in a QuickBooks form to make the data available to FormCalc SST formulas. To do that, follow the steps in Customizing QuickBooks forms for FormCalc SST.

Notes:

- Customer list and Vendor list custom fields can only be included in the form's header. (They are available on the Header tab of the Additional Customization window.)
- Item list custom fields can only be included in the form's Detail (columns) area. (They are available on the Columns tab of the Additional Customization window.)

> Any time you change a QuickBooks form's layout you will need to take a new snapshot of the form, so that FormCalc SST's Snapshot page matches the new layout.

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FormCalc SST makes custom fields more useful!

With QuickBooks alone, custom fields mostly hold descriptive information. If you had Items representing shoe inventories, custom fields might hold shoe color, style code, or sales category (dress, casual, running, etc.) for display on invoices and purchase orders.

But with FormCalc SST custom fields can hold *data*, not just information. When you select a Customer, Vendor, or Item on a form, custom fields on the form can automatically pull in Customer-, Vendor-, or Item-specific data which FormCalc SST can use to customize the form's text, messages, or calculated results.

List type	Custom Field	Benefits
Item	*Shipping Weight*	As you select each Item on an Invoice, its per-Item shipping weight can be pulled into the form. FormCalc SST can multiply each Item's weight by the quantity invoiced, and can calculate a total shipping weight for the invoice.
	Width *Height* *Length*	Where lumber sales are priced per board foot, Items identifying lumber inventory (such as a 2"x4", 8' long) could include each lumber dimension in several custom fields. FormCalc SST could multiply those fields together and convert inch dimensions to feet, to calculate board feet, then multiply by the number of units purchased to to put the total number of board feet in the form's Quantity column.
	Count per Pallet	When Items have a known full-palette quantity, that quantity could be entered in a custom field of the Items list and FormCalc SST could use it to calculate the number of palettes to ship for a given ordered quantity.
Customer	*Shipping Region*	You could store a region/location code in a custom field of the Customers list, and use it to adjust freight or shipping charges.
	Cust. Code	You could store a customer discount code or percentage in a custom field of the Customers list, and FormCalc SST could use that code or percentage to calculate customer-specific discounts on invoices.

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Calculating a running total

This example demonstrates:

- How to add a blank column to a QuickBooks form
- How to calculate a running total in that column
- Using anchor rows in FormCalc SST formulas

How to Calculate a Running Total

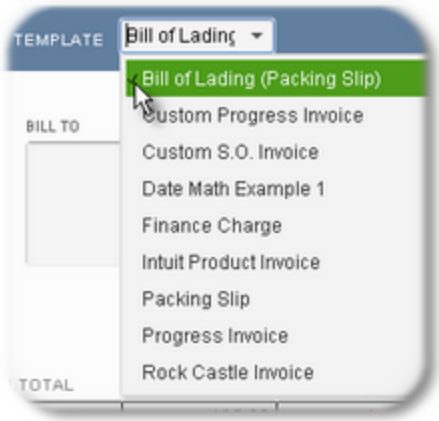
EverStone Products sells decorative and architectural stone throughout the Midwest. Most is shipped on pallets on the company's own trucks. The office staff has customized the Packing Slip template for QuickBooks' invoices to serve as a Bill of Lading. They apply the customized template to completed invoices, then print off the Bills of Lading to send down to the crew in the load-out yard.

When loading a truck it would be useful to have a running count of the pallets to be loaded, to help verify the palette count of each product as loading proceeds. EverStone's manager would like a running total column added to the Bill of Lading.

Customizing the Bill of Lading (Packing Slip) template

Add a column to the Bill of Lading template to hold the running total.

1. **Open the Invoice form.**
2. **Apply the Bill of Lading (or Packing Slip) template** to the Invoice if it isn't applied already, by selecting it in the Template field.



3. **Click on** `Formatting > Customize Data Layout` in the form's menu/ribbon bar.

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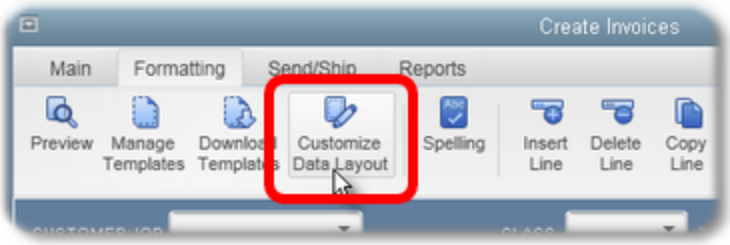

The Additional Customization window will open.

4. **Click on the Columns tab.**

   We need an unused field we can add to the form to hold the running total. *Other 1* and *Other 2* are spare fields available for any purpose, so let's use *Other 1*.

5. On the *Other 1* line, **checkmark the box** in the Screen column, **change the field's title** to *Run.Total*, **and enter 4 in the Order column,** which will place the field just to the right of the *Quantity* column, which is column 3.

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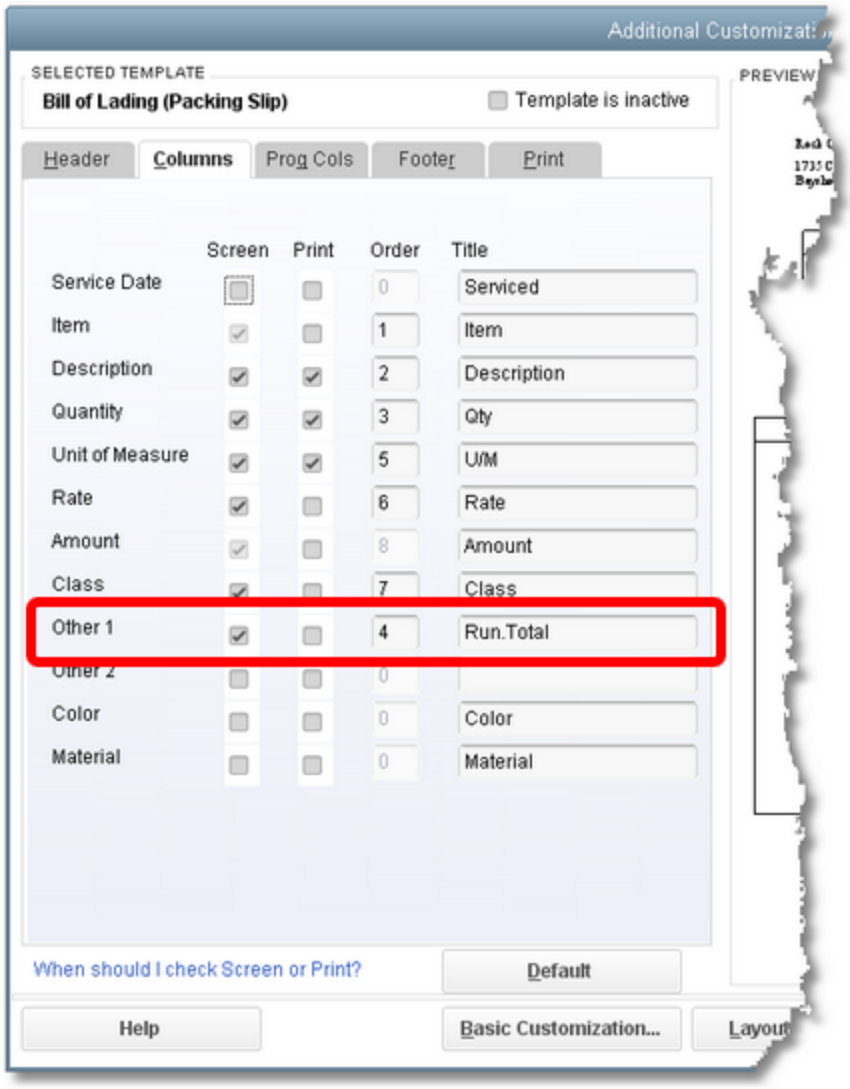

Be sure the ***Message*** field is selected on the Footer tab, also, even if you don't need it. The *Message* field is required by FormCalc SST.

6. **Click OK** to close the Additional Customization window.

Here's how the modified Bill of Lading template should look when applied to an Invoice. Notice the *Run.Total* field:

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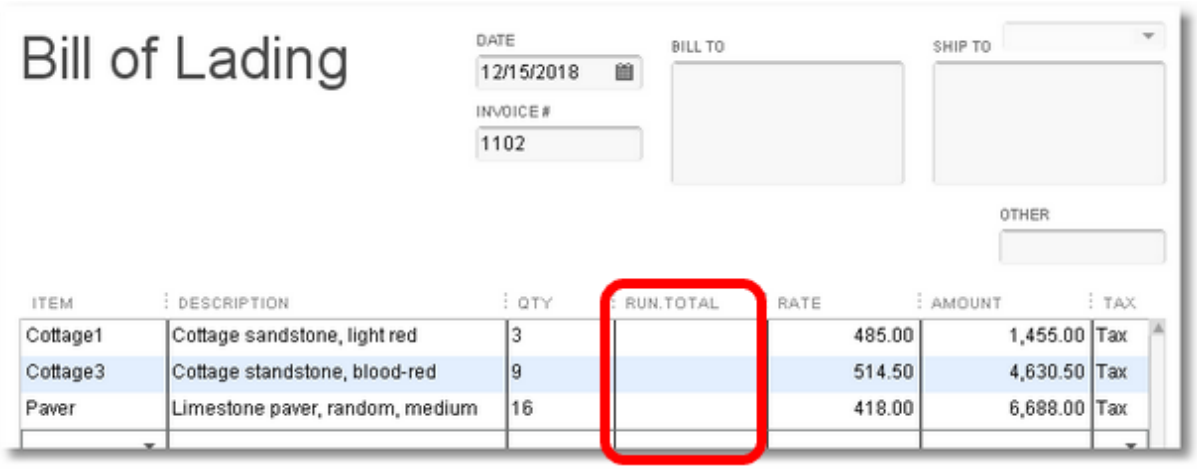

For more customization details, see Customizing QuickBooks forms for FormCalc SST.

Taking a snapshot and setting up the formula

Next, FormCalc SST needs to take a snapshot of the Invoice with the Bill of Lading template applied.

1. In FormCalc SST, **choose** `File > New` **from the main menu** to begin a new file.

   This step is not required, but it assures you won't overwrite an existing FormCalc SST file.

2. **Click the Action button** in the main toolbar.

The focus will switch to QuickBooks, and the *Choose an action* dialog will appear:

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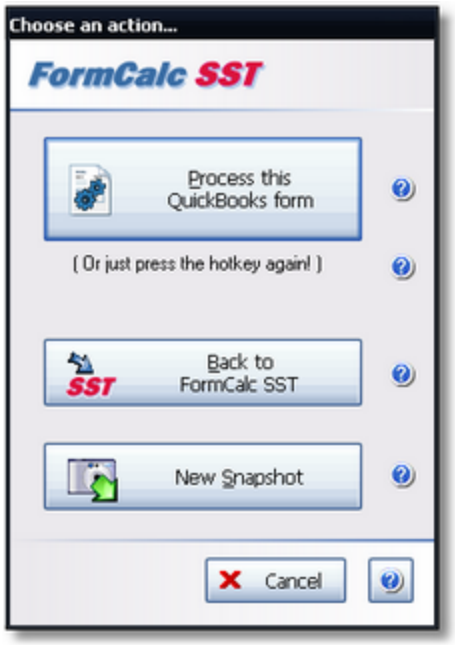

3. **Click on the New Snapshot button.**

   FormCalc SST will take a few seconds to gather information about the form, then display a representation of the form on the Snapshot tab.

4. **Indicate the column type of the *Item* column and of the *Run.Total* column,** at least.

   You must *always* indicate which is the Item column. Beyond that, you must identify the column type for all column which will have formulas—in this case, just the *Run.Total* column.

   Here's a partial view of the snapshot with column types of the *Item* column and a couple others already selected, and the *Run.Total* column's pop-up (right-click) menu displayed on the Column types row—*Run.Total*'s column type is about to be selected as Other.

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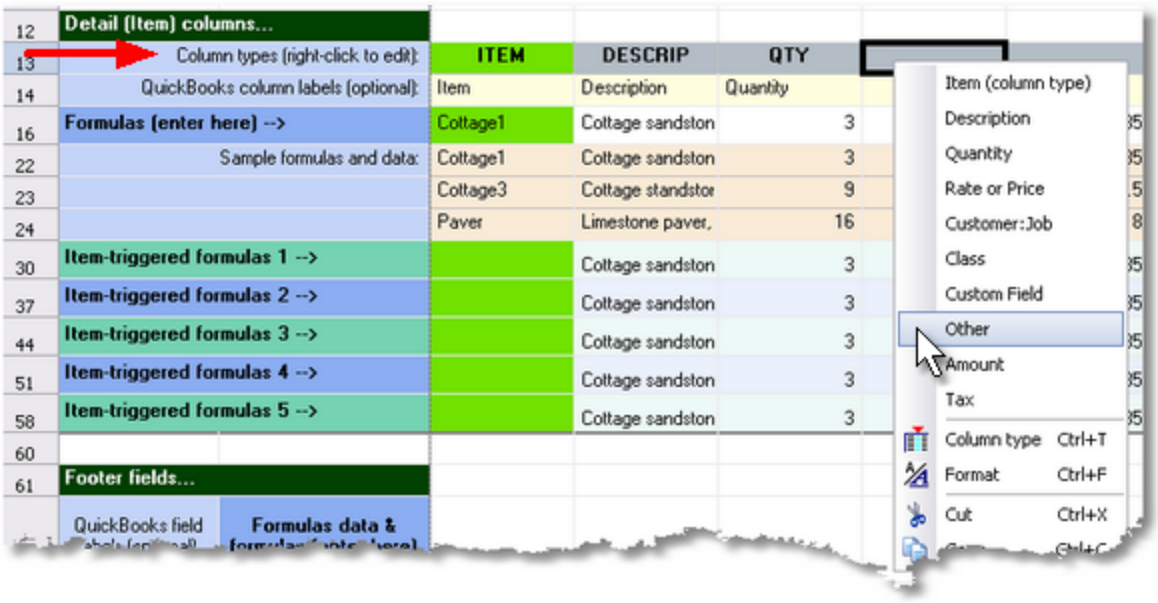
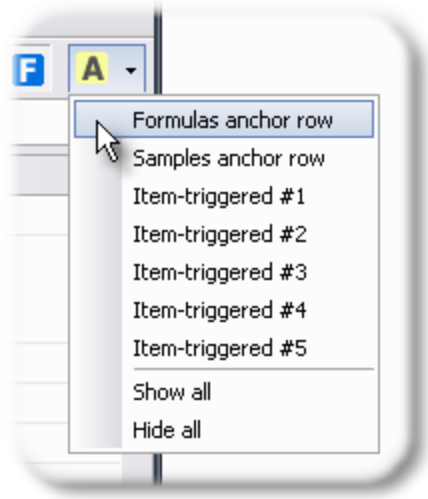


5. **Display the Formulas row's anchor row** by clicking on the [**A**] button on the toolbar and selecting *Formulas anchor row*.



The anchor row should now be visible immediately above the Formulas row:

6. **Enter the formula for the running total** in the *Run.Total* column.

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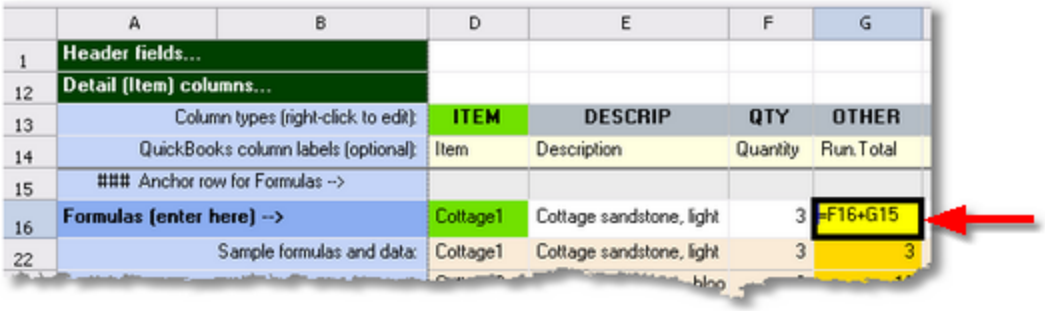
The formula is pretty simple: =F16+G15

It adds the value in the *Quantity* column on the current row (F16), to the value of the *Run.Total* column from the *prior* row—represented by a reference to the anchor row cell G15. (When FormCalc SST actually processes QuickBooks forms, it will copy this formula for each row of data on the form.)



Formula references to an anchor row are always relative, meaning they always refer to the "prior" row of QuickBooks form data.

7. **Click on the Save As button** and supply a filename, **to save the FormCalc SST file.**

FormCalc SST files are identifiable by their .SSF filename extension (.SST in prior versions).

FormCalc SST is now ready to use for calculating running totals on the Bill of Lading template.

Processing QuickBooks forms

To process an Invoice in QuickBooks:

1. **Be sure the Bill of Lading template is applied** to the Invoice.

   The FormCalc SST file is specific to the layout of that template.

2. **Press the FormCalc SST hotkey,** which is *F11* unless you have changed it in Preferences.

   The *Choose an action* dialog will appear:

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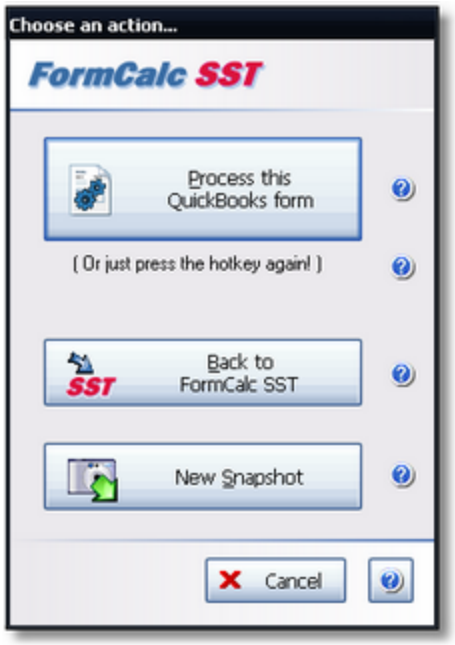
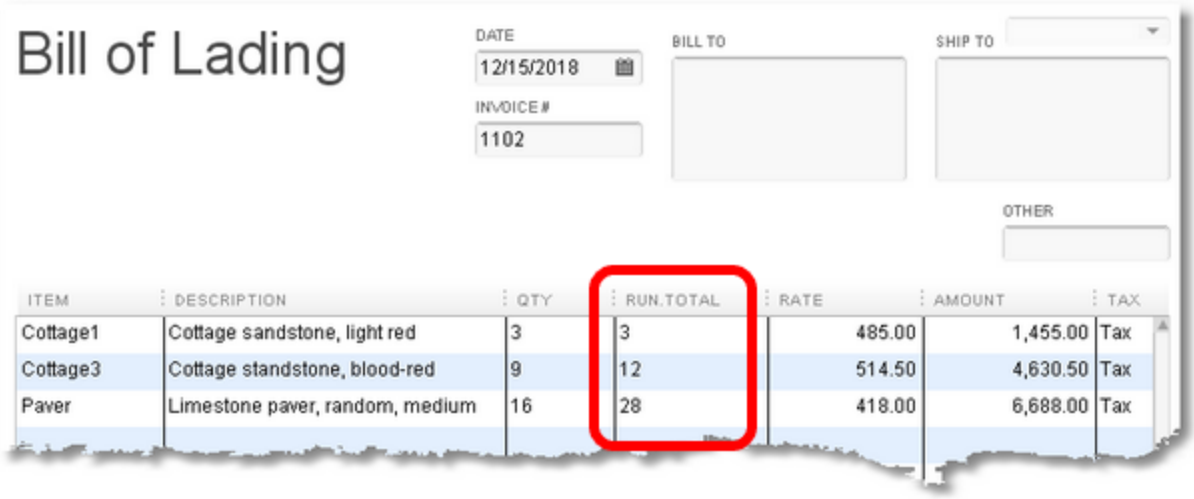


3. **Process the form** by either (1) pressing the hotkey a second time, or (2) clicking on the *Process the QuickBooks form* button.

Here's a view of the form after processing. The numbers in the *Run.Total* column were calculated by FormCalc SST.



ITEM	DESCRIPTION	QTY	RUN.TOTAL	RATE	AMOUNT	TAX
Cottage1	Cottage sandstone, light red	3	3	485.00	1,455.00	Tax
Cottage3	Cottage standstone, blood-red	9	12	514.50	4,630.50	Tax
Paver	Limestone paver, random, medium	16	28	418.00	6,688.00	Tax

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Totaling and subtotaling columns

This example demonstrates:

- How to set up a trigger Item in the QuickBooks Item list
- How to total a column
- How to subtotal a column

How to Total a Column

Totaling columns is a common need, and the most common use for Item-triggered formulas. Item-triggered formulas are those which FormCalc SST applies only when a specific Item name is encountered—the Item name you have entered on the Item-triggered formula's row in FormCalc SST.

Items which "trigger" Item-triggered formulas are often referred to as *trigger Items*.

Totaling a column with FormCalc SST involves (1) setting up a trigger Item in QuickBooks, (2) using that Item name on QuickBooks forms where you want the total to appear, and (3) associating the Item name with an Item-triggered formula row which calculates the total.

Setting up a trigger Item

Trigger Items are usually QuickBooks Items you have set up specifically for the purpose of triggering FormCalc SST calculations.

This isn't always true. See Tips for Trigger Items in the Item-triggered formulas topic.

For this example we will set up a Service-type Item named Total.

1. **Open the Item list** by choosing **Lists > Item list** from the QuickBooks main menu.
2. **Choose** **New** from the *Item* button's menu at the bottom of the Item list window.

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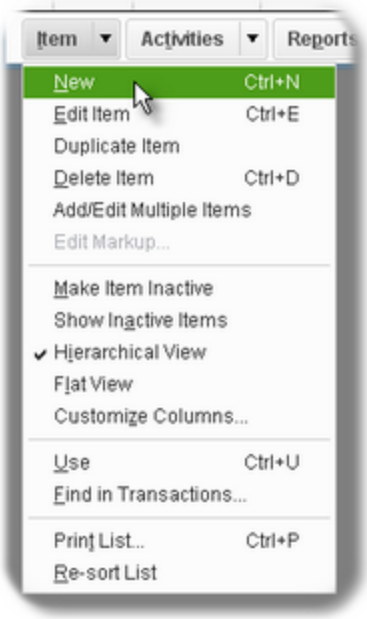
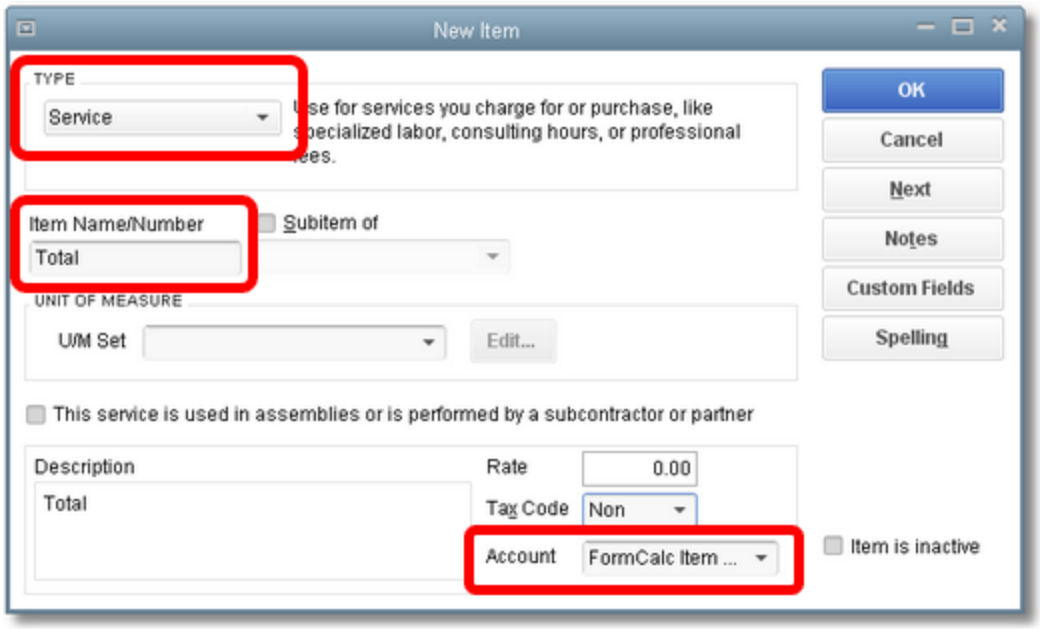


The New Item window will open.

3. **Fill the New Item window's fields** as shown here.



Notes:

- The Item name and Description can be anything you want.
- The Account this Item posts to is an equity-type account set up specifically for working with FormCalc SST trigger Items, called *FormCalc Item Posting*. We could have posted to an income or expense account, but using an equity account dedicated to this purpose makes

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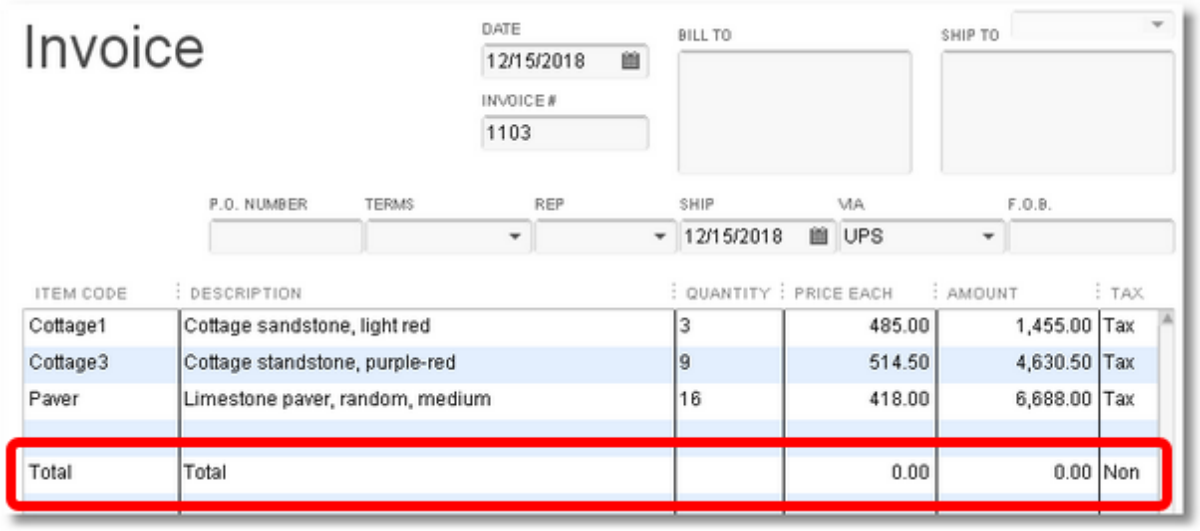
spotting errors easier (unintentionally posting income or expense, etc.). For an explanation, see Tips for Trigger Items in the Item-triggered formulas topic.

Using the trigger Item on QuickBooks forms

The location of the Total Item will determine where FormCalc SST calculates a total. Generally you will want to enter it as the last line in the form's Detail section, like this:



The total won't be calculated, of course, until FormCalc SST processes the form.

Setting up formulas in FormCalc SST

1. **Take a snapshot of the QuickBooks form.**

   Taking a snapshot of the form is always necessary before setting up formulas. Because taking snapshots is described in several earlier sections, the details won't be shown again here.

2. **Choose a column type for each column in the snapshot** by right-clicking in each column on the Column types row, then selecting the column type from the pop-up menu, as shown here for the Amount column:

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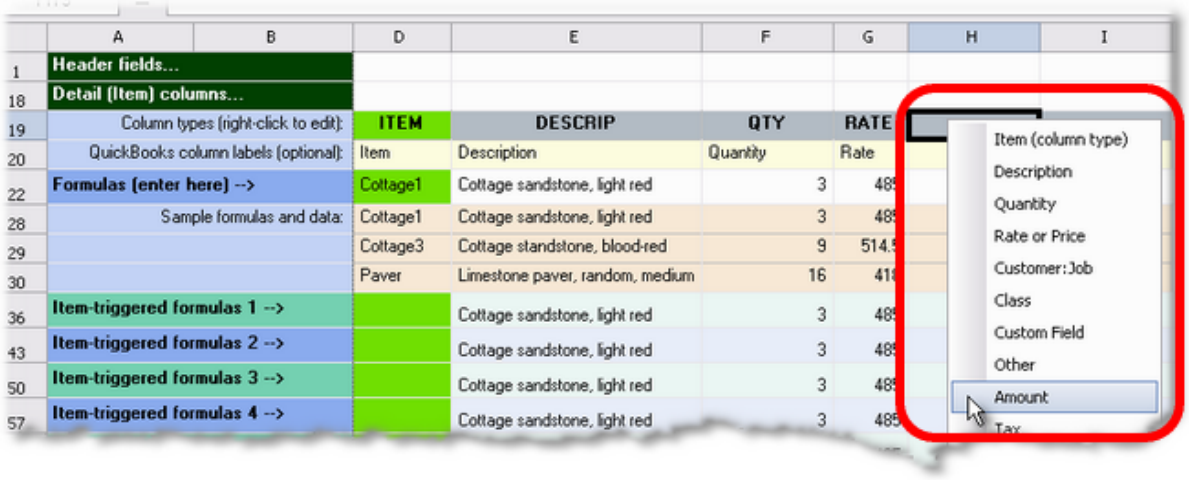

3. **Enter a formula** to total the desired column.

   The formula must be entered on one of the Item-triggered formulas rows—let's use the *Item-triggered formulas 1* row. For this simple example our formula will total the Quantity column, but you can total any numeric column in the Detail section of a form.

   Enter the following formula in the Quantity column on the *Item-triggered formulas 1* row (cell F36 in this example):

   ```
   =SUM(F1:F1)
   ```

   "Wait a minute! This formula appears to sum cell F1. Is that really what will happen?" No. When entering formulas you can refer to the whole column of data without using exact cell coordinates. FormCalc SST will adjust your formula to the required coordinates immediately after you've entered it, as described below. (For details, see "Close enough" cell referencing in the Formulas and cell references topic.)

   FormCalc SST will convert the formula to:

   ```
   =SUM(F28:F30)
   ```

   (Cell range references to the first and last row of the *Sample formulas and data* area—the rows with tan backgrounds in the screenshot above—tell FormCalc SST to reference "the whole column of data" when processing a QuickBooks form.)

4. **Enter the trigger Item's name** (Total, in this case) in the Item column of the same *Item-triggered formulas* row where you entered the formula.

   The item name is what will connect the formula with a particular row of data on your QuickBooks forms.

   Here's a view of the *Item-triggered formulas 1* row with the formula and item name in place:

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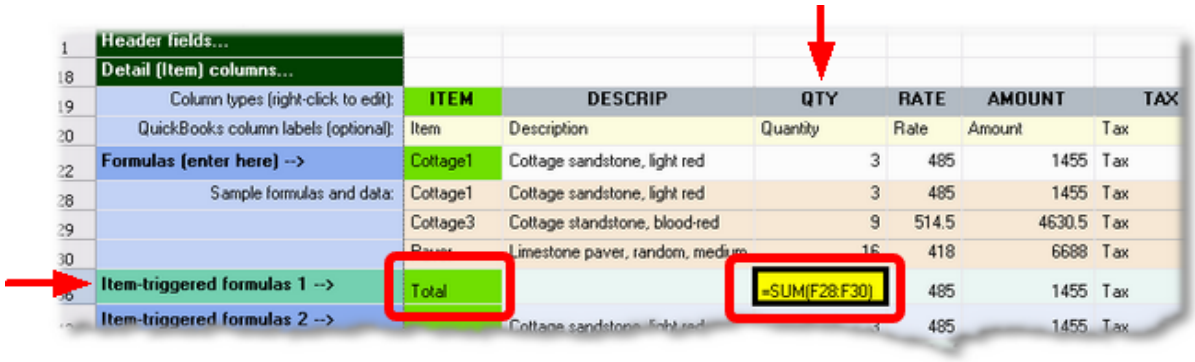

5. **Click on the Save button** to save the file.

FormCalc SST files are identifiable by their .SST filename extension (.SST in prior versions).

FormCalc SST is now set up for calculating totals on QuickBooks forms, wherever the *Total* Item appears.

Processing QuickBooks invoices

To process an Invoice in QuickBooks:

1. **Switch to QuickBooks,** and **open or click on the Invoice** you want to process.
2. **Press the FormCalc SST hotkey,** which is *F11* unless you have changed it in Preferences.

   The *Choose an action* dialog will appear:

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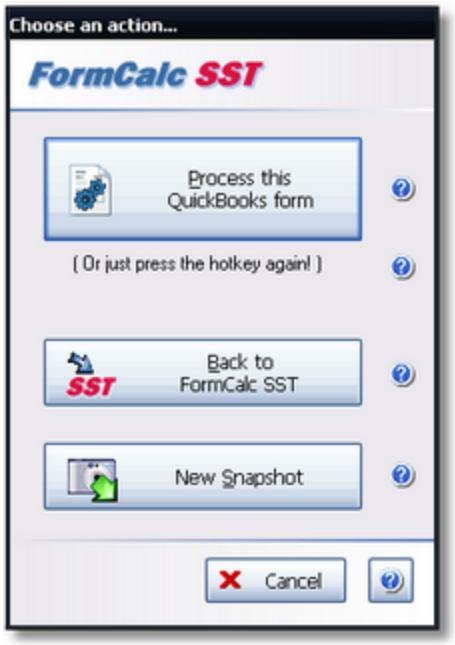
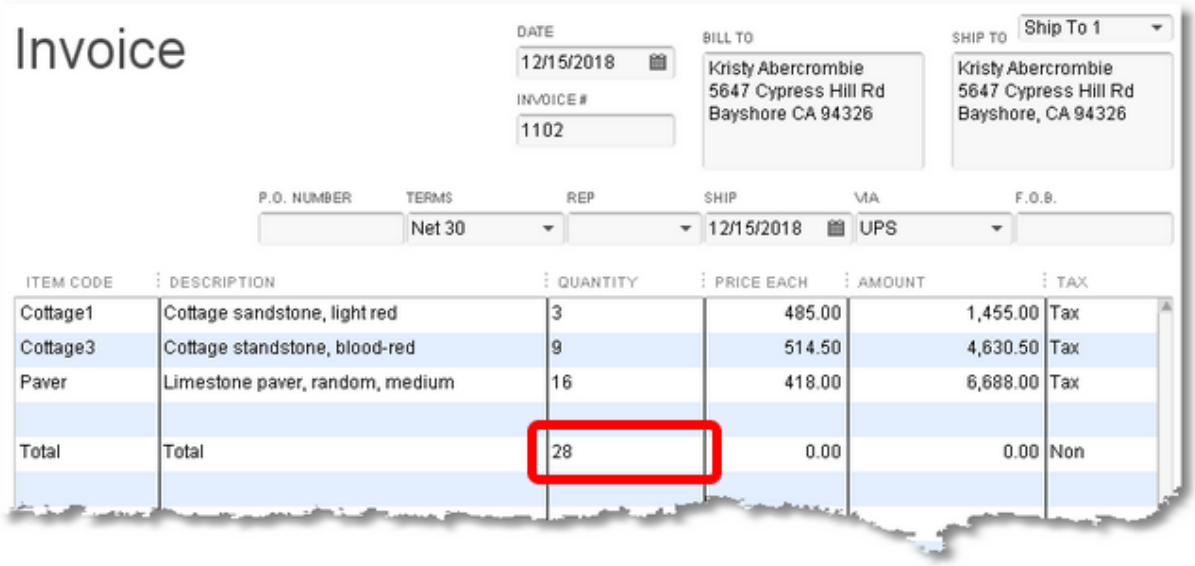


3. **Process the form** by either (1) pressing the hotkey a second time, or (2) clicking on the *Process the QuickBooks form* button.

Here's a view of the Invoice after processing, showing the total calculated by FormCalc SST.



Invoice

DATE 12/15/2018
INVOICE # 1102

BILL TO
Kristy Abercrombie
5647 Cypress Hill Rd
Bayshore CA 94326

SHIP TO Ship To 1
Kristy Abercrombie
5647 Cypress Hill Rd
Bayshore, CA 94326

P.O. NUMBER	TERMS	REP	SHIP	VIA	F.O.B.
	Net 30		12/15/2018	UPS	

ITEM CODE	DESCRIPTION	QUANTITY	PRICE EACH	AMOUNT	TAX
Cottage1	Cottage sandstone, light red	3	485.00	1,455.00	Tax
Cottage3	Cottage standstone, blood-red	9	514.50	4,630.50	Tax
Paver	Limestone paver, random, medium	16	418.00	6,688.00	Tax
Total	Total	28	0.00	0.00	Non

How to Subtotal Columns

The simplest way to subtotal columns on QuickBooks forms is to use the same trigger Item name in several places on the form. Let's prove this by making minor changes to the Item name and FormCalc SST setup, then processing an Invoice.

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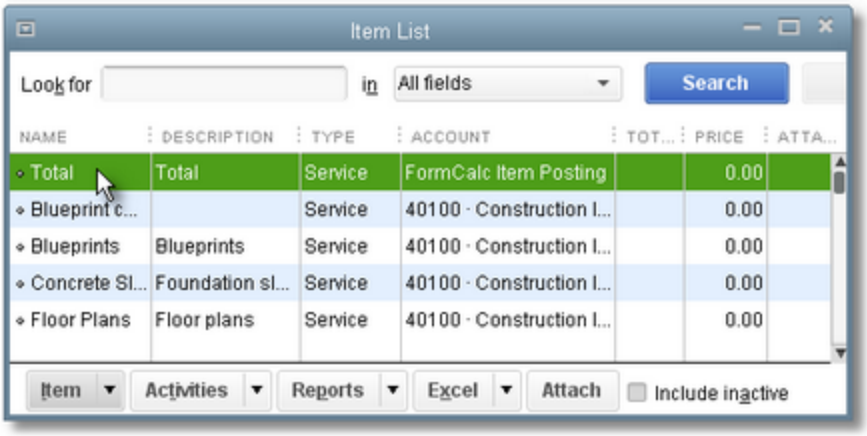
You can also calculate subtotals using different Item names. That approach may be necessary when additional calculations are needed on the subtotal rows, and those calculations need to be different for each Item. This is a more advanced approach: the rows included in each subtotal may have to be controlled by using IF() functions in the formulas.

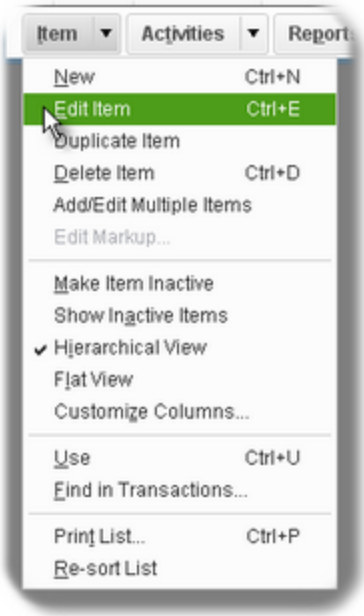
Changing the Item name

The *Total* Item we set up earlier would work for subtotals too, as is. But having the word "Total" appear on several rows of an Invoice might be confusing to someone else looking at the Invoice. So let's change the Item name to *Subtotal*:

1. **Open the Item list** by choosing **Lists > Item list** from the QuickBooks main menu.
2. **Select the Total item** by clicking on it.



3. **Choose** **Edit Item** from the *Item* button's menu at the bottom of the Item list window.



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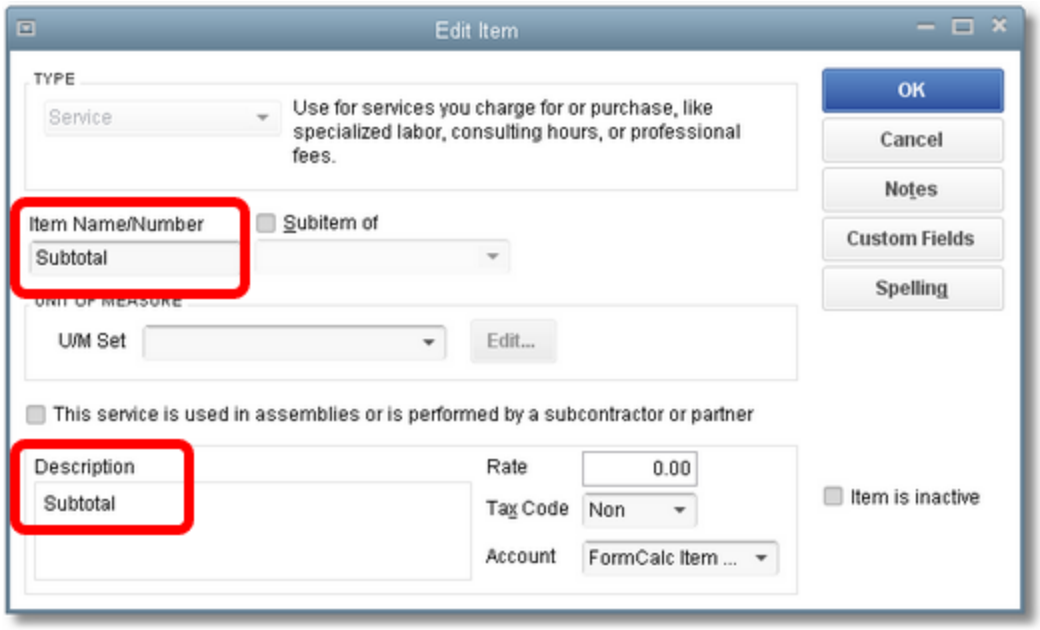
The Edit Item window will open.

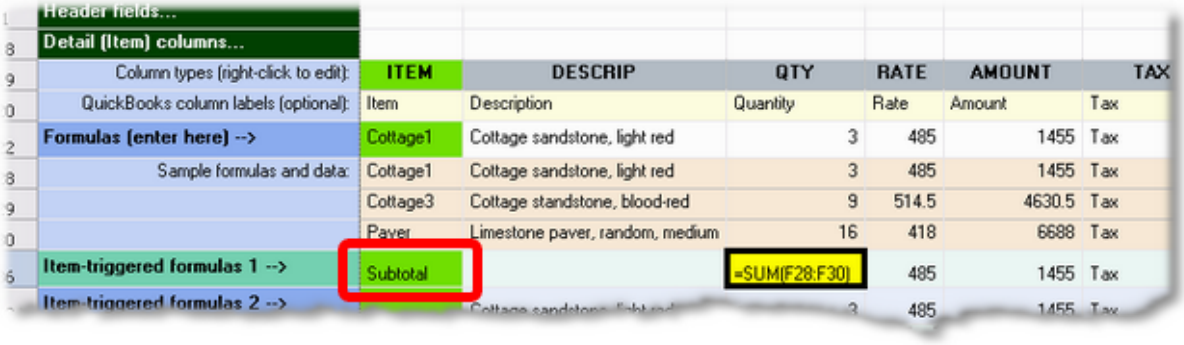
4. **Change the Item's Name and Description** from *Total* to *Subtotal*:



5. **Click OK** to close the window.

Updating the FormCalc SST file

We have not changed the layout of the QuickBooks Invoice, so we don't need to take a new snapshot. We only need to update the *Item-triggered formulas 1* row with the Item's new name, *Subtotal*.



Everything else stays the same. We don't need to change the formula, because of how FormCalc SST handles repeat occurrences of trigger Items. During form processing, each time an Item name appears FormCalc SST checks to see if there was a prior occurrence of it. If so, the formula is adjusted to include only data rows *since the most recent prior occurrence* of the Item name.

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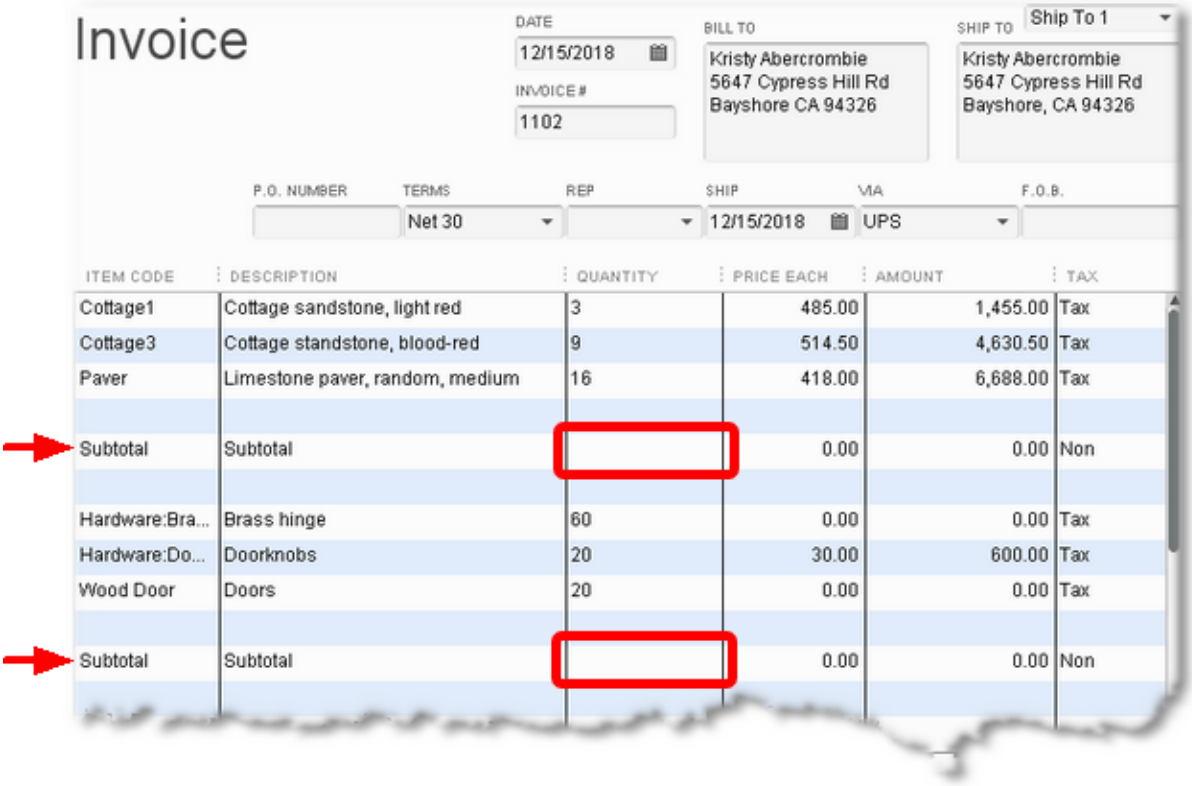
Processing QuickBooks forms...with subtotals

The steps for processing forms is the same as describe above. We've added more data rows to the example Invoice, to better demonstrate how subtotals work.

Before processing:



Invoice

DATE 12/15/2018
INVOICE # 1102
BILL TO Kristy Abercrombie 5647 Cypress Hill Rd Bayshore CA 94326
SHIP TO Ship To 1 Kristy Abercrombie 5647 Cypress Hill Rd Bayshore, CA 94326

P.O. NUMBER	TERMS	REP	SHIP	VIA	F.O.B.
	Net 30		12/15/2018	UPS	

ITEM CODE	DESCRIPTION	QUANTITY	PRICE EACH	AMOUNT	TAX
Cottage1	Cottage sandstone, light red	3	485.00	1,455.00	Tax
Cottage3	Cottage standstone, blood-red	9	514.50	4,630.50	Tax
Paver	Limestone paver, random, medium	16	418.00	6,688.00	Tax
Subtotal	Subtotal		0.00	0.00	Non
Hardware:Bra...	Brass hinge	60	0.00	0.00	Tax
Hardware:Do...	Doorknobs	20	30.00	600.00	Tax
Wood Door	Doors	20	0.00	0.00	Tax
Subtotal	Subtotal		0.00	0.00	Non

After processing with FormCalc SST (note the subtotals):

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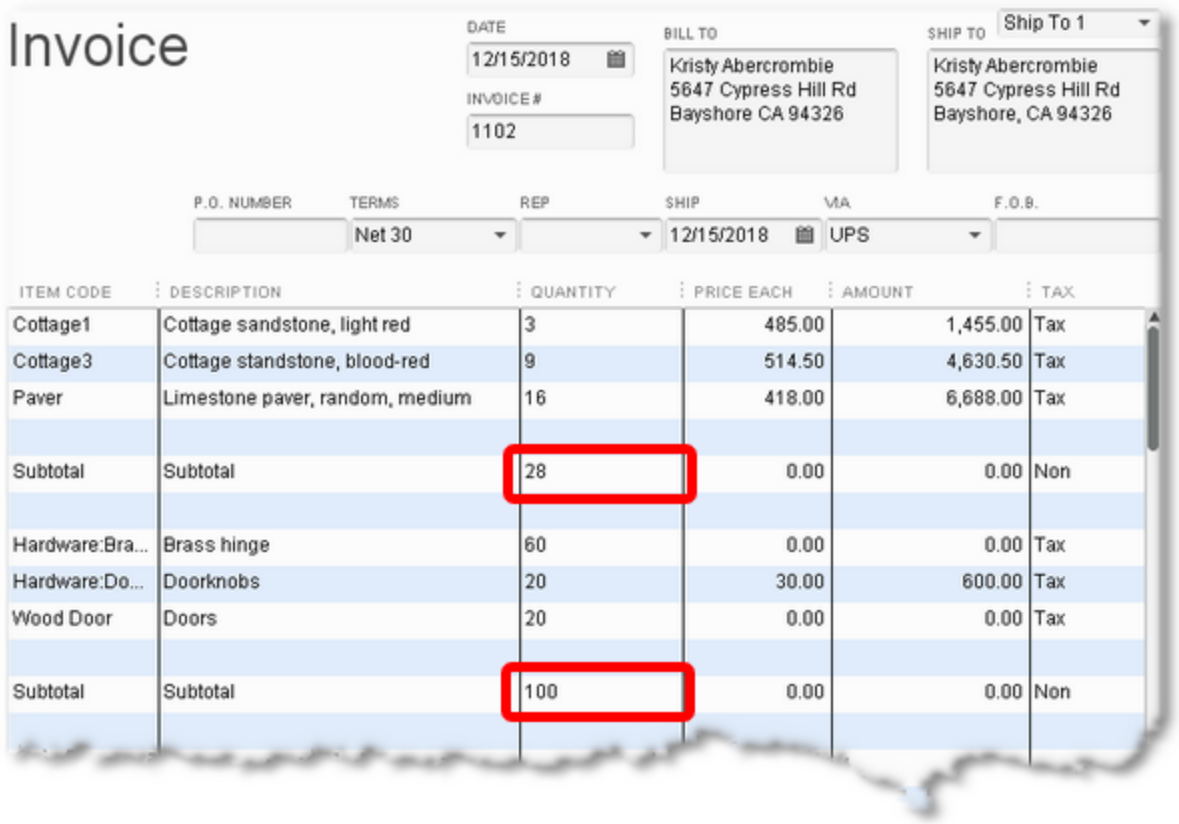

Invoice

DATE 12/15/2018

INVOICE # 1102

BILL TO
Kristy Abercrombie
5647 Cypress Hill Rd
Bayshore CA 94326

SHIP TO Ship To 1
Kristy Abercrombie
5647 Cypress Hill Rd
Bayshore, CA 94326

P.O. NUMBER	TERMS	REP	SHIP	VIA	F.O.B.
	Net 30		12/15/2018	UPS	

ITEM CODE	DESCRIPTION	QUANTITY	PRICE EACH	AMOUNT	TAX
Cottage1	Cottage sandstone, light red	3	485.00	1,455.00	Tax
Cottage3	Cottage standstone, blood-red	9	514.50	4,630.50	Tax
Paver	Limestone paver, random, medium	16	418.00	6,688.00	Tax
Subtotal	Subtotal	28	0.00	0.00	Non
Hardware:Bra...	Brass hinge	60	0.00	0.00	Tax
Hardware:Do...	Doorknobs	20	30.00	600.00	Tax
Wood Door	Doors	20	0.00	0.00	Tax
Subtotal	Subtotal	100	0.00	0.00	Non

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Shipping weight calculations

This example demonstrates:

- How to set up trigger Items in the QuickBooks Item list
- How to calculate a column from two other columns
- How to total a column

Overview

If you define a custom field in the Item list and you store the per-unit shipping weight there for each Item, then when you select an Item on an Invoice or other form QuickBooks can automatically bring the shipping weight into the form on that line.

With the shipping weight available on each line, FormCalc SST can multiply it by the quantity to calculate an extended shipping weight on each Item line (*Quantity * Ship Wt = Extd Wt*). FormCalc SST can also total the extended shipping weight column, to calculate a total shipping weight for the form (Invoice, etc.).

How to Calculate Per-Item and Total Shipping Weights

QuickBooks Setup

1. **Define a custom field** named *Ship Wt* in the Items list:

2. **Enter a shipping weight** for each Item—or at least, for those Items you ship:

3. **Add an Item to the Items list,** to use as a trigger Item.

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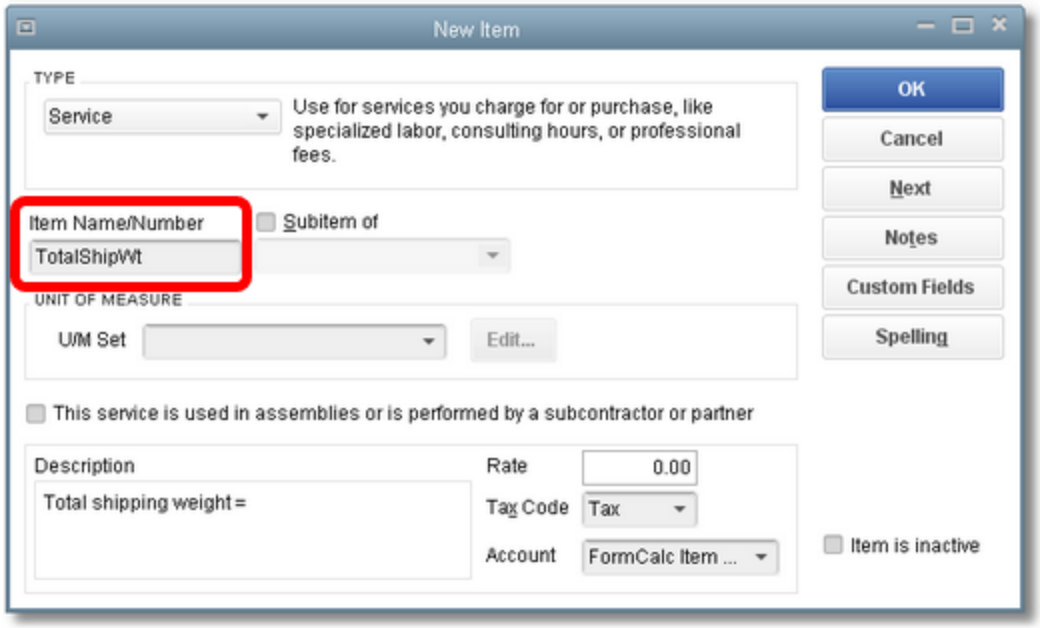
You will use this Item on QuickBooks forms to control where the extended weight column's total appears. Make it a Service-type Item and name it *TotalShipWt*.



The *FormCalc Item Postings* account has been assigned to this Item, as discussed in the Tips for Trigger Items topic, but you may use an income or expense account if you wish.

4. **Customize the form** where the shipping weights will be calculated.

   On the Columns tab, include the *Ship Wt* custom field. Also include the *Other 1* field, and rename it *Extd Wt*.

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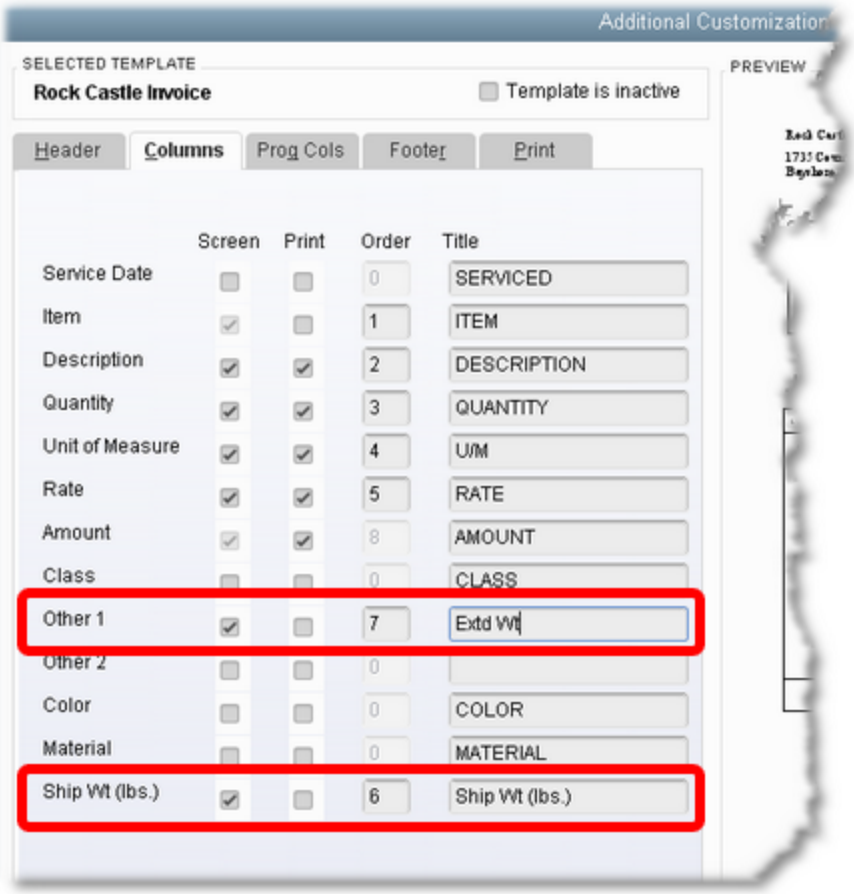

Also, renumber the *Order* column if necessary, to order fields as you want them:

5. Finally, **fill out the form as you normally would,** so it contains some sample data for FormCalc SST to copy when taking a snapshot of the form. The *Extd Wt* column is empty of course—it hasn't been calculated yet.

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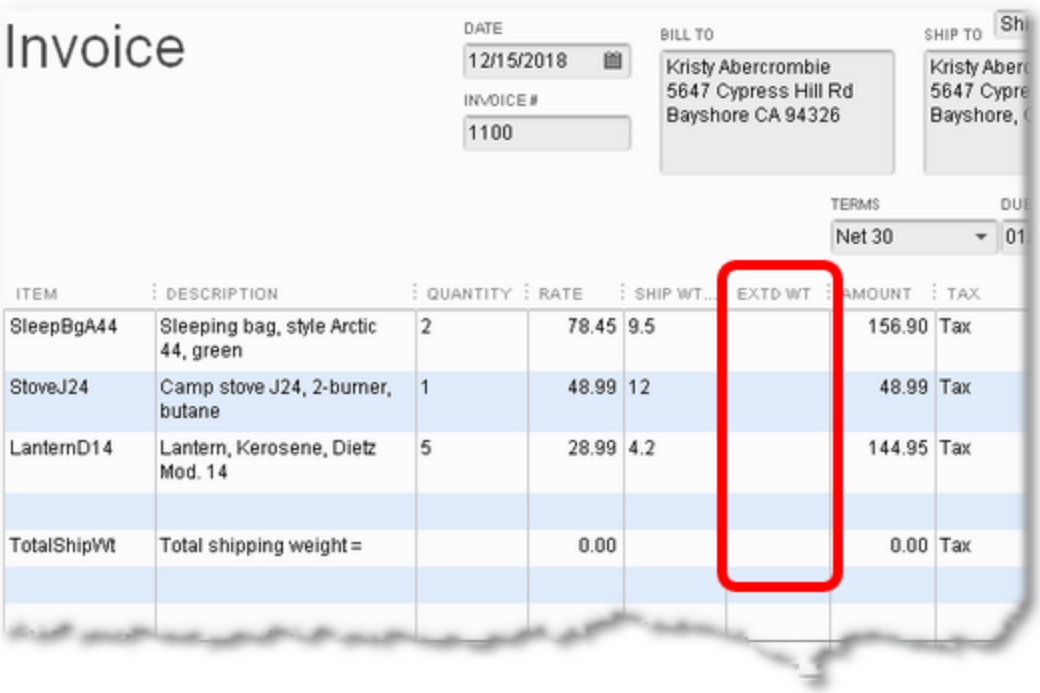

FormCalc SST Setup

1. **Select** `File > New` from the main menu to start a new FormCalc SST file.

   (Optional. You may overwrite the existing file if you want.)

2. **Take a snapshot** of the QuickBooks form.

   FormCalc SST will gather data about the form and build a spreadsheet based on it.

3. **Assign column types** on the Column types row, identifying the spreadsheet's column types with the corresponding QuickBooks columns.

   The column types row should look something like the following, depending on the order and number of columns on the QuickBooks form:

4. **Enter a formula** in the *ExtdWt* column of the Formulas row, which multiplies the *Quantity* column by the *ShipWt* column.

   For example:

   =F18*H18 *...your formula will be different if your form has a different column layout.)*

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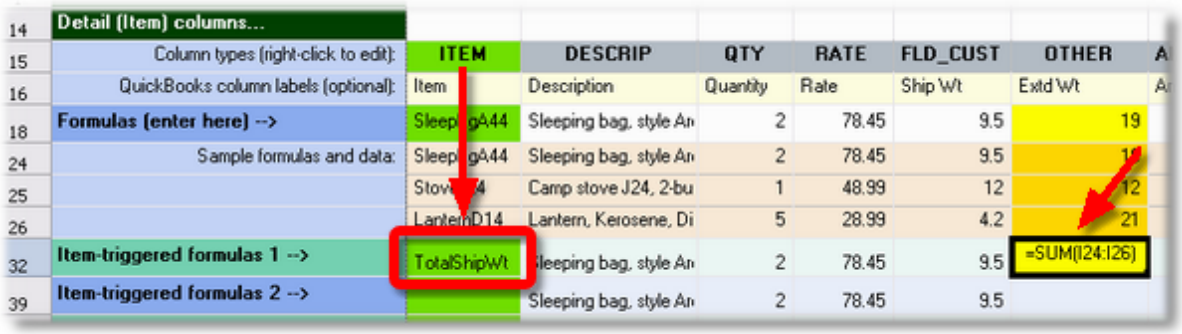
	Detail (Item) columns...							
15	Column types (right-click to edit):	ITEM	DESCRIP	QTY	RATE	FLD_CUST	OTHER	A
16	QuickBooks column labels (optional):	Item	Description	Quantity	Rate	Ship Wt	Extd Wt	A
18	Formulas (enter here) -->	SleepBgA44	Sleeping bag, style An	2	78.45	9.5	=F18*H18	
24	Sample formulas and data:	SleepBgA44	Sleeping bag, style An	2	78.45	9.5	19	

5. **Enter a formula** in the *ExtdWt* column of the Item-triggered formulas 1 row, to total the entire *ExtdWt* column.

   When referring to a whole column in a formula, you can simply referring to a one-cell "range" of the column:

   `=SUM(I1:I1)` *...again, your formula may be different*

   FormCalc SST will adjust this one-cell range to the correct coordinates for summing the entire column, `I24:I26` (see the "Close enough" cell referencing topic for details):



	Detail (Item) columns...							
15	Column types (right-click to edit):	ITEM	DESCRIP	QTY	RATE	FLD_CUST	OTHER	A
16	QuickBooks column labels (optional):	Item	Description	Quantity	Rate	Ship Wt	Extd Wt	A
18	Formulas (enter here) -->	SleepBgA44	Sleeping bag, style An	2	78.45	9.5	19	
24	Sample formulas and data:	SleepBgA44	Sleeping bag, style An	2	78.45	9.5	19	
25		Stove	Camp stove J24, 2-bu	1	48.99	12	12	
26		LanternD14	Lantern, Kerosene, Di	5	28.99	4.2	21	
32	Item-triggered formulas 1 -->	TotalShipWt	Sleeping bag, style An	2	78.45	9.5	=SUM(I24:I26)	
39	Item-triggered formulas 2 -->		Sleeping bag, style An	2	78.45	9.5		

6. **Also enter the trigger Item name,** *TotalShipWt*, in the Item column of the same row, as shown above.

7. **Save the file** to assure your changes are kept.

FormCalc SST files are identifiable by their .SST filename extension (.SST in prior versions).

Processing a QuickBooks Form

To verify that your FormCalc SST setup works as desired, just process a QuickBooks form containing some data.

From FormCalc SST

1. **Press the Action button** in the main toolbar.

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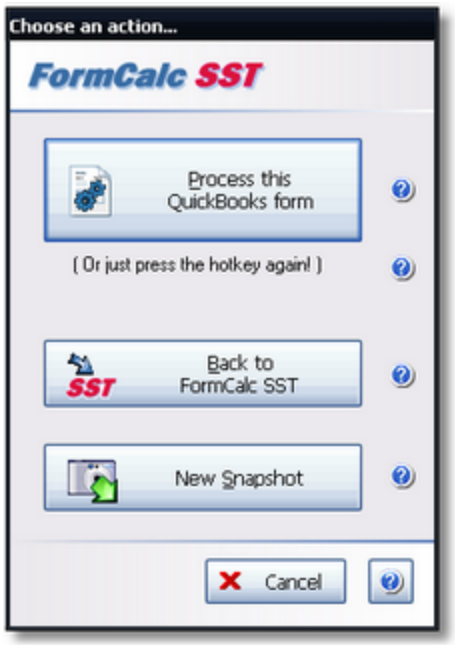
The focus will switch to QuickBooks, and the *Choose an action* dialog will appear:



2. **Click on the** *Process this QuickBooks form* **button** to process the form. (See example results below.)

From QuickBook

1. **Press the FormCalc SST hotkey,** which is *F11* unless you have changed it in Preferences.

   The same *Choose an action dialog* as shown above will appear.

2. **Process the form** by either pressing the hotkey a second time (quickest for most users), or clicking on the *Process the QuickBooks form* button.

Results

After processing, the form should look something like this. As you can see, the correct extended weight has been calculated on each line and a total shipping weight has been calculated at the bottom.

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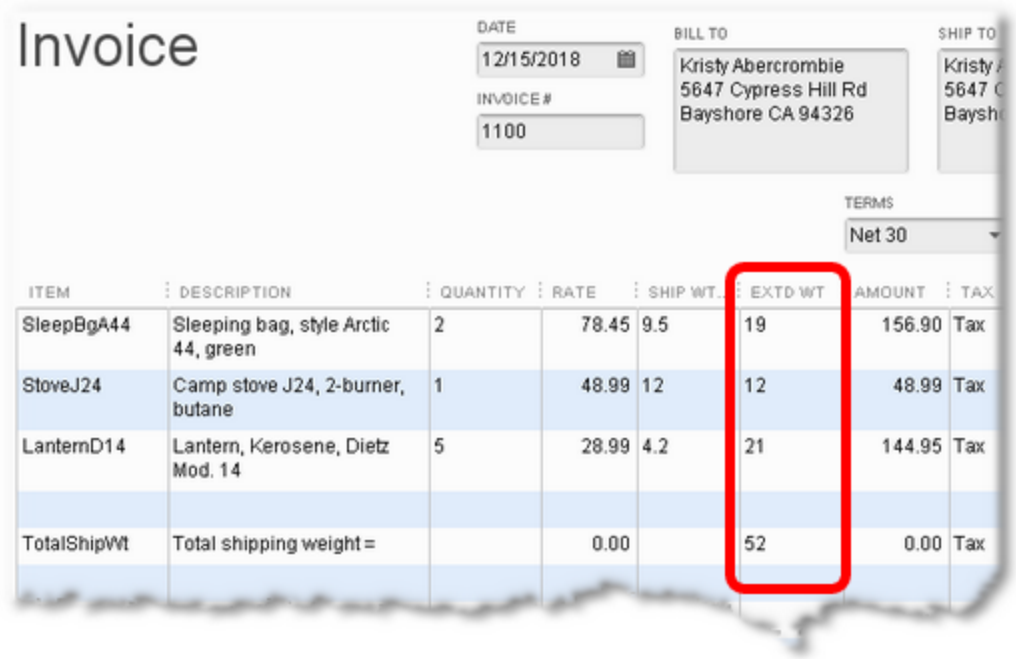

Note: When you save a QuickBooks form, the FormCalc SST-calculated results are saved with it. Other QuickBooks users who view the form will be able to see the calculated results even if they don't have FormCalc SST on their computer.

If you don't want to have the EXTD WT column on the Invoice, another option is to omit that column when customizing the form, and use one of the Scratchpad columns for the extended weight calculation instead.

Using your FormCalc SST setup

Once you have tested your FormCalc SST setup, it is ready to use for day-to-day data entry work. With the QuickBooks and FormCalc SST programs both running, most of the time you will (1) fill out a form, (2) invoke FormCalc SST from within QuickBooks by pressing the hotkey, (3) save the form, and (4) repeat.

Related topics:

Totaling or subtotaling a column

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Customer discount message, part 1

This example demonstrates:

- Using text functions to build a customer message containing a discount amount
- Using text functions to include a discount deadline based on the Invoice date, in the customer message
- Referencing a header field (Invoice date) in formulas
- Using trigger Items to control where calculations occur

Part 2 extends this example, adding an "indicator column" to limit the discount to specific Items on the form

How to Build a Custom Message Based on the Invoice Date

Overview

Skyview Farm Service supplies agricultural chemicals, fertilizer, and other crop production supplies to farmers in the surrounding area. The amount they borrow on an operating credit line at the bank grows incredibly large during the busy part of the cropping season. During that time their sales volume is high, the products they sell are expensive, and Accounts Receivable collections are particularly slow—partly because their customers (farmers) are very busy then too. Fertilizer, especially, puts a big burden on their borrowing needs. Skyview often carries a balance of up to $250,000 in Accounts Receivable for fertilizer alone in the busiest months.

To reduce the lofty amounts of operating credit they need, manager Jerry Swartz has decided to try to improve cash flow by offering a 2% discount on all invoices paid within 10 days, during the busy months of April, May, and June.

But Jerry managed another farm supply business in the past and, in his opinion, only putting the discount terms at the top of the invoice—as "2% 10 net 30"—is not very effective. Many customers fail to take advantage of the discount, because the deadline date is unclear and the amount they could save by paying early is not very apparent. So Jerry wants Skyview's invoices to have a message at the bottom which clearly spells out the discount amount and deadline date, something like this:

***** DISCOUNT of $123.45 if paid by 11/14/2013 *****

This is something you can do for Jerry, with FormCalc SST.

QuickBooks Setup

1. **Add an Item to the Items list,** to use as a trigger Item.

   The placement of this Item on invoices will determine where FormCalc SST displays the discount message. Give the Item a name which reminds you of its purpose, such as *CMsg* (for customer message). You can leave the Description field empty, because FormCalc SST will supply that during form processing.

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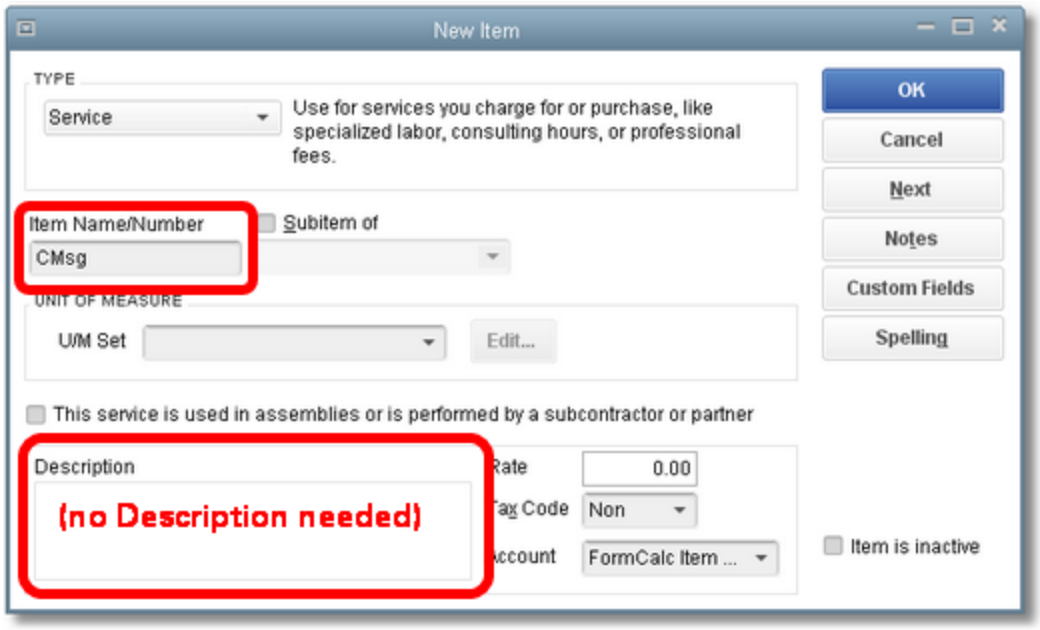

2. Open the Invoice form, and **fill it out as you normally would.**

Select a Customer, and put at least three Item lines on the form as sample data for FormCalc SST to copy when taking a snapshot of the form. In this example we've included the CMsg Item just to illustrate where it will go in the Invoice, though we didn't really need to include it for taking the snapshot.

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FormCalc SST Setup

1. **Select** `File > New` from the main menu to start a new FormCalc SST file.

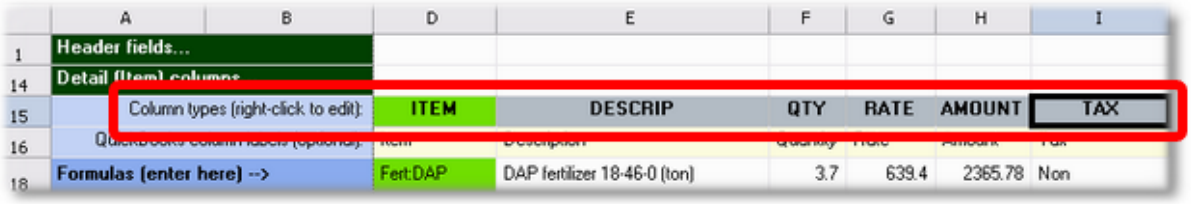
   (Optional. You may overwrite the existing file if you want.)

2. **Take a snapshot** of the QuickBooks form.

   FormCalc SST will gather data about the form and build a spreadsheet based on it.

3. **Assign column types** on the Column types row, to identify the spreadsheet's column types with their corresponding QuickBooks columns.

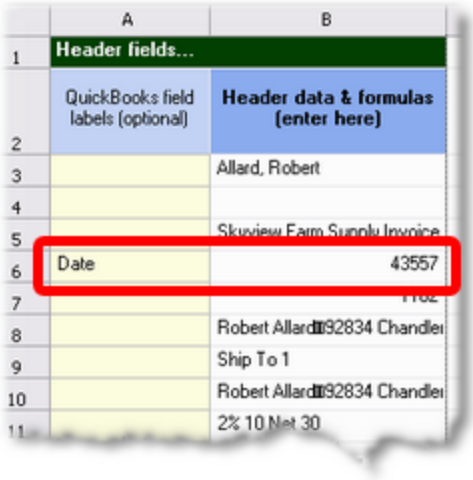
   The column types row should look something like this:



4. In the Header section, **find and label the Date (invoice date) field.**

   The reason for finding and labeling the Date field is to be sure you've identified the correct field before entering a formula which refers to it. (Labeling the field is optional but can prevent making mistakes later.)

   ➔ The Date field's contents probably won't be what you expect. As you can see below, dates come into FormCalc SST expressed as numbers. This may be confusing at first, but it is what is what allows spreadsheets to use dates in calculations. (In the next step you will format the number as a date.)



5. **Format the Date field's cell as a date.**

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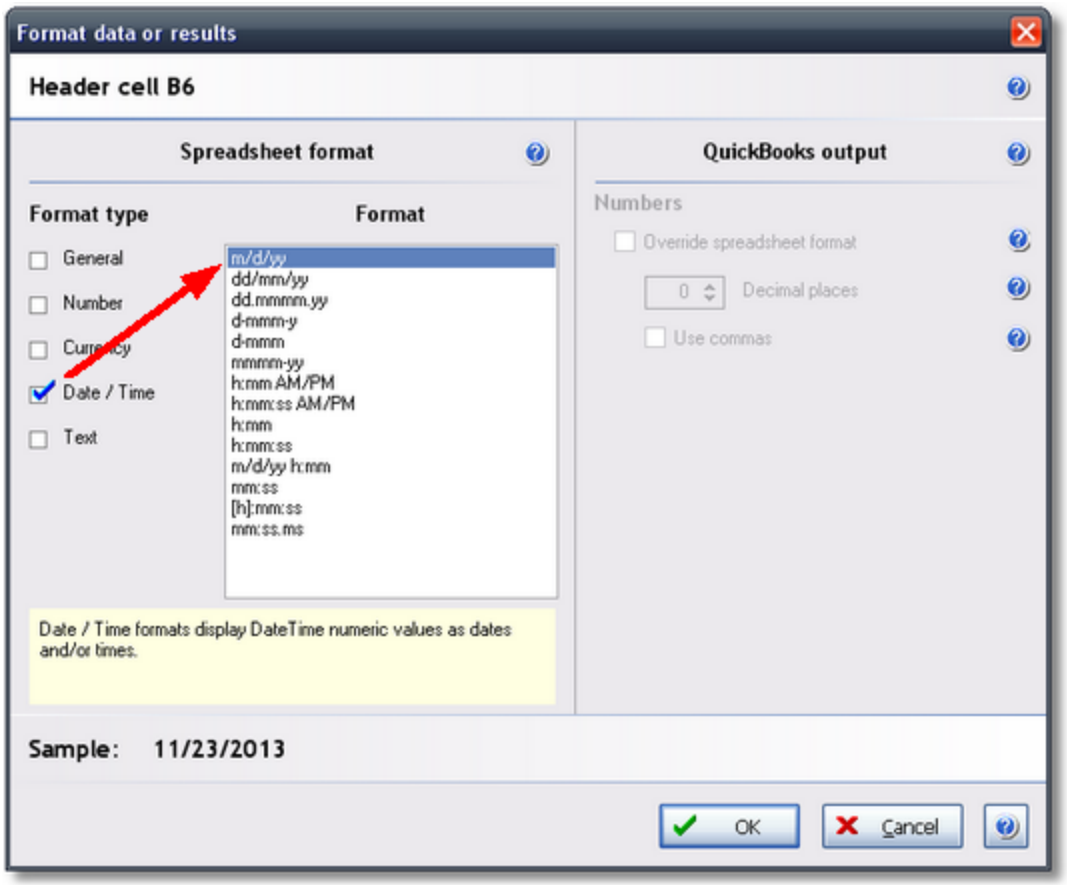
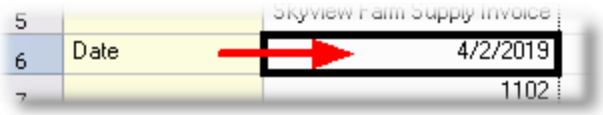
Right-click on it (the cell containing the number, not the "Date" label), then select Format from the pop-up menu. The *Format data or results* window will open, where you can select a date format as shown here.



When you are done the date cell should be formatted to look like this:



6. On the Item-triggered formulas 1 row, **enter the trigger item's name in the Item column, and this formula in the Description column:**

```
="*** DISCOUNT of "&DOLLAR(SUM(H24:H26)*0.02,2)&" if paid by:
"&TEXTD(B6+10)&" ***"
```

This screenshot shows the formula, calculated results, and trigger item as entered on the snapshot sheet.

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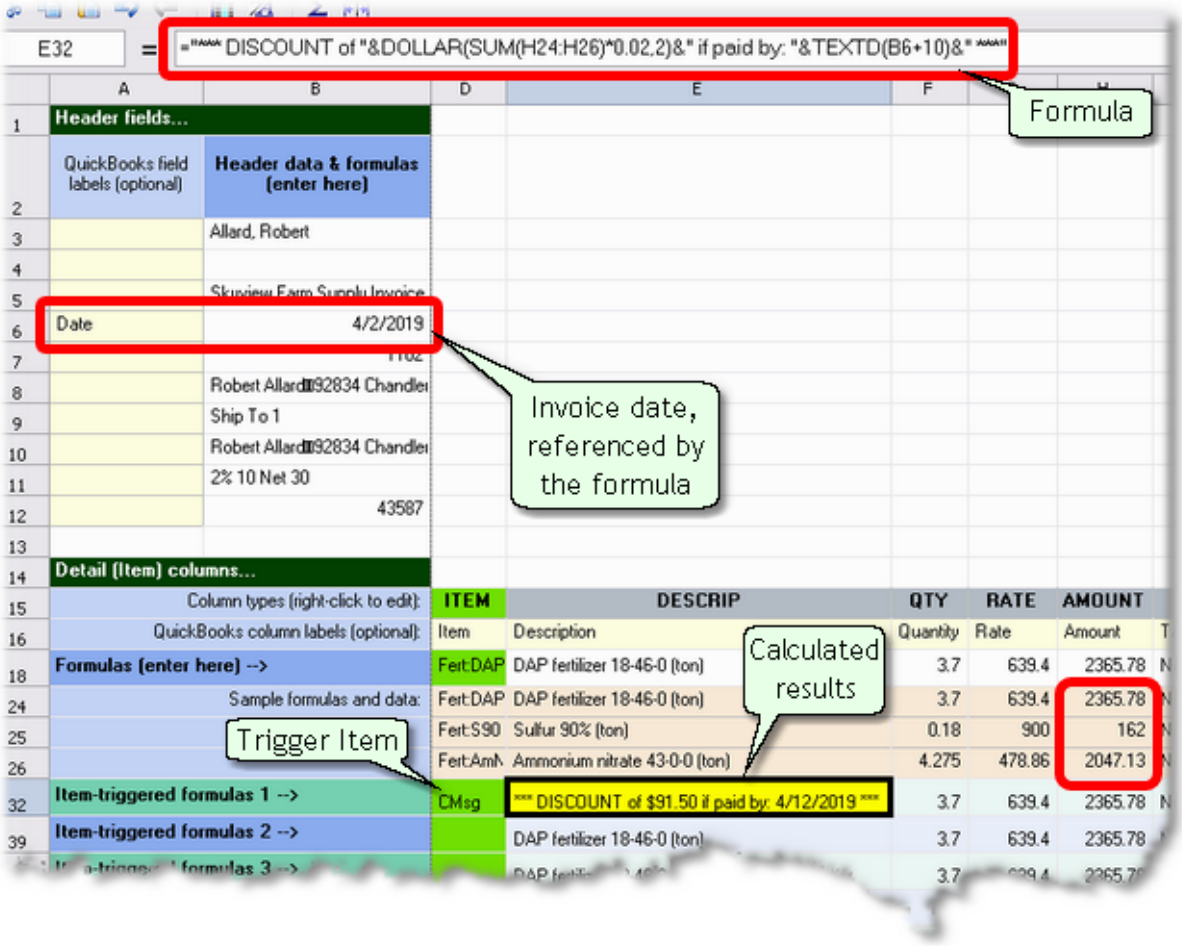

Here's the formula again.

```
="*** DISCOUNT of "&DOLLAR(SUM(H24:H26)*0.02,2)&" if paid by:
"&TEXTD(B6+10)&" ***"
```

Let's break it down to see how it works:

`=`	Every formula begins with an equal sign (=).
`"*** DISCOUNT of "`	The first part of the text we want on the line.
`&`	Joins two text strings together
`DOLLAR( )`	The Dollar() function formats a number as currency, using the number of decimal places you specify.
`SUM(H24:H26)`	The SUM() function sums a range of cells. `SUM(H24:H26)` refers to the entire range of sample rows in the *Amount* column, which is "shorthand" that tells FormCalc SST to sum the *entire column* when a QuickBooks form is actually being processed.

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`*0.02`	Multiplies the `SUM(H24:H26)` result by 0.02 to calculate the 2% discount Skyview will be offering.
`,2`	Tells the Dollar() function how many decimal places to use.
`&`	Joins two text strings.
`" if paid by: "`	More text we want on the line
`&`	Joins two text strings.
`TEXTD(B6+10)`	Takes the date/time value from cell B6 (the Invoice date field from the form's header), adds 10 days to it, and formats the result as a text string date.
`&" ***"`	Joins the last piece of text to the line.

7. **Save the file** to assure your changes are kept.

FormCalc SST files are identifiable by their .SST filename extension (.SST in prior versions).

Processing a QuickBooks Form

To verify that your FormCalc SST setup works as desired, process a QuickBooks form containing some data.

From FormCalc SST

1. **Press the Action button** in the main toolbar.

The focus will switch to QuickBooks, and the *Choose an action* dialog will appear:

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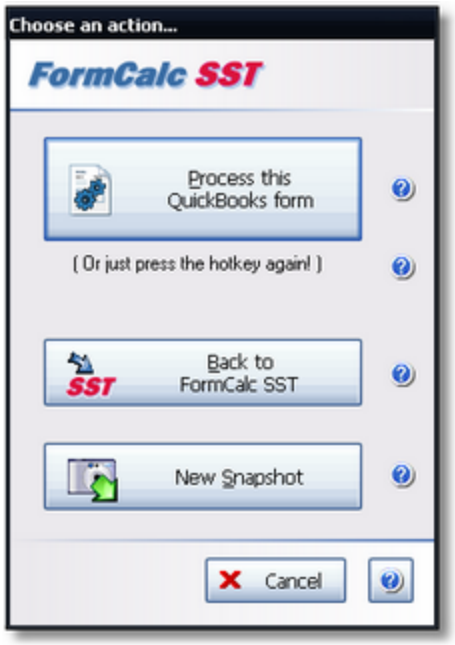

2. **Click on the** *Process this QuickBooks form* **button** to process the form. (See example results below.)

From QuickBooks

1. **Press the FormCalc SST hotkey,** which is *F11* unless you have changed it in Preferences.

   The same *Choose an action dialog* as shown above will appear.

2. **Process the form** by either pressing the hotkey a second time (quickest for most users), or clicking on the *Process the QuickBooks form* button.

Results

The form should look something like the following after it has been processed. Compare the invoice date with the message date, and you'll see that the message is 10 days later. Also, the discount amount has been calculated correctly as 2% of the Amount column.

➔ If the dates below seem odd it's because the example is based on one of QuickBooks' sample company files, where all dates are future dates.

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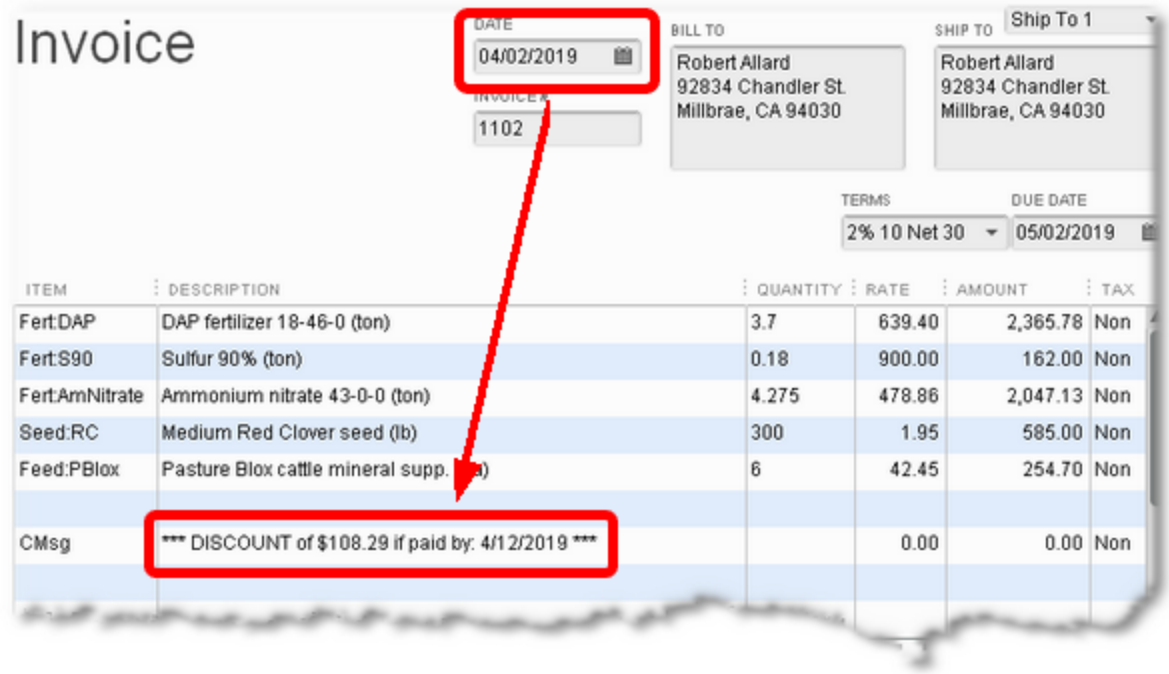

When you save a QuickBooks form, the FormCalc SST-calculated results are saved with it. Other QuickBooks users who view the form will be able to see the calculated results even if they don't have FormCalc SST on their computer.

But then Jerry says, "Wait a minute..."

"I only want the discount to apply to the fertilizer Items, not to everything on the Invoice."

You *think* "Well then why didn't you mention that?" but you *say* "No problem...it'll just take a bit more setup work." You will need to add a custom field to the Items list, add a couple columns to the Invoice, and make some formula changes...all of which are described in Part 2 of this example.

Related topics:

Totaling or subtotaling a column

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Customer discount message, part 2: using an "indicator" column

This example demonstrates:

- Using an "indicator column" to control calculations
- Using text functions to include a discount amount and deadline date in a customer message
- Referencing a header field (Invoice date) in formulas
- Using trigger Items to control where calculations occur

This is a continuation from Part 1. Refer to Part 1 for a background on the reasons why Jerry Swartz, manager of Skyview Farm Service, wants an "available discount" customer message on the company's invoices.

Limiting the Discount to Specific Items

Overview

continued from Part 1...

We've learned that Jerry, the manager at Skyview Farm Service, now wants the available discount to apply only to specific Item lines on the Invoice—only to Items representing fertilizer products. Adding that capability will require a few simple steps. You will need to:

- **Add a custom field** to the Items list to indicate which Items are discountable, and include that field on Skyview's Invoices. We'll call that field an "indicator column", because of the job it does.
- **Add another column** to Skyview's Invoices for holding the dollar amount of discountable Items. It will contain the results of a formula which multiplies the indicator column by the *Amount* column.
- **Take a new snapshot** of the Invoice with FormCalc SST, because the Invoice layout has changed.
- **Add formulas** to the snapshot. They will be only slightly different from those in Part 1.

The result will be a customer message at the bottom of invoices, which displays an available discount amount and the discount deadline date, like this:

***** DISCOUNT of $123.45 if paid by 11/14/2013 *****

QuickBooks Setup

Adding a custom field in the Items list, and storing data in it

Only the main steps are shown here. For more detail see the Defining and using custom fields topic.

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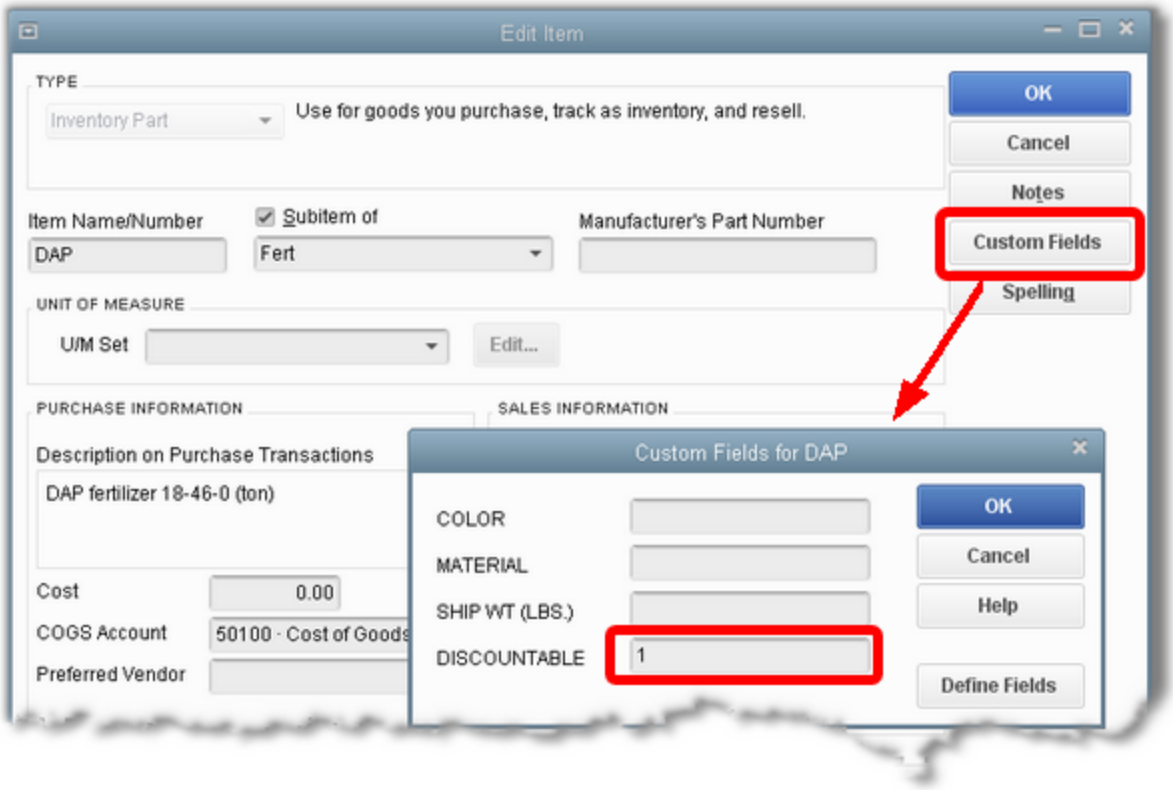
1. **Define a new a custom field** in the Items list, and name it *Discountable*.

2. **Edit each of the fertilizer Items** in the Items list, and **enter a "1" in the *Discountable* field** (in the Custom Fields window).

   Only do this for discountable Items; in this case, fertilizer Items.

   Why not use an "x" or some other character? Because using a "1" will keep the FormCalc SST formulas simple.



Adding columns to the Invoice

1. **Click on the command** to customize the Invoice form's layout.

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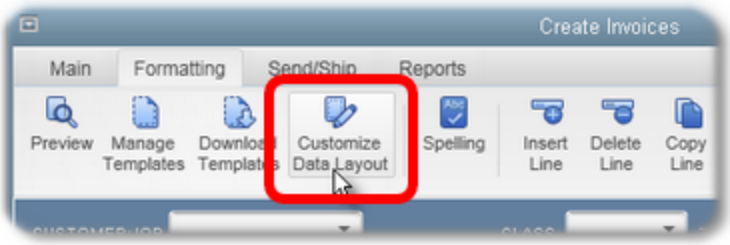
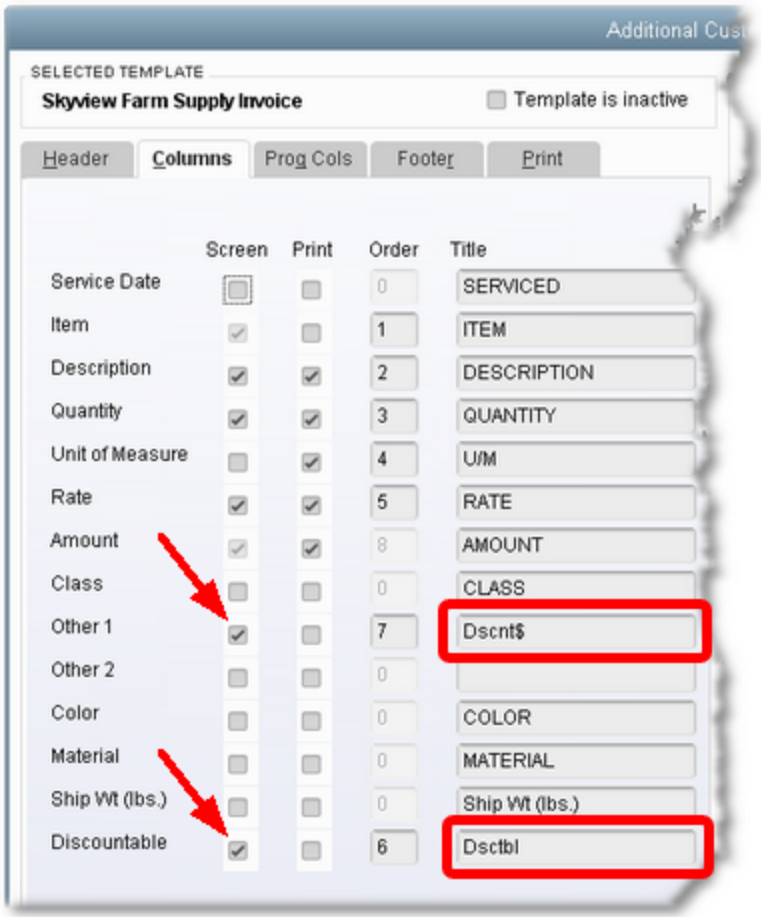


The Additional Customization window will open.

2. On the Columns tab of the Additional Customization window, **checkmark boxes** in the *Screen* column **for the *Discountable* field, and the *Other 1* field.**

   - *Discountable* is the custom field added in the steps above.
   - *Other 1* and *Other 2* are spare fields you may use for any purpose. In this case you will use one of them (either will do) to hold calculated results from a FormCalc SST formula.



3. **You can also change the fields' display names** if you want, in the *Title* column, **and change their order** by renumbering the *Order* column.

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In the screenshot above, *Discountable* has been re-titled as *Dsctbl* (so it will need less column width on the Invoice), and *Other 1* has been renamed *Discnt$* because it will hold discount dollar amounts.

Here's a partial view of the Invoice after customization, showing the added columns:

ITEM	DESCRIPTION	QUANTITY	RATE	DSCTBL	DSCNT$	AMOUNT	TAX
Fert:DAP	DAP fertilizer 18-46-0 (ton)	3.7	639.40			2,365.78	Non

FormCalc SST Setup

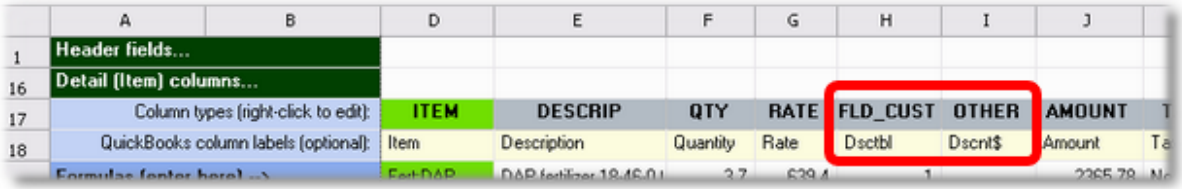
1. **Take a new snapshot** of the Invoice.

   FormCalc SST will gather data about the Invoice form and build a new spreadsheet based on it, in the Snapshot tab.

   The snapshot taken in Part 1 cannot be reused, because the Invoice form's layout has changed (columns were added).

2. **Assign column types** on the Column types row and column labels on the next row.

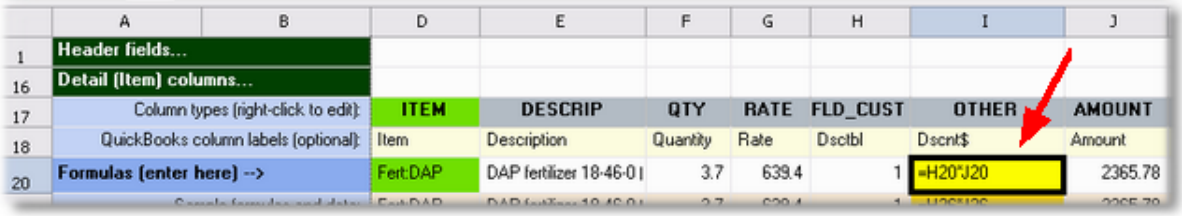
   When you are done the two rows should look something like this:



	A	B	D	E	F	G	H	I	J
1	Header fields...								
16	Detail (Item) columns...								
17	Column types (right-click to edit):		ITEM	DESCRIP	QTY	RATE	FLD_CUST	OTHER	AMOUNT
18	QuickBooks column labels (optional):		Item	Description	Quantity	Rate	Dsctbl	Dscnt$	Amount

3. **Add the following formula in the *Dscnt$* cell** on the Formulas row.

   ```
   =H20*J20
   ```



	A	B	D	E	F	G	H	I	J
1	Header fields...								
16	Detail (Item) columns...								
17	Column types (right-click to edit):		ITEM	DESCRIP	QTY	RATE	FLD_CUST	OTHER	AMOUNT
18	QuickBooks column labels (optional):		Item	Description	Quantity	Rate	Dsctbl	Dscnt$	Amount
20	Formulas (enter here) -->		Fert:DAP	DAP fertilizer 18-46-0	3.7	639.4	1	=H20*J20	2365.78

   This formula multiplies the *Dsctbl* column (H) by the *Amount* column (J). Since *Dsctbl* will contains a "1" for discountable items and nothing (equivalent to "0") for non-discountable Items, *Dscnt$* will end up displaying amounts for only the discountable Items.

4. **Enter the following formula** in the Description column on the Item-triggered formulas 1 row:

   ```
   ="*** DISCOUNT of "&DOLLAR(SUM(I26:I28)*0.02,2)&" if paid by:
   "&TEXTD(B6)&" ***"
   ```

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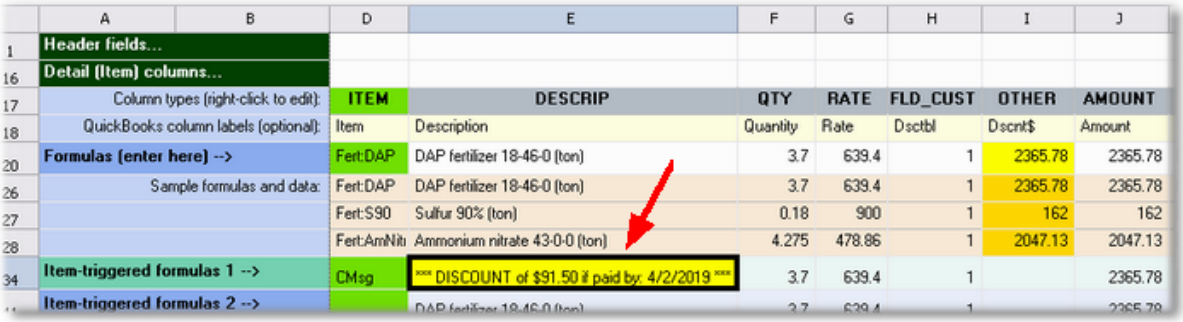
This formula does basically the same thing as the formula from Part 1 (see the formula break-down in Part 1 for details). But this time it sums the *Discnt$* column (I), so that the discount is calculated only on the value of fertilizer Items in the Invoice, not on the Invoice total.

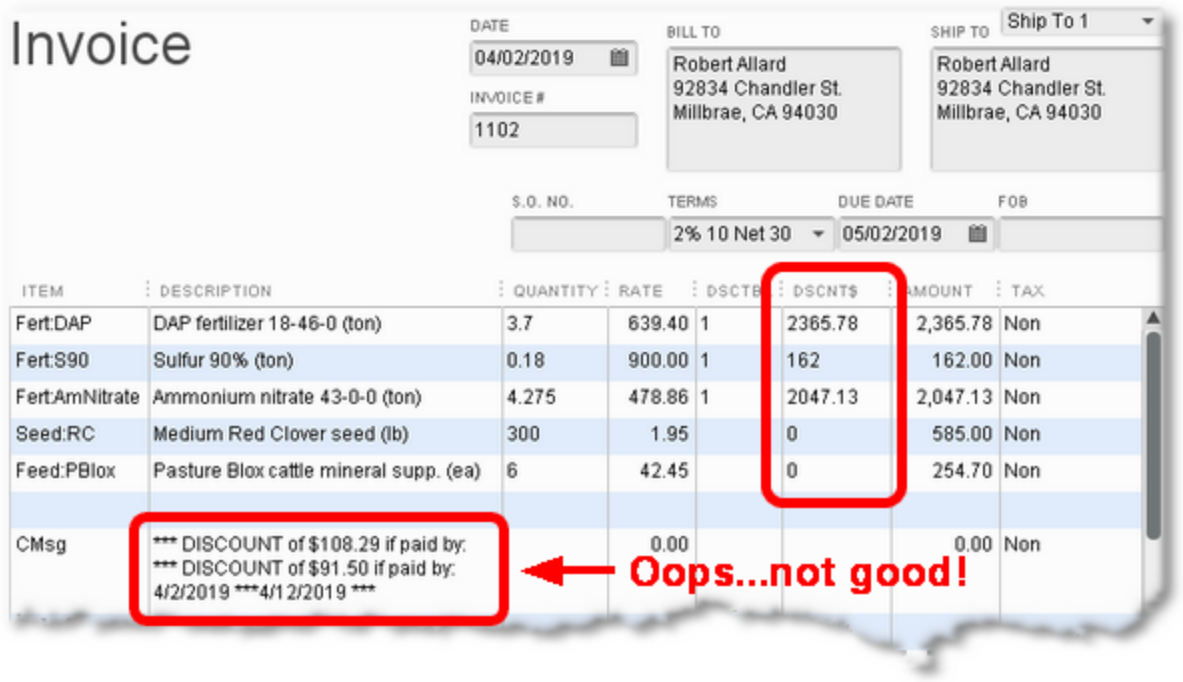
Here's a view of the snapshot with the formula in place:



	A	B	D	E	F	G	H	I	J
1	Header fields...								
16	Detail (Item) columns...								
17	Column types (right-click to edit):		ITEM	DESCRIP	QTY	RATE	FLD_CUST	OTHER	AMOUNT
18	QuickBooks column labels (optional):		Item	Description	Quantity	Rate	Dsctbl	Dscnt$	Amount
20	Formulas (enter here) -->		Fert:DAP	DAP fertilizer 18-46-0 (ton)	3.7	639.4	1	2365.78	2365.78
26	Sample formulas and data:		Fert:DAP	DAP fertilizer 18-46-0 (ton)	3.7	639.4	1	2365.78	2365.78
27			Fert:S90	Sulfur 90% (ton)	0.18	900	1	162	162
28			Fert:AmNit	Ammonium nitrate 43-0-0 (ton)	4.275	478.86	1	2047.13	2047.13
34	Item-triggered formulas 1 -->		CMsg	*** DISCOUNT of $91.50 if paid by: 4/2/2019 ***	3.7	639.4	1		2365.78
	Item-triggered formulas 2 -->			DAP fertilizer 18-46-0 (ton)	3.7	639.4	1		2365.78

Processing an Invoice

Here's the result of processing an Invoice in QuickBooks using this new FormCalc SST setup:



Invoice

DATE 04/02/2019 | INVOICE # 1102

BILL TO: Robert Allard, 92834 Chandler St., Millbrae, CA 94030

SHIP TO: Ship To 1 — Robert Allard, 92834 Chandler St., Millbrae, CA 94030

S.O. NO. | TERMS: 2% 10 Net 30 | DUE DATE: 05/02/2019 | FOB

ITEM	DESCRIPTION	QUANTITY	RATE	DSCTB	DSCNT$	AMOUNT	TAX
Fert:DAP	DAP fertilizer 18-46-0 (ton)	3.7	639.40	1	2365.78	2,365.78	Non
Fert:S90	Sulfur 90% (ton)	0.18	900.00	1	162	162.00	Non
Fert:AmNitrate	Ammonium nitrate 43-0-0 (ton)	4.275	478.86	1	2047.13	2,047.13	Non
Seed:RC	Medium Red Clover seed (lb)	300	1.95		0	585.00	Non
Feed:PBlox	Pasture Blox cattle mineral supp. (ea)	6	42.45		0	254.70	Non
CMsg	*** DISCOUNT of $108.29 if paid by: *** DISCOUNT of $91.50 if paid by: 4/2/2019 ***4/12/2019 ***		0.00			0.00	Non

Oops...not good!

Do you see the problem?

The old customer message (from Part 1) wasn't fully erased before FormCalc SST wrote the new one to the Invoice, with this being the result:

```
*** DISCOUNT of $108.29 if paid by:
*** DISCOUNT of $91.50 if paid by: 4/2/2019 ***4/12/2019 ***
```

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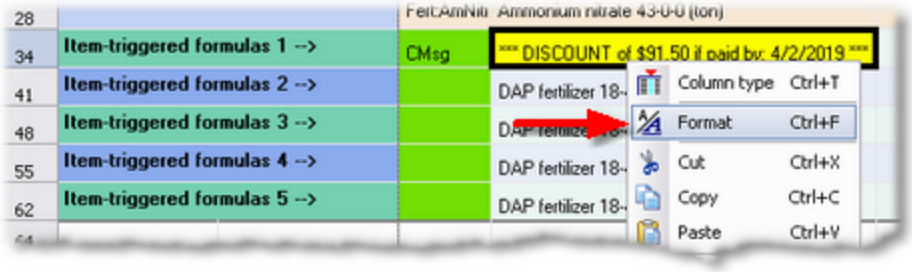
This won't do! It's alerting us to the fact that if an Invoice gets processed a second time, the customer message won't be displayed properly.

A simple fix

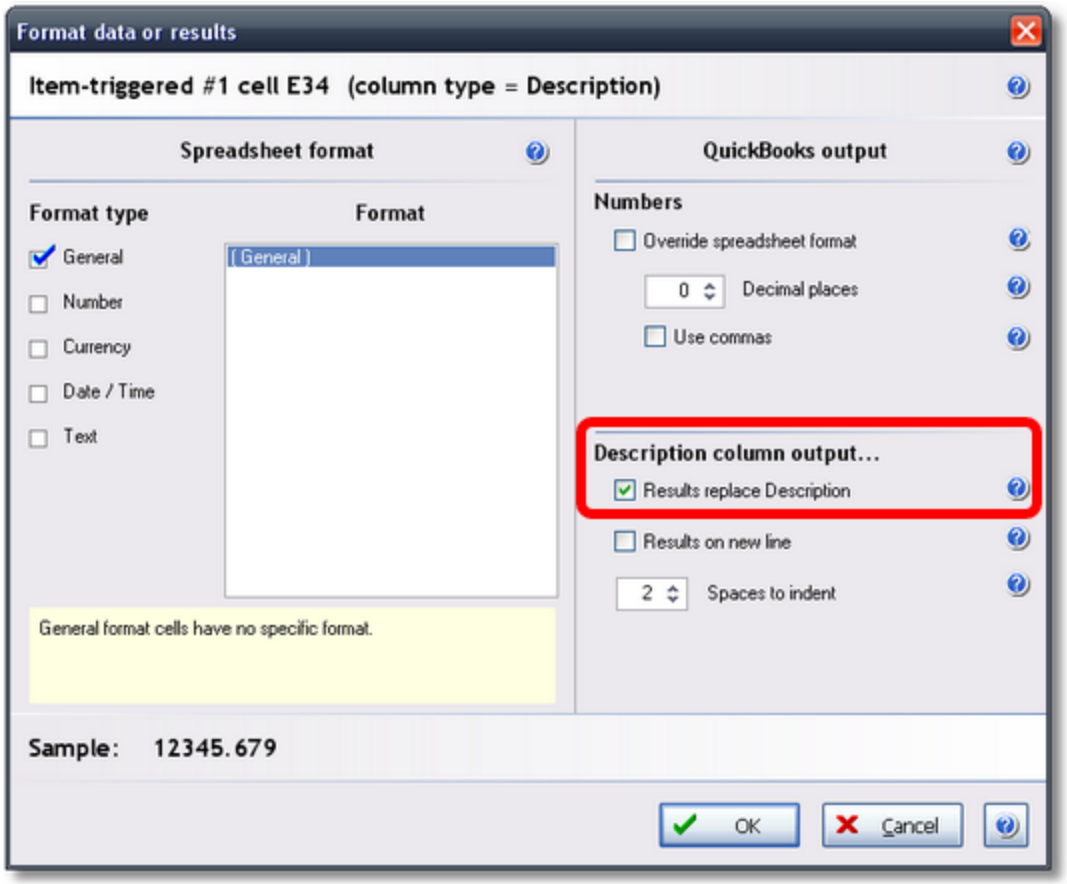
Formatting the Description column's results differently in FormCalc SST will fix the problem

1. **Right-click on the *Description* column's cell** on the Item-triggered formulas 1 row, and select the Format item from the pop-up menu.



The *Format data or results* window will open.

2. In the right pane of the window, **checkmark the *Results replace Description* option.**



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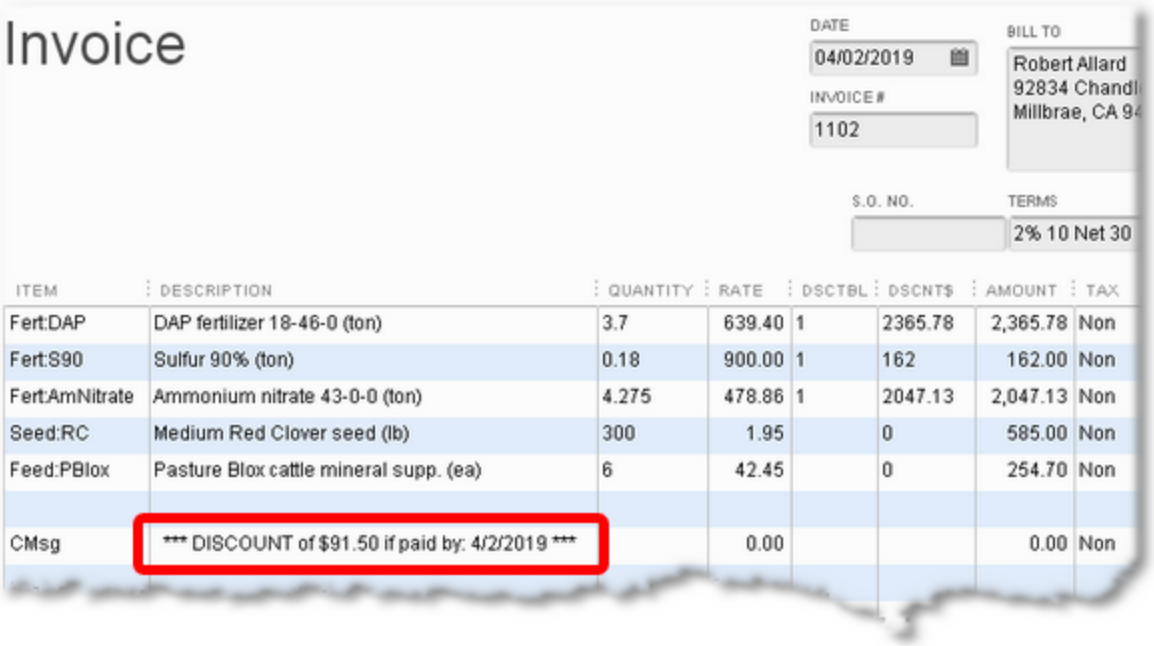
This tells FormCalc SST to erase the contents of the *Description* column before writing results there.

3. **Click OK** to close the window.

Processing an Invoice Again...Success!

And here's the result of processing the Invoice again. As you can see, the customer message now correctly replaces the prior one.



Invoice

DATE 04/02/2019

INVOICE # 1102

BILL TO Robert Allard 92834 Chandl Millbrae, CA 94

S.O. NO.

TERMS 2% 10 Net 30

ITEM	DESCRIPTION	QUANTITY	RATE	DSCTBL	DSCNT$	AMOUNT	TAX
Fert:DAP	DAP fertilizer 18-46-0 (ton)	3.7	639.40	1	2365.78	2,365.78	Non
Fert:S90	Sulfur 90% (ton)	0.18	900.00	1	162	162.00	Non
Fert:AmNitrate	Ammonium nitrate 43-0-0 (ton)	4.275	478.86	1	2047.13	2,047.13	Non
Seed:RC	Medium Red Clover seed (lb)	300	1.95		0	585.00	Non
Feed:PBlox	Pasture Blox cattle mineral supp. (ea)	6	42.45		0	254.70	Non
CMsg	*** DISCOUNT of $91.50 if paid by: 4/2/2019 ***		0.00			0.00	Non

Related topics:

Totaling or subtotaling a column

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Calculating rental days in a rental business (date math)

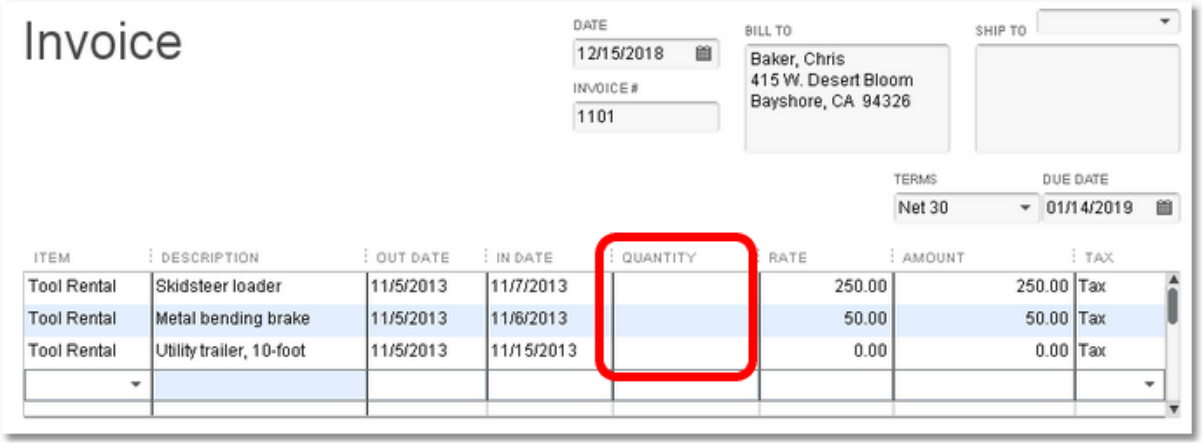
This example demonstrates:

- How to calculate the number of days between two dates entered on an Invoice
- How to use IF() function logic to control where calculations are done (i.e., on which rows)

A Simple Date Math Example

For basic information on handling dates and times, see the topic Dates, times, and date calculations.

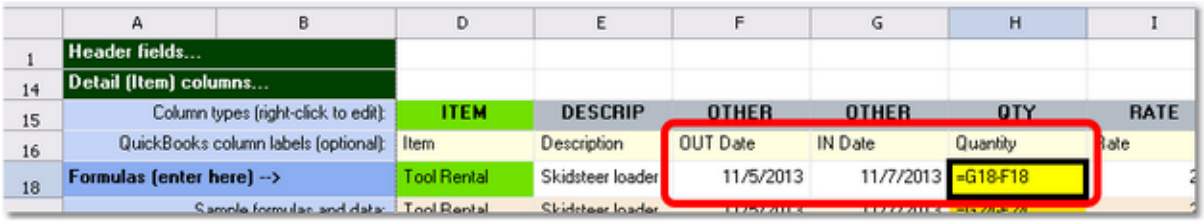
Suppose an equipment rental business charges for equipment based on the number of days the customer had it out on rental. They have customized the Invoice form in QuickBooks, adding columns to hold the OUT date and IN date. Now they want FormCalc SST to calculate the number of rental days based on dates entered in those two columns, with the calculated result placed in the *Quantity* column.



To set up FormCalc SST for this, we would take a snapshot of the Invoice, indicate the column types of columns in the Detail area, then enter a formula in the *Quantity* column like the following

```
=G18-G17
```

Here's a partial view of the Snapshot page in FormCalc SST, with the *OUT Date* and *IN Date* columns formatted as dates and the *Quantity* column showing the formula.



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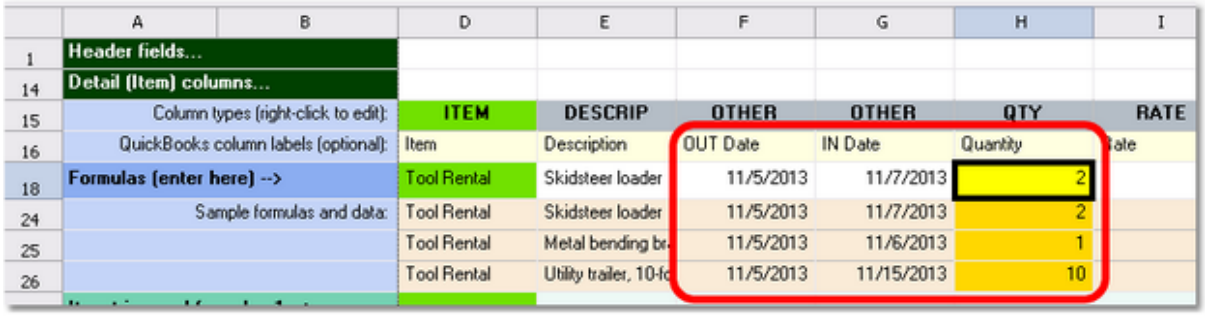
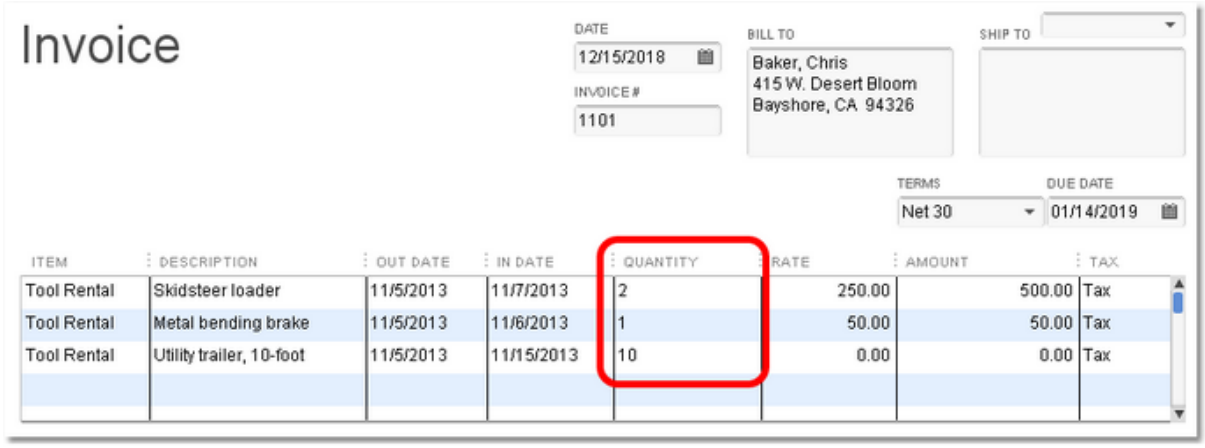
Here is another view. The *Quantity* column shows the formula's results, and below the formula cell the *Sample formulas and data* rows show a range of sample results (based on the sample data in those rows).



	A	B	D	E	F	G	H	I
1	Header fields...							
14	Detail (Item) columns...							
15	Column types (right-click to edit):		ITEM	DESCRIP	OTHER	OTHER	QTY	RATE
16	QuickBooks column labels (optional):		Item	Description	OUT Date	IN Date	Quantity	Rate
18	Formulas (enter here) -->		Tool Rental	Skidsteer loader	11/5/2013	11/7/2013	2	
24	Sample formulas and data:		Tool Rental	Skidsteer loader	11/5/2013	11/7/2013	2	
25			Tool Rental	Metal bending br	11/5/2013	11/6/2013	1	
26			Tool Rental	Utility trailer, 10-fo	11/5/2013	11/15/2013	10	

Switching to QuickBooks, then pressing the FormCalc SST hotkey (F11) twice to process the form, gives this result:



Invoice

DATE 12/15/2018
INVOICE # 1101
BILL TO: Baker, Chris, 415 W. Desert Bloom, Bayshore, CA 94326
SHIP TO
TERMS: Net 30
DUE DATE: 01/14/2019

ITEM	DESCRIPTION	OUT DATE	IN DATE	QUANTITY	RATE	AMOUNT	TAX
Tool Rental	Skidsteer loader	11/5/2013	11/7/2013	2	250.00	500.00	Tax
Tool Rental	Metal bending brake	11/5/2013	11/6/2013	1	50.00	50.00	Tax
Tool Rental	Utility trailer, 10-foot	11/5/2013	11/15/2013	10	0.00	0.00	Tax

Having verified that this FormCalc SST setup works as planned, we could use it on any Invoice where the same kind of calculation is desired.

A real-world rental business may need more complex calculations than shown here—like maybe calculating the number of days *and* half days an item was out on rental. That is something FormCalc SST is fully capable of doing, but it is beyond the scope of this simple example.

"Nothing" vs. a "Blank" Result

Suppose this same rental business also sells industrial cleaning supplies—mops, buckets, floor buffer pads, cleaning solutions, etc. On invoice lines where cleaning supplies are entered, quantities need to be entered directly in the *Quantity* column, not calculated by FormCalc SST. In fact, the FormCalc SST calculation described above would cause a problem on rows where cleaning supplies are entered. Sincethose rows have no dates in the *OUT Date* and *IN Date* columns, FormCalc SST would calculate a 0 (zero) result for them...*overwriting the user-entered Quantity!*

Overcoming this problem is simple. FormCalc SST is designed so that it will not write a "nothing" result to QuickBooks. So the formula needs to be enhanced a bit to use the IF() function in a way

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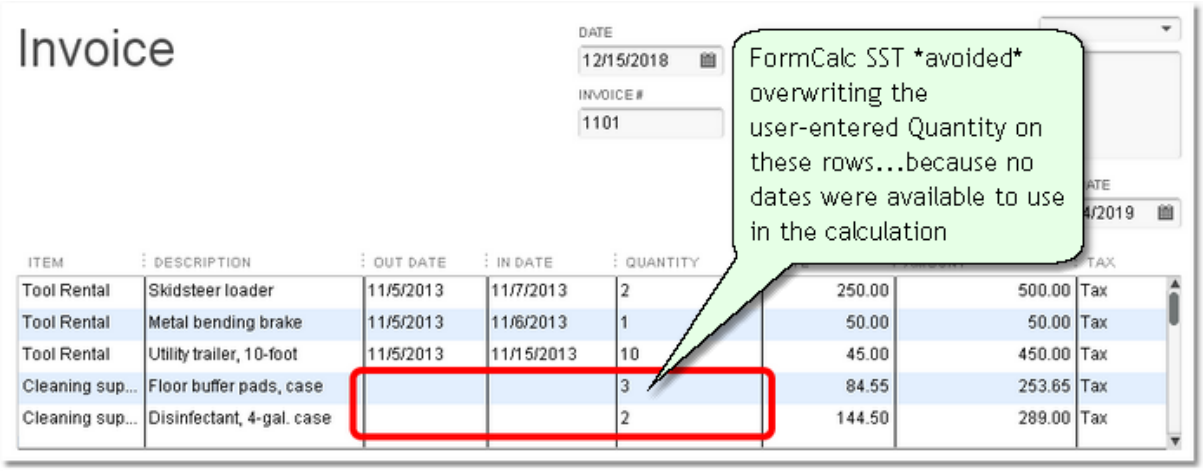
that says "If dates have been entered, calculate the Quantity, but if they are missing don't write anything in the Quantity column." Here is a "new and improved" formula to be entered in the Quantity column, in cell H18:

```
=IF(ISNUMBER(F18),G18-F18,"")
```

Breaking this formula down into its parts, it says that if cell F18 is a number, then calculate the result as G18-F18, otherwise the result is "" (nothing).

There is a big difference between "nothing" and a blank space. The formula described above specifies nothing as ""—two quotation marks with nothing between them. Sometimes though, you may want a formula to write a "blank" or "space" back to QuickBooks, which *is not* the same as nothing! In that case, you would specify the result as " "—two quotation marks with a space between them.

If we change the formula at cell H18, then use process an Invoice which contains both rental items and cleaning supplies, FormCalc SST will calculate a quantity for just the rental item rows.



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Taxable & nontaxable items: a mini-spreadsheet example

This example demonstrates:

- Using FormCalc SST's "mini-spreadsheet" feature to do calculations which use data from other rows of the form
- Using IF() function logic to determine calculation results based on contents of the Tax column
- Entering data in header fields (fuel surcharge, freight charges) and using it in formulas
- Totaling a column on the form
- Protecting formulas from divide-by-zero errors
- How to set up trigger Items in the QuickBooks Item list
- Using trigger Items to control where calculations occur


This very complex example is based on a real-world problem FormCalc SST was able to solve for one of our customers.

How to Use the Mini-Spreadsheet Feature for Multi-Row Calculations

Overview

Paul Hibbs is a partner in an industrial cleaning service specializing in cleaning machine tools and parts, and paint and varnish removal. Paul's company often picks up parts at the customer's site, cleans them at his facility, then delivers the cleaned tools or parts back to the customer.

Business has been good, but the prospect of having to comply with new state sales tax rules is taking some of the fun out of it! Customer invoices often have both taxable and non taxable items on them—and QuickBooks handles the sales tax calculations on those without any problem. But when parts are picked up and delivered freight charges and a fuel surcharge are usually involved. And that's where the trouble begins.

As of January 1, 2014 Minnesota's sales tax regulations will require Paul to charge sales tax on the freight charges and fuel surcharges *in proportion to the dollar amount of taxable items on the invoice.* So if 62% of the rest of the invoice is taxable, then sales tax must be charged on 62% of the freight charge and 62% of the fuel surcharge. (Do people in government ever fully comprehend the burden laws and regulations can place on the everyday lives of the people they serve?)

Paul is looking for a solution which will calculate the sales-taxable portion of his invoices, including the taxable part of freight and fuel surcharges, and that's something you can provide with FormCalc SST. To set this up for Paul you will need to:

- **Customize Paul's Invoice forms,** adding two fields to the header area as places to enter freight charge and fuel surcharge amounts, and adding two columns to the detail area which FormCalc SST will use for separately tallying taxable and nontaxable amounts on the invoice.

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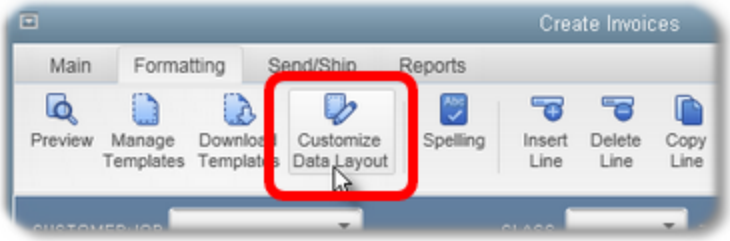
- **Take a snapshot** of the Invoice with FormCalc SST, and assign column types and column labels.
- **Add formulas** to put taxable and nontaxable amounts in the appropriate (taxable or nontaxable) column.
- **Add Item-triggered formulas** to total the taxable and nontaxable columns, and to calculate the taxable and nontaxable portions of freight charges and of fuel surcharges.

QuickBooks Setup

Customizing the Invoice: adding fields

If you need more detail on customizing Invoices, see the Customizing QuickBooks forms (for FormCalc SST) topic.

1. **Click on the command** to customize the Invoice form's layout.



The Additional Customization window will open.

Paul's staff needs header fields where freight charges and fuel surcharges can be entered. QuickBooks doesn't provide any fields dedicated to those two jobs, but most other fields can be used for such purposes. The main qualifications for fields you can use this way, is that (1) they must not already be in use for other information Paul needs on Invoices, and (2) they must accept all kinds of data entries—which mostly means they cannot be date fields and cannot be fields like the Terms or Rep fields, which only accept entries from their associated drop-down lists.

Paul is not using the *S.O. No.* and *FOB* fields on invoices, and they will work fine for holding freight charges and fuel surcharges. All you need to do is add them to the Invoice and give them more suitable titles.

2. On the Header tab of the Additional Customization window, **checkmark boxes** in the *Screen* column **for the *S.O. No.* and *FOB* fields** and **give them appropriate titles** as shown in the *Title* column in the screenshot below.

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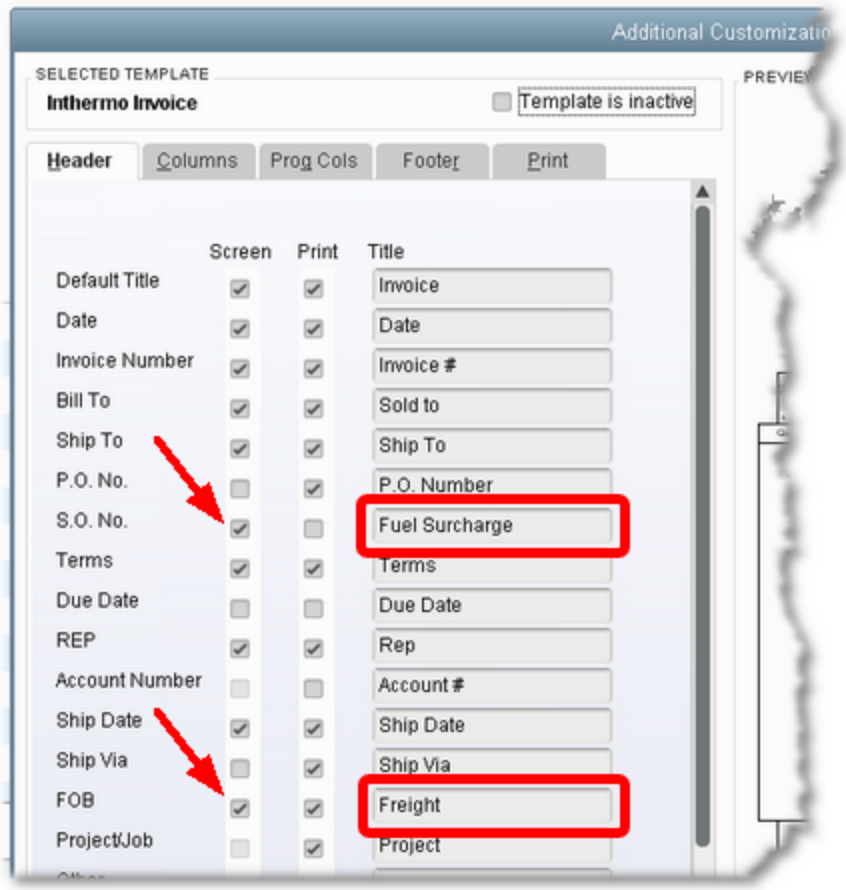

Next you need to add two columns to the Invoice form's detail area, as places for FormCalc SST to tally taxable and nontaxable amounts. *Other 1* and *Other 2* are spare fields you can use for this purpose. They are not available on QuickBooks reports, but that's fine, because the calculated results in them will never be needed on reports.

3. On the Columns tab of the Additional Customization window, **checkmark boxes** in the *Screen* column **for the *Other 1* and *Other 2* fields,** and **change their titles to Taxbl and NonTaxbl,** in the *Title* column.

   You may also renumber the *Order* column to have these newly added columns appear where you want them on the Invoice.

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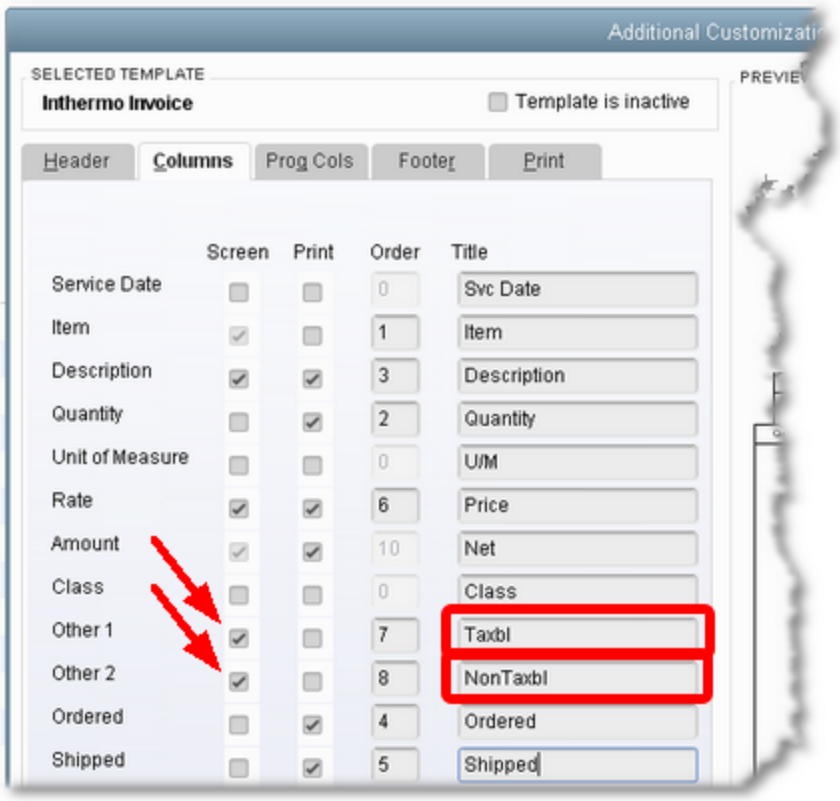
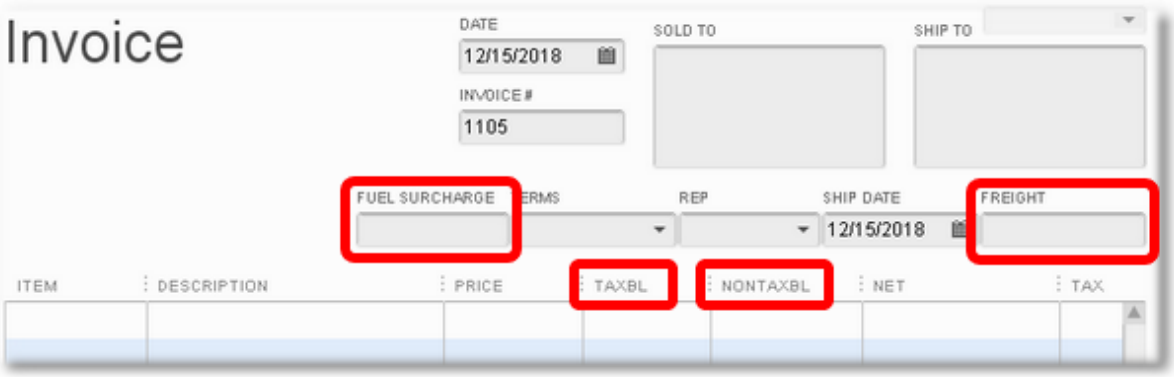


Here's the Invoice after customization, showing the added header fields and added columns in the detail area:



Adding some new Items

Using FormCalc SST's mini-spreadsheet feature requires using one or more QuickBooks Items for triggering some Item-triggered calculations; that is, for indicating the rows on which calculations are to happen.

Existing Items can sometimes be used as trigger Items, but often some new ones must be added. In this case, new Items are needed for taxable and nontaxable freight and fuel surcharges to be calculated by FormCalc SST. They will be added near the bottom of Paul's invoices, arranged something like this:

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FuelSurchT	Fuel Surcharge - Taxable
FuelSurchNT	Fuel Surcharge - Non Taxable
FreightT	Freight - Taxable
FreightNT	Freight - Non Taxable

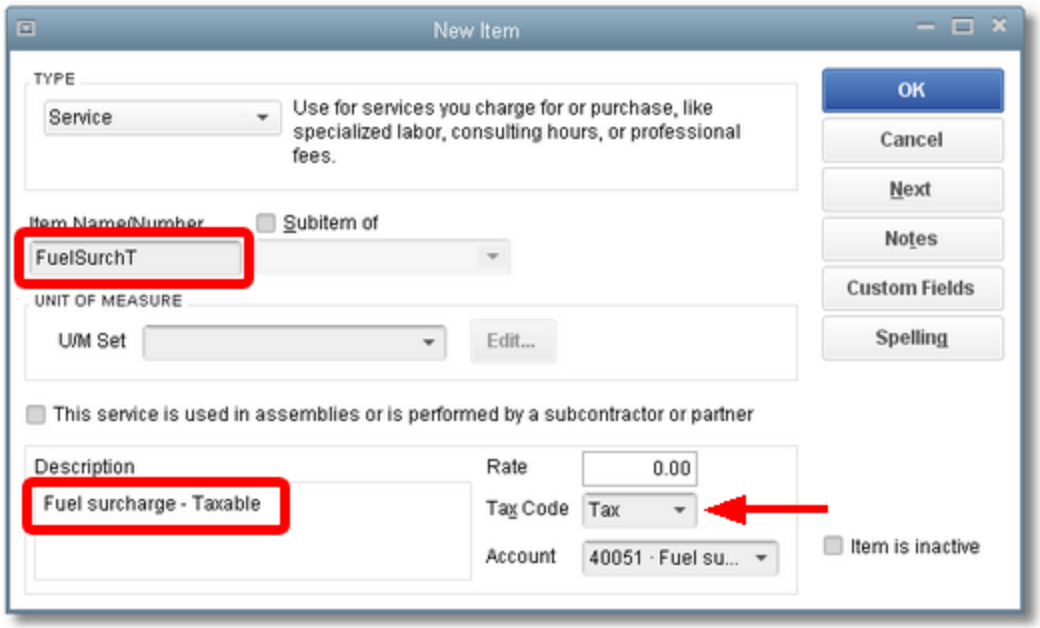
Item order can be important, but *row spacing* never is! FormCalc SST ignores blank rows. So the Items shown above could immediately follow each other, or they could have one or two blank rows between them...it wouldn't matter to FormCalc SST.

Here is the list of Items which need to be added:

Item Type	Item Name	Description	Tax Code
Service	FuelSurchT	Fuel surcharge - Taxable	Tax (taxable)
Service	FuelSurchNT	Fuel surcharge - Nontaxable	Non (nontaxable)
Service	FreightT	Freight - Taxable	Tax (taxable)
Service	FreightNT	Freight - Nontaxable	Non (nontaxable)

Either Service or Non-inventory part Item types are usually best for creating trigger Items.

And here is a screenshot of the New Item window as one of these Items is being added:



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FormCalc SST Snapshot Setup

1. **Select** `File > New` from the main menu to start a new FormCalc SST file.

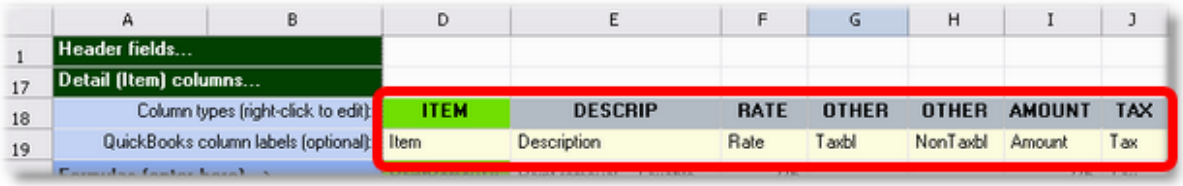
   (Optional. You may overwrite the existing file if you want.)

2. **Take a snapshot** of the QuickBooks form.

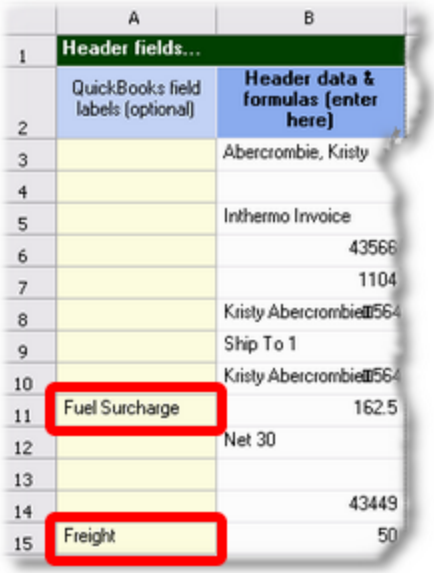
   FormCalc SST will gather data about the form and build a spreadsheet based on it.

3. **Assign column types** in the Detail area, to identify the spreadsheet's column types with their corresponding QuickBooks columns. Enter column labels too, if you want, to have column names which match those on the Invoice.

   The column types and column labels rows should look something like the following when you are done.



   Also figure out which Header fields are the Fuel Surcharge and Freight fields, and label them. That will make it easier to find them later, when building formulas which refer to them.



FormCalc SST: Add General Formulas

When FormCalc SST processes Invoices, the Formulas row's formulas will be applied to each Item row on the Invoice (with the exception of Item-triggered formula rows, discussed farther below). For this job you need to enter formulas which identify each row's amount as taxable or nontaxable.

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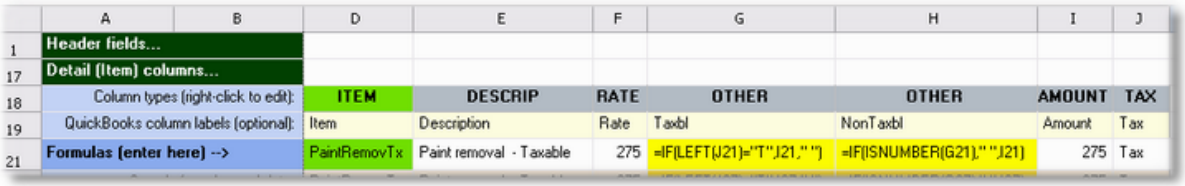
1. **Enter formulas for tallying taxable and nontaxable amounts,** on the Formulas row.



	A	B	D	E	F	G	H	I	J
1	Header fields...								
17	Detail (Item) columns...								
18	Column types (right-click to edit):		ITEM	DESCRIP	RATE	OTHER	OTHER	AMOUNT	TAX
19	QuickBooks column labels (optional):		Item	Description	Rate	Taxbl	NonTaxbl	Amount	Tax
21	Formulas (enter here) -->		PaintRemovTx	Paint removal - Taxable	275	=IF(LEFT(J21)="T",J21," ")	=IF(ISNUMBER(G21)," ",J21)	275	Tax

The *Taxbl* column's formula returns the *Amount* if the *Tax* column's contents begins with "T", or a blank space if not:

```
=IF(LEFT(J21)="T",I21," ")
```

=	Every formula begins with an equal sign (=).
IF(LEFT(J21)="T"	If the first character of cell J21 (the *Tax* column) is "T", return the IF() function's first option; otherwise return the second.
I21	IF() function's first option: return the amount from I21 (the *Amount* column).
" "	IF() function's second option: return a blank space.

The *NonTaxbl* column's formula returns a blank space if the *Taxbl* column contains a number; otherwise it returns the *Amount*:

```
=IF(ISNUMBER(G21)," ",I21)
```

=	Every formula begins with an equal sign (=).
IF(ISNUMBER(G21)	If cell G21 contains a number, return the IF() function's first option; otherwise return the second.
" "	IF() function's first option: return a blank space.
I21	IF() function's second option: return the amount from I21 (the *Amount* column).

"Playing" with the sample data

After you have entered these formulas FormCalc SST copies them to the sample data rows (immediately below the Formulas row) to let you see how they work, using sample data which was copied from the Invoice when the snapshot was taken. In this example the *Amount* column's values were all copied to the *Taxbl* column, as they should be—because all of the sample rows are for taxable Items.

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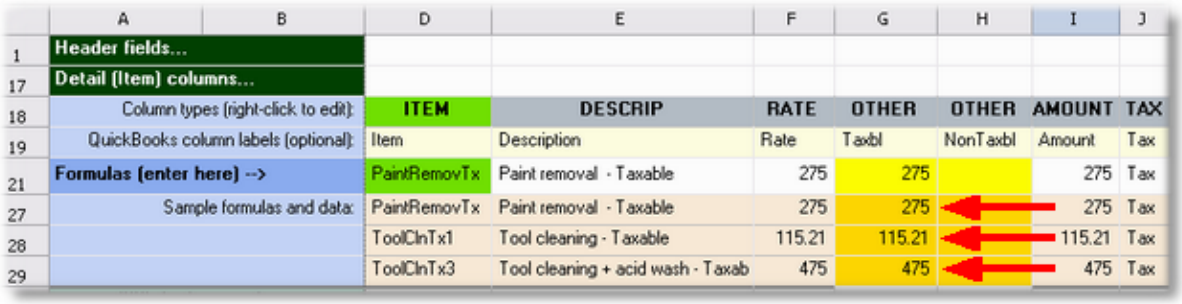
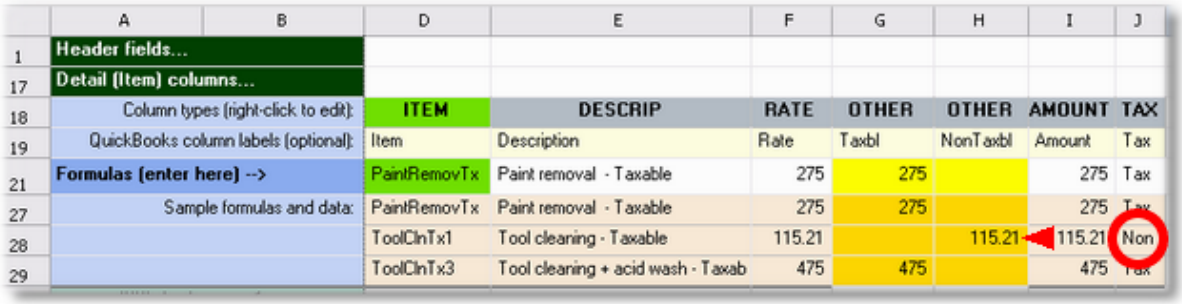


	A	B	D	E	F	G	H	I	J
1	Header fields...								
17	Detail (Item) columns...								
18	Column types (right-click to edit):		ITEM	DESCRIP	RATE	OTHER	OTHER	AMOUNT	TAX
19	QuickBooks column labels (optional):		Item	Description	Rate	Taxbl	NonTaxbl	Amount	Tax
21	Formulas (enter here) -->		PaintRemovTx	Paint removal - Taxable	275	275		275	Tax
27	Sample formulas and data:		PaintRemovTx	Paint removal - Taxable	275	275		275	Tax
28			ToolClnTx1	Tool cleaning - Taxable	115.21	115.21		115.21	Tax
29			ToolClnTx3	Tool cleaning + acid wash - Taxab	475	475		475	Tax

The only problem is that this sample data doesn't test the formula in the *NonTaxbl* column. But you you can edit the sample data to do that. Here's another screenshot, taken after making one of the rows' *Tax* column entry from "Tax" to "Non". As you can see, the formula in the *NonTaxbl* column seems to be working correctly too.



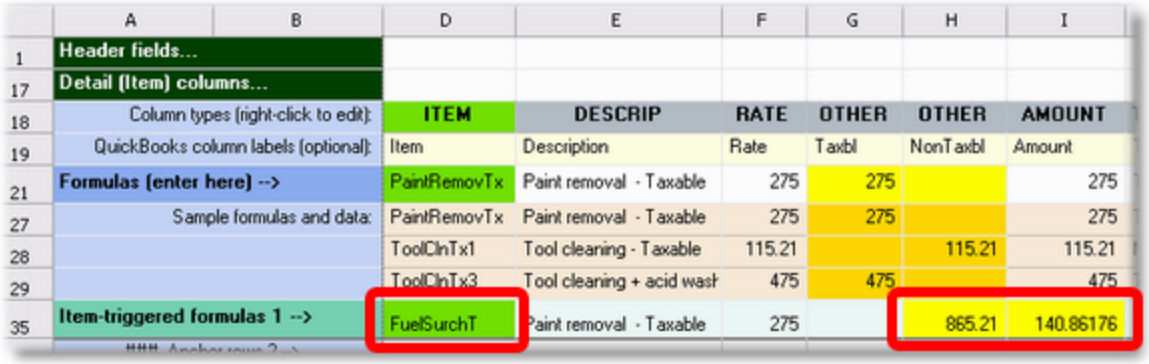
	A	B	D	E	F	G	H	I	J
1	Header fields...								
17	Detail (Item) columns...								
18	Column types (right-click to edit):		ITEM	DESCRIP	RATE	OTHER	OTHER	AMOUNT	TAX
19	QuickBooks column labels (optional):		Item	Description	Rate	Taxbl	NonTaxbl	Amount	Tax
21	Formulas (enter here) -->		PaintRemovTx	Paint removal - Taxable	275	275		275	Tax
27	Sample formulas and data:		PaintRemovTx	Paint removal - Taxable	275	275		275	Tax
28			ToolClnTx1	Tool cleaning - Taxable	115.21		115.21	115.21	Non
29			ToolClnTx3	Tool cleaning + acid wash - Taxab	475	475		475	Tax

FormCalc SST: Add Item-Triggered Formulas

Now we can add the formulas which calculate the taxable and nontaxable portions of freight and of fuel surcharges. The calculations will be triggered by the appearance of the Items added earlier—which is why they are referred to as trigger Items.

Here are descriptions of the entries needed on four of the Item-triggered formulas rows.

Item-triggered formulas 1



	A	B	D	E	F	G	H	I
1	Header fields...							
17	Detail (Item) columns...							
18	Column types (right-click to edit):		ITEM	DESCRIP	RATE	OTHER	OTHER	AMOUNT
19	QuickBooks column labels (optional):		Item	Description	Rate	Taxbl	NonTaxbl	Amount
21	Formulas (enter here) -->		PaintRemovTx	Paint removal - Taxable	275	275		275
27	Sample formulas and data:		PaintRemovTx	Paint removal - Taxable	275	275		275
28			ToolClnTx1	Tool cleaning - Taxable	115.21		115.21	115.21
29			ToolClnTx3	Tool cleaning + acid wash	475	475		475
35	Item-triggered formulas 1 -->		FuelSurchT	Paint removal - Taxable	275		865.21	140.86176

1. In the *Item* column, **enter "FuelSurchT"**—the name of the taxable fuel surcharge Item.
2. In the *Taxbl* column, **enter a formula to total the *Taxbl* and *NonTaxbl* columns:**

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```
=SUM(G27:G29)+SUM(H27:H29)
```

`=`	Every formula begins with an equal sign (=).
`SUM(G27:G29)`	Will sum the *Taxbl* column when an invoice is processed. (Referring the range of sample data rows in a formula tells FormCalc SST to refer to the entire column during form processing.)
`+`	Adds the two sums together.
`SUM(H27:H29)`	Will sum the *NonTaxbl* column when an invoice is processed.

Remember, you can use "close enough" cell referencing. For instance, you can enter the first SUM() above as `SUM(G1:G1)` and FormCalc SST will correct it to refer to the range of sample data rows (which implies summing the whole column, during form processing).

3. In the *NonTaxbl* column, **enter a formula to calculate the taxable portion of the fuel surcharge:**

```
=IF(H35<>0,B11*(SUM(G27:G29)/H35),0)
```

`=`	Every formula begins with an equal sign (=).
`IF(H35<>0`	Using the IF() function this way protects against a divide-by-zero error, which could occur in the unlikely even that cell H35 (the Taxbl + NonTaxbl total) was zero.
`B11`	The total fuel surcharge amount entered in the form's Header.
`*(SUM(G27:G29)/H35)`	Multiplies the total fuel surcharge amount by the invoice's taxable portion (SUM(G27:G29)) of the invoice total (H35).
`0)`	Returns 0 if H35 was zero (to prevent divide-by-zero errors).

Item-triggered formulas 2

This row's formula is the first one in this example to actually illustrate the mini-spreadsheet idea, because it refers to an anchor row—which represents a "prior row of data" during actual processing of an Invoice.

1. **Show the anchor rows for Item-triggered formulas 2,** using the Show/hide Anchor rows button in the upper right corner of the main window.

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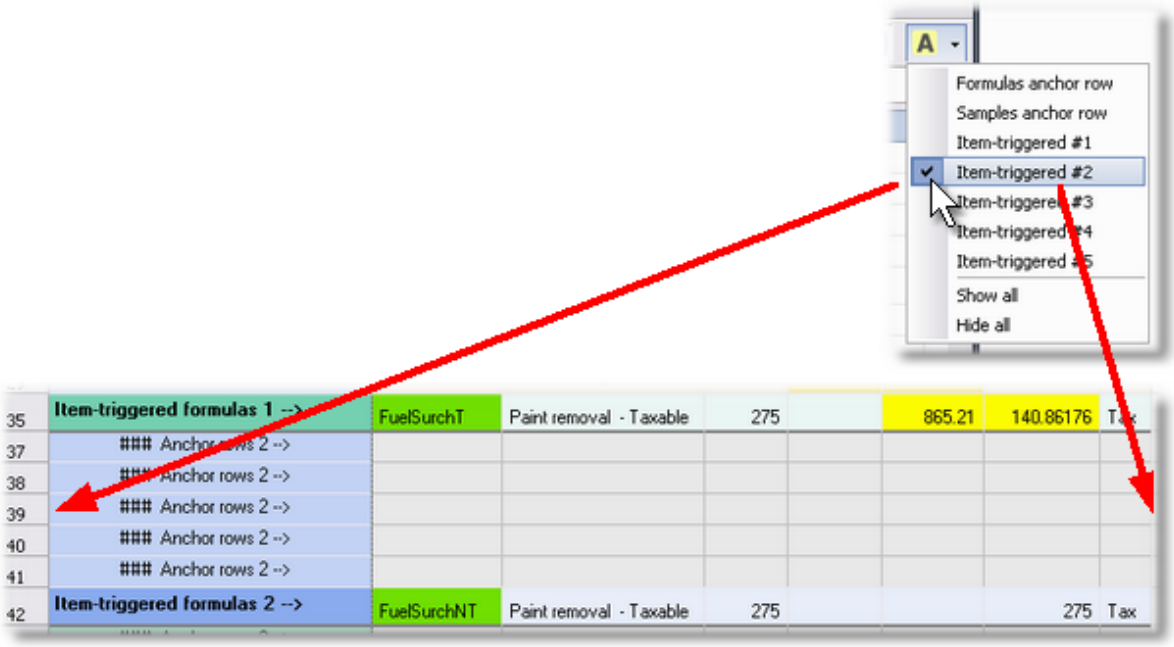


Having the anchor rows visible will make formula entry easier to comprehend.

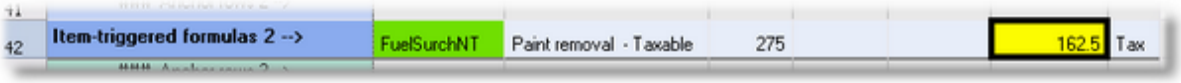
2. In the *Item* column, **enter "FuelSurchNT"**—the name of the nontaxable fuel surcharge Item.

3. In the *Amount* column, **enter a formula to calculate the nontaxable portion of the fuel surcharge:**

```
=B11-I41
```

=	Every formula begins with an equal sign (=).
B11	This references the fuel surcharge amount from the Invoice's header.
-I41	This refers to the prior row's *Amount* field, which calculated the amount of *taxable* fuel surcharge, and subtracts it from the total fuel surcharge, leaving the nontaxable amount as the result.

After entering the formula, the *Amount* cell should show the total fuel surcharge:



Why doesn't it just show the nontaxable portion? Because the anchor row the formula refers to contains no data, which the formula interprets as a zero. To mimic what the formula will "see" during actual form processing, you can enter some sample data in the anchor row cell the formula refers to. In this example the taxable fuel surcharge amount calculated on the Item-triggered formulas 1 row, has been entered in cell I41. Now the just-entered formula makes sense, calculating the nontaxable amount as $21.64.

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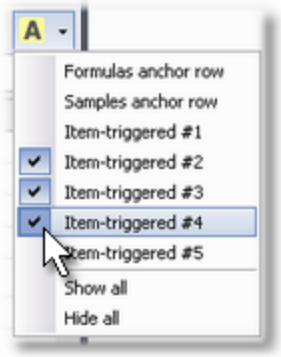
You are free to enter data anywhere in anchor rows, as sample data for your formulas to reference.

Item-triggered formulas 3

1. **Show the anchor rows for Item-triggered formulas 3 and 4,** as you did above.



2. In the *Item* column, **enter "FreightT"**—the name of the taxable freight Item.
3. In the *Taxbl* column, **enter a formula to total the *Taxbl* and *NonTaxbl* columns,** the same formula you entered on the Item-triggered formulas 2 row earler.

   ```
   =SUM(G27:G29)+SUM(H27:H29)
   ```

   Why use the same formula here as you did above? It makes the fuel surcharge and freight calculations independent of each other. If Paul wants to charge for freight on an invoice without adding a fuel surcharge, FormCalc SST will accommodate that.
4. In the *NonTaxbl* column, **enter a formula to calculate the taxable portion of the freight:**

   ```
   =IF(H49<>0,B15*(SUM(G27:G29)/H49),0)
   ```

   This is like the taxable fuel surcharge formula except that it refers to cell B15, the freight charge field.

Item-triggered formulas 4

1. In the *Item* column, **enter "FreightNT"**—the name of the nontaxable freight Item.
2. In the *Amount* column, **enter a formula to calculate the nontaxable portion of the freight charge:**

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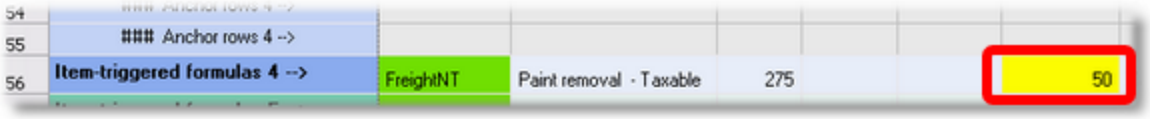
=B15-I55

This is like the nontaxable fuel surcharge formula except that it refers to cell B15, the freight charge field. After entering this formula, its cell shows the freight charge amount—$50.00 in this example.



As happened for the nontaxable fuel surcharge calculation, this formula returns the entire freight charge. The reason is that it is subtracting a blank cell (I55, which equates to zero) from the freight charge (B15). To see whether the formula is calculating properly you only need to enter sample data in the anchor row cell (I55), such as the taxable amount from the Item-triggered 3 row, $43.34:

The completed snapshot

Here's a view of the snapshot's Detail area tab with all formulas and item names in place.

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	A	B	D	E	F	G	H	I	J
1	Header fields...								
17	Detail (Item) columns...								
18	Column types (right-click to edit):		ITEM	DESCRIP	RATE	OTHER	OTHER	AMOUNT	TAX
19	QuickBooks column labels (optional):		Item	Description	Rate	Taxbl	NonTaxbl	Amount	Tax
21	Formulas (enter here) -->		PaintRemovTx	Paint removal - Taxable	275	275		275	Tax
27	Sample formulas and data:		PaintRemovTx	Paint removal - Taxable	275	275		275	Tax
28			ToolClnTx1	Tool cleaning - Taxable	115.21		115.21	115.21	Non
29			ToolClnTx3	Tool cleaning + acid wash	475	475		475	Tax
35	Item-triggered formulas 1 -->		FuelSurchT	Paint removal - Taxable	275		865.21	140.86176	Tax
37	### Anchor rows 2 -->								
38	### Anchor rows 2 -->								
39	### Anchor rows 2 -->								
40	### Anchor rows 2 -->								
41	### Anchor rows 2 -->							140.86	
42	Item-triggered formulas 2 -->		FuelSurchNT	Paint removal - Taxable	275			21.64	Tax
44	### Anchor rows 3 -->								
45	### Anchor rows 3 -->								
46	### Anchor rows 3 -->								
47	### Anchor rows 3 -->								
48	### Anchor rows 3 -->								
49	Item-triggered formulas 3 -->		FreightT	Paint removal - Taxable	275		865.21	43.342079	Tax
51	### Anchor rows 4 -->								
52	### Anchor rows 4 -->								
53	### Anchor rows 4 -->								
54	### Anchor rows 4 -->								
55	### Anchor rows 4 -->							43.34	
56	Item-triggered formulas 4 -->		FreightNT	Paint removal - Taxable	275			6.66	Tax
63	Item-triggered formulas 5 -->			Paint removal - Taxable	275			275	Tax

Processing an Invoice

On the first attempt at using this FormCalc SST setup to process an Invoice, QuickBooks stopped the processing attempt with a pop-up message:

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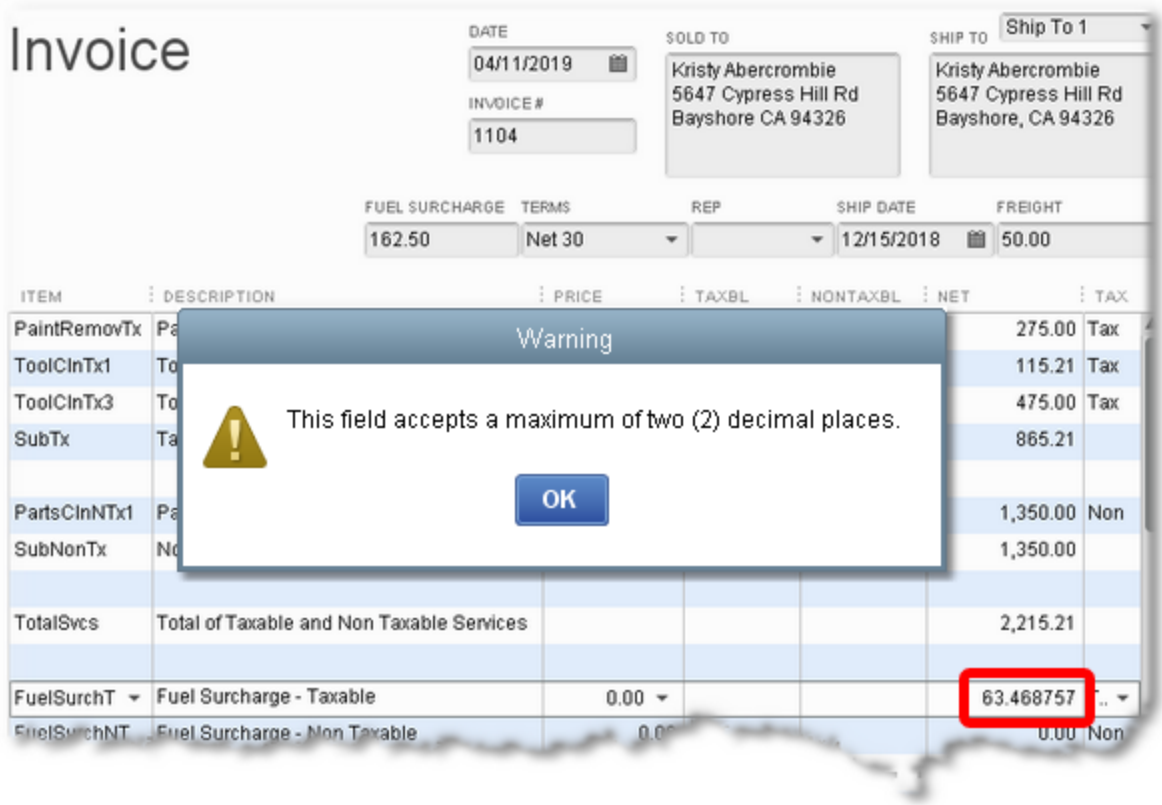
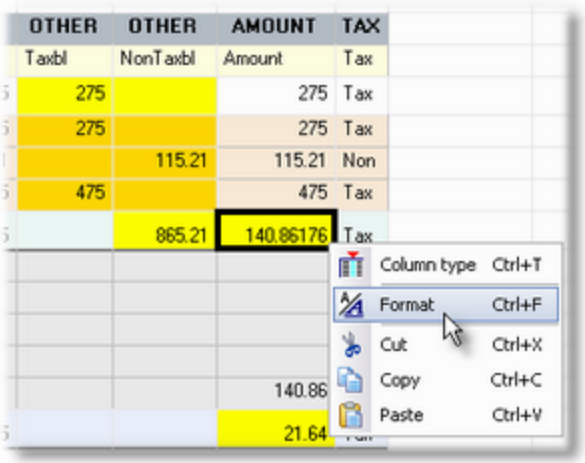


The problem is that FormCalc SST is trying to write "63.4688757" in the *Amount* column (labeled *Net* here), but QuickBooks won't accept more than two decimal places in that column.The solution is to change the format FormCalc SST uses for writing results to the *Amount* column.

Changing formats in the Amount column

1. In FormCalc SST, **right click one of the Amount column formula cells,** and **select *Format*** from the pop-up menu.



The *Format data or results* window will open.

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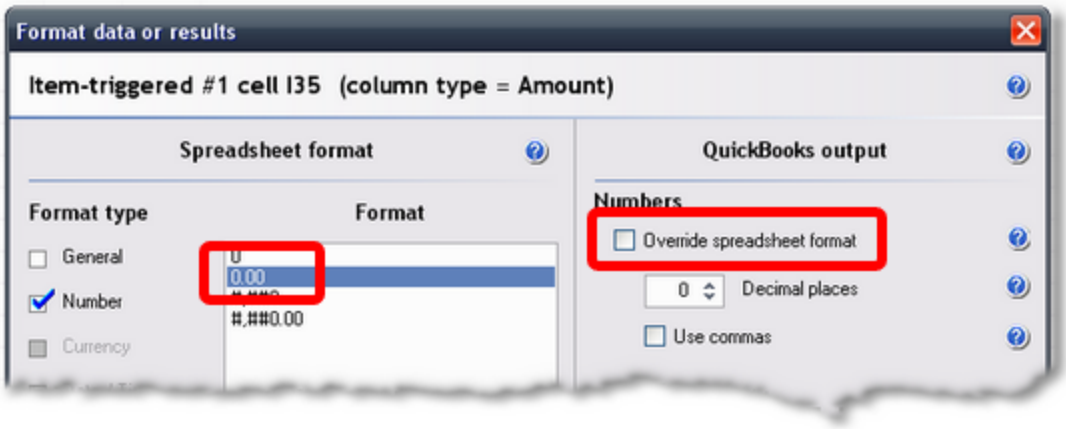
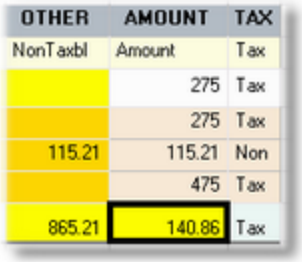
2. **Select a two-digit number format,** and be sure to **turn off the *Override spreadsheet format* option.**



3. **Click OK** to close the window.

   The cell's results should then be displayed with two-decimal places, like this.



OTHER	AMOUNT	TAX
NonTaxbl	Amount	Tax
	275	Tax
	275	Tax
115.21	115.21	Non
	475	Tax
865.21	140.86	Tax

4. Use the same steps to **format each of the *Amount* column's formula cells.**

   When you are finished, they should look something like this (anchor rows have been hidden to make the screenshot more compact):

OTHER	AMOUNT	TAX
NonTaxbl	Amount	Tax
	275	Tax
	275	Tax
115.21	115.21	Non
	475	Tax
865.21	140.86	ax
	21.64	ax
865.21	43.34	ax
	6.66	ax
	275	Tax

➔ *"Why not format cells in the NonTaxbl column?"* You can format them if you want, but it isn't necessary, because: (1) The *NonTaxbl* column is an

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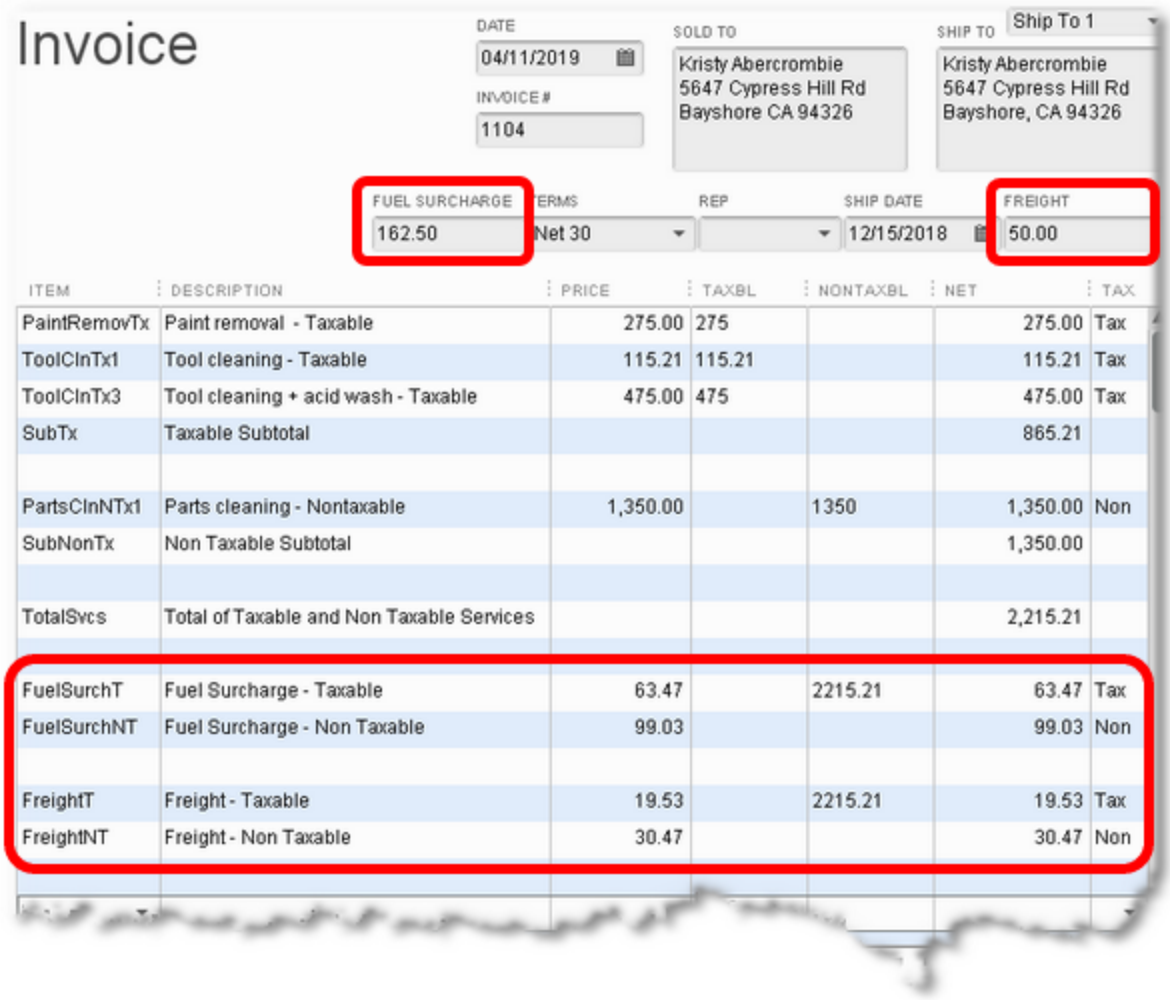
Other column type. Unlike the Amount column, it will accept any number of decimal places without complaint, and (2) Neither the *Taxbl* nor *NonTaxbl* columns will appear on printed Invoices, so their appearance is of little importance. If they were to be printed out for customers to see, then they certainly should be formatted!

Processing the Invoice Again...Success!

Here's the result of processing the Invoice again.



Invoice

DATE 04/11/2019
INVOICE # 1104
SOLD TO Kristy Abercrombie 5647 Cypress Hill Rd Bayshore CA 94326
SHIP TO Ship To 1 Kristy Abercrombie 5647 Cypress Hill Rd Bayshore, CA 94326
FUEL SURCHARGE 162.50 | TERMS Net 30 | REP | SHIP DATE 12/15/2018 | FREIGHT 50.00

ITEM	DESCRIPTION	PRICE	TAXBL	NONTAXBL	NET	TAX
PaintRemovTx	Paint removal - Taxable	275.00	275		275.00	Tax
ToolClnTx1	Tool cleaning - Taxable	115.21	115.21		115.21	Tax
ToolClnTx3	Tool cleaning + acid wash - Taxable	475.00	475		475.00	Tax
SubTx	Taxable Subtotal				865.21	
PartsClnNTx1	Parts cleaning - Nontaxable	1,350.00		1350	1,350.00	Non
SubNonTx	Non Taxable Subtotal				1,350.00	
TotalSvcs	Total of Taxable and Non Taxable Services				2,215.21	
FuelSurchT	Fuel Surcharge - Taxable	63.47		2215.21	63.47	Tax
FuelSurchNT	Fuel Surcharge - Non Taxable	99.03			99.03	Non
FreightT	Freight - Taxable	19.53		2215.21	19.53	Tax
FreightNT	Freight - Non Taxable	30.47			30.47	Non

The taxable and nontaxable amounts are correctly calculated, based on the fuel surcharge and freight amounts in the Invoice's header fields, and this FormCalc SST setup is ready to use for processing Paul's invoices.

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Truck net weight and bushels of grain calculations

This example demonstrates:

- Interdependent formulas; for example, column D depends on the result calculated in column C, which depends on values from columns A and B. (Like any spreadsheet, FormCalc SST handles formula dependencies automatically.)
- Using "dummy Items" for entering data on the invoice without recording income
- Calculating Item quantities from other data entered on the same row
- Protecting formulas from divide-by-zero errors
- Totaling a column

Calculate Net Weight and Bushels of Grain from Truck Loaded and Empty Weights

Overview

Schaaf Farms and Trucking, LLC is a multi-generation family business producing feeder cattle and grains—mostly corn, soybeans, and wheat—plus operating a trucking business. Over the past few years they have edged into producing specialty grains: organic soybeans and high-anti-oxidant grain sorghum for the health food market.

Sales of the organic soybeans and grain sorghum are handled a lot differently than for generic, commodity grains. These specialty grains are delivered on contract to two small, regional food processing companies. Neither company's mill has a truck scale, so Schaaf's drivers have to weigh loads at a nearby public scale, drive to the mill to dump their grain, then drive back to the public scale to get a truck empty weight. Also, neither food company pays directly for the delivered grain; rather, Schaaf Farms has to invoice them for it. Along with each invoice they include copies of the scale tickets showing truck loaded and empty weights, plus calculations of the net weight and number of bushels on each load and the per-bushel contract price.

Mary Schaaf does most of the operation's bookkeeping and follows these steps to do the (usually weekly) invoicing:

1. As she gets time during the day she calculates a net weight for each unrecorded scale ticket, using a calculator, and hand-writes the net weight on the ticket.
2. When it's time to send an invoice she gathers the scale tickets for the week (typically for one to three loads of grain) and uses a paper-tape adding machine to total the loads' net weights, then divides by the number of pounds per bushel to calculate the total number of bushels delivered.
3. She verifies the paper tape's numbers against the net weights written on the tickets, then staples the tape to copies of the scale tickets for sending along with the invoice.
4. She enters an invoice in QuickBooks for the total number of bushels at the contract price, and prints it out.

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5. She mails the invoice to the food company along with the stapled-together scale tickets and paper tape.

Someone told Mary she should be using an Excel spreadsheet for adding up the tickets and calculating bushels. But she doesn't feel comfortable with Excel and knows it would require printing out a separate, full-sized sheet of paper to send out with the invoices and scale tickets, so she has continued using the paper-tape adding machine.

You tell her she could accomplish everything she does now by entering truck loaded and empty weights *directly* into QuickBooks as she prepares each invoice and let FormCalc SST do all the calculations. That would eliminate using the calculator and paper-tape adding machine and would have the added benefit of documenting each truckload of grain (loaded, empty, and net weights) *directly on the invoice,* making that information available to anyone who reviews the invoice.

Mary gives you the go ahead to set this up for her.

QuickBooks Setup

Mary already has QuickBooks Items set up to record income from grain sales:

```
OrgSoybns
HASorghum
```

These will also work as trigger Items for FormCalc SST's calculation of total net weight and total bushels. However, you need to set up a couple "dummy Items" (ones which don't record income) to use on the invoice lines where truck weights are entered—one dummy Item for each grain.

Why two dummy Items? Because to calculate net bushels FormCalc SST will need the per-bushel weight of the grain being sold. When one of these dummy items is selected on an invoice you'd like that grain's per-bushel weight to appear on the same invoice line, to make it accessible to FormCalc SST. The easy way to have that happen is to add a custom field to the Items list—let's call it *BuWt*—then enter the appropriate per-bushel weight in that custom field for *each* dummy Item. Of course, you will also need to customize the invoice template to include the custom field.

You will need several extra invoice columns for holding things like truck loaded and empty weights. You can use the two spare columns *Other 1* and *Other 2* for this purpose, but they won't be enough. To make another column available you will need to add yet another custom field, *NetWt*, for the net weight calculated for each truckload.

> For easy understanding this example uses the terms *loaded weight, empty weight,* and *net weight* in place of the common commercial terms *gross weight, tare weight,* and *net weight,* respectively.

1. **Add the two dummy Items** to the Items list.

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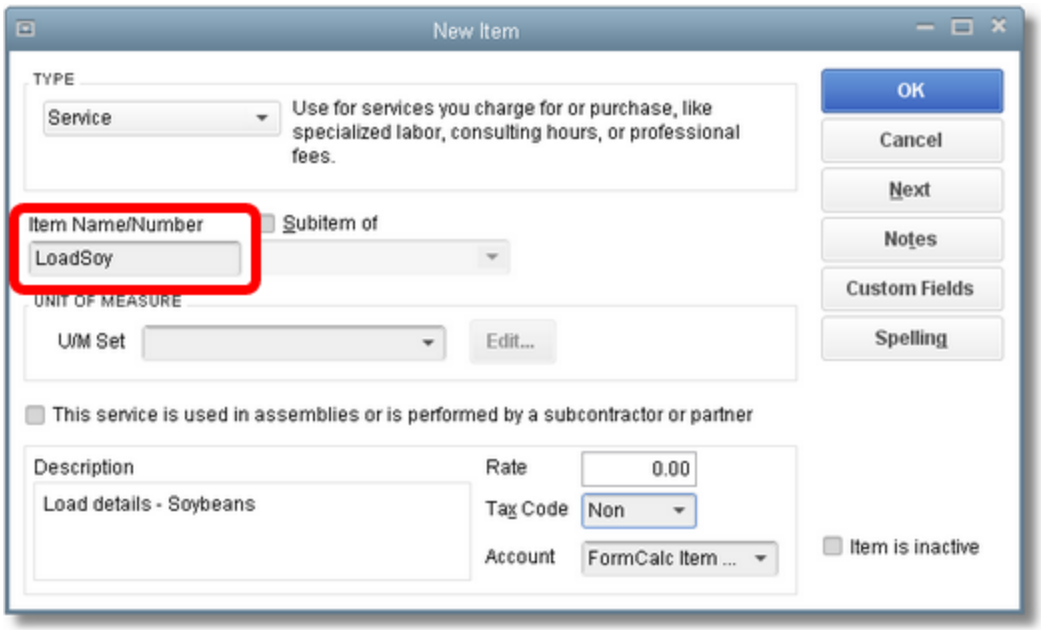
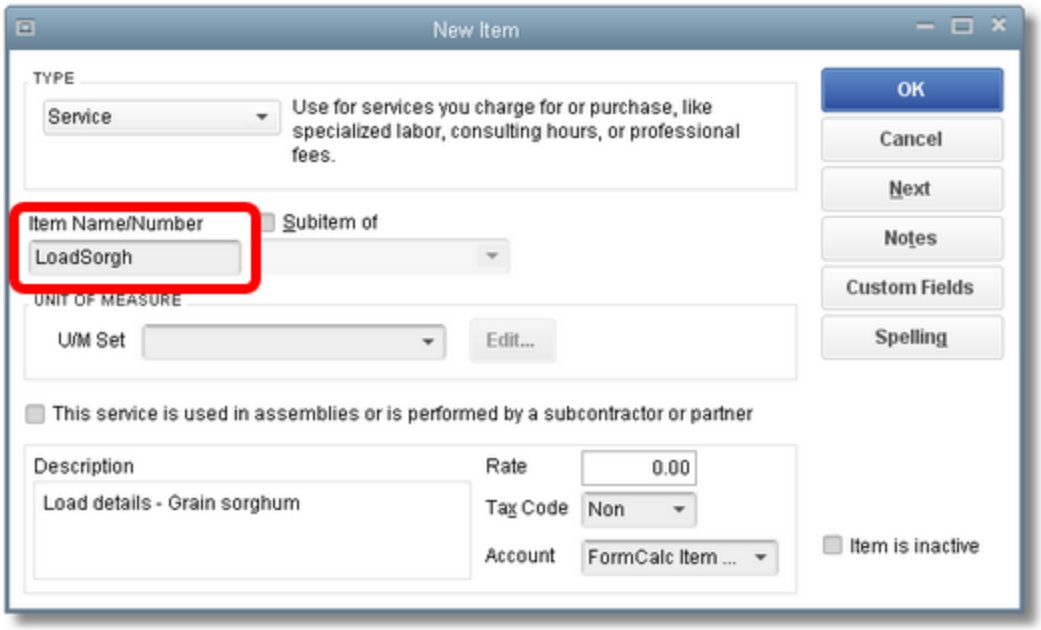
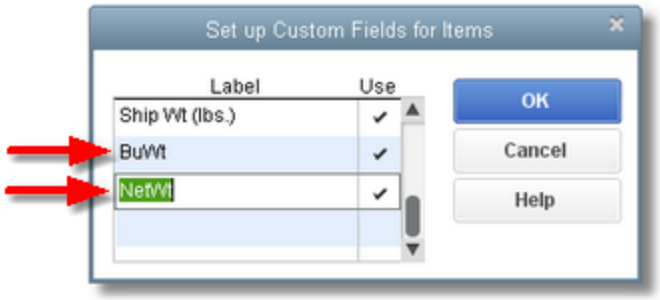




2. [Define custom fields](#) in the Item list, named *BuWt* and *NetWt*:



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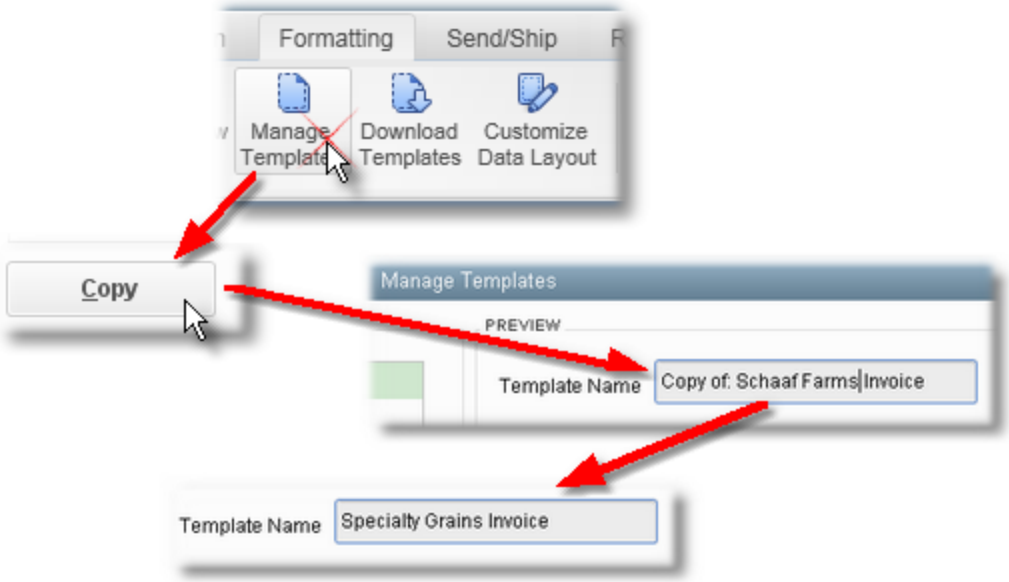
3. For each dummy Item, **enter a per-bushel weight in the *BuWt* custom field.**

   You don't need to enter anything in the *NetWt* field; it will be calculated by FormCalc SST.

4. **Create a new Invoice template** by copying the existing one and renaming it.

   Mary will only be using the new invoice template for specialty grain invoices, so make a copy of her existing invoice template, then customize the copy, leaving the original template available for other invoicing.



5. [Customize the new Invoice template] to include the necessary columns.

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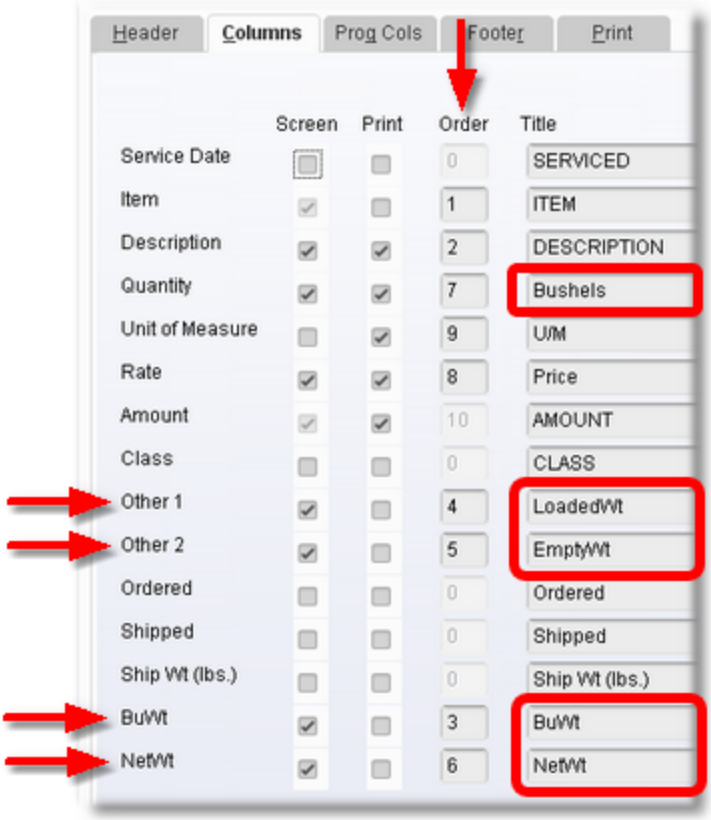
On the Columns tab:

- Checkmark the *BuWt* and *NetWT* custom fields—the ones added to the Item list earlier.
- Checkmark the *Other 1* and *Other 2* fields, renaming them *LoadedWt* and *EmptyWt*.
- Rename the *Quantity* field to *Bushels*. (This template will only be used for specialty grain invoices, so that's OK.)
- Renumber the *Order* as desired, to arrange columns as you want them on the invoice form.



6. **Fill out the form** as Mary normally would **for one of the grains.**

   Include at least three rows of sample truckload data for FormCalc SST to copy when taking a snapshot of the form, and put the appropriate grain Item at the bottom:

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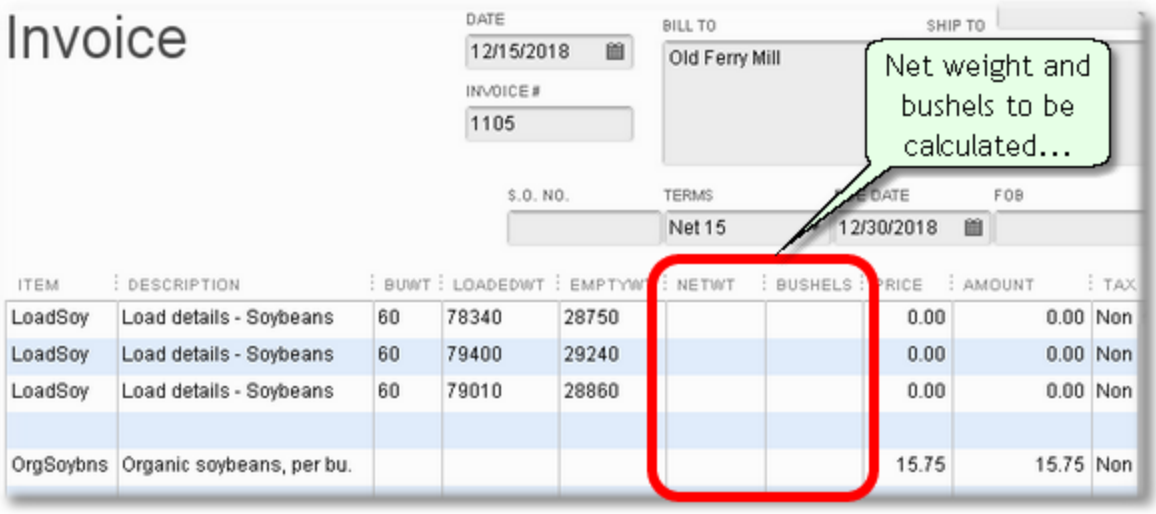


FormCalc SST Setup

1. **Select** `File > New` from the main menu to start a new FormCalc SST file.

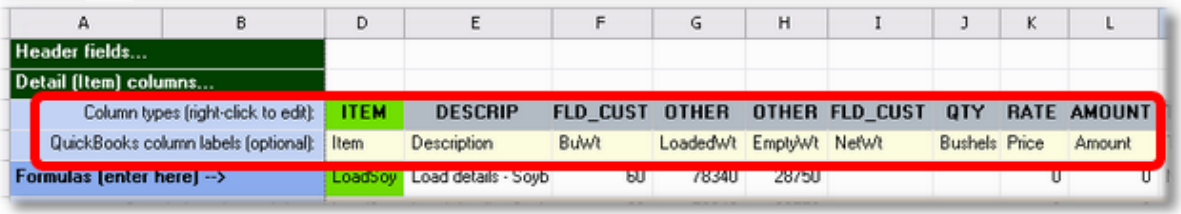
   (Or, you may overwrite the existing file if you prefer.)

2. **Take a snapshot** of the QuickBooks form.

   FormCalc SST will gather data about the form and build a spreadsheet based on it.

3. **Assign column types** on the Column types row, to identify the spreadsheet columns with their corresponding QuickBooks columns.

   The column types and column labels rows should look something like the following when you are done, if you update the column labels to match the QuickBooks column names.



4. **Format the *NetWt* cell** to have no decimals, because truck weights are only recorded in whole pounds.

   Right-click on that cell (of the Formulas row), then select Format from the pop-up menu. The *Format data or results* window will open, where you can select a format no decimal places as shown here.

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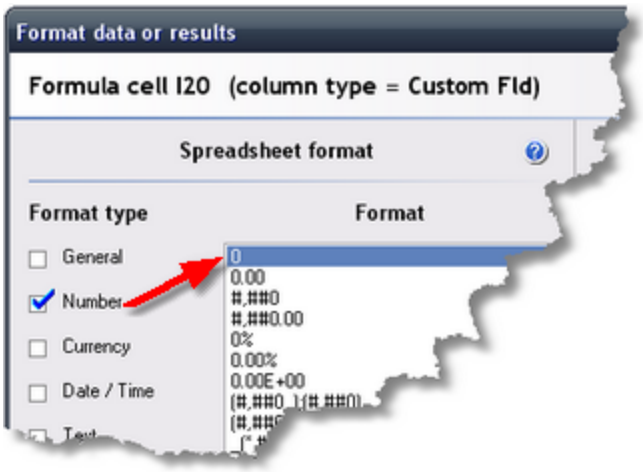
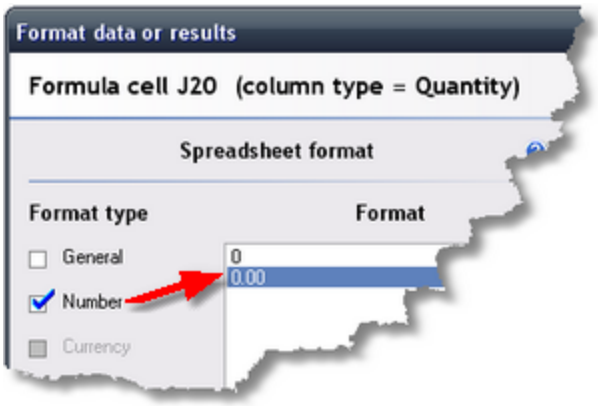


5. Likewise, **format the *Bushels* (Quantity) cell** to also have two decimals:



6. **Enter a formula to calculate the *NetWt*:**

```
=G20-H20
```

which breaks down as:

`=`	Every formula begins with an equal sign (=).
`G20`	The *LoadedWt* value.
`-H20`	Minus the *EmptyWt* value.

7. **Enter a formula to calculate *Bushels*:**

```
=IF(F20>0,I20/F20,0)
```

which breaks down as:

`=`	Every formula begins with an equal sign (=).
`IF(F20>0`	This protects the formula against "divide by zero" errors. If the per-bushel weight in F20 is greater than 0, the formula will use it to calculate bushels; otherwise the formula will return 0 (see below).

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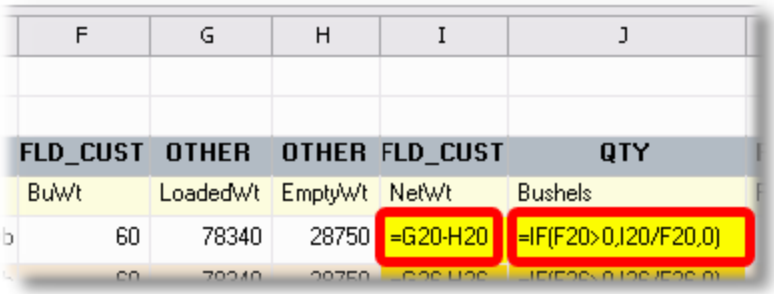
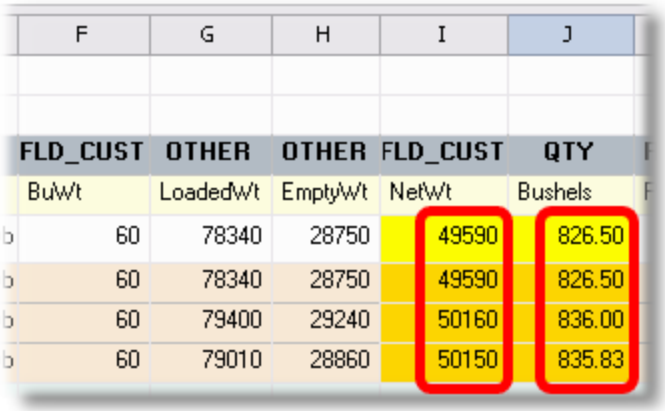
`I20`	The *NetWt* value.
`/F20`	Divided by the per-bushel weight value in *BuWt*.
`,0)`	If F20 was 0 or negative, a zero result is returned.

Here's a view of the formulas:



F	G	H	I	J
FLD_CUST	OTHER	OTHER	FLD_CUST	QTY
BuWt	LoadedWt	EmptyWt	NetWt	Bushels
60	78340	28750	=G20-H20	=IF(F20>0,I20/F20,0)

...and the sample results they calculate:



F	G	H	I	J
FLD_CUST	OTHER	OTHER	FLD_CUST	QTY
BuWt	LoadedWt	EmptyWt	NetWt	Bushels
60	78340	28750	49590	826.50
60	78340	28750	49590	826.50
60	79400	29240	50160	836.00
60	79010	28860	50150	835.83

8. **Type "OrgSoybns" in the *Item* column** on the Item-triggered formulas 1 row.

   This makes OrgSoybns a trigger item for the formulas you will enter on this row.

9. **Enter this formula In the *NetWt* column** on the same row:

   ```
   =SUM(I1:I1)
   ```

   This is a shorthand way of saying "sum the entire column". As soon as you've entered it, FormCalc SST converts the formula to:

   ```
   =SUM(I26:I28)
   ```

   which is the actual cell range that indicates to FormCalc SST to sum the entire column of net weights.

10. **Enter a similar formula in the *Bushels* column:**

    ```
    =SUM(J1:J1)
    ```

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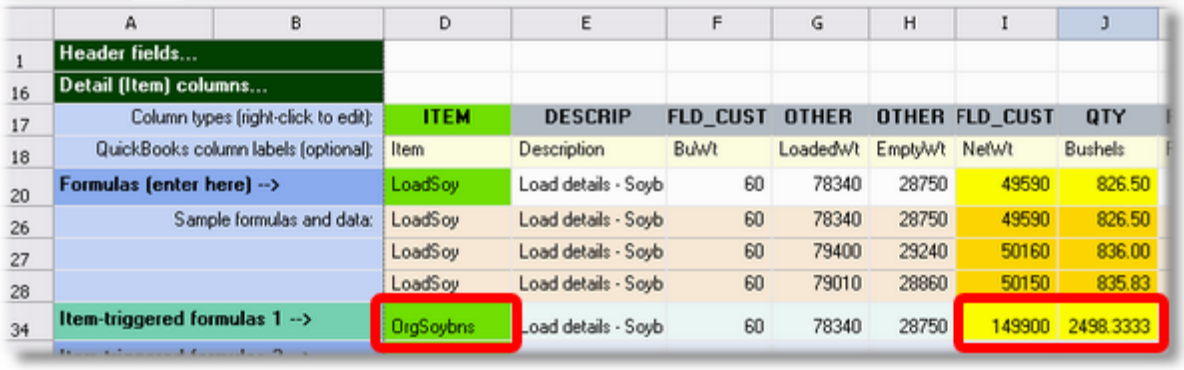
Which FormCalc SST converts to:

```
=SUM(J26:J28)
```

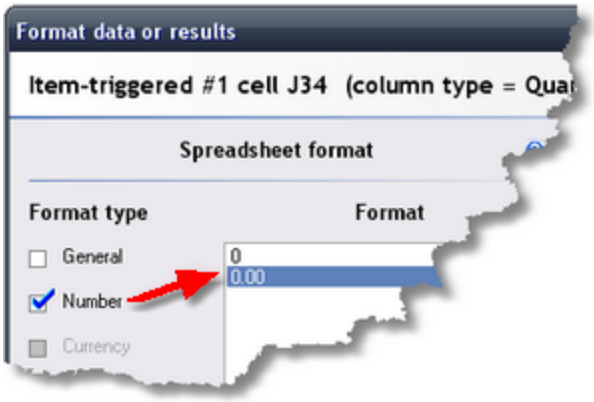
After entering formulas the row may look something like this:



	A	B	D	E	F	G	H	I	J
1	Header fields...								
16	Detail (Item) columns...								
17	Column types (right-click to edit):		ITEM	DESCRIP	FLD_CUST	OTHER	OTHER	FLD_CUST	QTY
18	QuickBooks column labels (optional):		Item	Description	BuWt	LoadedWt	EmptyWt	NetWt	Bushels
20	Formulas (enter here) -->		LoadSoy	Load details - Soyb	60	78340	28750	49590	826.50
26	Sample formulas and data:		LoadSoy	Load details - Soyb	60	78340	28750	49590	826.50
27			LoadSoy	Load details - Soyb	60	79400	29240	50160	836.00
28			LoadSoy	Load details - Soyb	60	79010	28860	50150	835.83
34	Item-triggered formulas 1 -->		OrgSoybns	Load details - Soyb	60	78340	28750	149900	2498.3333

As you can see, the sample result shows bushels as *2498.3333*. The cell needs to be formatted to show fewer decimal places.

11. Format the *Bushels* cell on the Item-triggered formulas 1 row, to have two decimals:



12. Enter similar formulas and formatting for the *HASorghum* Item, on the Item-triggered formulas 2 row.

That way both trigger Items will be set up in FormCalc SST, so it will work with invoices involving either OrgSoybns or HASorghum.

➔ *"But wait a minute! With the LoadSoy Item name on the Formulas row, won't this setup only work for sales of soybeans?"* No. Item names on the Formulas row are always ignored for FormCalc SST calculations. The LoadSoy Item is only there because it was part of the data FormCalc SST harvested when the invoice snapshot was taken. The point to understand is that Item names are only important on the Item-triggered formulas rows.

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Column types (right-click to edit):	ITEM	DESCRIP	FLD_CUST	OTHER	OTHER	FLD_CUST	QTY
QuickBooks column labels (optional):	Item	Description	BuWt	LoadedWt	EmptyWt	NetWt	Bushels
Formulas (enter here) -->	LoadSoy	Load details - Soyb	60	78340	28750	49590	826.50
Sample formulas and data:	LoadSoy	Load details - Soyb	60	78340	28750	49590	826.50
	LoadSoy	Load details - Soyb	60	79400	29240	50160	836.00
	LoadSoy	Load details - Soyb	60	79010	28860	50150	835.83
Item-triggered formulas 1 -->	OrgSoybns	Load details - Soyb	60	78340	28750	149900	2498.33
Item-triggered formulas 2 -->	HASorghum	Load details - Soyb	60	78340	28750	149900	2498.33

13. **Save the FormCalc SST file** to prevent accidentally losing your changes.

Processing a QuickBooks Invoice

To verify that your FormCalc SST setup is working as desired, try processing the QuickBooks invoice you filled out earlier:

To invoke form processing from FormCalc SST

1. **Press the Action button** in FormCalc SST's main toolbar.

The focus will switch to QuickBooks, and the *Choose an action* dialog will appear:

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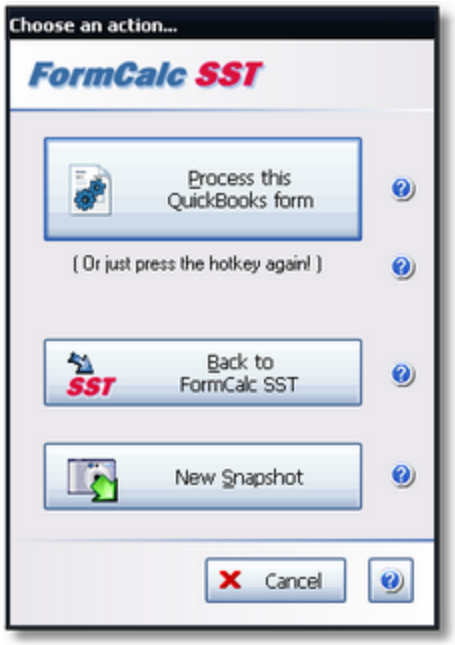

2. **Click on the** *Process this QuickBooks form* **button** to process the form. (See example results below.)

To invoke form processing from from QuickBooks

1. **Press the FormCalc SST hotkey,** which is F11 unless you have changed it in Preferences.

   The same *Choose an action dialog* as shown above will appear.

2. **Process the form** by either pressing the hotkey a second time (quickest for most users), or clicking on the *Process the QuickBooks form* button.

Results

The invoice should look something like the following after processing, with the weights and bushels calculated as shown here.

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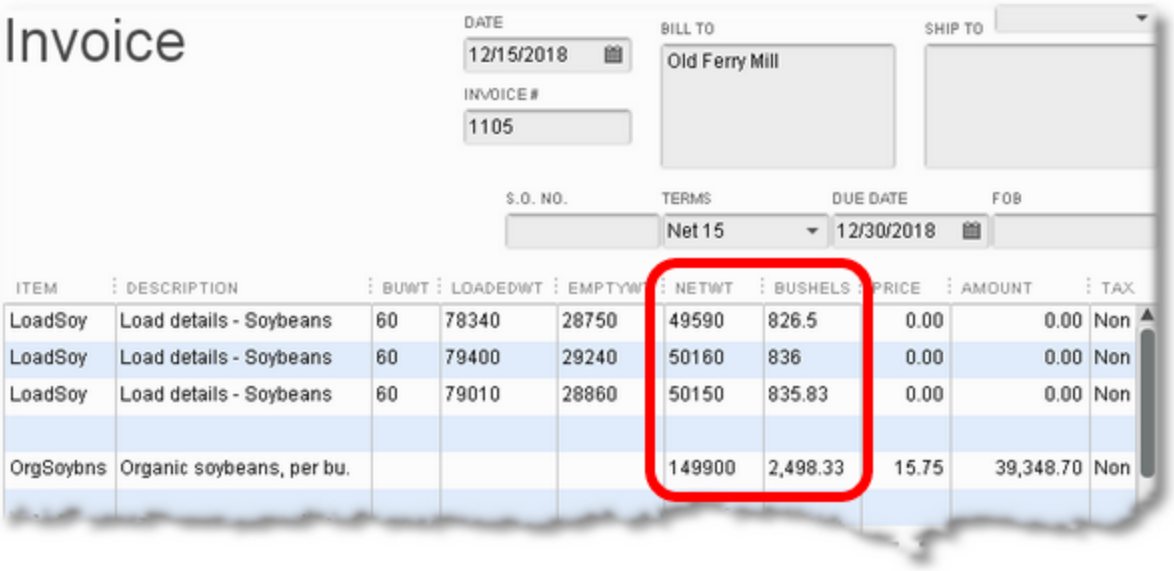

Invoice

DATE 12/15/2018

INVOICE # 1105

BILL TO Old Ferry Mill

SHIP TO

S.O. NO.

TERMS Net 15

DUE DATE 12/30/2018

FOB

ITEM	DESCRIPTION	BUWT	LOADEDWT	EMPTYWT	NETWT	BUSHELS	PRICE	AMOUNT	TAX
LoadSoy	Load details - Soybeans	60	78340	28750	49590	826.5	0.00	0.00	Non
LoadSoy	Load details - Soybeans	60	79400	29240	50160	836	0.00	0.00	Non
LoadSoy	Load details - Soybeans	60	79010	28860	50150	835.83	0.00	0.00	Non
OrgSoybns	Organic soybeans, per bu.				149900	2,498.33	15.75	39,348.70	Non

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Adding line numbers to a packing slip (or invoice)

This example demonstrates:

- How to auto-number the lines of a packing slip (or invoice, or sales receipt, or any other QuickBooks form)
- How to use FormCalc SST's statistical function COUNTA

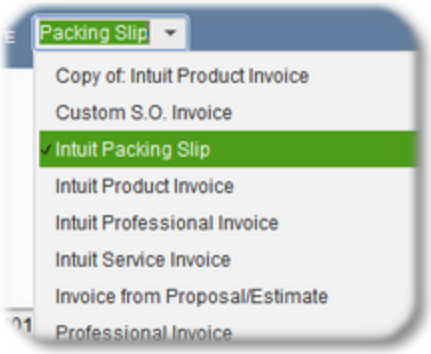
Adding Line Numbers to a Packing Slip (or Invoice)

Like many companies that ship out products, Deep Blue Pool Supply prepares and prints out packing slips by applying a Packing Slip template to their QuickBooks invoices. Because the number of items being shipped can cause confusion as orders are filled, Deep Blue wants to add line numbers to their packing slips. QuickBooks has no option for doing this, but it's simple to do with FormCalc SST.

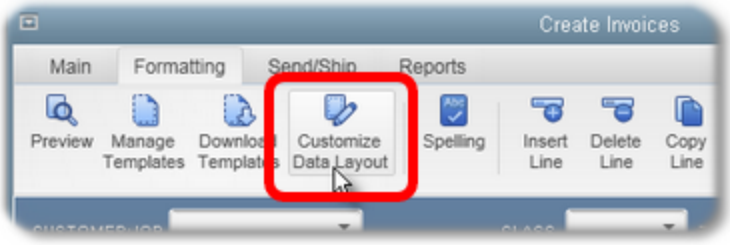
QuickBooks Setup

Add a column to the Packing Slip (or Invoice) template, to hold the line numbers

1. **Open the Invoice form.**
2. **Apply the Packing Slip template you use,** by selecting it in the invoice's Template field.



3. **Click on** `Formatting > Customize Data Layout` in the invoice form's menu/ribbon bar.



The Additional Customization window will open.

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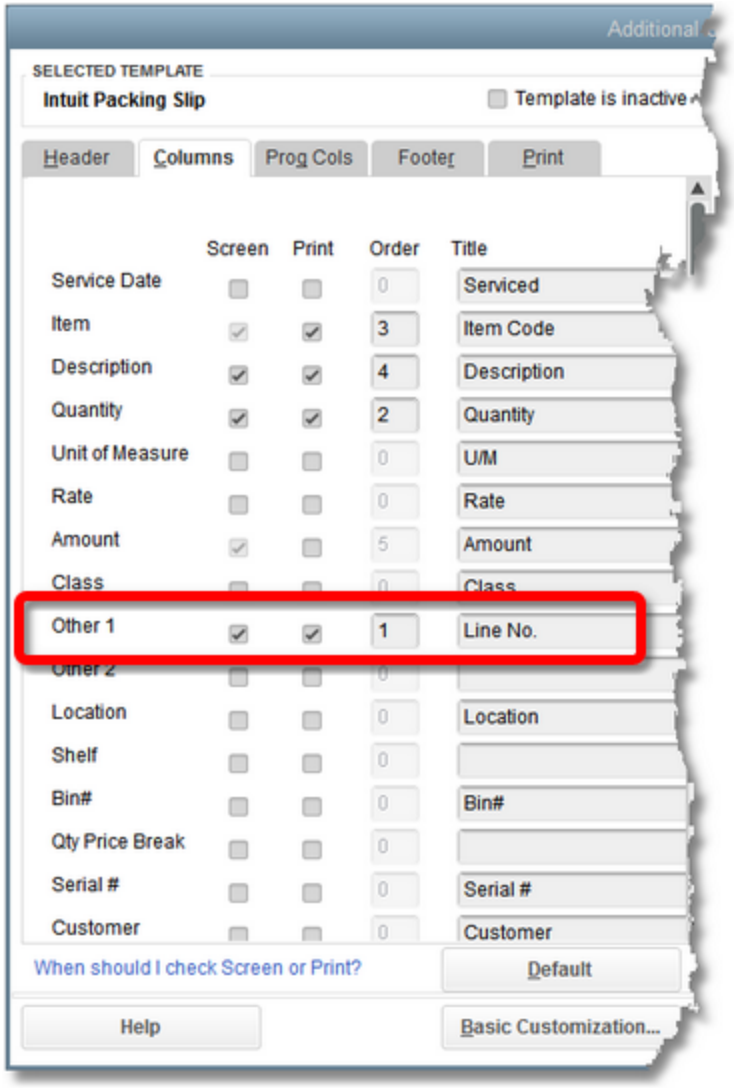
4. Click on the Columns tab.

Now, you need an unused field you can add to the form to hold the line numbers. *Other 1* and *Other 2* are spare fields available for any purpose, so use *Other 1* if it is available.

If *Other 1* and *Other 2* are already in use, you can add a custom field to the Items list to make an additional field available for adding to the packing slip template when you customize it, as described below.

5. On the *Other 1* line, **checkmark the boxes** in both the Screen and Print columns, **change the field's title** to *Line No.*, **and enter 1 in the Order column** to make *Line No.* the first field on the form. (You don't have to make *Line No.* the first field, but that's where most people prefer to see it.)



Also, be sure the ***Message*** field is selected on the Footer tab, even if you don't need it. The *Message* field is required by FormCalc SST for navigating the invoice/packing slip form.

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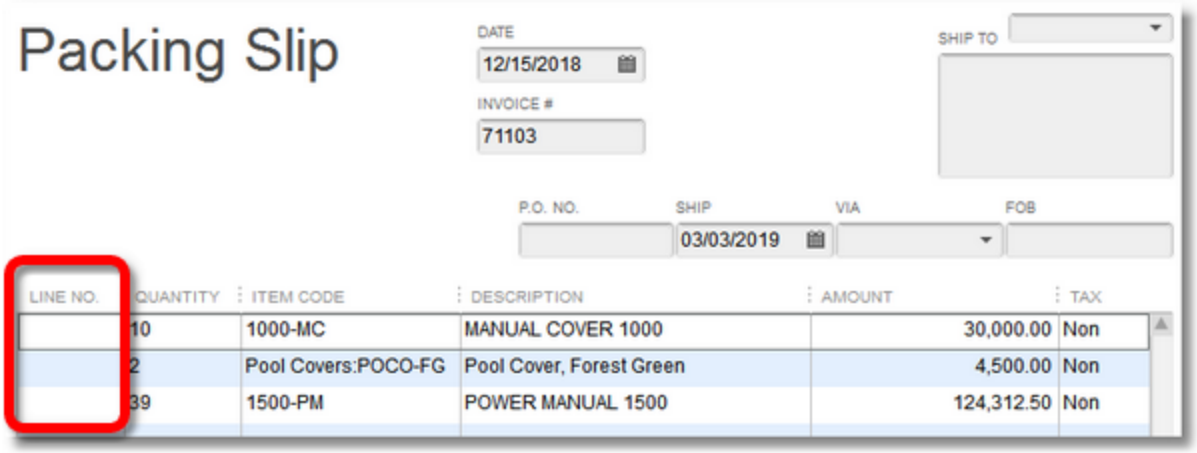
6. **Click OK** to close the Additional Customization window.

   Here's how the modified Packing Slip might look, with the added *Line No.* field:



For more customization details, see Customizing QuickBooks forms for FormCalc SST.

FormCalc SST Setup

Take a snapshot of the Packing Slip form

FormCalc SST needs to take a snapshot of the Packing Slip (which is really an invoice with the Packing Slip template applied).

1. **Don't take a snapshot of a blank packing slip!** Include at least three Item lines, as shown on the form sample above. Also, enter "dummy" numbers in the *Line No.* column on all three lines so that FormCalc SST won't think they are blank.

2. In FormCalc SST, **choose `File > New` from the main menu** to begin a new file.

   This step assures you won't overwrite an existing FormCalc SST file. If you were taking a second snapshot of a QuickBooks form—maybe because you had modified the form since the prior snapshot—then you wouldn't need to start with a new file.

3. **Click the Action button** in the main toolbar.

   The focus will switch to QuickBooks, and the *Choose an action* dialog will appear:

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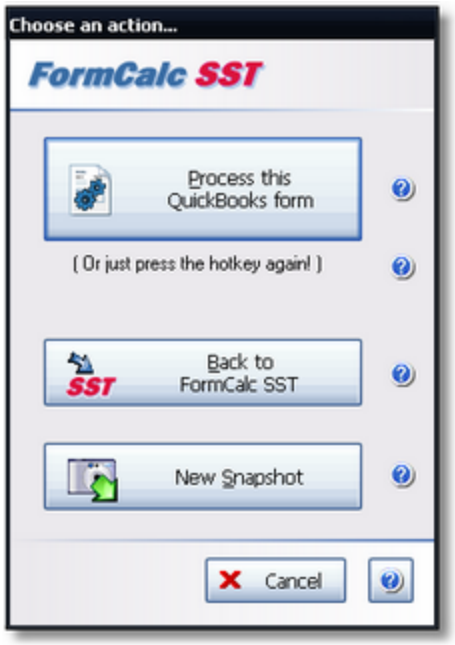

4. **Click on the New Snapshot button.**

   FormCalc SST will take a few seconds to gather information about the Packing Slip form, and will then display a representation of the form on the Snapshot tab.

   ➔ If you get a "No detail lines?" message while taking the snapshot, it is because you failed to populate the *Line No.* column with a number on each Item line. Do that, then take the snapshot again.

5. **Indicate the column type of the *Item* column and the *Line No.* columns** (at least).

   You must *always* indicate which column is the *Item* column. Beyond that, you must also identify the type for any column(s) which will have formulas in them, which in this case is just the *Line No.* column. Identifying the types of other column is optional but very helpful. It helps you keep track of "where you are" on the snapshot sheet, relative to the QuickBooks form's columns.

   Here's a partial view of the snapshot with column types already selected for the *Item* column and a few others, and the *Line No.* column's pop-up (right-click) menu displayed—*Line No.*'s column type is about to be selected as Other.

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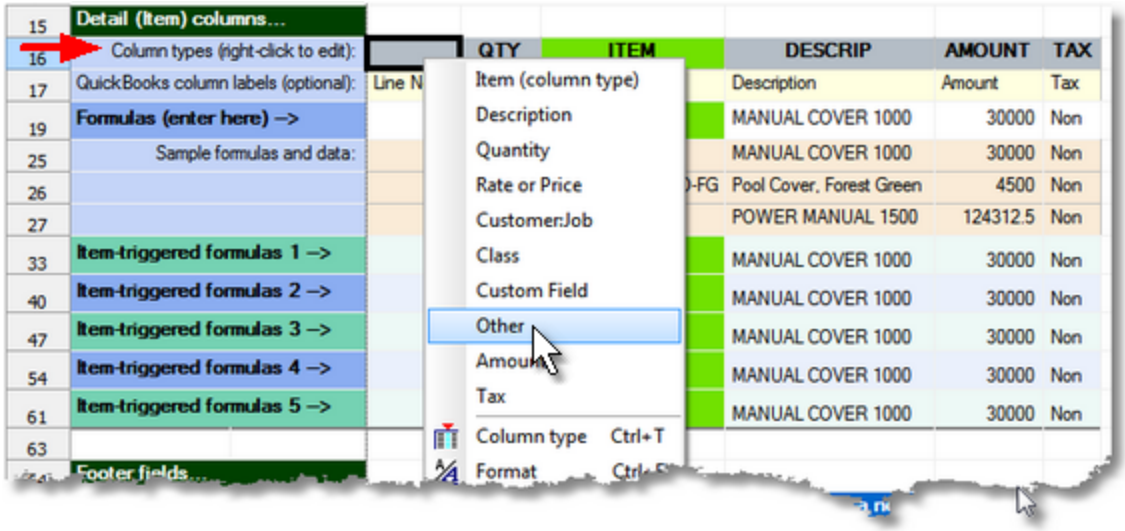
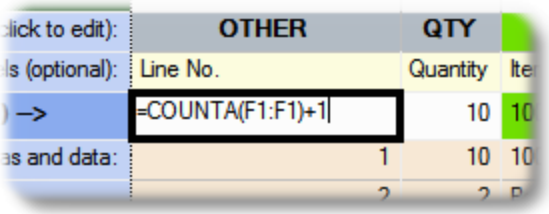


6. **Enter a formula to generate the line numbers** in the *Line No.* column.

   Enter it this way:

   ```
   =COUNTA(F1:F1)+1
   ```

   This tells FormCalc SST that you want the formula to count all the non-blank cells in column F (the *Item* column) and add 1 to that number each time the formula calculates. The formula will calculate on every line, it will number all lines which have an Item.



   The reference to a cell range that involves just the first row of the worksheet (F1:F1) is a shorthand way of telling FormCalc SST you want to include all rows of column F that are present *at the time the formula is calculated*—i.e., when the QuickBooks form is being processed. Understand that as soon as you've entered this formula FormCalc SST will convert it to a reference to the sample rows area, which is the cell range FormCalc SST uses for keeping track of references to "all rows" of any column. The adjusted formula will look like this:

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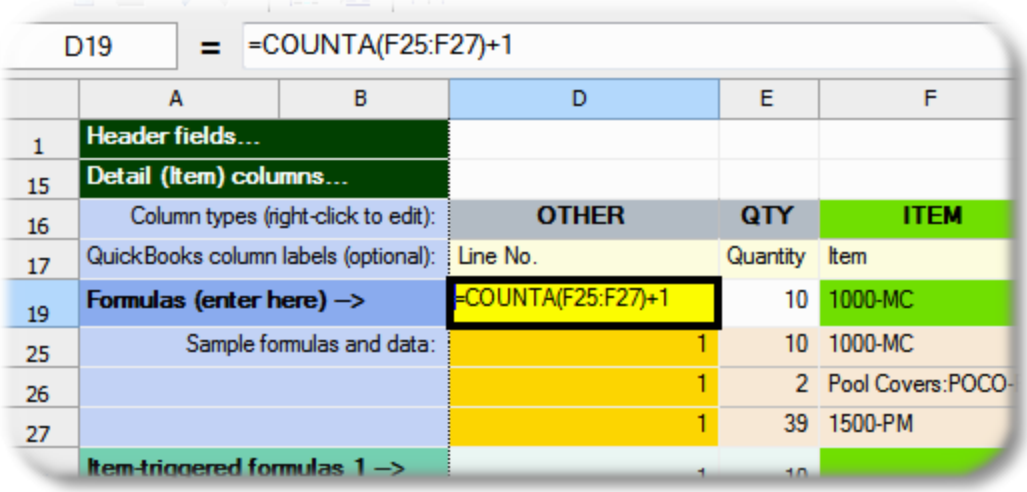

7. **Click on the Save As button** and supply a filename, **to save the FormCalc SST file.**

FormCalc SST files are identifiable by their .SSF filename extension.

All of the necessary setup is completed, and FormCalc SST is ready to use for adding line numbers to QuickBooks Packing Slips.

Processing QuickBooks Packing Slips

To process a Packing Slip in QuickBooks:

1. In QuickBooks, **open the Invoice** for which you want to create a Packing Slip.
2. **Be sure your Packing Slip template is applied** to the invoice.

   A FormCalc SST snapshot is specific to the template (field and column arrangement) that was in use when the snapshot was taken.

   To use FormCalc SST with a different template you need to take a new snapshot, to update the FormCalc SST data file. To use FormCalc SST with several different QuickBooks forms and/or templates, you may create a different FormCalc SST data file for each.

3. **Press the FormCalc SST hotkey,** which is *F11* unless you have changed it in Preferences.

   The *Choose an action* dialog will appear:

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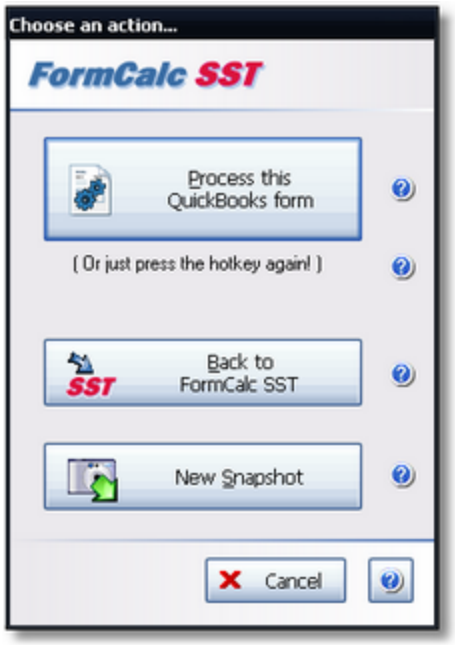
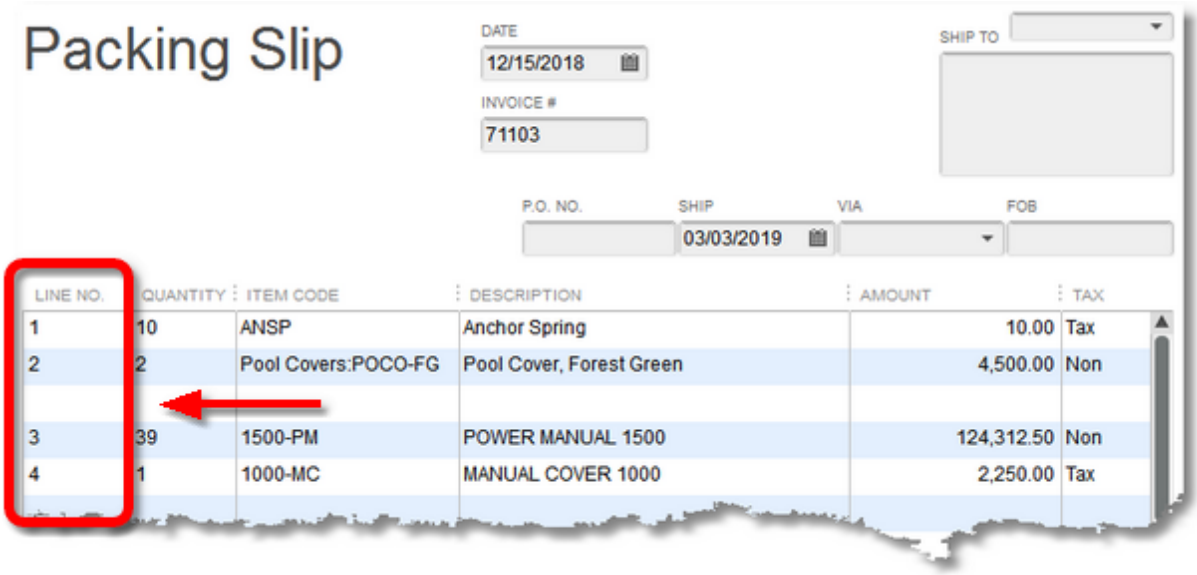


4. **Process the form** by either (1) pressing the hotkey a second time, or (2) clicking on the *Process this QuickBooks form* button.

Here's a view of the form after FormCalc SST has added line numbers.



Note that there's a blank line inserted between some of the Item lines in this example. That was to demonstrate that this approach—the formula we used—only numbers lines that have an Item name on them. As you can see, the blank line is not numbered (indicated by the red arrow).

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"But I want *every* line numbered, including blank lines!"

If you'd prefer to have the blank lines numbered too, no problem. In fact there are a couple different ways to accomplish that.

One would be to just slightly change the formula from the example above. If you enter it this way:

```
=COUNTA(D1:D1)+1
```

FormCalc SST will number every line.

If that approach doesn't make sense to you, here's an even simpler formula for the *Line No.* column:

```
=D18+1
```

This formula simply adds 1 to the number from the row above it, thus numbering each line.

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More Things to Know

This section describes various FormCalc SST concepts.

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Form fields, columns, and column types

Here are some important concepts related to fields and columns on QuickBooks forms.

The terms *field* and *column* are basically interchangeable. Both refer to data entry fields on a QuickBooks form, but *column* is only used when talking about columns in the form's Detail area.

Which Fields and Columns are Accessible to FormCalc SST?

You might think that all fields on a QuickBooks form would be accessible, but that isn't so! Only fields which are accessible according to the following rules can sources of data for FormCalc SST formulas or destinations where it writes results.

- For Header and Footer fields: if you can move into the field by pressing the *Tab* or *Shift-Tab* keys, the field is accessible and can be used by FormCalc SST.
- For Detail area columns the rule is a bit different: if you can move into the field by pressing the *Tab* or *Shift-Tab* keys *on a blank row of the form*, then the column is accessible and can be used by FormCalc SST.

  Why must you be able to Tab into a column on a blank row of the form? Because columns accessible on a blank row are accessible to *all* Item types, not just a few.

  This simple rule up *many* new FormCalc SST users! Understanding it will make using FormCalc SST easier.

Most of the inaccessible fields are columns in the Detail area. Basically any column which has a grayed background won't be accessible. Also, any column which is supported by some Item types but not others won't be accessible. The following are examples:

Field Name	Description
U/M	Unit of Measure. This field is only supported for Inventory Part Items, so it is not accessible to FormCalc SST.
MPN	Manufacturer's Part Number. This field is available for several Item types but not all, so it is not accessible to FormCalc SST.

QuickBooks Column Types

After taking a snapshot of a QuickBooks form, one of the things you must do is assign column types to columns in the Detail area—at least the Item column, plus any column(s) where you will enter formulas. There are two reasons for this:

1. **FormCalc SST must know the location of the Item column to navigate the form.**

   When the Item column contains no data for three successive rows, that tells FormCalc SST to stop processing the Detail area of the form.

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2. **Some column types accept a limited range of data.**

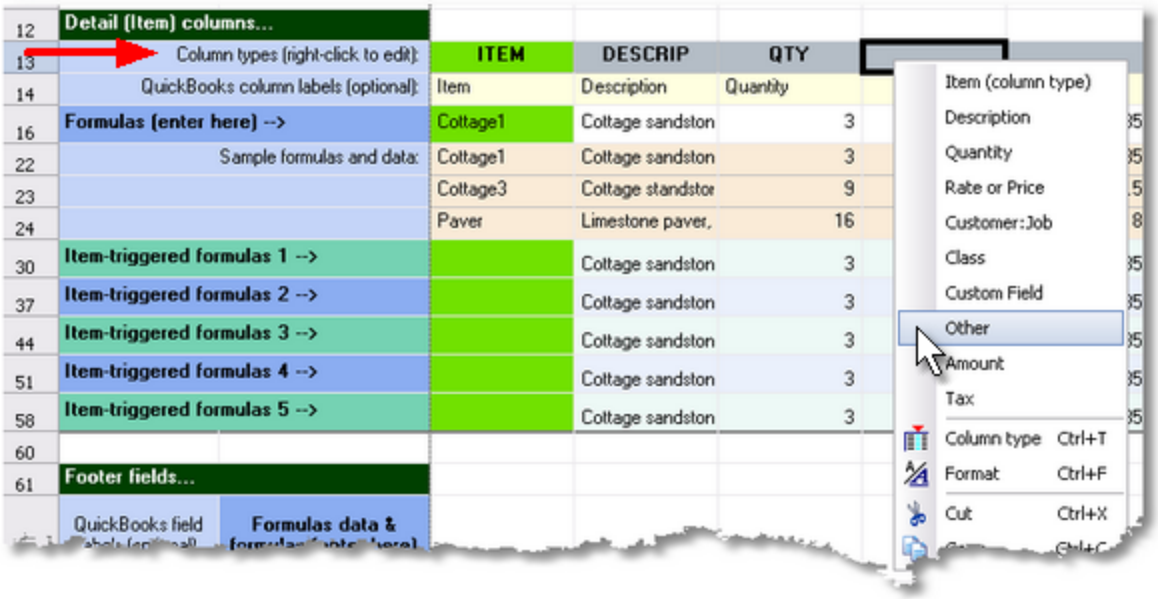
   The *Quantity* and *Rate* (or Price) columns, for instance, accept only numbers and reject numbers with more than five decimal places. By indicating the column type of such columns you give FormCalc SST the information it needs to help prevent errors by controlling the kind and format of data sent to QuickBooks. ("Errors" in this case would be pop-up message windows in QuickBooks which would cause form processing to stop.)

How to assign column types

There are two ways to assign a column's type:

A. Right-click the Column types row

- **Right-click** on the *Column types* row of the desired column, **then select a column type from the pop-up menu:**



or... B. Use the Column type button in the Editing toolbar

1. **Click on any cell** in the desired column.
2. **Click the Column type button** on the Editing toolbar:

3. A Column type dialog will open, where you can **select a column type:**

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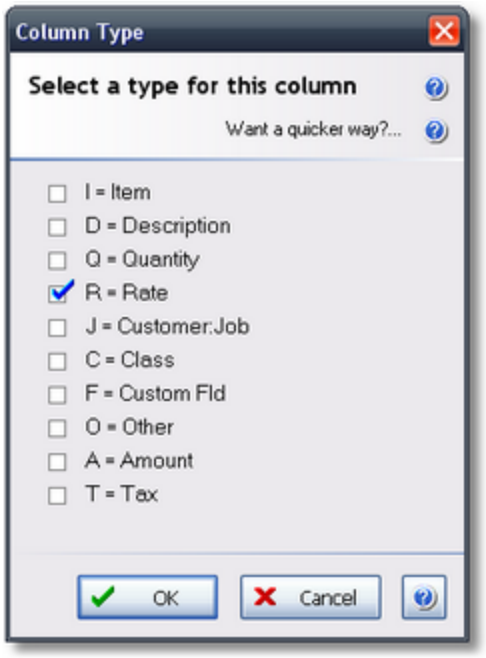

Which column type should I assign?

In most cases the choice of column type will be obvious: the Item column should be assigned the Item column type; the Quantity column should be assigned the Quantity column type; and so on.

But in a few cases you may not be sure which column type to use. Choosing between two of the column types may sometimes seem unclear, so here is some guidance about using them:

Column Type	Where to Use It
Custom Field	Use this type for custom fields brought into the form from the Item, Customer, Vendor, or Employee lists.
Other	Other is for columns with an unknown type, such as the *Other 1* and *Other 2* columns which are selectable during QuickBooks form customization.

Why don't I have to assign a type to Header and Footer fields?

Because FormCalc SST treats all Header and Footer fields the same—as the Custom Field type.

Why so many Header and Footer fields?

The first time or two that you take a snapshot of a QuickBooks form, you may notice that the Header and Footer sections of the Snapshot page seem to have too many fields in them.

The reason is that some QuickBooks buttons and other form controls appear to FormCalc SST as fields. Why is that? Because FormCalc SST follows the rules mentioned earlier in this section: anything which can be moved to using the *Tab* key is considered a field.

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If it seems there are too many fields in the Header section of the snapshot, you can verify them this way: click in to the very first field of the QuickBooks form, then observe where the caret (cursor) stops each time you press the *Tab* key. You will find that each of these locations corresponds to a row in the Header section of the snapshot.

To keep track of which of these locations corresponds to form fields you want FormCalc SST to access, you can label the fields as described below.

Field Labels, Column Labels

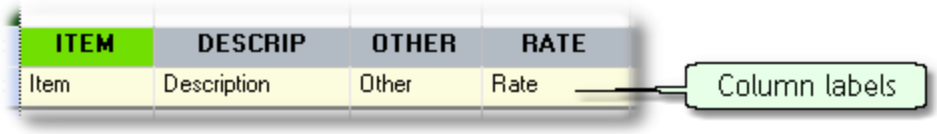
When FormCalc SST takes a snapshot of a QuickBooks form, the form's field and column locations are copied to unlabeled cells in the Snapshot page. In other words, these cells contain no information which can tell you the name of the corresponding QuickBooks form field or column.

FormCalc SST does not label snapshot fields and columns automatically, because it cannot obtain that information from QuickBooks.

The form data copied into each cell gives a clue about its corresponding field; but still, having no label on each field makes formula entry more difficult/confusing than it should be.

The purpose of *Field labels* columns and the *Column labels* row is to give you a place to label the fields and columns of the snapshot. Using them is completely optional, but it can be a big help in "keeping your bearings" within the snapshot page, so that the formulas you enter will refer to the desired fields and columns.

Choosing a Column type automatically enters a suggested label for the column; however, you may change the label to anything you want.



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Formulas and cell references

FormCalc SST formulas are similar to those in other spreadsheet programs.

Formula Requirements

The main requirement, is that all formulas begin with an equal sign ('='):

```
=SUM(E19,B7:B9)

=34.5*H14

=TODAY()
```

Beyond this requirement of course, the formula must also be "legal"—it must be constructed properly and cannot reference out-of-bounds cells or cell ranges, etc.

In the Snapshot sheet, cells containing valid formulas are highlighted with a yellow background, and those which have errors are highlighted with a red background.

Where You May Enter Formulas

This screenshot below shows the areas where you may enter formulas in FormCalc SST.

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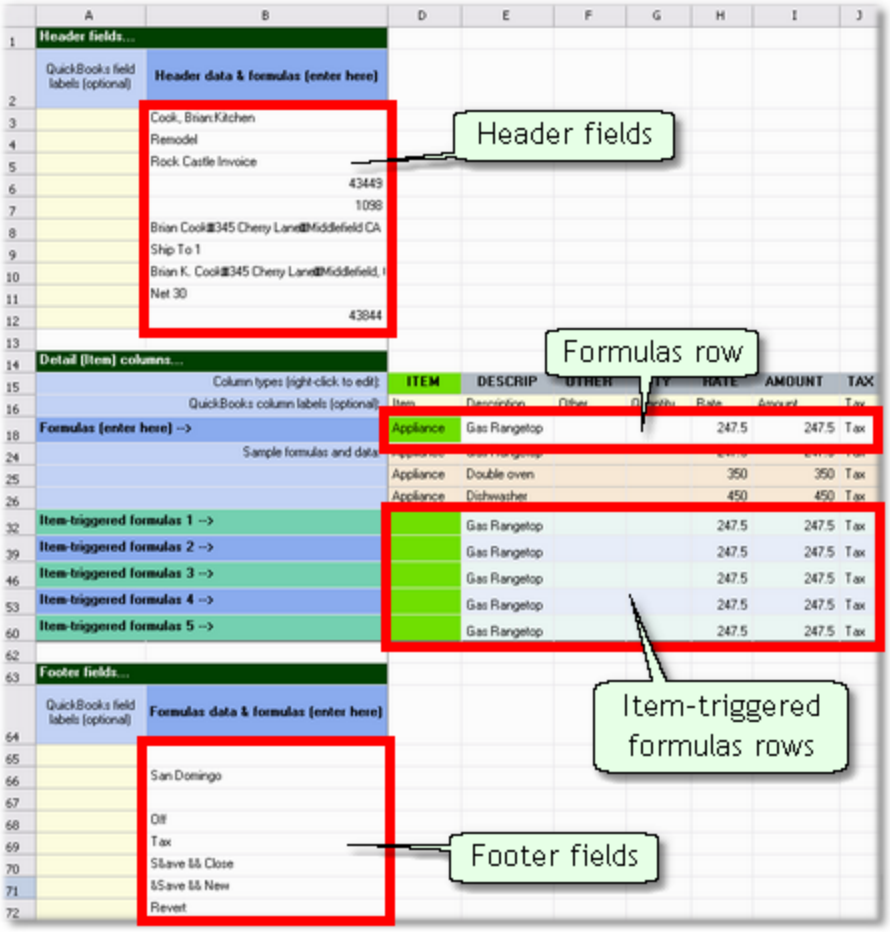

Most of your formulas will be entered in either these two areas:

- **Formulas row:** formulas entered here will be applied to every row of data on your QuickBooks form *except* rows processed by Item-triggered formulas.
- **Item-triggered formulas rows:** formulas entered on these rows get applied only to QuickBooks form rows which have a matching Item name. (This lets you control where special calculations like totals or subtotals get done, by your placement of certain Item names on the form.)

References to Other Cells and Cell Ranges

Cell references in formulas

To refer to another cell in a formula, enter the cell's coordinates. For instance, the following formula multiplies 34.5 times the value in cell H14.

```
=34.5*H14
```

To refer to a range of cells, specify the coordinates of the upper left and lower right cells of the range, separated by a colon (':'). This formula sums the range of cells consisting of B7, B8, and B9:

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```
=SUM(B7:B9)
```

As you may have guessed from the "upper left and lower right" phrase in the above paragraph, a cell range *may* refer to a block of cells which spans more than one row and/or column.

Cell referencing limitations

To prevent errors, FormCalc SST only allows formulas to refer to *specific cell ranges* on the Snapshot page. Each formula is checked as you enter it, and if the formula refers to an out-of-bounds cell one of two things will happen:

1. **The formula will be highlighted** in the error color (red background), or
2. **A message will be displayed** telling you FormCalc SST has adjusted (corrected) the formula's cell references.

Allowed cell references:

Header formulas	Can refer to other Header cells, to Footer cells, and to the entire range of Formulas (Detail) cells but not to *individual* Formulas cells.
Formulas row formulas (in the Detail area)	Can refer to Header cells, Footer cells, other cells on the Formulas row, and to the entire range of Formulas (Detail) cells.
Item-triggered formulas (in the Detail area)	Can refer to Header cells, Footer cells, other cells on the *same* Item-triggered formula row (i.e., not on other Item-triggered rows), cells on the Item-triggered row's anchor rows, and to the entire range of Formulas (Detail) cells. (Item-triggered rows have several anchor rows, to support the mini-spreadsheet feature.)
Footer formulas	Can refer to other Footer cells, to Header cells, and to the entire range of Formulas (Detail) cells but not to *individual* Formulas cells.

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References to Footer fields can be *legal* (allowed) without being *practical*.

Most formulas which refer to either the Header or Footer areas will refer to Header fields and not to Footer fields. Why?

1. Custom fields from the Customer and Vendor lists can only appear in the form's Header. So formulas which access this sort of custom field data must refer to cells in the Header section.
2. In most Footer fields, data entry must be done by selecting an option from a drop-down list. Until FormCalc SST can work with drop-down lists, it won't be able to work with those fields—even though they appear in the Footer section of the Snapshot page.

   Often, the only Footer field FormCalc SST may be able to work with is the Memo field, if it is present.

Referring to "a whole column"—the entire range of Formulas (Detail) cells ...or "Close Enough" cell references

A frequent need in FormCalc SST formulas is to refer to an entire column of data in the Detail area of a QuickBooks form—to total the column, get an average or count of items in it, or to do other calculations based on the whole column. But since the entire possible range of Detail cells is not present in a snapshot, how do you tell FormCalc SST that is what you want?

The solution is simple: have your formula refer to a cell range which includes the *first* and *last* row in the sample rows part of the Detail area. (Sample rows are the ones with tan backgrounds, immediately below the Formulas row.) For example, suppose you are creating a formula on the Item-triggered formulas 1 row, and you want it to total the Quantity column, which happens to be column H of the form snapshot. You would enter the formula something like this:

```
=SUM(H24:H26)
```

As the red box indicates in the screenshot below, this formula refers to a cell range which includes the *first* and *last* sample row in column H:

	A	B	D	E	F	G	H
1	Header fields...						
14	Detail (Item) columns...						
15		Column types (right-click to edit):	ITEM	DESCRIP	OTHER	OTHER	QTY
16		QuickBooks column labels (optional):	Item	Description	OUT Date	IN Date	Quantity
18	Formulas (enter here) -->		Tool Rental	Skidsteer loader	11/5/2013	11/7/2013	2
24		Sample formulas and data:	Tool Rental	Skidsteer loader	11/5/2013	11/7/2013	2
25			Tool Rental	Metal bending bra	11/5/2013	11/6/2013	1
26			Tool Rental	Utility trailer, 10-fo	11/5/2013	11/15/2013	10
32	Item-triggered formulas 1 -->			Skidsteer loader	41583	41585	=SUM(H24:H26)

During form processing, FormCalc SST will convert this sample rows reference into a reference to the form's *entire column* of Quantity data.

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Actually, there's an even easier way. Instead of the formula shown above, you could enter any of the following combinations (and many others):

```
=SUM(H1:H1)

=SUM(H5:H9)

=SUM(H3:H12)
```

In other words, just have your formula refer to the desired column (H in this case) and *any range of rows above the Detail area* of the snapshot. FormCalc SST will immediately and automatically convert what you enter to a reference to the appropriate range of sample rows. So the result of any of the three entries above will be:

```
=SUM(H24:H26)
```

Entering "whole column" cell ranges in the form "=SUM(H1:H1)" is easiest. That way, you don't have to be concerned with knowing the exact beginning/ending coordinates of the sample rows area.

Understanding how references to a "whole Detail column" really work.

As mentioned, FormCalc SST changes these references at runtime (when processing a QuickBooks form) to refer to the actual set of Detail rows present at the time, but there is one more important point to understand:

- The formula references are changed to refer to all Detail rows *up to and including the prior row.* In other words, "all Detail rows" does not include the QuickBooks form row which is currently being processed.

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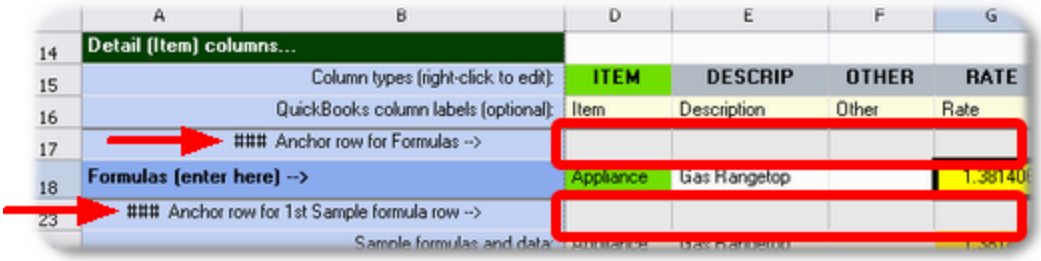
Anchor rows for your formulas

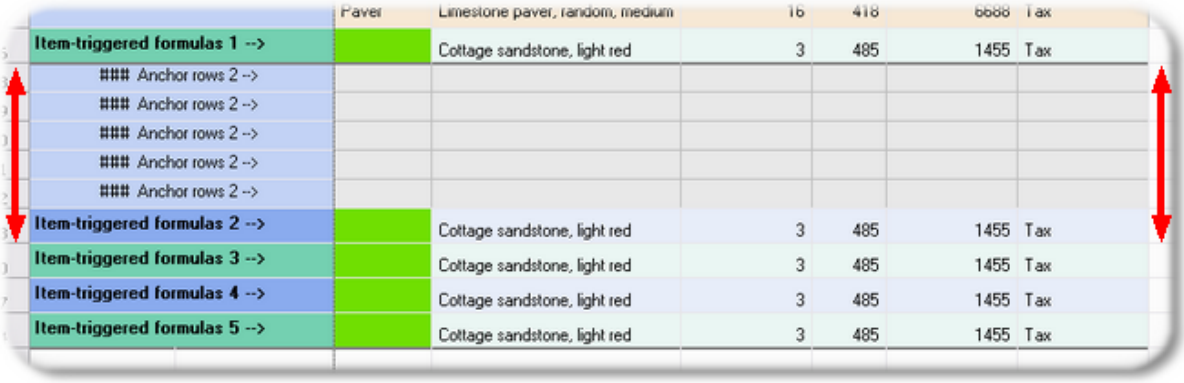
Anchor rows allow your FormCalc SST formulas to refer to QuickBooks form data which won't actually be available until a form is being processed. In other words, they serve as "place holders" for QuickBooks data which will be available "later", when FormCalc SST is processing the form.

Where are They?

On the Snapshot page, every Detail area row which allows formula entry has at least one anchor row immediately above it. The Formulas and Sample formulas and data rows each have one anchor row:



Item-triggered formula rows each have *five* anchor rows, which allows them to support the mini-spreadsheet feature. This screenshot shows the anchor rows for the *Item-triggered formulas 2* row:



But I don't see them on *my* Snapshot page...where are they?

You won't need anchor rows all of the time—and some people may never use them—so they are hidden by default. You can show or hide them by using the [**A**] button menu in the upper right corner of the main window:

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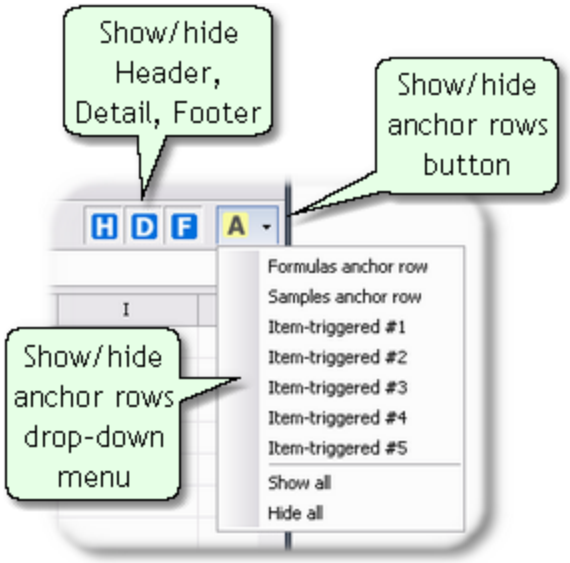
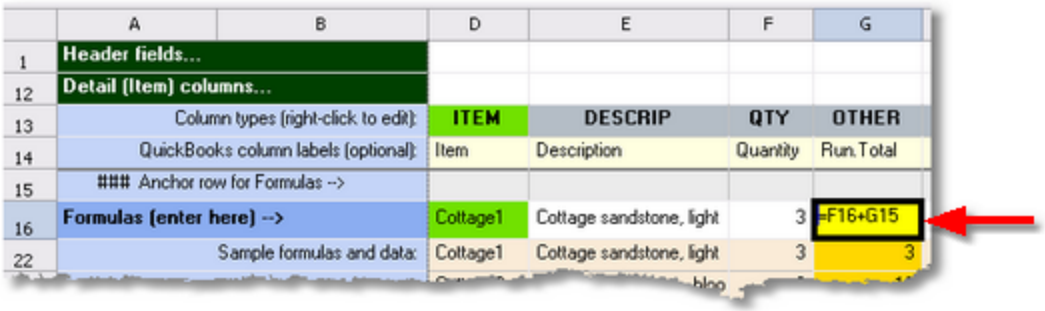


How Do I Use Anchor Rows?

A common use for anchor rows is in formulas which compute a running total or other calculation involving data from the "prior" row on the form.

Here's an example. The following formula, entered on the Formulas row, refers to the anchor row in a way which will compute a running total in the *Quantity* column.



For details, see the Running total calculation topic in How-To Examples.

Another, more advanced, use of anchor rows is in building formulas which may refer to *several prior rows of data*. See the the mini-spreadsheet topic for a discussion of that technique.

Can I enter formulas or sample data in anchor rows?

You may enter sample data on them, but not formulas.

Entering example data on anchor rows is a way to create a "mock environment" for testing your formulas. This is especially helpful when several anchor rows are available, as for Item-triggered formula rows.

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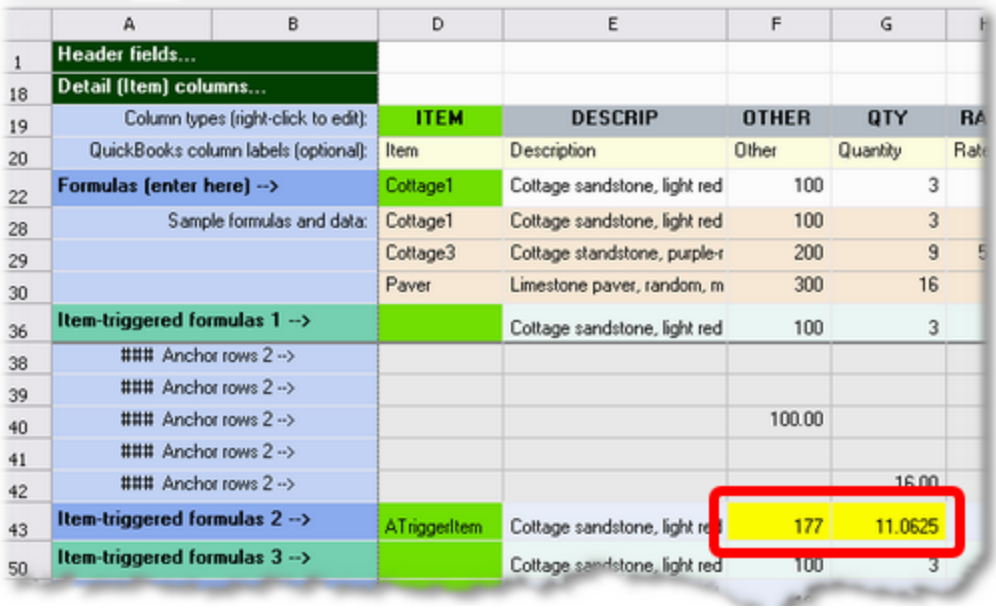
The following example from the mini-spreadsheet topic shows how data entered on anchor rows lets you see immediate results for formulas entered on the Item-triggered row. Without this example data (444.00 and 10.00) the first real test of those formulas would come when a QuickBooks form was actually processed.



	A	B	D	E	F	G
1	Header fields...					
18	Detail (Item) columns...					
19	Column types (right-click to edit):		ITEM	DESCRIP	OTHER	QTY
20	QuickBooks column labels (optional):		Item	Description	Other	Quantity
22	Formulas (enter here) -->		Cottage1	Cottage sandstone, light red	100	3
28	Sample formulas and data:		Cottage1	Cottage sandstone, light red	100	3
29			Cottage3	Cottage standstone, purple-r	200	9
30			Paver	Limestone paver, random, m	300	16
36	Item-triggered formulas 1 -->			Cottage sandstone, light red	100	3
38	### Anchor rows 2 -->					
39	### Anchor rows 2 -->					
40	### Anchor rows 2 -->				100.00	
41	### Anchor rows 2 -->					
42	### Anchor rows 2 -->					16.00
43	Item-triggered formulas 2 -->		ATriggerItem	Cottage sandstone, light red	177	11.0625
50	Item-triggered formulas 3 -->			Cottage sandstone, light red	100	3

You can change data on anchor rows as often as you like, to see how your formulas work with different data.

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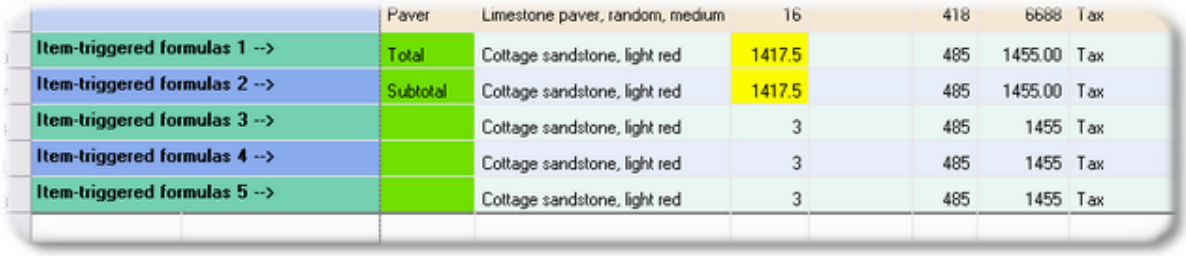
Item-triggered formulas

This topic provides details related to Item-triggered formulas.

FAQ (Frequently Asked Questions)

"Where are Item-triggered formula rows located?"

You will find them toward the bottom of the Detail section on the Snapshot page. Prior to version 3 FormCalc SST supported five Item-triggered formulas; beginning with version 3 it now supports ten.



	Paver	Limestone paver, random, medium	16	418	6688	Tax
Item-triggered formulas 1 -->	Total	Cottage sandstone, light red	1417.5	485	1455.00	Tax
Item-triggered formulas 2 -->	Subtotal	Cottage sandstone, light red	1417.5	485	1455.00	Tax
Item-triggered formulas 3 -->		Cottage sandstone, light red	3	485	1455	Tax
Item-triggered formulas 4 -->		Cottage sandstone, light red	3	485	1455	Tax
Item-triggered formulas 5 -->		Cottage sandstone, light red	3	485	1455	Tax

"Why are they called 'Item-triggered' formulas?"

Because they are formulas which FormCalc SST only applies when it encounters a specific Item name on a QuickBooks form. That is, the Item name "triggers" the formulas.

QuickBooks Items used with Item-triggered formulas are sometimes referred to simply as *trigger Items*.

"What are Item-triggered formulas used for?"

Their most common use is for totaling and subtotaling columns on QuickBooks forms, but they are also used for doing calculations across several rows of a QuickBooks form—referred to as the mini-spreadsheet feature.

"What Item types should I use with them?"

See the subtopic below, Tips for Items (for Item-triggered Formulas).

"Howshould I enter Item names for Item-triggered formulas?"

You can enter Item names in FormCalc SST so that they will match Item names in QuickBooks, in one of two ways:

- **Exact match.** This happens when an Item name you have entered in FormCalc SST exactly matches an Item name in QuickBooks—except that capitalization is ignored: *ItemName, itemname,* and *ITeMNAMe* would all be matches for a QuickBooks Item named *ItemName*.
- **Wildcard match.** This happens if you have used wildcard characters in an Item name in FormCalc SST and a QuickBooks Item name is encountered which matches the wildcard

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name. FormCalc SST supports ***** and **?** as wildcard characters: ***** matches any number of characters in an Item name, and **?** matches any single character. Examples:

Local Tax* would match these QuickBooks Item names:

Local Tax - Jacksonville
Local Tax - Key West
Local Tax - Orlando

Local Tax - Jack* would match these QuickBooks Item names:

Local Tax - Jacksonville
Local Tax - Jacksonville Beach

But not:

Local Tax - Key West
Local Tax - Orlando

Local Tax 3?? would match all of these QuickBooks Item names:

Local Tax 301
Local Tax 348

But not:

Local Tax 214
Local Tax 179

"Why does FormCalc SST have more than one Item-triggered formula row?"

This allows you to set up several different sets of formulas, each triggered by the appearance of a different Item name on a QuickBooks form. For instance, you might have set of formulas for subtotaling a column, and another set for providing a grand total or for totaling other data.

"Can the same trigger Item appear more than once on a form?"

Yes. That's how subtotaling is usually done: you insert the Item name on each QuickBooks form row where you want a subtotal calculated. Each time FormCalc SST encounters the Item name, it then provide a subtotal for all rows since the most recent prior occurrence of the Item name.

Tips for Trigger Items (Items Used with Item-triggered Formulas)

- FormCalc SST can work with any QuickBooks Item name, but single-level Item names like "MyItem" are generally easier to work with than multi-level Item names like "MyItem:MySubItem", because less typing is required.
- It's best to set up a few QuickBooks Items *specifically* for working with FormCalc SST's Item-triggered formulas. This lets you give them descriptive Item names like "Subtotal", "Total", or "Labor Hours Subtotal". It also prevents conflicts with other Item uses such as inventory management or for recording sales.

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- **We recommend these item types** for use with Item-triggered formulas:

  Service
  Non-inventory Part
  Other Charge

  Most other item types *should be avoided* as FormCalc SST trigger Items, because using those other types for triggering calculations may inadvertently affect inventories or account balances in ways you did not intend.

- **Avoid the following Item types as FormCalc SST trigger Items:**

  Subtotal
  Group
  Discount
  Payment
  Sales Tax Item
  Sales Tax Group

  Why? bbecause (1) they block FormCalc SST's access to some QuickBooks form columns, and (2) FormCalc SST may even malfunction if you use them!

- There two possible accounting objectives for FormCalc SST trigger Items: either (1) you *do* want them to post income/expense when used on a form, or (2) you *do not* want them to post income/expense when used.

  When you *do* want the Item to post income/expense...

  These will usually be Items which already exist in your QuickBooks Items list—Items you are already using. For example, maybe you have a *Freight Charges* Item and you want FormCalc SST to calculate the freight amount on invoice lines where this Item name appears. In such situations you simply use the existing Item name (*Freight Charges*) as a FormCalc SST trigger Item—you *do not* need to set up a separate Item for that purpose.

  When you *do not* want the Item to post income/expense...

  When an Item is being used only to trigger a FormCalc SST calculation, you need to guard against using the Item in a way that accidentally posts income or expense.

  > *The only way to accidentally post income or expense by using an Item with FormCalc SST, is if a FormCalc SST formula writes its results into the Rate or Amount columns of your QuickBooks form.*

  The Item types recommended as FormCalc SST trigger Items (Service, Non-inventory Part, and Other Charge) require you to specify a posting account when you set up the Item, so one way to avoid accidentally posting income or expense with these Item types is by making them post to an equity-type account which you've created specifically for this purpose. You might create an equity-type account named something like "FormCalc SST Item Postings" (to remind you of its purpose), and use it as the posting account for any FormCalc SST trigger Items you set up.

  The benefit of using a *separate* equity account like this, is that it makes finding errors easier. How? The account should never have a balance unless an amount has been posted to it. So if

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you look at the Chart of Accounts list or print a balance sheet and notice a balance for the "FormCalc SST Item Postings" account, you will immediately know that you need to investigate to find out why some transaction are posting to that account.

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Re-using formulas from the prior Snapshot

Where are My Old Formulas?

When you take a new snapshot of a QuickBooks form, it will overwrite any formulas you may have entered on the Snapshot tab of the current FormCalc SST file.

If you've spent much time entering formulas, having them overwritten this way can be disappointing...until you learn that FormCalc SST makes a copy of them each time you take a new snapshot. Where is this copy of your formulas? On the OLD Snapshot tab.

To retrieve and reuse your old formulas, click on the OLD Snapshot tab. There you will find a copy of the text and formulas which were on the Snapshot tab immediately before taking the current snapshot. You can Copy (to the Windows clipboard) individual cells' formulas here, then go to the Snapshot tab and Paste them into the desired locations.

Notes:

- **Copy and Paste formula cells *individually*** rather than as groups of cells. FormCalc SST's formula checking logic may raise errors when a group of formulas is Pasted in.
- If you needed to take the new snapshot because of rearrangement of your QuickBooks form, **many of the formulas** you Copy and Paste into the Snapshot sheet **may have to be adjusted** (edited) after Pasting them in.

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Mini-spreadsheet basics

The mini-spreadsheet feature lets you do calculations access to multiple rows and columns of data on your QuickBooks forms.t

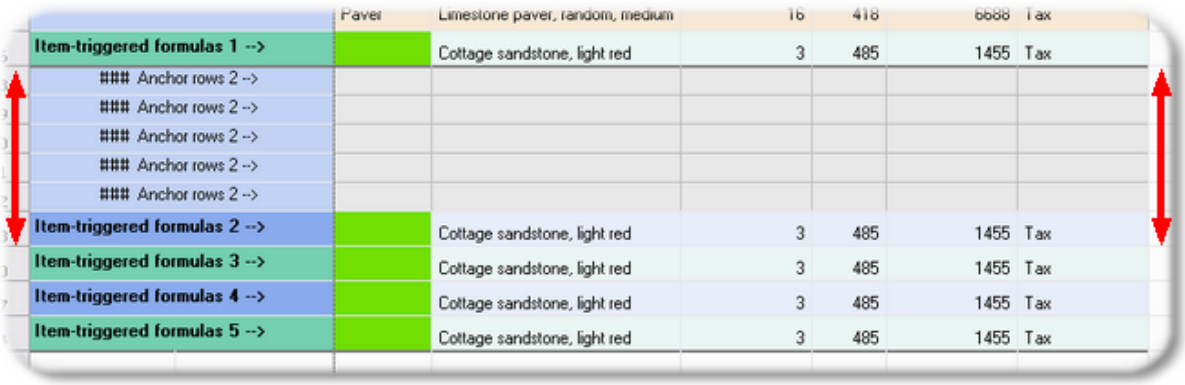
The Mini-Spreadsheet Idea

Mini-spreadsheets are just an extension of the anchor rows concept. They provide a way for formulas to refer to "prior" rows on the QuickBooks form:

- The Formulas row has a single anchor row above it, giving its formulas access to the immediately-prior row of data on a QuickBooks form.
- Item-triggered formula rows each have *five* anchor rows above them, giving them access to the *five* prior rows of data. (Blank rows are ignored and are not included in the count of data rows.)

Here is a screenshot of an Item-triggered formulas row on a Snapshot page, with its anchor rows section expanded. The red arrows indicate the vertical range of the *Item-triggered formulas 2* row and its five anchor rows.

See the anchor rows topic for details about showing/hiding anchor rows.



Think of this block of cells as representing up to six rows in the Detail section of a QuickBooks form. Formulas on the *Item-triggered formulas 2* row can refer to any of its anchor row cells, and when a QuickBooks form is processed those formulas will actually refer to data fields of the five rows of QuickBooks data above the row where the trigger Item appears.

A Quick Mini-Spreadsheet Example

Here is an example to help you understand the relationship between anchor rows and QuickBooks form rows.

This screenshot shows a QuickBooks Invoice with several rows of data. The last row holds a trigger Item for an Item-triggered formula, indicated by a red arrow.

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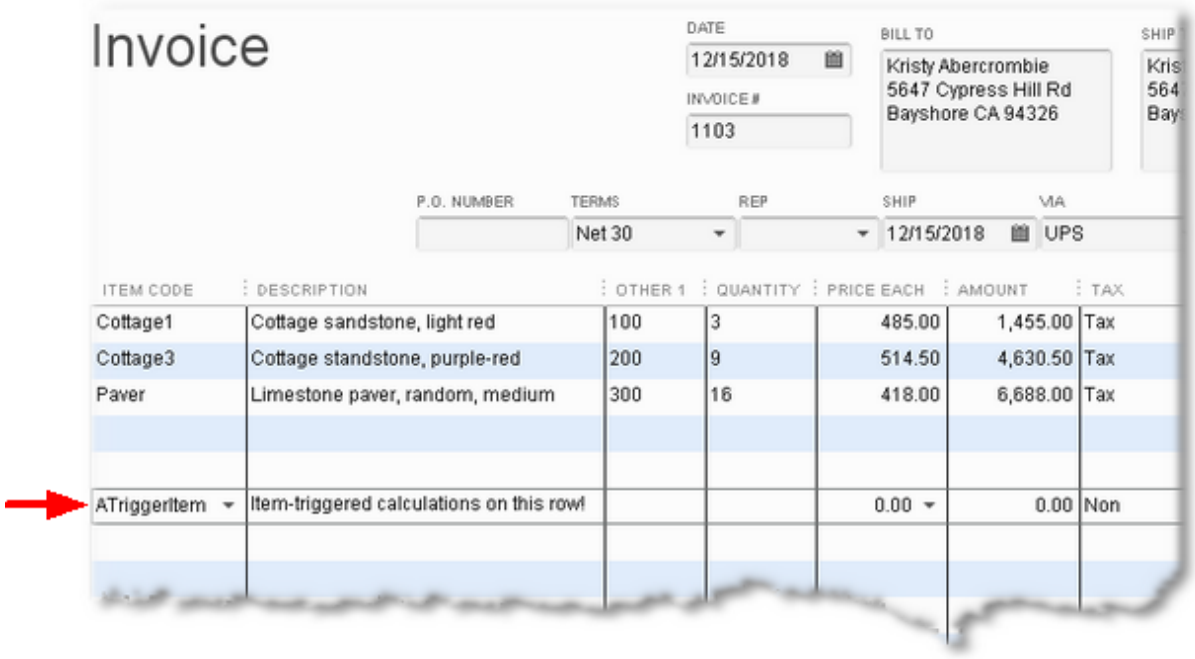
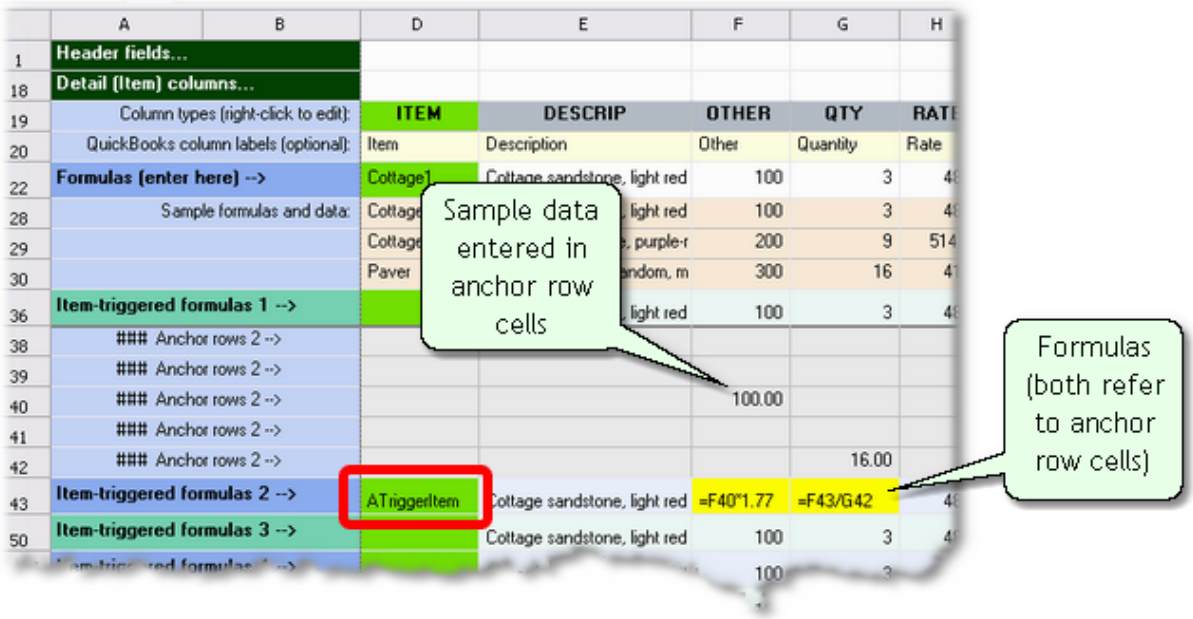


Below is a screenshot of an Item-triggered formulas row in FormCalc SST with two simple formulas, both of which refer to anchor row cells.

➔ The formulas aren't intended to solve a real-world problem, they just demonstrate how mini-spreadsheets work.



Things to note:

- **The formula in the *Other* column** multiplies a value from the third-prior anchor row by 1.77:

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```
=F40*1.77
```

- **The formula in the *Quantity* column** divides the result of the first formula by an amount from the 1st-prior anchor row (the fifth anchor row from the top).

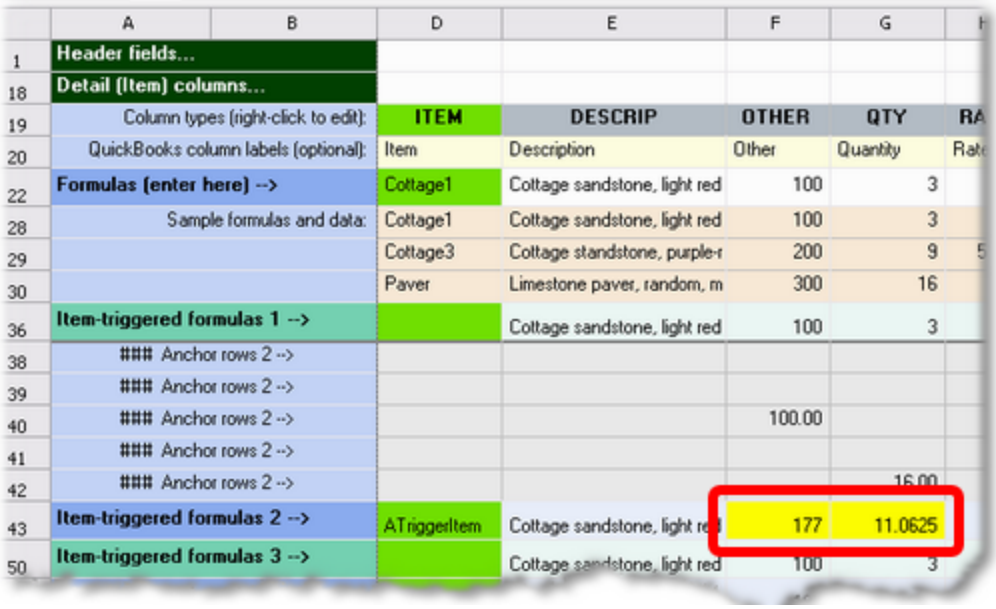
```
=F43/G42
```

- **Sample data has been entered in anchor row cells** targeted by the formulas, to allow seeing formula results immediately.

  You may enter sample data anywhere in anchor rows, and change or delete it whenever you wish.

- **The trigger Item name** shown on the QuickBooks form, *ATriggerItem*, has been entered on the *Item-triggered formulas 2* row.

Here's another screenshot of the same area, with calculated results showing in the formula cells.



	A	B	D	E	F	G
1	Header fields...					
18	Detail (Item) columns...					
19	Column types (right-click to edit):		ITEM	DESCRIP	OTHER	QTY
20	QuickBooks column labels (optional):		Item	Description	Other	Quantity
22	Formulas (enter here) -->		Cottage1	Cottage sandstone, light red	100	3
28	Sample formulas and data:		Cottage1	Cottage sandstone, light red	100	3
29			Cottage3	Cottage standstone, purple-r	200	9
30			Paver	Limestone paver, random, m	300	16
36	Item-triggered formulas 1 -->			Cottage sandstone, light red	100	3
38	### Anchor rows 2 -->					
39	### Anchor rows 2 -->					
40	### Anchor rows 2 -->				100.00	
41	### Anchor rows 2 -->					
42	### Anchor rows 2 -->					16.00
43	Item-triggered formulas 2 -->		ATriggerItem	Cottage sandstone, light re	177	11.0625
50	Item-triggered formulas 3 -->			Cottage sandstone, light red	100	3

When we process the QuickBooks Invoice shown earlier, this is the result:

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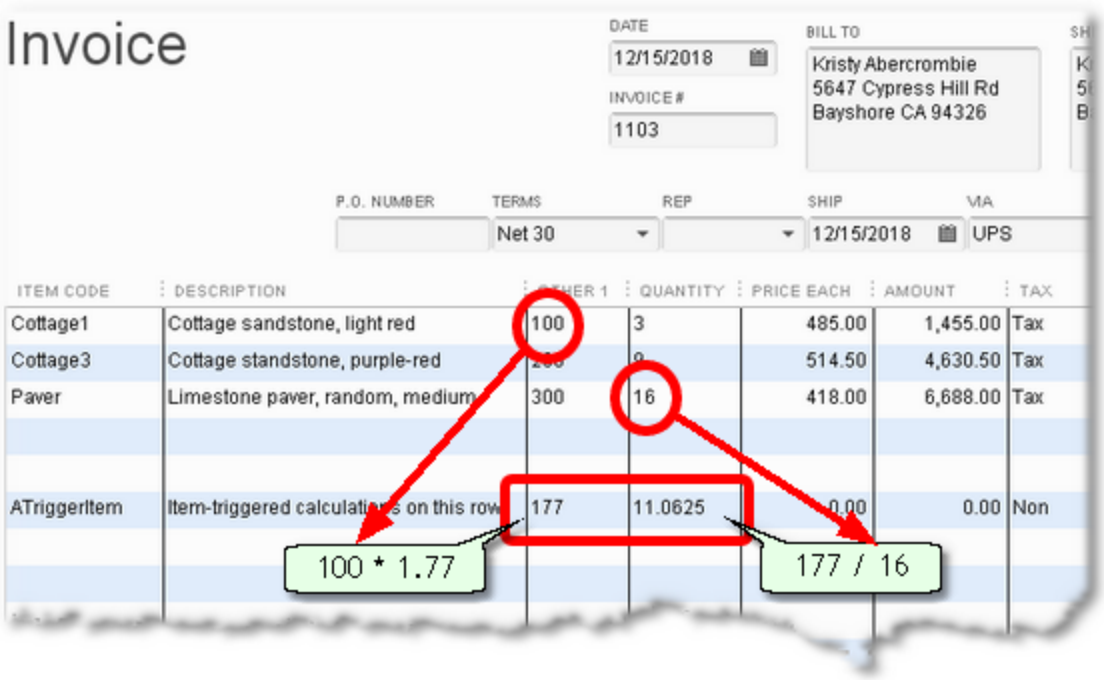

Points to note about mini-spreadsheets:

1. Mini-spreadsheet formulas refer to QuickBooks form rows *relative to* the row where the trigger item is encountered on the form.

2. FormCalc SST ignores blank lines between data rows on your forms. Said differently, FormCalc SST operates as if QuickBooks forms *have no blank lines at all.*

   This can lead to some confusion until you get used to it. Like FormCalc SST, *you* must remember to ignore blank lines as you build mini-spreadsheet formulas!

See also

A mini-spreadsheet example

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Dates, times, and date calculations

If you have limited spreadsheet experience, the following introduction to how spreadsheets store dates and times will help you quickly become comfortable with handling date and time information in FormCalc SST, allowing you to do date and time calculations and much more.

How Spreadsheets Store Dates and Times

Spreadsheets—and many other computer programs—internally represent date and time information as a single number. The following number represents 7:50 am. on November 15, 2013:

41593.327

The whole-number part (41593) represents the date, November 15, 2013, and the fractional part (.327) represents the time, 7:50 am.

This is sometimes called the "1900 date system" because the whole number part represents the number of days elapsed since January 1, 1900.

Probably the two most important things to know about dates and/or times stored this way are:

1. **Because dates and times are stored as numbers, date and time math is easy.**

   If today is represented by 41593 and yesterday is represented by 41592, it's easy to see how you can calculate the number of days between two dates (41593 - 41592 = 1 day). Calculating the number of hours, minutes, and seconds between two times is just as easy.

2. **You can format date/time numbers in many different ways.**

   Here are differently-formatted representations of 41593.327:

11/15/2013	*Date only*
11/15/2013 7:50:52 AM	*Mixed date and time*
7:50 AM	*Time only*
15.November.13	*...and many other ways*

Changing the format of a date/time number *does not* change the number, only the way it is displayed.

See also:

A simple date math example

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Formatting data and calculated results

Like most spreadsheets, FormCalc SST gives you options for formatting calculated results (for writing back to QuickBooks), and also for formatting data cells—cells which don't contain formulas but to which your formulas may refer.

Why Format Cells?

Formula Cells

The results calculated by formulas get written to your QuickBooks form. So, formatting formula cells not only makes calculated results more readable in FormCalc SST but also determines how those results will appear in QuickBooks.

Data cells

Data cells are those which don't contain formulas but to which formulas may refer. For instance, if a formula on the Formulas row refers to a cell in the Header section for a number it uses, you may consider that Header cell a data cell. The formula might also refer to some other cell on the Formulas row, or to a cell on its anchors row. Both could be considered data cells.

Formatting data cells is always optional. The main reason to do so is to make the sample data they contain (if any) more readable.

For example, spreadsheet cells represent date and time data internally as a decimal number such as 41596.775—something most of us would not recognize easily as a date or time. But a Date or Time format can be applied to 41596.775 so that it is displayed as 18 November 2013 or as 6:35pm. (The date and time are both encoded in the number 41596.775.)

You use the *Format data or results* dialog (described next) to format both data cells and formula cells.

Formatting a Cell

To format a cell, use the *Format data or results* dialog:

1. **Click on the cell** you want to format.

   FormCalc SST's main focus is on formatting *formula* cells. So if you click on an anchor row or other nearby cell, the formula cell may be the one which actually gets formatted.

2. Either **click on the Format button** in the editing toolbar, **or right-click the cell and select Format from the pop-up menu,** as shown below.

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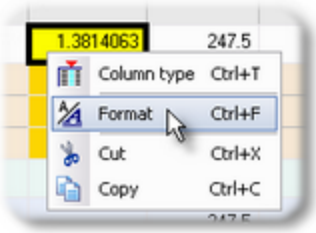
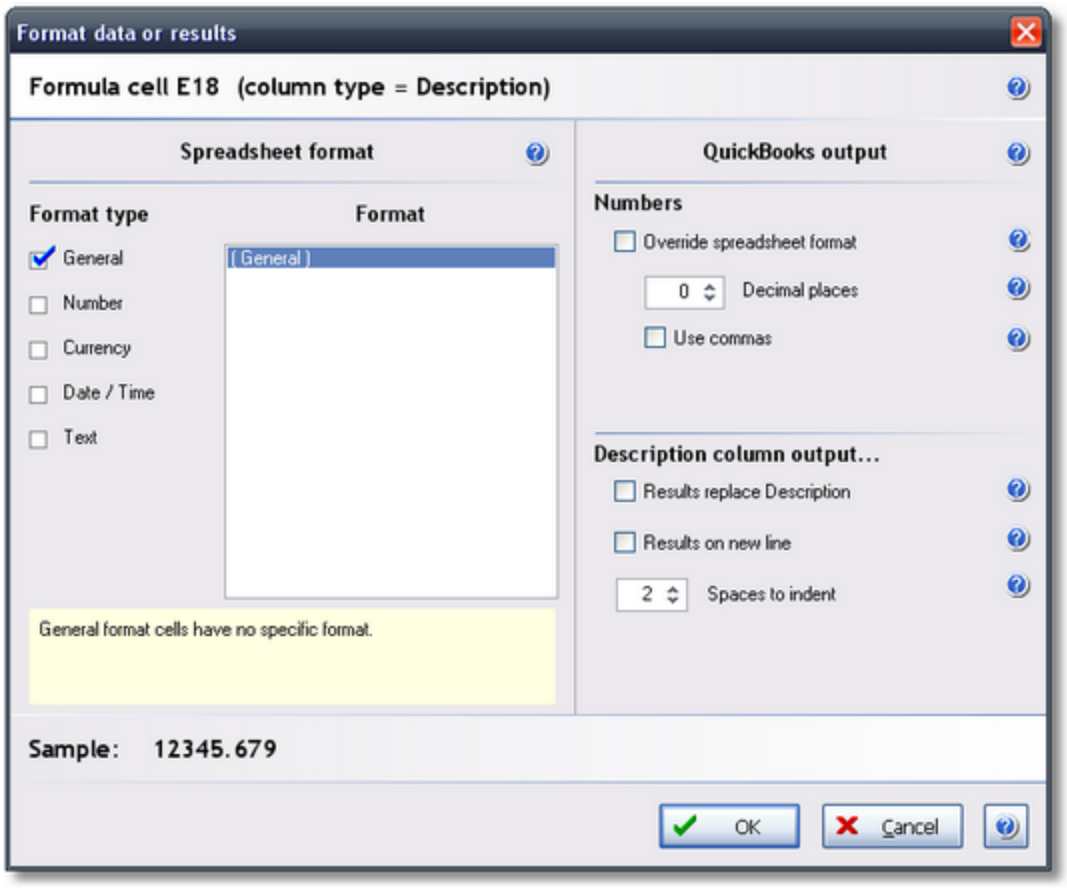


The *Format data or results* dialog will open (shown farther below)

3. **Select the formatting options you want.**
4. **Click OK** to close the dialog.

The Format data or results *Dialog*



➔ The column type of the current Snapshot column determines which formats are available. If a format isn't available in this dialog and you think it should be, check to see it the correct column type has been assigned.

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Spreadsheet format

This section in the left pane of the dialog, is where you choose a format type and a format to apply to the cell you are formatting.

QuickBooks output

This section in the right pane of the dialog, gives you additional control over how the cell's calculated results will be sent to QuickBooks.

Numbers

The spreadsheet formatting options available for numbers (in the left pane) are a bit limited. Many of them support no more than two decimal places, while some QuickBooks fields allow up to five decimal places (Quantity and Rate columns) or more. The Numbers section lets you override a spreadsheet cell's format when sending its calculated result to QuickBooks, giving you more control over **decimal places** and whether **commas** are used.

Though omitted from the screenshot above, newer editions of FormCalc SST support yet another kind of override: sending results to QuickBooks as **mixed fractions.** For instance, if a result is calculated in FormCalc SST as 1.75, selecting this override sends the result to QuickBooks as 1-3/4. Negative numbers are sent surrounded by parentheses: -2.5 would be displayed as (2-1/2).

Description column output

This section only appears when you are formatting the Description column.

As you probably know, when you select an Item on a QuickBooks form the Description column is automatically filled with the Item's description. You may or may not want to overwrite the Item description with results sent from FormCalc SST. This section gives you options for whether or not to overwrite the description, whether results appear on a separate line from it, and how many spaces to indent the results.

"Help bubbles"

Help bubbles provide detailed information about the various formatting options.. Hovering the mouse cursor over a help bubble displays a pop-up window with information about the adjacent option.

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QuickBooks Sales Orders and Purchase Orders

QuickBooks' Sales Order and Purchase Order forms work a bit different from other forms. To prevent confusion when working with them in FormCalc SST you need to understand those differences.

Working with Sales Order (SO) and Purchase Order (PO) Forms

Unique Columns in SOs and POs

QuickBooks may automatically add some of the following columns toward the right side of a SO or PO form:

Clsd	(Closed)
Rcv'd	(Received)
Bkordered	(Backordered)
Invoiced	

These columns may not necessarily appear when you first enter lines on a new PO or SO. Often they will be added later if/when you edit the form. The *Backordered* column may not appear until you receive Items against a PO, for instance.

QuickBooks displays the *Rcv'd, Invoiced,* and *Backordered* columns with a gray background, indicating they are not directly accessible to you. However, the *Clsd* column is not grayed by QuickBooks, so it is accessible to you but works differently from other columns. FormCalc SST cannot read from or write to the *Clsd* column. That's something you probably wouldn't want FormCalc SST to do anyway, but you need to understand that trying to write to it will likely cause QuickBooks to display an error message.

Another column to know about...

Man. Part Num	(Manufacturer's Part Number)

The Man. Part Num column, if you include it in your PO form's template, is most peculiar of all. QuickBooks sometimes makes it inaccessible. FormCalc SST was not designed to handle this situation; however, working around the problem is easy, as described below.

➔ In some cases FormCalc SST can detect that a QuickBooks form's column such as *Clsd* is inaccessible to it. When that happens, FormCalc SST displays ****No Access**** in that column of the Snapshot worksheet.

Rules for using FormCalc SST with SO and PO Forms

1. Don't try to read from or write to the *Clsd* column with FormCalc SST. It will fail.
2. In PO forms, always set up the form template so that the *Man. Part Num* column comes after (to the right of) any columns referenced by your FormCalc SST layout. Otherwise, FormCalc SST likely will not be able to process the form.

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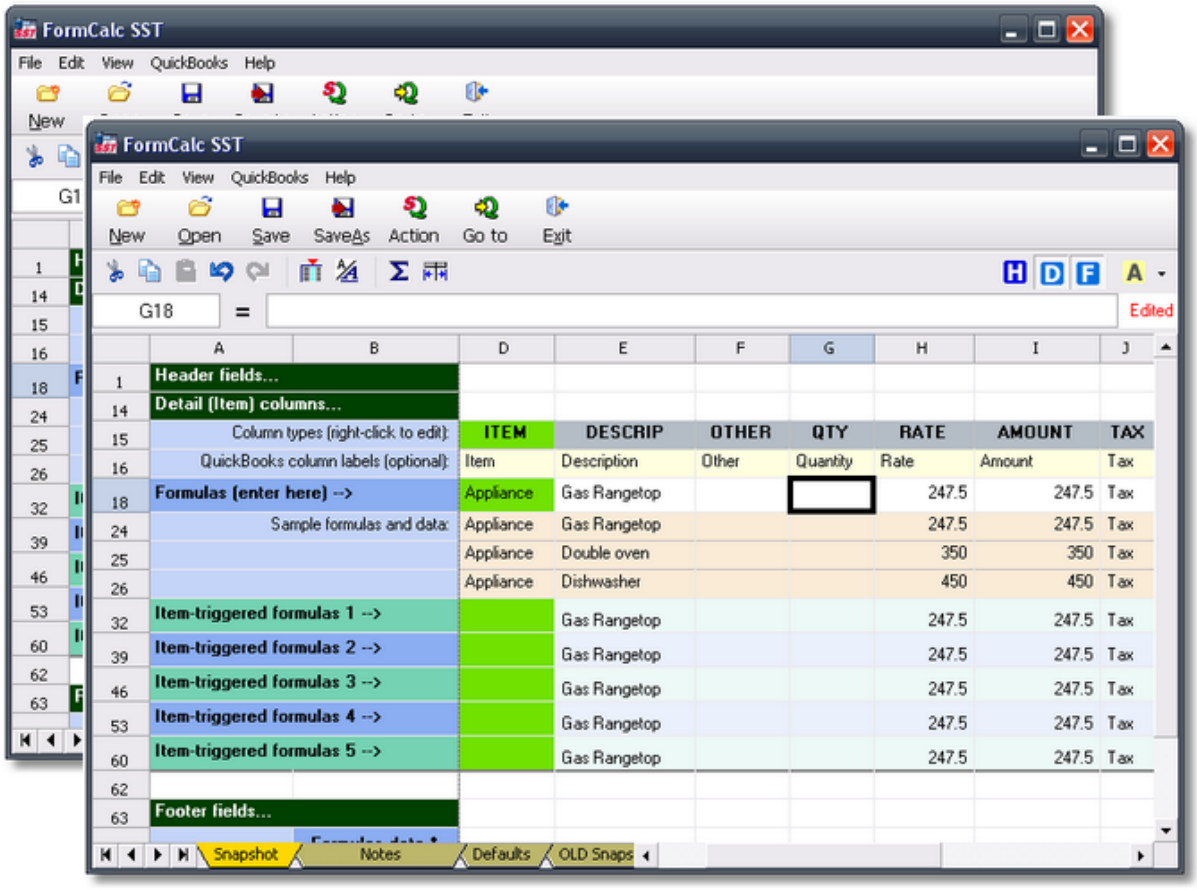
Running multiple instances of FormCalc SST



Some FormCalc SST users need to be able to do calculations on two or more different QuickBooks forms, such as Invoices and Sales Receipts, at any time—because they may enter sales on either form at any time.

This was a problem in older FormCalc SST versions because they only allowed running a single instance of the program at a time. If you had a data file (*.SSF) loaded for doing calculations on an Invoice, for instance, then wanted to apply calculations to a Sales Receipt, you first had to go to FormCalc SST and manually load a different data file—one set up for working with Sales Receipts.

This is no longer a problem however, beginning with FormCalc SST version 3. Now you can run multiple instances of the FormCalc SST program, and each instance (each running copy of the program) can have a different data file loaded, with a different hotkey assigned to it. So if you want to be able to quickly apply calculations to Invoices and also to Sales Receipts, you can start two copies of FormCalc SST and load a different data file into each one. (The number of FormCalc SST instances you can run at one time is essentially unlimited.)

The most important consideration for running multiple FormCalc SST instances, is to assign a different hotkey to the data file (*.SSF) you load in each one. To assign a different hotkey to a data file:

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1. **Open the desired data file** (*.SSF) in FormCalc SST (File > Open).
2. **Set the hotkey** in the Preferences dialog (Edit > Preferences).
3. **Save the data file** (`File > Save`) to preserve your hotkey setting for that file.

What happens if you load two data files which both use the same hotkey? When you load the second file, FormCalc SST will display a message saying it could not register the file's hotkey. The solution is to set a different hotkey for the file, then close it and reopen it.

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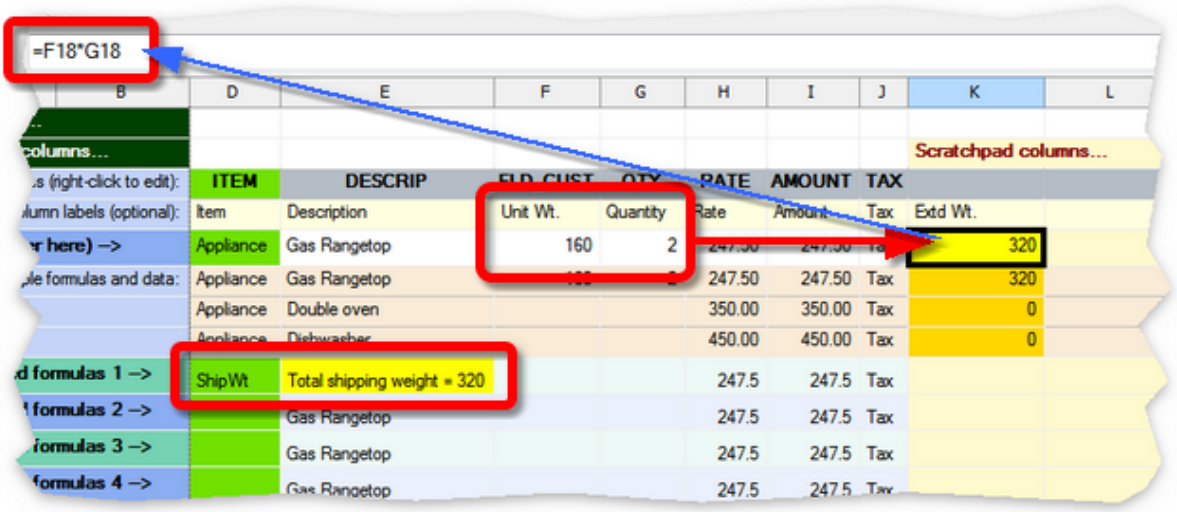
Using the Scratchpad



The Scratchpad is an area on the Snapshot tab, to the right of the columns which represent native columns of the QuickBooks form. It consists of ten blank columns colored with a light yellow background. In the Scratchpad, you can enter formulas which refer to the native QuickBooks columns. Also, formulas entered in the native columns can refer to cells in the Scratchpad.

In the example above, a formula entered on the Formulas row of the Scratchpad, =F18*G18, will calculate an extended weight for each line of an invoice, by multiplying the Unit Weight by the Quantity on each line. Presumably, a trigger Item named ShipWt will be selected somewhere toward the bottom of the invoice, and it will total the Extd Wt. column of the Scratchpad, to provide a total shipping weight for the entire invoice.

The Scratchpad lets you do things like create subtotals and totals of the QuickBooks form's columns, or do other intermediate calculations, *without adding additional custom columns to the QuickBooks form* (Invoice, Sales Receipt, etc.). This provides several benefits:

1. Using the Scratchpad sometimes **frees up custom fields for other uses** in QuickBooks. This can be especially important if you need a large number of custom fields (columns) for data but the number of custom fields available in your QuickBooks edition (such as QuickBooks Pro) is limited.

2. Sometimes, you may be able to **add new calculations** for a QuickBooks form **without taking a new snapshot** of the form. If you can add the new calculation in a Scratchpad column instead of modifying the form's layout, taking a new Snapshot won't be necessary.

3. The Scratchpad lets you **do some kinds of calculations more simply** than if all formulas had to be entered in (match up with) native QuickBooks columns. For instance, in some situations the Scratchpad lets you avoid using long formulas containing IF() statements.

4. Using the Scratchpad often **makes FormCalc SST run faster!** How? If you can remove custom columns from the Items area of a QuickBooks form (because they are no longer needed for use by FormCalc SST), the form will have fewer columns for to travel over as it gathers data and processes calculations. Fewer columns to travel over means quicker operation!

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Spreadsheet Reference

This section is a reference to the operators and functions available for building formulas in FormCalc SST's.

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Arithmetic & logical operators

FormCalc SST's spreadsheet has the following built-in operators.

Arithmetic Operators

Arithmetic operators let you perform basic arithmetic operations.

Symbol	Operand Type	Example	Explanation
+	Two arguments	=B1+5	Adds the first argument's value to the value of the second argument.
-	Two arguments	=A5-B1	Subtracts the second argument's value from the value of the first one.
*	Two arguments	=A2*A3	Multiplies the first argument's value by the value of the second argument.
/	Two arguments	=A15/7.33	Divides the first argument's value by the value of the second argument.
^	Two arguments	=B1^A2	Raises the first argument's value to the power determined by the second argument's value.

Logical Operators

Logical operators perform comparisons and return a logical value (TRUE or FALSE) as a result.

Symbol	Operand Type	Example	Explanation
=	Two arguments of logical types	=A1=A2	Equality. Returns TRUE if the first argument is equal to the second one. Otherwise, returns FALSE.
<>	Two arguments of logical types	=A1<>B2	Inequality or "not equal". Returns TRUE if values within the list are not equal. Otherwise, returns FALSE.
<	Two arguments of logical types	=A2<B4	Less than. Returns TRUE if the first argument is less than the second one. Otherwise, returns FALSE.
>	Two arguments of logical types	=A12>100	Greater than. Returns TRUE if the first argument is greater than the second one. Otherwise, returns FALSE.
<=	Two arguments of logical types	=A2<=C4	Less than or equal to. Returns TRUE if the first argument is less than or equal to the second one. Otherwise, returns FALSE.
>=	Two arguments of logical types	=A2>=2.45	Greater than or equal to. Returns TRUE if the first argument is greater than or equal to the second one. Otherwise, returns FALSE.

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Function reference

FormCalc SST's spreadsheet has the following built-in functions.

Arithmetic Functions

A set of mathematic and trigonometric functions.

In this table a *double* value means a number which may consist of a whole number part and a fractional part, in contrast to an *integer* value, which consists only of a whole number.

Symbol	Operand Type	Example	Explanation
ABS	One argument of double type	=ABS(B6)	Returns the absolute value.
ACOS	One argument of double type	=ACOS(B16)	Returns the arccosine.
ACOSH	One argument of double type	=ACOSH(A1)	Returns the inverse hyperbolic cosine.
ASIN	One argument of double type	=ASIN(B7)	Returns the arcsine.
ASINH	One argument of double type	=ASINH(B5)	Returns the inverse hyperbolic sine of the argument.
ATAN	One argument of double type	=ATAN(C5)	Returns the arctangent.
ATAN2	One argument of double type	=ATAN2(C3)	Returns the arctangent using x- and y- coordinates.
ATANH	One argument of double type	=ATANH(D4)	Returns the inverse hyperbolic tangent.
CEILING	Two arguments of double type	=CEILING(A6,1)	Rounds the first argument up to the nearest multiple based on the significance specified by the second argument.
COS	One argument of double type	=COS(A5)	Returns the cosine.
COSH	One argument of double type	=COSH(D4)	Returns the hyperbolic cosine.
COUNTIF	Two arguments: a range of cells and a condition of type string	=COUNTIF(B3:B7,">2")	Counts the number of nonblank cells within a range which meet a given condition.
DEGREES	One argument of double type that	=DEGREES(PI()/2)	Converts radians to degrees.

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Symbol	Operand Type	Example	Explanation
	specifies an angle in radians		
EVEN	One argument of double type	=EVEN(-1.59)	Rounds the argument up to the nearest even integer.
EXP	One argument of double type	=EXP(C1)	Returns the exponent value of the argument.
FACT	One nonnegative argument	=FACT(5)	Returns the factorial of the argument.
FLOOR	Two arguments of double type	=FLOOR(-2.5,-2)	Rounds the first argument down, towards zero, to the nearest multiple of the significance specified by the second argument.
INT	One argument of double type	=INT(E4)	Rounds the argument down to the nearest integer.
LN	One argument of double type	=LN(C1)	Returns the natural logarithm.
LOG	Two arguments: the number and the base	=LOG(100,10)	Returns the logarithm of a number to the specified base.
LOG10	One argument of double type	=LOG10(1000)	Returns the base-10 logarithm of the argument.
MOD	Two arguments: a number and divisor	=MOD(4,3)	Returns the remainder after the number is divided by the divisor.
ODD	One argument of double type	=ODD(3.5)	Rounds the argument up to the nearest odd integer.
PI	No arguments required	=PI()	Returns the value of Pi.
POWER	Two arguments of double type: the number and the power	=POWER(A1,4)	Raises the number to the base.
RADIANS	One argument of type double which specifies angle in degrees	=RADIANS(180)	Converts degrees to radians.
RAND	No arguments required	=RAND()	Returns a random number between 0 and 1.
ROUND	Two arguments: the number of double type and the number of digits	=ROUND(20.57,1)	Rounds the first argument to the specified number of digits.

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Symbol	Operand Type	Example	Explanation
ROUNDDOWN	Two arguments of double type	=ROUNDDOWN(2.75,0)	Rounds the argument toward zero. The first argument specifies a number to round up. The second argument defines the number of digits to which you want to round the first argument.
ROUNDUP	Two arguments of double type	=ROUNDUP(-3.42,1)	Rounds the argument toward infinity. The first argument specifies a number to round up. The second argument defines the number of digits to which you want to round the first argument.
SIGN	One argument of double type	=SIGN(A2)	Returns the sign.
SIN	One argument of double type	=SIN(A1)	Returns the sine.
SINH	One argument of double type	=SINH(1)	Returns the hyperbolic sine.
SQRT	One argument of double type	=SQRT(B5)	Returns the square root.
SUM	A list of arguments	=SUM(A1:C12) =SUM(A1, 3.14, 1.57)	Sums all the values in the list.
SUMSQ	A list of arguments	=SUMSQ(B1:D1) =SUMSQ(1,2,3,4)	Sums the square of values in the list.
TAN	One argument of double type	=TAN(C3)	Returns the tangent.
TANH	One argument of double type	=TANH(0)	Returns the hyperbolic tangent.
TRUNC	One argument of double type	=TRUNC(PI())	Returns the integer part. (Compare this with the INT function, which returns a double.)

Statistical Functions

Basic statistical functions.

Symbol	Operand Type	Example	Explanation
AVERAGE	A list of arguments	=AVERAGE(A1:A5) =AVERAGE(10.3,9.1)	Calculates the average value of values within the list.
AVERAGEA	A list of arguments	=AVERAGEA(A1:A5)	Calculates the average value of the non-empty cells referenced.AVERAGEA(range) equals SUM(range)/COUNTA(range).

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Symbol	Operand Type	Example	Explanation
COUNT	A list of arguments	=COUNT(A1:A4) =COUNT(1,5,8)	Returns the count of the number of cells in a given range.
COUNTA	A list of arguments	=COUNTA(A1:A4)	Counts the number of non-empty cells in a given range.
COUNTBLANK	A list of arguments	=COUNTBLANK(A1:E1)	Counts the number of empty cells.
MAX	A list of arguments	=MAX(A1:D1) =MAX(A1,100,C2)	Returns the largest argument value.
MIN	A list of arguments	=MIN(A1:D1) =MIN(0, C2)	Returns the smallest argument value.
SUM	A list of arguments	=SUM(A1:C12) =SUM(A1,3.14,1.57)	Sums values within the list.
SUMSQ	A list of arguments	=SUMSQ(B1:D1) =SUMSQ(1,2,3,4)	Sums squares of values within the list.

Logical Functions

Logical functions take logical values as arguments and return a logical value as a result.

Symbol	Operand Type	Example	Explanation
AND	A list of logical arguments	=AND(1<B4,B4<100)	Logical AND operation. Returns TRUE if all values within the list are TRUE; returns FALSE if one or more values within the list evaluates to FALSE.
FALSE	No arguments required	=FALSE()	Returns the logical value FALSE.
IF	Three arguments: the logical expression, the value to return if the expression succeeds, the value to return the expression fails	=IF(A10<=100, "Within budget", "Over budget")	Returns the second argument if the logical expression evaluates to TRUE and the third argument otherwise.
NOT	One argument of logical type	=NOT(1>D4)	Logical NOT operation. Reverses the value of its argument.
OR	A list of logical arguments	=OR(A1>=10, A1<=–10)	Logical OR operation.Returns TRUE if any argument is TRUE; returns FALSE if all values within the list evaluate to FALSE.

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Symbol	Operand Type	Example	Explanation
TRUE	No arguments required	=TRUE()	Returns the logical value TRUE.

Date and Time Functions

Symbol	Operand Type	Example	Explanation
DATE	Three operands defining the year, month and day	=DATE(1900,1,1)	Calculates the serial number that represents a specified date.
DAY	One argument defining the serial number of the desired date	=DAY(TODAY())	Returns the day portion of a given date.
HOUR	One argument defining the serial number of the desired date/time value	=HOUR(NOW())	Returns the hour portion of a given date/time value.
MONTH	One argument defining the serial number of the required date	=MONTH(TODAY())	Returns the month portion of a given date.
MINUTE	One argument defining the serial number of the desired date/time value	=MINUTE(NOW())	Returns the minutes portion of a given date/time value.
NOW	No arguments required	=NOW()	Returns the current time in general format. You can apply other formatting to display the result as a date, a time, or a mixed date/time.
SECOND	One argument defining the serial number of the desired date/time value	=SECOND(NOW())	Returns the seconds portion of a given date/time value.
TIME	Three arguments defining hour, minute and second parts of a time value	=TIME(16,48,10)	Returns a decimal value for the specified time.
TODAY	No arguments required	=TODAY()	Returns the serial number of the current date.

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Symbol	Operand Type	Example	Explanation
WEEKDAY	Two arguments: the serial number of the required date, weekday base	=WEEKDAY(TODAY()) =WEEKDAY(DATE(2002, 12, 1),1) *...returns 1(Sunday)*	Returns the day of the week corresponding to the specified date. The weekday base identifies the first day of the week and determines the return value type: 1 or omitted: the first day of the week is Sunday. (The function returns 1 for Sunday, 2 for Monday, etc.) 2: the first day of the week is Monday. (The function returns 1 for Monday, 2 for Tuesday, etc.) 3: the first day of the week is Tuesday. (The function returns 0 for Monday, 1 for Tuesday, etc.)
YEAR	One argument defining the serial number of the required date	=YEAR(TODAY())	Returns the year portion of a given date.

Data Management Functions

Special FormCalc SST functions for extracting and storing data.

Symbol	Operand Type	Example	Explanation
GET1 GET2 GET3 GET4 GET5 GET6 GET7 GET8 GET9	No arguments required	=GET1() =GET3()	The GET functions return the number stored in the memory location corresponding to the numeral at the end of the word GET. Numbers are stored in those locations by a STOR function. For example, if a cell has the formula =STOR7(44.785), then another cell with the formula =GET7() would return the result 44.785 in the second cell. The memory locations referenced by STOR and GET functions are *global* across all macros, which means data can be stored in them (STOR) by one macro and accessed (GET) by other macros.

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Symbol	Operand Type	Example	Explanation
			There are several important limitations for using these functions: for details, see Using STOR and GET functions.
GETVAL	Two arguments of type string	=GETVAL(D5,"Wt") =GETVAL(D5,"Cases")	Extracts the data value named by the second argument, from the text string defined by the first argument. Data values in the text string must be stored in a specific format. See the GETVAL function reference topic for examples and data storage rules.
STOR1 STOR2 STOR3 STOR4 STOR5 STOR6 STOR7 STOR8 STOR9		=STOR1() =STOR3()	The STOR functions store a number in the memory location corresponding to the numeral at the end of the word STOR. Numbers stored in those locations can be retrieved by a GET function. For example, if a cell has the formula =STOR7(44.785), then another cell with the formula =GET7() would return the result 44.785 in the second cell. The memory locations referenced by STOR and GET functions are *global* across all macros, which means data can be stored in them (STOR) by one macro and accessed (GET) by other macros. There are several important limitations for using these functions: for details, see Using STOR and GET functions.

Text Functions

Symbol	Operand Type	Example	Explanation
& (ampersand)	Two arguments of type string	="Yellow "&"river	Concatenates specified strings.
CONCATENATE	A list of strings	=CONCATENATE("John "," Doe")	Joins several text strings in one text string. (An alternative to "&".)
DOLLAR	Two arguments defining the value and the number of digits to the right of the	=DOLLAR(957.344,2)	Converts the number to text using currency format $#,##0.00_);($#,##0.00), with the decimals rounded to the specified number of places.

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Symbol	Operand Type	Example	Explanation
	decimal point in the output string		
FIXED	The first argument of type double is required. The second argument of type integer is optional (the default value is 2). The third argument of type Boolean is optional.	=FIXED(1234.567,1)	Rounds the first argument to the number of decimals determined by the second argument and returns it as a string. The third argument (which must be TRUE or FALSE) specifies whether to omit commas in the output string.
LEFT	The first argument of type string is required. The second argument of type integer is optional.	=LEFT(A1) =LEFT(A1, 3)	Returns the first character or characters in a text string. The second argument defines the number of characters to extract. The default value is 1.
LEN	One argument of type string.	=LEN("ABC")	Returns the length of the string argument.
LOWER	One argument of type string.	=LOWER(A1)	Converts a string to lowercase.
MID	The first argument is of type string, the second and the third arguments are of type integer.	=MID("ABC",3,1)	Returns the substring of a given text string. The position of the substring is defined by the second argument. The third argument specifies the number of characters to extract.
RIGHT	The first argument of type string is required. The second argument of type integer is optional.	=RIGHT(B2,3)	Returns the last character or characters in a text string. The second argument defines the number of characters to extract. The default value is 1.
TEXTD	The first argument of type double is required. The second argument of type string is optional.	=TEXTD(A1) =TEXTD(NOW()) =TEXTD(A1, "mm/dd/yyyy")	Returns a text string for the date defined by the date/time value in first argument, formatted according to the current short date format. (Time is not included.) When two arguments are supplied, the date/time value defined by the first argument is formatted according to the format defined by the second

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Symbol	Operand Type	Example	Explanation
			argument. (See the TEXTD formatting characters.)
TRIM	One argument of type string.	=TRIM(" Some text ")	Removes all spaces from text except for single spaces between words.
UPPER	One argument of type string.	=UPPER(A1&A2)	Converts a text string to upper-case.

IS Functions

These functions test the type of a value and return a Boolean result.

Symbol	Operand Type	Example	Explanation
ISBLANK	A value of any type	=ISBLANK(A1)	Returns TRUE if cell is empty.
ISERR	A value of any type	=ISERR(H1)	Returns TRUE if the cell contains any error value except #N/A.
ISERROR	A value of any type	=ISERROR(A7)	Returns TRUE if the cell contains any error value (#N/A, #VALUE!, #REF!, #DIV/0!, #NUM!, #NAME?, or #NULL!).
ISLOGICAL	A value of any type	=ISLOGICAL(C3)	Returns TRUE if the specified value refers to a logical value.
ISNA	A value of any type	=ISNA(E5)	Returns TRUE if the cell contains #N/A (value not available) error value.
ISNONTEXT	A value of any type	=ISNONTEXT(D4)	Returns TRUE if the cell does not contain text. (Returns TRUE for blank cells, also.)
ISNUMBER	A value of any type	=ISNUMBER(A2)	Returns TRUE if the cell contains a number.
ISTEXT	A value of any type	=ISTEXT(D1)	Returns TRUE if the specified cell contains text.

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GETVAL function reference

The GETVAL function allows formulas to extract data values from text strings—a handy feature for storing data in programs with no spare numeric or text storage locations. An example will best explain how it works:

Example: Suppose a Description column (field) in your accounting program contains the following text:

```
SillySpray child's lawn sprinkler [Wt=3.8;Cs=12]
```

The square brackets surround the text area from which GETVAL can extract data. Here, *Wt* identifies the per-unit weight of a SillySpray sprinkler (3.8 pounds), and *Cs* is the number of sprinklers per case (12).

If the above Description field text corresponds to cell D7 in FormCalc SST, this formula would extract the per-unit weight and the number of sprinklers per case, and multiply them to calculate the weight per case:

```
=GETVAL(D7,"Wt")*GETVAL(D7,"Cs")
```

What if the goal was to calculate a shipping weight for each line of an invoice? If cell D9 corresponds to a quantity of items, and D7 holds the same Description text described above, this formula would multiply the weight per item by the quantity of items ordered, thus calculating the shipping weight on that line of the invoice:

```
=GETVAL(D7,"Wt")*D9
```

You may store and retrieve numbers, or text, or both using this technique.

GETVAL Data Storage Rules

For GETVAL to extract data from a text string, the data must be stored according to the following rules.

[ ]	The data block must begin and end with square brackets.
name=value	Each data item within the block must consist of a data name and a data value, separated by an equal sign. Data names are *not* case sensitive. so these data names are all equivalent: *Wt, wT, wt, WT*
; *(semicolon)*	If the data block contains more than one data item they must be separated by a semicolon character.
spaces	Extra spaces are between data items and delimiters are ignored. Text data items are *not* required to have surrounding quotation marks except when they contain spaces which you want to preserve.
block location	FormCalc SST searches for the data block from the *right-hand end* of the source text string. So square brackets may appear elsewhere in the

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source text so long as they are *to the left of* the data block.

Examples:

`[Name=John]`	...no quotation marks needed
`[Name="John Doe"]`	...quotation marks required, because of space
`[Wt=44;Len=55.75]`	...typical
`[  Wt=44;  Len=55.75  ]`	...extra spaces will be ignored
`[Wt=34.  7]`	...**error!** (space within a data value)

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Using STOR and GET functions

The STOR functions let you store numbers in nine memory locations numbered 1..9. For instance, the formula =STOR4(F5) would store the value from cell F5 in memory location 4. The GET functions retrieve the numbers stored in those in nine memory locations. For instance, the formula =GET4() would return the value stored in memory location 4.

These functions greatly enhance the flexibility and usefulness of FormCalc SST macros, but to use them properly you must be mindful of their limitations.

Why Use STOR and GET?

- Using STOR and GET in formulas can sometimes be an easier way to reference data in your formulas, compared to storing the data in a Scratchpad column.
- Using STOR and GET is currently the *only* way to pass data between macros.

  For instance, suppose you have one macro with the formula =STOR4(F5), to store the value from cell F5 in memory location 4, and you have a second macro with the formula =GET4( ) in it somewhere. If you run the first macro, then run the second macro, the second macro will return the memory location 4 value stored by the first macro.

  If you have computer programming experience you may recognize that FormCalc SST's STOR and GET memory locations are *global,* meaning they are accessible to all macros.

Considerations for Using STOR and GET

The main thing you must be mindful of when using STOR and GET functions, is assuring that a formula containing a STOR gets called before any formula which contains a corresponding GET.

This is not a problem when the STOR and GET are in two different macros: you just need to run the macro containing the STOR first, before the one containing the GET.

Where it can be a problem is when STOR and GET are used in the same macro. *The most common problem* with using STOR and GET functions in the same macro worksheet is failing to insure that the formula containing the STOR is called *before* any formulas containing a corresponding GET for the same memory location.

Contrast this with what you know about spreadsheet formulas. When a spreadsheet formula references other cells in a worksheet and those cells also contain formulas, there is an internal mechanism which insures that those other cells are recalculated before their formula results are used in the first formula.

With FormCalc SST's memory locations no such mechanism is available for determining how formulas containing GETs are dependent on formulas containing STORs.

How can you insure that formulas are called in the right order? The proper approach will depend on the calculation situation you face:

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- If the GET is used on the Formulas row of the worksheet (i.e., the GET is applied to every row of the target form, such as an invoice), then you might make sure that an Item-triggered formula containing the STOR gets called on the first row of the invoice—before other rows where the GET might be called. This is a technique used in accessing header fields in QuickBooks Online or QuickBooks desktop editions, for instance.
- If the GET is used on a Item-triggered formula row, then you need to assure that either a Formulas row formula or another text-triggered formula containing the corresponding STOR gets called before the formula containing the GET.

  For instance, suppose you have a text-triggered formula row which calculates a gratuity on the last line of invoices for your catering business. If a formula on that row contains a GET to retrieve the invoice subtotal on which the gratuity is calculated, then you just need to be sure that the text-triggered row which subtotaled the invoice and STORed that amount appears above the gratuity row on the invoice.

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TEXTD format characters

TEXTD Format Characters

The TEXTD function gives you flexible options for formatting date/time values, using combinations of formatting specifiers from the table below.

Examples:

```
TEXTD(NOW(),"mm/dd/yyyy"                    11/23/2013
TEXTD(NOW(),"mm/dd/yy hh:nn am/pm"          11/23/13 10:45 am
```

Terms like "short date format" and "long time format" in the explanations below refer to the Windows Regional settings for date and time formats, which you may change in the Windows Control Panel.

Format Specifier	Explanation
c	Displays the date formatted using the current short date format, followed by the time formatted using the current long time format. No time is displayed if the fractional part of the date/time value is zero.
d	Displays the day as a number without a leading zero (1-31).
dd	Displays the day as a number with a leading zero (01-31).
ddd	Displays the day as an abbreviation (Sun-Sat) using the current short day names.
dddd	Displays the day as a full name (Sunday-Saturday) using the current long day names.
ddddd	Displays the date using the current short date format.
dddddd	Displays the date using the current long date format.
m	Displays the month as a number without a leading zero (1-12). *However,* if the m specifier immediately follows an h or hh specifier, the minute rather than the month is displayed.
mm	Displays the month as a number with a leading zero (01-12). However, if the mm specifier immediately follows an h or hh specifier, the minute rather than the month is displayed.
mmm	Displays the month as an abbreviation (Jan-Dec) using the current short month names.
mmmm	Displays the month as a full name (January-December) using the current long month names.
yy	Displays the year as a two-digit number (00-99).
yyyy	Displays the year as a four-digit number (0000-9999).

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Format Specifier	Explanation
h	Displays the hour without a leading zero (0-23).
hh	Displays the hour with a leading zero (00-23).
n	Displays the minute without a leading zero (0-59).
nn	Displays the minute with a leading zero (00-59).
s	Displays the second without a leading zero (0-59).
ss	Displays the second with a leading zero (00-59).
z	Displays the millisecond without a leading zero (0-999).
zzz	Displays the millisecond with leading zeros (000-999).
t	Displays the time using the current short time format.
tt	Displays the time using the current long time format.
am/pm	Uses the 12-hour clock for the preceding h or hh specifier, and displays 'am' for any hour before noon, and 'pm' for any hour after noon. The am/pm specifier can use lower, upper, or mixed case, and the result is displayed accordingly.
a/p	Uses the 12-hour clock for the preceding h or hh specifier, and displays 'a' for any hour before noon, and 'p' for any hour after noon. The a/p specifier can use lower, upper, or mixed case, and the result is displayed accordingly.
ampm	Uses the 12-hour clock for the preceding h or hh specifier, and displays the current TimeAMString value for any hour before noon, and the current TimePMString value for any hour after noon.
/	Displays the date separator character indicated by your Windows Regional settings.
:	Displays the time separator character indicated by your Windows Regional settings.
'some text'	Characters enclosed in single quotes can appear in the format string and are displayed as-is. They do not affect formatting.

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Other Reference Topics

This section is a collection of miscellaneous reference topics.

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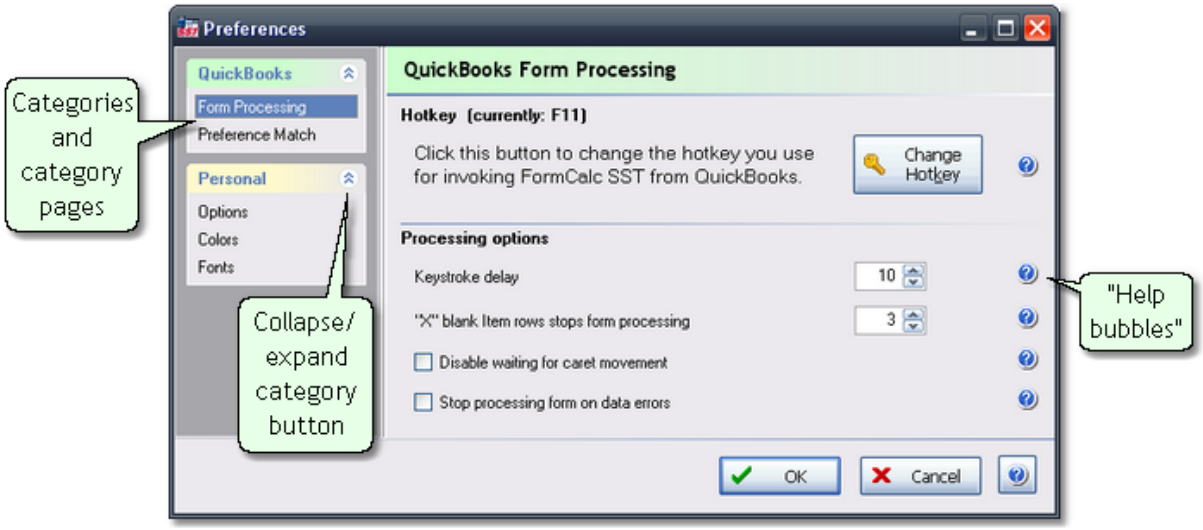
The Preferences dialog

Like QuickBooks, FormCalc SST has a Preferences dialog where you can change most program settings.

Preference Dialog

- **To open the Preferences dialog,** select `Edit > Preferences` from the main menu.



Categories and category pages

Select a category and category page to work with, from the category list in the left pane.

Collapse/expand category button

Clicking this button in a category's heading lets you collapse or expand the category's list of pages.

"Help bubbles"

Help bubbles provide detailed information about each Preference settings. Hovering the mouse cursor over a help bubble displays a pop-up window with information about the adjacent setting.

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FormCalc SST files and file management

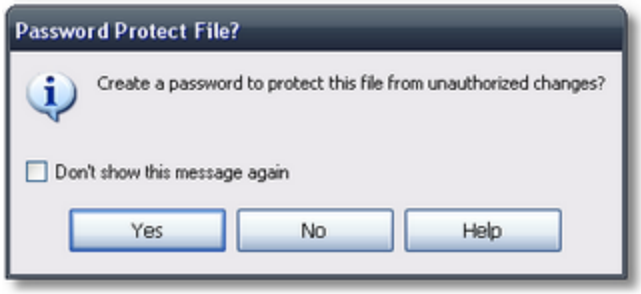
Here are details about working with FormCalc SST data files.

Password Protecting FormCalc SST Files

FormCalc SST gives you a way to protect data files from unauthorized changes with a simple password-protect-on-save option.

How to password protect a file

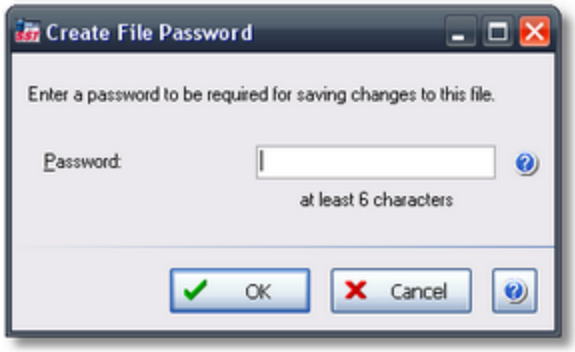
1. **When saving a file for the first time** (i.e., when using `File > Save As`), FormCalc SST will ask if you want to password protect the file.



   If FormCalc SST fails to ask, it's likely that you have turned off the message. To re-enable it open the Preferences dialog, find the page with a *Re-enable all "Don't show again" messages* button, and click it.

2. **Click on the Yes button** if you want to password protect the file.

   The Create File Password dialog will open.



3. **Enter the password** you want to use.
4. **Click OK** to close the dialog.

   A file save dialog will open.

5. In the file save dialog, **choose a location (folder) and name for the file.**
6. **Click Save** to save the file and close the dialog.

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File passwords FAQ

When will FormCalc SST ask for the password?

Because this is a password-protect-on-save system, FormCalc SST will only ask for the password when you save the file. This protects it from unauthorized changes but not from unauthorized access and use.

Also, once you have supplied the file's password, FormCalc SST won't ask you for it again during the current session. In other words, you will be able to save the file repeatedly without having to supply the password each time. For added security then, when you are done editing and saving a file, be sure to close and reopen the file (or exit and restart FormCalc SST). This will reset the file's password entry for the session, so that anyone wanting to save the file again will have to supply the password.

Who can access the file or use it in FormCalc SST?

Anyone with sufficient Windows login permissions to access the folder where the file is located can use the file in FormCalc SST, copy it to other locations, etc.) The file's password *does not* limit access; it only prevents unauthorized users from making changes to the file.

Having a password *does not* protect a file from being deleted! To prevent unauthorized users from deleting files, either make the files read-only, or limit users to read-only access to the folder where the files reside.

What if I forget the password?

No problem! Just open the file in FormCalc SST and use **File > Save As** to save it under a different name—and optionally, password protect this new copy of the file.

.SSF versus .SST Files

Early versions of FormCalc SST used the .SST extension for data file names; for example, *mydatafile.sst*. The current version uses .SSF instead; for example, *mydatafile.ssf*.

Why the change? Some FormCalc SST users were sharing common data files by putting them in a DropBox folder (www.dropbox.com). For most file types this would have caused no problem whatsoever. But the .SST extension is also used for Microsoft Serialized Certificate Store files, and placing one of FormCalc SST's .SST files in a DropBox folder caused Windows to try to automatically access it as a Serialized Certificate Store file, resulting in an error message. Due to the popularity of DropBox, we switched to using a different filename extension to avoid problems for FormCalc SST users.

Must my files have the .SSF extension?

No. Though .SSF is now the recommended filename extension, FormCalc SST will still load .SST files.

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However, if you have files with the .SST extension and want to use them with DropBox or a similar file synchronization service, you may need to load them into FormCalc SST and choose **File > SaveAs** to save them with the .SSF extension.

Or you can simply rename the files manually (changing the extension to .SSF) in Windows Explorer or another file manager. This is permissible because .SSF and .SST files are *identical* internally.

File Management FAQ

(FAQ = Frequently Asked Questions.)

Howare FormCalc SST files identified?

FormCalc SST files all have the **filename extension .SSF** (.SST in prior versions).

Are .SSF files compatible with Microsoft Excel?

Yes and no:

- You *may* be able to load an .SSF file into Microsoft Excel, depending on which functions are present in the file used. (Not all FormCalc SST spreadsheet functions are compatible with Excel.)
- You *cannot* load files saved from Microsoft Excel into FormCalc SST, even if they have the .SSF filename extension.

Where are .SSF files stored?

By default, FormCalc SST stores files in a folder location like the following (varies slightly depending on the version of Microsoft Windows you use):

```
C:\Users\Public\Documents\FormCalcSST
```

However, you may store the files in any location you prefer.

Can I access .SSF files across a network?

Yes. Unlike the old version of FormCalc (FormCalc SST's predecessor), FormCalc SST can work with files stored anywhere on a network. This, along with password protection, lets you store .SSF files in a central location for access by all FormCalc SST users, with little risk of users making file changes which might negatively affect other users.

Backup your .SSF files often! Passwords and read-only access are no protection against losing files due to a hard drive crash, fire, or flood.

Can two or more users share .SSF files by putting them in a DropBox folder?

Yes. This is how some users share .SSF files without being on the same local area network.

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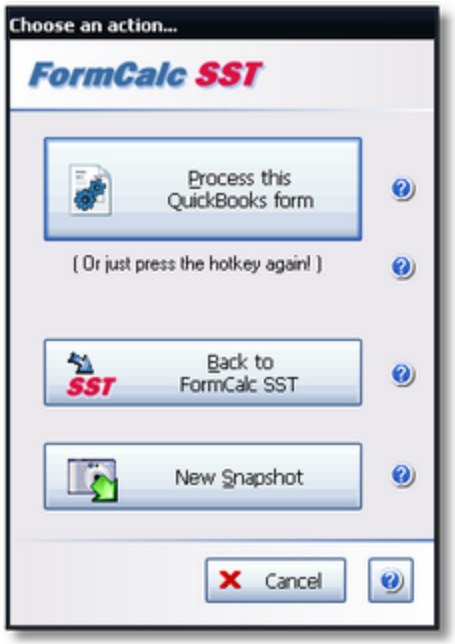
Special keys and shortcuts

Using the FormCalc SST Hotkey (Invoking FormCalc SST)

Most of the time you will invoke FormCalc SST directly from QuickBooks while working in the form you want to process, by pressing the FormCalc SST hotkey (which by default is the *F11* key, unless you change it in Preferences) . There are two ways to use the hotkey to process the form:

1. Keyboard and Mouse

Press the FormCalc SST hotkey once to display the *Choose an action* menu, then click the *Process this QuickBooks form* button.



2. Keyboard Only

Press the FormCalc SST hotkey once to display the *Choose an action* menu, then press it again to process the form.

This method is usually faster, because it only requires two presses of the same key.

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Keystrokes

F1	Opens the FormCalc SST Help system.
F2	Opens the editor for the current spreadsheet cell.
F11	*(when pressed in QuickBooks)* Invokes FormCalc SST. *(F11* is the default FormCalc SST hotkey but may be changed in Preferences.)
Ctrl-x *Ctrl-c* *Ctrl-v*	Respectively, these invoke the Cut, Copy, or Paste commands, to copy data to/from the Windows clipboard.
Ctrl-z	Undo the most recent spreadsheet operation.
Shift-Ctrl-z	Redo the most recent Undo operation.

Other Shortcuts

Double-click	*(on a spreadsheet cell)* Opens the editor for the current spreadsheet cell.
Right-click	*(on a spreadsheet cell)* Displays a pop-up menu for the cell, if any is available.

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Troubleshooting

Troubleshooting

Pressing the hotkey (F11) in QuickBooks does nothing.

Try the following:

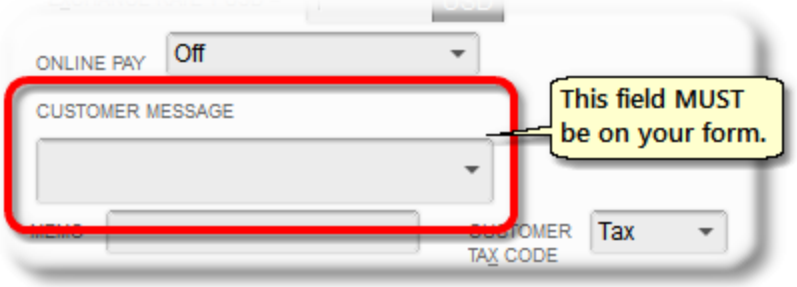
1. Shut down FormCalc SST, then right-click the icon you use for starting it and choose the *Run as administrator* option.
2. If the first step doesn't work, restart Windows, then try the *Run as administrator* option again.

When I try to process calculations on my QuickBooks form the cursor seems to jump around from field to field forever, without getting any calculations done. Eventually I have to abort the FormCalc SST's calculations by clicking on a different window.

Here are possible causes:

A. The snapshot no longer matches the form's field layout, as when you have added or removed fields on the form. The solution is to take a new snapshot.

B. The form does not have a *Customer Message* or *Vendor Message* field in the footer. This field is absolutely required by FormCalc SST for navigating the form.



I am getting a "...could not locate QuickBooks window..." message, and FormCalc SST can neither take a snapshot nor process my QuickBooks form.

1. In QuickBooks, be sure the desired form is "focused". For instance, if you want to work with an invoice click in a field of the Invoice form before invoking FormCalc SST.
2. If step 1 doesn't help, try the *Run as administrator* steps described above in the *Pressing the hotkey (F11) in QuickBooks does nothing* topic.

FormCalc SST seems slowwhen processing a form. Can it work faster?

This can happen if you the *Keystroke delay* set too high in Preferences.

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Experiment with smaller *Keystroke delay* values this way: try decreasing the number by 5 or 10 units. If FormCalc SST seems to work properly at that *Keystroke delay* setting, decrease by another 5 or 10 units and try again. Keep decreasing and/or increasing the Keystroke delay setting until you find the smallest value which still allows FormCalc SST to work reliably, then increase it by 5 units for safety. A typical *Keystroke delay* setting is 20.

Help! FormCalc SST is sending keystrokes to QuickBooks and I don't know how to make it stop!

If there's ever a problem while FormCalc SST is processing a QuickBooks form, just click on another non-QuickBooks window or on the Windows taskbar. (You'll have to click on the Windows taskbar if QuickBooks is maximized so that no other windows are visible.)

To fix problems created by keystrokes sent to the wrong part of a QuickBooks form you can use the QuickBooks revert command (**Edit > Revert**), if it is supported by your version of QuickBooks.

> Note: **Edit > Revert** returns the form to the state in which you last saved it. If you have edited the form but not yet saved your changes, **Edit > Revert** will simply delete them!

FormCalc SST adds blank lines to the bottom my QuickBooks forms.

The addition of a few blank lines is inevitable because of how FormCalc SST processes the form. You can minimize the number of blank lines added by keeping the *"X" blank Item rows stop form processing* setting at a value of 2 or 3 (3 is the default).

FormCalc SST works fine several times in a row, then the next time it may fail and give me an error message. If I try it again it works...what's going on?

FormCalc SST is somewhat timing sensitive, and other things "going on" in your computer system while FormCalc SST is working can affect it. Even if you have the *Keystroke delay* set to a value which work 99% of the time, once in a while FormCalc SST may stop unexpectedly.

Things to try: increase the *Keystroke delay* slightly, in Preferences. In some cases, restarting Microsoft Windows is the only remedy.

FormCalc SST starts working, but then stops somewhere in the middle of my QuickBooks form.

Do you have too many blank lines in the form's Detail section? FormCalc SST stops processing when it encounters the number of blank Item lines you've specified for the *"X" blank Item rows stop form processing* setting in Preferences.

I have several Actions which show results in the Description column, but the results look all "jammed together". Can't FormCalc SST put the results on separate lines?

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FormCalc SST is putting some results in the wrong QuickBooks columns.
or...
Some results aren't being shown at all.

Have you changed the form (added or deleted columns, or header or footer fields) since the most recent snapshot? That can cause FormCalc SST to write results in the wrong locations.

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