Commonly Used Excel Formulas

Look Up Values in a List of Data:

Let's say you want to look up an employee's phone extension by using their badge number or the correct rate of a commission for a sales amount. You look up data to quickly and efficiently **find specific data in a list** and to automatically verify that you are using correct data. After you look up the data, you can perform calculations or display results with the values returned. There are several ways to look up values in a list of data and to display the results. There are two Lookup functions: **VLOOKUP** and **HLOOKUP.**

When to use what:

- VLOOKUP looks at a value in one column, and finds its corresponding value on the <u>same row</u> in another column. Use VLOOKUP when your comparison values are located in a column (*Vertical)* <u>to the left of the data</u> you want to find
- HLOOKUP searches for a value in the top row of a table or an array of values, and then returns a value in the <u>same column</u> from a row you specify in the table or array. Use HLOOKUP when your comparison values are located <u>in a row across the top of a table of data</u>, and you want to look down a specified number of rows (*Horizontal).*

   VLOOKUP

   Syntax - VLOOKUP(lookup_value,table_array,col_index_num,range_lookup)

   Sample - =VLOOKUP(1,A2:C10,2,True) OR =VLOOKUP(1,A2:C10,2,False)

   Meaning: Look up value 1 in cell ranges A2:C10; if found give me the data in column #2 from the same row where 1 was found. *True* means give me exact or approximate match; *False*, the exact match.

Lookup_value (Required): The value to search <u>in the first column</u> of a table_array, meaning the value you want to look up must be in the first column of the range of cells you specify in table-array. It can be a value (either a number or text) or a reference cell such as A23. If the lookup_value is a text, place it in double quotes. If lookup_value is a number and smaller than the smallest value in the first column of table_array, VLOOKUP returns the #N/A error value.

Table_array (Required): <u>One or more columns of data</u>. Use a reference to a range or a range name. The values in the first column of table_array are the values searched by lookup_value. These values can be

text, numbers, or logical values. Uppercase and lowercase texts are equivalent.   You **cannot** have duplicate values in the leftmost column of the lookup range.

Col_index_num (Required): It is the column number (starting with 1 for the left-most column of table-array) that contains the return value. A col_index_num of 1 returns the value in the first column in table_array (in the same row); a col_index_num of 2 returns the value in the second column in table_array (in the same row), and so on. If col_index_num is:

> Less than 1, VLOOKUP returns the #VALUE! error value.

> Greater than the number of columns in table_array, VLOOKUP returns the #REF! error value.

Range_lookup (Optional): A logical value that specifies whether you want VLOOKUP to find an exact match or an approximate match:

> **If TRUE or omitted, an exact <u>or</u> approximate match is returned**. If an exact match is not found, the next largest value that is less than lookup_value is returned. **The values in the first column of table_array must be placed in ascending sort order**; otherwise, VLOOKUP may not give the correct value. You can put the values in ascending order by choosing the Sort command from the Data menu and selecting Ascending.

> **If FALSE, VLOOKUP will only find an <u>exact</u> match**. In this case, the values in the first column of table_array **do not need to be sorted**. If there are two or more values in the first column of table_array that match the lookup_value, the first value found is used. If an exact match is not found, the error value #N/A is returned.

Remarks

> When searching text values in the first column of table_array, ensure that the data in the first column of table_array does not have leading spaces, trailing spaces, inconsistent use of straight (' or ") and curly (' or ") quotation marks, or nonprinting characters. In these cases, VLOOKUP may give an incorrect or unexpected value. (Use =TRIM(Cell address) function to get rid of leading or trailing spaces.)

> When searching number or date values, ensure that the data in the first column of table_array is not stored as text values. In this case, VLOOKUP may give an incorrect or unexpected value.

> If range_lookup is FALSE and lookup_value is text, then you can use the wildcard characters, question mark (?) and asterisk (*), in lookup_value. A question mark matches any single character; an asterisk matches any sequence of characters. If you want to find an actual question mark or asterisk, type a tilde (~) preceding the character.

Let's open *LookUps.xlsx* workbook and practice this function under *TravelExpense* worksheet. Remember Vlookup function begins with an equal sign "=" like a formula. We will be looking for exact matches on all examples below.
   1.   Select cell H2. Enter a VLookup function to look for the name "Julie Baker" in this worksheet.
   2.   Select cell H3. Enter a VLookup function to look for the name "Julie Baker" and if found, find how much she spent on *Plane Tickets*.

3. Select cell H4. Enter a VLookup function to look for the name begins with "Ellie" and if found, find me how much *Total* she spent.

See results in the next worksheet *TEResult* in the same workbook.

In the same workbook, let's look at another example where VLookup function is used to find matching information. In the example, the function is used to find whether any customer on 5/18/15 list is a repeated customer – are they on the list of customers in column A?
1. Select cell F7. Enter a VLookup function to find the value in D7 in the range of data A7 through A26. You only want an exact match.
2. Copy the formula in cell F7 through F17 using the fill handle. **Remember to change the table array A7:A26 into an absolute cell range before copying so that we are going to use the same table array for every formula we copied down.**

See results in the next worksheet *VMResult.*

HLOOKUP (Look up values horizontally in a list.) Searches for a value in the top row of a table or an array of values, and then returns a value in the same column from a row you specify in the table or array.

Syntax

HLOOKUP(**lookup_value**,**table_array**,**row_index_num**,range_lookup)

Lookup_value (Required): The value to be found in the first row of the table. Lookup_value can be a value, a reference, or a text string.

Table_array (Required): A table of information in which data is looked up. Use a reference to a range or a range name.

- The values in the first row of table_array can be text, numbers, or logical values.
- If range_lookup is TRUE, the values in the first row of table_array must be placed in ascending order: ...-2, -1, 0, 1, 2,... , A-Z, FALSE, TRUE; otherwise, HLOOKUP may not give the correct value. If range_lookup is FALSE, table_array does not need to be sorted.

- Uppercase and lowercase texts are equivalent.

- Sort the values in ascending order, left to right.

Row_index_num (Required): The row number in table_array from which the matching value will be returned. A row_index_num of 1 returns the first row value in table_array, a row_index_num of 2 returns the second row value in table_array, and so on. If row_index_num is less than 1, HLOOKUP returns the #VALUE! error value; if row_index_num is greater than the number of rows on table_array, HLOOKUP returns the #REF! error value.

Range_lookup (Optional): A logical value that specifies whether you want HLOOKUP to find an exact match or an approximate match. If TRUE or omitted, an approximate match is returned. In other words, if an exact match is not found, the next largest value that is less than lookup_value is returned. If FALSE, HLOOKUP will find an exact match. If one is not found, the error value #N/A is returned.

Remarks

If HLOOKUP can't find lookup_value, and range_lookup is TRUE, it uses the largest value that is less than lookup_value.

If lookup_value is smaller than the smallest value in the first row of table_array, HLOOKUP returns the #N/A error value.

If range_lookup is FALSE and lookup_value is text, you can use the wildcard characters, question mark (?) and asterisk (*), in lookup_value. A question mark matches any single character; an asterisk matches any sequence of characters. If you want to find an actual question mark or asterisk, type a tilde (~) before the character.

In the same workbook, open the worksheet named *"HLOOKUP"*. In the example, the names of the students are in row 1 and their grades appear from rows 2 through 5 for four different subjects. Assume, you are only interested in searching for grades for *Steve* and *Will*.

	A	B	C	D	E	F	G
1	Name	Steve	Joe	Will	Zack	Mark	Joe
2	AP Cal	80	65	89	93	78	98
3	AP Euro	90	89	89	76	89	92
4	AP Lit	76	80	92	95	79	91
5	AP Lang	80	90	93	95	89	78
6							
7	Individual Student Grades:						
8	Student	AP Cal	AP Lang				
9	Steve						
10	Will						

- Select cell B9. Enter a HLookup function to retrieve Steve's AP Cal grade.
  - Look for the value in cell A9 (Steve).
  - In cell ranges (A1:G5)
  - If found, give me the value in the row #2 (AP Cal) in the same column where you find the value "Steve". And find an exact match.
- Select cell B10. Enter a HLookup function to retrieve Will's AP Cal grade. Use the same concept above.
- Select cell C9. Enter a HLookup function to retrieve Steve's AP Lang grade. Use the same concept above.
- Select cell B11. Enter a HLookup function to retrieve Will's AP Lang grade. Use the same concept above.

See the result in the next worksheet *HLookupResult.*

Logical Functions OR Conditional Formulas:

Logical functions can be used to create conditional formulas to test whether conditions are true or false and making logical comparisons between expressions.

Comparing two values: A simple equation with two values as a formula will return either TRUE or FALSE constant value.   For example, if you want to see whether the value in A2 is greater than the value in A3 and want to receive either TRUE or FALSE in your result, simply type =A2>A3.

Open the *ConditionalFormula* workbook and do practice in the *Compare* worksheet as follows:
- Select cell A7. Enter a formula to get either TRUE or FALSE for the condition - *Is A2 greater than number in A3?*
- Select cell A8. Enter a formula to get either TRUE or FALSE for the condition - *Is A3 less than or equal to the number in A4?*
- Select cell A9. Enter a formula to get either TRUE or FALSE for the condition - *Is A2 greater than the combination of A3+A4?*
  See result in next worksheet – *CompareResult.*

Logical Function 1: AND

AND Function: Returns TRUE if <u>all</u> its arguments are TRUE; returns FALSE if <u>one or more</u> argument is FALSE. Each logical values are separated by commas.
  Syntax
  AND(logical1,logical2, ...)
  Logical1, logical2, ...   are 1 to 255 conditions you want to test that can be either TRUE or FALSE.

Open *ANDCondition* worksheet in the same workbook and practice as follows:
- Select cell A7. Enter an AND condition formula to find out - *Is A2 greater than A3 **AND** A3 greater than A4*?
- Select cell A8. Enter an AND condition formula to find out - *Is A4 greater than A3 **AND** A2 greater than A3?*
See result in next worksheet – *ANDResult.*

Logical Function 2: OR

OR Function: Returns TRUE if <u>any</u> argument is TRUE; returns FALSE if <u>all</u> arguments are FALSE.
  Syntax
  OR(logical1,logical2,...)
  Logical1,logical2,...   are 1 to 30 conditions you want to test that can be either TRUE or FALSE.

Open *ORCondition* worksheet in the same workbook and practice as follows:
- Select cell A7. Enter an OR condition formula to find out - *Is A2 greater than A3 OR A3 greater than A4?*
- Select cell A8. Enter an OR condition formula to find out - *Is A2 greater than A3 OR A4 greater than A3?*

- Select cell A9. Enter an OR condition formula to find out - *Is A3 greater than A2 OR A4 greater than A3?*
  See result in next worksheet – *ORResult.*

Logical Function 3: NOT

NOT Function: <u>Reverses</u> the value of its argument. This function receives a logical value and simply returns the opposite logical value. I.e. if supplied with the value TRUE, the Not function returns FALSE and if supplied with the value FALSE, the function will return the value TRUE. Use NOT when you want to make sure a value is **not equal to one particular value**.

Syntax
NOT(logical)
Logical is a value or expression that can be evaluated to TRUE or FALSE.
Remark
If logical is FALSE, NOT returns TRUE; if logical is TRUE, NOT returns FALSE.

Open the *NOTCondition* worksheet and see examples and results.

Logical Function 4: IF

IF Function: Tests a user-defined condition and returns one result if the condition is TRUE, and another result if the condition is FALSE. Use IF to conduct conditional tests on values and formulas.

Syntax
IF(logical_test,value_if_true,value_if_false)

Formula with the IF function
1 logical_test: The condition that you want to check. This argument can use any comparison calculation operator (=, >, <, =>, =<, <>).
2 value_if_true: The value to return if the condition is true. Value_if_true can be another formula.
3 value_if_false: The value to return if the condition is false. Value_if_false can be another formula.

Open *IFCondition* worksheet to practice the followings:

1. **Simple IF Condition**
- Select cell H2. Enter an IF condition formula to achieve the result – If the value in cell B2 is greater than 500, give me the excess amount over 500, or else just give me the text "OK".
- You may copy the formula in H2 to all the way to cell H17 by using the *Fill Handle.*

2. **Combined IF and Other Conditions**

The IF function can be used combined with other functions. After opening an IF function, immediately follow with another function in parenthesis. See example below. =If(And(B2>B3,B3>B4),"OK", "Not OK") – this argument asks for if both conditions B2>B3 and B3>B4 are true, give me the text "OK", or else "Not OK".

Do the practice in the same worksheet as follows.
- Select cell I2. Enter an IF/AND combined nested formula to achieve the result – If the value in cell B2 is greater than 500 AND the value is C2 is greater than 1000, give me the text "OVER", or else give me the text "OK".
- Copy the formula in I2 all the way to cell I17 by using the *Fill Handle.*

3. Nested IF Conditions
The IF function is frequently 'nested' in Excel. That means the value_if_true or the value_if_false argument is replaced with another call to the If function. See example in the worksheet *NestIFExample*.
=IF(A1=1,"red", IF(A1=2,"blue", IF(A1=3,"green","black"))) – If the value in cell A1=1, give me the text "red", if the value in cell A1=2, give the text "blue", if the value in cell A1=3, give me the text "green", or else give me "black" for all other numbers. Note that for every opened parenthesis, you need to have a closed parenthesis. Notice the color for each pair in your formula bar area. Change the number in cell A1 from zero to other numbers to see the result in cell A2. **Note**: You can leave out the alternative result "black" to get FALSE in your result instead of the text "black".

To do exercise for this **Nested IF Conditions**, use the worksheet *IFCondition.*
- Select cell J2.
- Create <u>Nested</u> IF functions in cell J2 meeting the following criteria:
    1) If Total expense is less than 3000, the office will cover the full cost.
    2) If Total expense is more than 3000 but less than 5000, the office will cover full up to 3000 **and** 50% beyond 3000.
    3) If Total expense is more than 5000, the office will cover full up to 3000 **and** 50% between 3000 and 5000 **and** 25% beyond 5000.
    Hints:
    1) =IF(G2<3000,G2,….)
    2) =IF(G2<5000,3000+(G2-3000)*50%,…)
    3) =IF(G2>5000,3000+1000+(G2-5000)*25%)

When to use what Functions:

a) Create a conditional formula that results in a logical value (TRUE or FALSE)

   To do this task, use the AND, OR, and NOT functions, and operators.

b) Create a conditional formula that results in another calculation or in values other than TRUE or FALSE

   To do this task, use the IF, AND, and OR functions.

Note: Up to **64 IF functions** can be nested as value_if_true and value_if_false arguments to construct more elaborate tests.

COUNT FUNCTION USING IF: There are times that you simply want to count the number of cells that meet a criterion; for example, to count the number of times a particular city appears in a customer list. Use COUNTIF function to accomplish this goal.

COUNTIF

The **COUNTIF** function counts the number of cells within a range that meet <u>a single</u> criterion that you specify.

    Syntax: =COUNTIF(range, criteria)

    Range: Required. One or more cells to count, including numbers or names, arrays, or references that contain numbers. Blank and text values are ignored.

    Criteria: Required. A number, expression, cell reference, or text string that defines which cells will be counted. For example, criteria can be expressed as 32, ">32", B4, "apples", or "32". **Be sure to enclose the criteria argument in double quotes unless you are looking for an exact value like 32. Arguments to find text and value that uses operators need double quotes.**

    Wildcard characters —the question mark (?) and asterisk (*)—can be used in criteria such as "Bu*" to find any cell that begins with "Bu" followed by any strings. A question mark matches any single character. An asterisk matches any sequence of characters. If you want to find an actual question mark or asterisk, type a tilde (~) in front of the character.

Open the worksheet named *"COUNTIF"* in the same workbook *ConditionalFormulas.xlsx.*
- Select cell H2.
- Enter a COUNTIF formula to count how many times the name "Buchanan" (in other words, the value in cell G2) appears in the cell range: B2:B800.
- Do the same for the next cells H3 through H10. **Note:** If you opt to use the text string "Buchanan" in your cell H2 formula, you will have to rewrite formulas in cells H3 through H10 to find different salesmen individually. However, if you use the cell reference such as G2 <u>and</u> keep the cell range B2:B800 into an absolute range, then you can use *Fill Handle* to copy the formula all the way down to H10.
- The value in cell H11 should turn into 799 once you fill in cell H2 through H10 with formula.
- See results in column K (cells K2 through K10).

Let's do another practice of finding values (Dollar Amount) greater than certain values in cells H14 and H15.
- Select cell H14.
- Enter a COUNTIF formula to count how many times the order amount in cell range E2:E800 go over $10,000.
- Select cell H15.
- Enter a COUNTIF formula to count how many times the order amount in cell range E2:E800 go over $5,000.
- See results in cells K14 and K15.

COUNTIFS: On the other hand, if you have <u>more than one criterion</u> you want to specify, USE THE COUNTIFS. It applies criteria to cells across multiple ranges and counts the number of times all criteria are met.

>Syntax: COUNTIFS(criteria_range1, criteria1, [criteria_range2, criteria2]…)

>**criteria_range1**: Required. The first range in which to evaluate the associated criteria.

>**criteria1:** Required. The criteria in the form of a number, expression, cell reference, or text that define which cells will be counted. For example, criteria can be expressed as 32, ">32", B4, "apples", or "32".

>**criteria_range2, criteria2, ...**: Optional. Additional ranges and their associated criteria. Up to **127** range/criteria pairs are allowed.

>**Sample:** COUNTIFS(B2:B800,"Smith",E2:$800,">500") – In this formula, we are looking how many times the text string "Smith" appear in cell range B2:B800 AND the value is greater than 500 in cell range E2:E800 for the same row where "Smith" is found.

>**Important!** Each additional range must have the same number of rows and columns as the criteria_range1 argument. The ranges do not have to be adjacent to each other.

Open the worksheet named *"COUNTIFS"* in the same workbook *ConditionalFormulas.xlsx.*
- Select cell H3.
- Enter a COUNTIFS formula to find out whether the salesman "Buchanan" has any Order Amount greater than $10,000. Remember to place quotes around your criterion searches. Buchanan did not have order amount that exceeds 10000, the answer is zero. **Note:** Just like in the above COUNTIF function, if you use cell references and keep the cell ranges as absolutes, then you can use *Fill Handle* to copy cells from cell H3 all the way down to H11.
- The total in cell H12 should be 10 since only 10 order amounts by all these salesperon exceed 10000.
- See results in cells H15 through H23.

Goal Seek

Goal Seek function lets you set a formula cell to achieve a desired result by changing the value of <u>one</u> of the variables in the equation. In other words, **Goal Seek** lets you start with the desired result, and it calculates the input value that will give you that result. **Goal Seek** works <u>only with one variable</u> input value.

Note: The cell that Goal Seek changes <u>must be referenced by the formula</u> in the cell that you specified in the Set cell box.

Practice: Open the *WhatIfAnalysis.xlsx* workbook and follow the steps in the *GoalSeek* worksheet. In this example, we want to find out how much of the change in *Misc.* income if we need to seek the *Income Totals* to be at $4000.

1. Set up the formula as usual by using separate cells for each variable. In this example, cell B8 already has the =SUM(B5:B7) formula to add *Wages, Interest/Dividends,* and *Misc.*
2. On the **Data** tab, in the **Data Tools** group, click **What-If Analysis**, and then click **Goal Seek**.
3. In the **Set cell** box, enter the reference for the cell that contains the formula that you want to resolve. In this example, the formula contains in cell B8 and we selected that cell already.
4. In the **To value** box, type the formula result that you want. We want to test if we want *Income Totals* to be at 4000. Type in 4000 in the box.
5. In the **By changing cell** box, enter the reference for the cell that contains the value that you want to or you can adjust. In this example, the only line item we can adjust is *Misc.* So click on cell B7. Click **OK**.
6. Cell B7 just displayed the value determined by the **Goal Seek.**
7. Try finding how much you will have to make in *Misc.* figure if you are seeking goal of having the *Income Totals* up to $5000. Start with step 1 through 5 above using the desired amount to 5000 in **To value** box.

Scenarios

A scenario is a set of values that Excel saves and can substitute automatically in cells on a worksheet. You can create and save different groups of values on a worksheet and then switch to any of these new scenarios to view different results. Each scenario can accommodate up to 32 variable values.

How many scenarios can you create for a workbook? - Limited by available memory; a summary report shows only the first 251 scenarios.
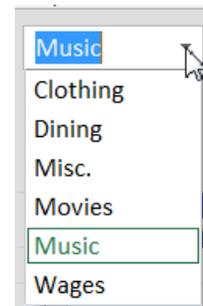
For example, you want to create several different scenarios on your household budget since you see the possibility of working hours being cut back.
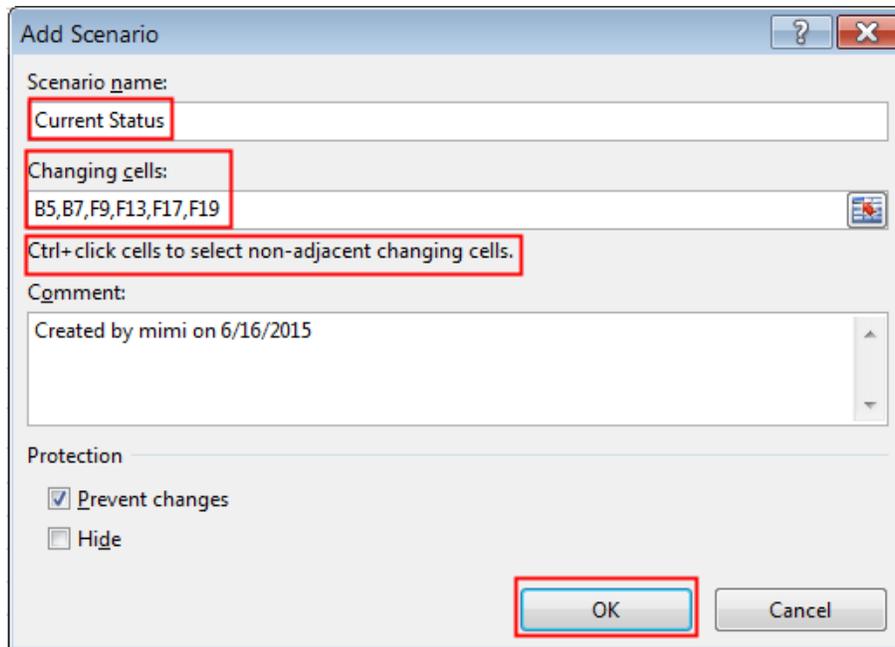
Open the worksheet *Scenario* in the same workbook *WhatIfAnalysis.xlsx*.

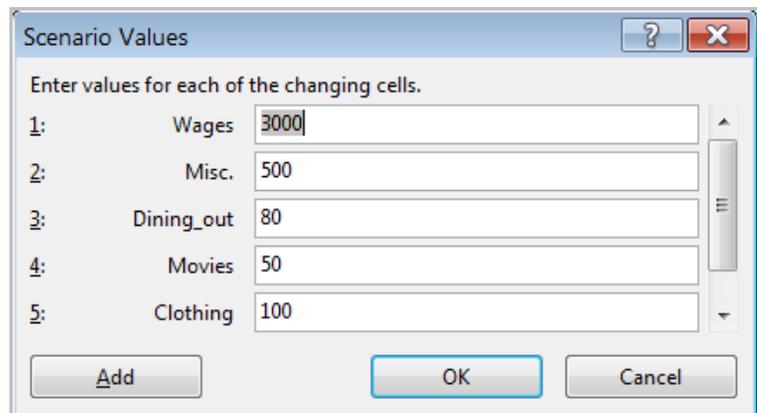|	A	B	D	E	F
1	**Monthly Personal Budget 1**				
2				**Cash short/extra**	**$480**
3					
4	**Income**	**Amount**		**Expenses**	**Amount**
5	Wages	$3,000		Mortgage/rent	$850
6	Interest/dividends	$150		Utilities	$150
7	Misc.	$500		Mobile telephone	$150
8	**Income totals**	**$3,650**		Groceries	$500
9				Dining out	$80
10				Gas/fuel	$200
11				Insurance	$80
12				Cable TV	$35
13				Movies/plays	$50
14				Insurance	$75
15				Prescriptions	$50
16				Internet connection	$50
17				Clothing	$100
18				Salon/barber	$50
19				Music (CDs, etc.)	$50
20				Retirement (401k, Roth IRA)	$200
21				Credit card payments	$500
22				**Total Expenses**	**$3,170**
23					

In this worksheet, we will use the cells in red as our variables. In other words, we will change these multiple variables to find out how our **Income totals, Cash short/extra,** and **Total Expenses** values cells are affected. We also named these cells appropriately. Naming cells give us distinctive advantage in using these cells in formula. Assume the sheet shows the current status of the budget. We want to create a scenario with given figures and will name it "Current Status":

1) Follow the steps below.
    a. Select cell B5 (first variable cell).
    b. In **Data Tools Group**, click the arrow next to the **What-If-Analysis** and select the **Scenario Manager**.
    c. Click on the **Add** button in the **Scenario Manager Window**. **Add Scenario** window will pop up.

d. Type in *Current Status* in the **Scenerio name** box.

e. Next, click inside the **Changing cells** box. The first variable cell B5 is there already since it was selected in step 1 above. Hold down the **Control** button on the keyboard and click the remaining cells B7,F9,F13,F17,F19 individually to include in our variable group of cells.

f. Click on **OK. Scenario Values** box will appear. In there, all cells that would be changed while creating different scenarios wil be listed. Note the scroll down on the right to see more cells at the bottom of the window. Note the names of those cells which clearly identifies which cell you are changing such as

Wages instead of cell B5. Also note the **Add** button on the bottom left. If you want to add more variable cells, you can click on the **Add** button and add more cells. Remember only if you name the cells ahead then you will see the names on the left. Or else the cells will be identified by a generic cell address.

g. Click **OK**.

h. Click the **Close** button on next window. You have just created a single scenario that includes 6 different variables (cells B5, B7,F9,F13,F17,F19).

2) Let's create another scenario with 30% pay cut on *Wages* but you are willing to work overtime and increase your *Misc.* income up to $800. And you are also willing to cut down *Dining, Movie, Clothing,* and *Music* costs to 50%. See what happen to our **Income totals, Cash short/extra,** and **Total Expenses** values cells. Follow the same steps above a through h. Name this scenario *30% Paycut*. Change the values in **Scenario Values** box as:

a. Wages: 2100 (30% cut off 3000)
b. Misc: 800 (Willing to make more overtime to increase this income)
c. Dining_out: 40 (50% cut)
d. Movies: 25 (50% cut)
e. Clothing: 50 (50% cut)
f. Music: 25 (50% cut)
g. Then click on the **Show** button to see the changes reflected in **Income totals, Cash short/extra,** and **Total Expenses** values cells.

3) Create another scenario with 50% pay cut on *Wages, Misc.* up $800. And still cut down the variable cells to 50% of original value. Be sure to go back to the *Current Status* scenario to see the original first. Select the *Current Status* scenario and click on **Show** button then create a new scenario. Call this scenario *50% Paycut*.

To display your different scenarios that you just created:
1. Open **Scenario Manager** by following the same steps 1 through 3 above.
2. Click on the name of the scenario that you want to display.
3. Click **Show**. **Note**: After you close the Scenario Manager Dialog box, the values from the last scenario that you displayed remain on the worksheet. If you saved your initial values as a scenario, you can display those values before you close the Scenario Manager Dialog box.

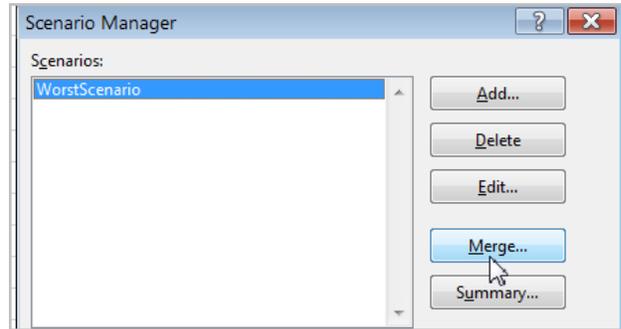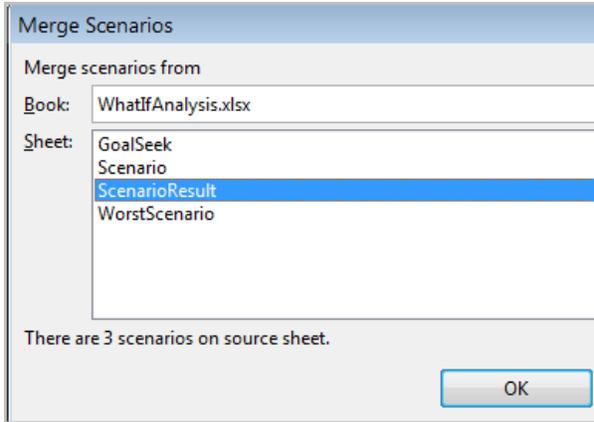See results in the worksheet *ScenarioResult.*

To create a Scenario Summary Report:

1. On the **Data** tab, in the **Data Tools** group, click **What-If Analysis**, and then click **Scenario Manager**. Try in the *ScenarioResult* worksheet.
2. Click **Summary**.
3. Click **Scenario summary**.
4. In the **Result** cells box, enter the references for the cell F2 that refer to cells <u>whose</u> values are changed by the scenarios. If you want to see more than one cells, separate multiple references with commas.

   Note: Scenario reports do not automatically recalculate. If you change the values of a scenario, those changes will not show up in an existing summary report, but will show up if you create a new summary report.

To merge scenarios:

1. Select the worksheet in which to store the merged scenarios results. In this example, select the worksheet *WorstScenario.* We want to combine this worksheet with *ScenarioResult* worksheet where there are 3 scenarios stored.

2. Open **Scenario Manager** in the worksheet *WorstScenario.* Click on the **Merge** button.

3. In the **Merge Scenarios** dialog box, select *ScenarioResult* worksheet to merge with the *WorstScenario* worksheet. Click **OK.**

4. You will see the 3 scenarios from the *ScenarioResult* worksheet are now merged onto the *WorstScenario* worksheet.