

Excel supplement

Copying cells with cell references

If you copy a cell with a cell reference, it will assume you want to shift your reference the same number of cells.

Example: you copy the cell right one column and down one, it will move the cell reference – one to the right and one down. The contents **=G4+E5** will become **=H5+F6**.

If you want to copy the cell reference without change your reference point, place a \$ in front of the reference (the column or the row or both the column and row)

Example: you copy the cell right one column and down one,

place a \$ in front of the column reference

=G4+E5 becomes **=\$G5+E5**

place a \$ in front of the row reference

=G4+E5 becomes **=G\$4+F\$5**

place a \$ in front of the column and row reference

=G4+E5 stays the same **=\$G\$4+\$E\$5**

Built-in Functions:

Position in a cell

Type =A – you get a list

=ABS – absolute value (+ or -)

=AVERAGE

Type =C – you another list

=COUNT

=CONCATENATE (Merge fields)

To Count the cells in a column use versions of **=COUNT**

These examples work with the first column (A) and the third column (C), and rows 2 through 35 (baseinfo sheet)

Count each cell with the **letter A only** (A2 represents column A and row 2)

=COUNTIF(A2:A35,"=A")

Count each cell with **any number**

=COUNT(C2:C35)

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Count each cell with **any letter**

=COUNTA(C2:C35)

Count the cells in column **C that contains the letters am**

=COUNTIF(C2:C35,"*am*")

The next examples work with the fifth column (E) and rows 2 through 35 (baseinfo sheet)

Count each cell with any number **less than 20**

=COUNTIF(E2:E35,"<20")

Count each cell with any number **equal to or greater than 70**

=COUNTIF(E2:E35,">=70")

Count each cell with any number **20 through 70 inclusive**

=COUNTIF(E2:E35,"<=70")-COUNTIF(E2:E35,"<20")

To add the values in the cells in a column use versions of =SUM

The next examples work with the sixth column (F) and rows 2 through 35

Add the values of the cells

=SUM(F2:F35)

Add the values of the cells that are **equal to or greater than 70**

=SUMIF(E2:E35,">=70")

Add the values of the cells in column **F** if the **corresponding cell in column D contains the letter M**

=SUMIF(D2:D35,"M", F2:F35)

Add the values of the cells in column **F** if the **corresponding cell in column D contains the letter F**

Sum F=SUMIF(D2:D35,"F", F2:F35)

Add the values of the cells in column **F** if the **corresponding cell in column C contains the letters am**

=SUMIF(C2:C35,"*am*", F2:F35)

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Finding Minimum, Maximum, use versions of =MIN or =MAX

Min of age column =MIN(E2:E35)

Min of age column =MAX(E2:E35)

=MIN(IF(E2:E35<20,F2:F35)) – if age is less than 20

=MAX(IF(E2:E35<71,IF(E2:E35>19,F2:F35))) – Max if age is 20 to 70

To Merge 2 fields =CONCATENATE

These examples work with column (B & C) and rows 4 through 10 (Name & Address 2 sheet)

Combine first and last name

=CONCATENATE(B4,C4) - Need a space

=CONCATENATE(B4," ",C4)

These examples work with column (E, F, & G) and rows 4 through 10 (Name & Address 2 sheet)

Combine city, state, and zip

insert comma and space after city

insert 2 spaces after state

=CONCATENATE(E4," ",F4," ",G4)

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Neat Features

These examples work with the Name & Address 2 sheet

Sequential numbering

- Start numbering the cells (2 cells)
- Highlight the 2 cells
- Position the pointer in lower right corner of highlighted area
- Hold down left button and drag to number the next cell(s)

Hiding columns

- To hide
 - Select column D
 - Right click the top
 - Choose hide
- To unhide
 - Select column C & E
 - Right click the top
 - Choose unhide

Selecting a print area

- Select area to print
 - At top choose Page layout
 - Choose Print area
 - Choose Set print area
- To clear selected print area
 - At top choose Page layout
 - Choose Print area
 - Choose Clear print area

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Today's date or date and time

- Select cell
 - =TODAY() – for today's date
 - =NOW() – for date and time

Page Headings – multiple pages

- Page Layout tab
 - Select Print Titles
 - Click calendar on “Rows to repeat”
 - Select rows

Column width

- Select column(s)
 - Right click
 - Select column width
 - Enter number

Row height

- Select rows(s)
 - Right click
 - Select Row height
 - Enter number

These examples work with the Baseinfo and Summary sheets

Use the Expense tabs for the following.

The Expense 2 tab is the modified method using drop-down menus

Drop-down menus

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- Set-up Summary Table
 - Title and column headings (Red box)
 - Totals at top (Green box)
 - Category list (Yellow box)
 - Summary totals (Purple box)

2014 Expenses		
Expense Type	Amount	Count
Totals	1790	24
Cable	400	4
Medical	340	5
Food	850	13
Electricity	200	2

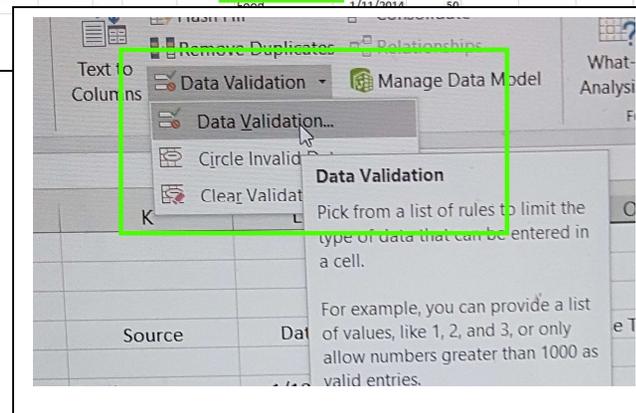
- Set-up detail table
 - Create headings
 - Move to first source
 - Select **“Data Tab”** in Box)
 - Click the **“Data ribbon (Red Box)**

2014 Expenses					
Expense Type	Amount	Count	Expense Source	Date	Amount
Totals	1790	24	Food	1/10/2014	50

(Blue box)
cell (Green box)
the Ribbon at top (Red

Validation” icon in the

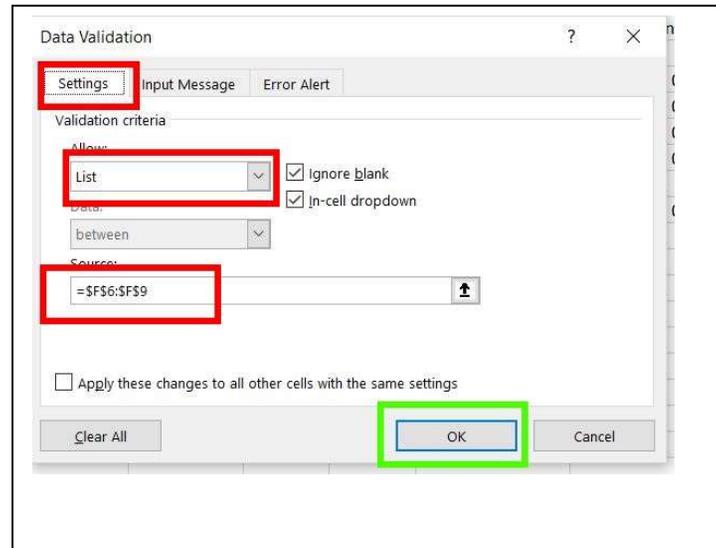
- In the drop-down menu,



select **“Data Validation”**

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- Select the **“Settings”** tab (Red box)
- In the **“Allow”** box, select the **“List”** (Red box)
- In the **“Source”** box enter the table. (Red box) Use the little icon source area and select the range. spaces at the bottom of the growth.
- Click the OK button when finished (Green box)
- Using the key combination of “Ctrl and C” just added the validation.
- Then highlight the cell down and use the key combination of “Ctrl and V” to paste the validation to those cells.



box)

“List” (Red box)

range for the **“Category”** on the right side of the Allow a couple of extra **“Category”** list for

(Green box)

and C” copy the cell you

You are now ready to use the worksheet for expenses

Table lookup Example

VLOOKUP or HLOOKUP

Vertical or horizontal search

First define a table

Column you want to search

Column with results

All columns between

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C2:E35 – columns C has search value, column has resultant information

```
=VLOOKUP(M25,C2:E35,3,FALSE)
```

Use the value in cell M25

Use cells C2 through E35

When you find it use the value in 3rd column

FALSE – No match display error. (N/A)

Multiple Spreadsheets

Data worksheet

But show someone with Summary

To reference a different worksheet you use the worksheet name followed by an exclamation point (!)

Example Baseinfo worksheet – Baseinfo!

Count a group of selected rows in baseinfo sheet

Use =, <, >, >=, <= – Note: the < or > is before the = when combining criteria

```
=COUNTIF(Baseinfo!A2:A35,"=A")
```

```
=COUNTIF(Baseinfo!A$2:A$35,"=A")
```

```
=COUNTIF(Baseinfo!E2:E35,">70")
```

```
=COUNTIF(Baseinfo!E2:E35,">=70")
```

```
=COUNTIF(Baseinfo!E2:E35,"<=70")
```

Note: Combining criteria 20 to 70 – Note <= 70 then subtract < 20

```
=COUNTIF(Baseinfo!E2:E35,"<=70")-COUNTIF(Baseinfo!E2:E35,"<20")
```

Add a group of numbers from selected rows in baseinfo sheet

```
=SUMIF(Baseinfo!A$2:A$35,"A",Baseinfo!F$2:F$35)
```

```
=SUMIF(Baseinfo!E2:E35,">70",Baseinfo!F2:F35)
```

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=SUMIF(Baseinfo!E2:E35,"<=70",Baseinfo!F2:F35)SUMIF(Baseinfo!E2:E35,"<20",Baseinfo!F2:F35)

Finding the minimum or maximum of a group of numbers from selected rows in baseinfo sheet

=MIN(IF(Baseinfo!A\$2:A\$35="A",Baseinfo!E\$2:E\$35))
=MAX(IF(Baseinfo!A\$2:A\$35="A",Baseinfo!F\$2:F\$35))
=MAX(IF(Baseinfo!D\$2:D\$35="M",Baseinfo!F\$2:F\$35))
=MIN(IF(Baseinfo!E2:E35>70,Baseinfo!F2:F35))
=MIN(IF(Baseinfo!E2:E35>=70,Baseinfo!F2:F35))
=MIN(IF(Baseinfo!E2:E35<=20,Baseinfo!F2:F35))

Note: Combining criteria 20 to 70 – Note < 71 then > 19
=MIN(IF(Baseinfo!E2:E35<71,IF(Baseinfo!E2:E35>19,Baseinfo!F2:F35)))

Formulas can be complicated with multiple ifs and various cell references.

=IF(+\$G11="M",(IF(+\$F11>=\$Z\$21,(+H9-(+\$E11+1)),(+H9-\$E11))),IF(+\$F11>=\$Z\$22,(+H9-(+\$E11+1)),(+H9-\$E11))))

Macros

Find Macros under view – If not there go to

File → Options → Customize Ribbon → Developer (Checked)

How to Create a Macro

Use the Baseinfo worksheet.

Select the “VIEW” ribbon at the top.

Click the “Macro” icon in the ribbon. (Right side)

In the drop down menu, select “Record Macro”

Rename the macro “Paintcells” and click the “OK” button.

Now select the “HOME” ribbon.

Now select cell F2 and click the paint bucket with the yellow strip under it.

Now select cell F3 and click the little down button next to the paint bucket and choose a color.

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Now select cell F4 and click the paint bucket button and click “More colors”, pick one and click “OK”

Select the “VIEW” ribbon at the top.

Click the “Macro” icon in the ribbon. (Right side)

In the drop down menu, select “Stop Recording”

Select the “VIEW” ribbon at the top.

Click the “Macro” icon in the ribbon. (Right side)

In the drop down menu, select “Record Macro”

Rename the macro “ResetColors” and click the “OK” button.

Now select the “HOME” ribbon.

Now select range of cells F2 through F4

Now select click the paint bucket button click “No Fill”.

Select the “VIEW” ribbon at the top.

Click the “Macro” icon in the ribbon. (Right side)

In the drop down menu, select “Stop Recording”

Using the Macros

Now we can paint the cells in F2 through F4 with the macro.

Select the “VIEW” ribbon at the top.

Click the “Macro” icon in the ribbon. (Right side)

In the drop down menu, select “View Macros”

Highlight the “Paintcells” then click the “Run” button.

Now run the macro to remove the colors.

Select the “VIEW” ribbon at the top.

Click the “Macro” icon in the ribbon. (Right side)

In the drop down menu, select “View Macros”

Highlight the “ResetColors” then click the “Run” button.

This is a simple example of how to automate repetitive operations in a spreadsheet.

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To view (and possibly change) the macro code,

Select the "VIEW" ribbon at the top.

Click the "Macro" icon in the ribbon. (Right side)

In the drop down menu, select "View Macros"

Highlight the "Paintcells" then click the "Edit" button.

This display the code for the highlighting the cells.

It followed the steps of;

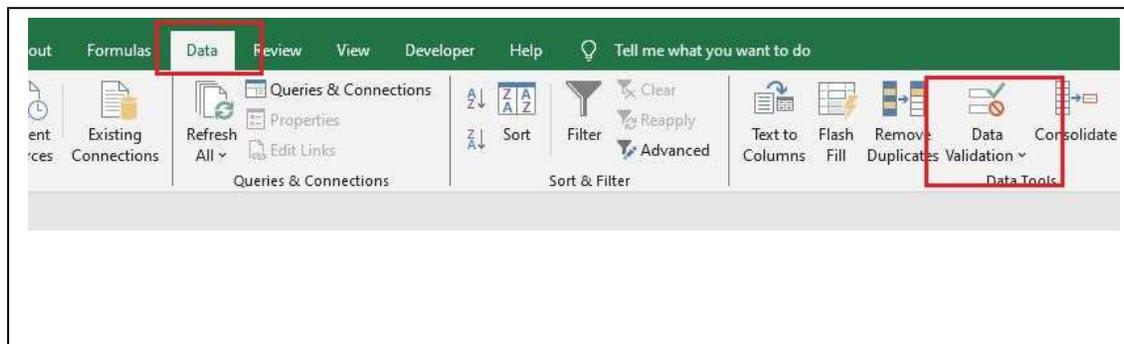
Selecting the cell, highlighting it, selecting the next cell, highlighting it, and finally the last cell and highlighting it.

By adding IF statements in the code, you can select to highlight with yellow if a cell contains a number greater than 50 or highlight in red if a cell contains a number less than or equal to 50.

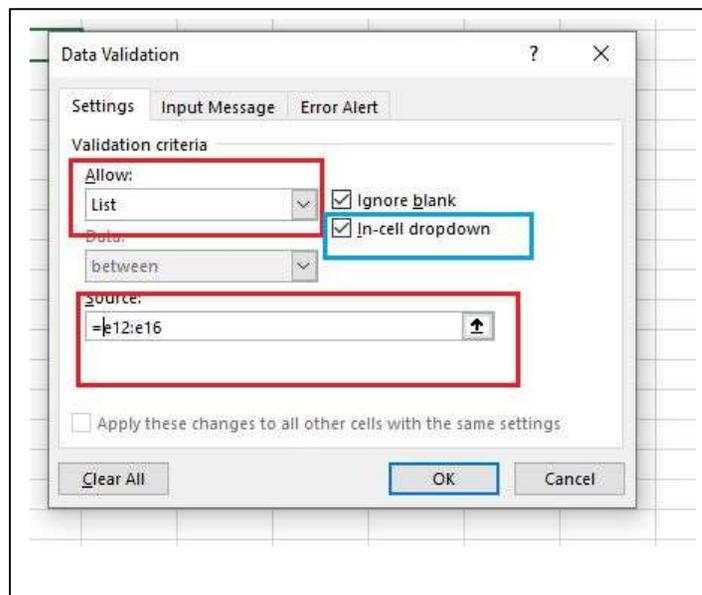
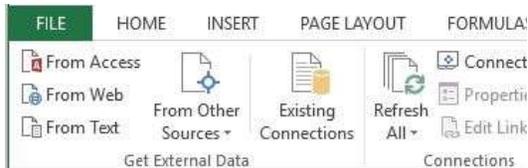
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Drop-down menus

1. In a spreadsheet, create a small table with entries for the **Drop-down** menu.
2. Select the cell where you want the **Drop-down** menu to appear.
3. Go to the **Data** tab and select **Data Validation**



4. In the **Allow** box, select **List**.
5. In the **Source** box enter the
6. Check the **In-cell dropdown**
7. If you want a message to
 - a. Click the **Input**
 - b. Check the box for **cell is selected.**



cell range for the table.
box

show ;
Message tab
Show input message when