



# Implementing Re-Calc Strategies in Google Sheets

Here we will describe an oddity of Google Sheets and how to work around it. Specifically, there is no way to re-calc a spreadsheet under Google Sheets. F2 Enter doesn't work. No F9 function key to re-calc. Don't bother to retype an argument since if the value doesn't change neither does the function result. To illustrate let's look at an intraday series from Alpha Vantage

The screenshot shows a Google Sheet titled "Alpha Vantage Demo". The spreadsheet contains a table with columns for ticker, interval, adjusted, Date, open, high, low, close, and volume. The data is for MSFT on 2019-08-13. The formula bar shows the function `=AVGetEquitySeries(B6,B7,B8)`.

	A	B	C	D	E	F	G	H	I
6	ticker	MSFT		Date	open	high	low	close	volume
7	interval	1min		2019-08-13 14:51:00	138.6100	138.6400	138.5800	138.6300	46564
8	adjusted	TRUE		2019-08-13 14:50:00	138.6100	138.6450	138.6100	138.6100	30975
9				2019-08-13 14:49:00	138.6500	138.6500	138.6000	138.6100	39537
10				2019-08-13 14:48:00	138.6400	138.6650	138.5900	138.6450	53280
11				2019-08-13 14:47:00	138.6300	138.6834	138.6300	138.6400	37706
12				2019-08-13 14:46:00	138.7000	138.7300	138.6200	138.6200	52801
13				2019-08-13 14:45:00	138.7000	138.7050	138.6300	138.6801	53607
14				2019-08-13 14:44:00	138.6320	138.7200	138.6320	138.6900	73749

This is a series with an interval of 1 minute. Surely, I'd like to be able to refresh this during the day. Right now, the only way is to change one of the arguments to something different and then change it back. Pretty inconvenient right?

Well our workaround to this is to put a dummy argument into the Alpha Vantage functions to force a re-calc. This argument is always the last one in a function. For our example the function help looks like

Alpha Vantage Demo

File Edit View Insert Format Data Tools

100% \$ % .0 .00 123

`=AVGetEquitySeries(B6,B7,B8,...)`

AVGetEquitySeries(symbol, interval, is\_adjusted, opt\_outputsize, recalc\_trigger)

Example  
 AVGetEquitySeries(string, string, string, string, any)

Summary  
 AVGetEquitySeries Gets the historical equity quotes for a series.

symbol  
 Equity symbol.

interval  
 Frequency of returned time series (Monthly,Weekly,Daily,60min,30min,15min,5min,1min).

is\_adjusted  
 For raw equity quotes this is 'false'. Adjustments are for corporate actions.

opt\_outputsize  
 (Optional: 'compact' default) Full or compact series (full, compact).

recalc\_trigger  
 (Optional) Argument to force recalc of function.

To implement a re-calc function we'll first select a cell to hold the re-calc trigger. For convenience we'll call that cell RECALC\_TRIGGER.

Alpha Vantage Demo

File Edit View Insert Format Data

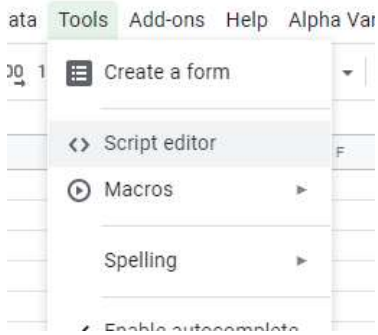
Named ranges

	A	B	C
1			
2	recalc trigger	2	
3			
4			

+ Add a range

RECALC\_TRIGGER  
 Sheet1!B2

Next we need to create a function to increment the trigger. We open the scripts editor



We'll use it to create our function

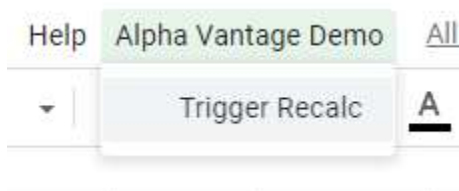


It is important to note that the first time this function runs you will be asked to approve its permission to do so. This is not a big deal as you are just giving permission for *your* function to modify *your* spreadsheet.

For the purposes of this tutorial we'll show how to create two convenient ways to call this function. The first way is to create a menu with an entry to call the function. We'll add the following code to the top of Code.gs

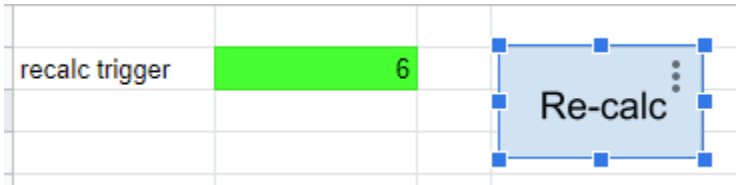
```
function onOpen(e) {
    SpreadsheetApp.getUi().createMenu('Alpha Vantage Demo')
        .addItem('Trigger Recalc', 'incrementTrigger')
        .addToUi();
}
```

This function will add a menu named Alpha Vantage Demo with an item named "Trigger Recalc."

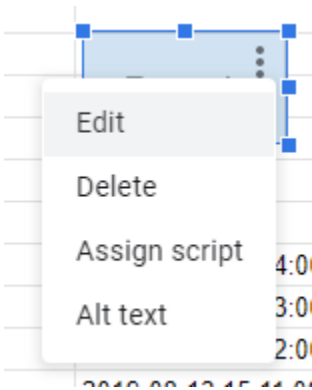


You'll have to refresh your spreadsheet in the browser for this menu to appear.

We can also create a button. Go to Insert->Drawing in the spreadsheet menu and draw a button. Then save your work and drag it to the part of the spreadsheet where you want it. Right click the mouse to edit the button. You will also see three dots in the upper right corner of the button



The menu looks like



Select Assign script and type in "incrementTrigger"

Now go back to your original function and add the re-calc trigger.

=AVGetEquitySeries(B6,B7,B8,,B2)

A	B	C	D	E	F	G
recalc trigger	6		Re-calc			
ticker	MSFT		=AVGetEquitySeries(B6,B7,B8,,B2)	igh	low	
interval	1min		AVGetEquitySeries(symbol, interval, is_adjusted, opt_outputsize, recalc_trigger)			240
adjusted	TRUE		Example			301
			AVGetEquitySeries(string, string, string, string, any)			291
			Summary			290
			AVGetEquitySeries Gets the historical equity quotes for a series.			190
			symbol			210
			Equity symbol.			210
			interval			312
			Frequency of returned time series (Monthly,Weekly,Daily,60min,30min,15min,5min,1min).			32E
			is_adjusted			39E
			For raw equity quotes this is 'false'. Adjustments are for corporate actions.			430
			opt_outputsize			500
			(Optional: 'compact' default) Full or compact series (full, compact).			561
			recalc_trigger			570
			(Optional) Argument to force recalc of function.			570
			<a href="#">Learn more about custom functions</a>			550
						57E

Here we've left out the argument for `opt_outputsize` since we're fine with the default values.

Now you can update your intraday series anytime but either pushing the Re-calc button or selecting "Trigger Recalc" from the Alpha Vantage Demo menu. **Try it!**