

Excel Best Practices Workbook

The purpose of this workbook is to introduce you to various Excel tips, tricks, and commonly used formulas, allowing you to practice performing them within Excel.

If you are struggling with any of the tasks within this workbook, feel free to use an internet search engine or classmates that have more experience working in Excel to assist you in performing the appropriate procedures.

You will have the following amount of time to complete each section of the workbook:

- **Section 1: Tips and Tricks – 20 minutes**
- **Section 2: Formulas (including XLOOKUP) – 20 minutes**
- **Section 3: PivotTables – 10 minutes**

You have **20 minutes** to complete Section 1. Please do not advance once you have completed the section.

1 Transpose Data

How To:

Copy data > Paste Special > Transpose

Task Instructions:

Transpose the data below so that it pastes across the blue cells horizontally.

Orange
Blue
Yellow
Red
Green
Blue

2 Force a Carriage Return in a Cell Instead of Wrapping the Text

How To:

ALT+ENTER while editing the cell

Task Instructions:

Write 3 sentences with a space between each within the merged cell outlined below using the ALT+Enter function.

3 Use Format Painter More than Once

How To:

Select the cell that you want to copy the formatting from. Double Click the Format Painter and use it as many times as you like. When you're done press ESC.

Task Instructions:

Use the Format Painter to format the data within column C and E to match the formatting of column B.

123,424	672394.07	23%	372323.54
567,563	375272.58	45%	482323.78
51,348	56234.01	82%	56732.72
457,396	92742.33	65%	75829.12

4 Format Sheet Tab Colors

How To:

Right-Click mouse on Sheet Tab > Tab Color

Task Instructions:

Change the Tips and Tricks Tasks tab color to Orange.

5 Combine Text from Multiple Cells

How To:

Enter your formula with the ampersand '&' between the cell references e.g. =A1&A2&A3 will add the text in cell A1, A2 and A3 together.
Note: if you want to add a space between the text from each cell enter your formula like this: =A1&" "&A2&" "&A3 Where the " " is adding a space

Task Instructions:

Combine the text in the three cells highlighted blue below in the outlined cell. Include a space between each word.

Practice
Makes
Perfect

6 Apply Different Formats within One Cell

How To:

Could be different fonts, font colors, styles and more. Select the cell you want to format > F2 to edit the cell > highlight the text you want to change > use the formatting tools on the Home tab of the ribbon.

Task Instructions:

Underline the word underline, bold the word bold, italicize the word italicize, and change the color of the word red to red.

You can underline, bold, italicize, or make font red.

7 Move a Column, Row or Cells

How To:

Select the range of cells, column(s) or row(s) > hover your mouse over the edge of your selected range of cells (or columns or rows) >when the mouse pointer changes to a 4 pointed arrow left click the mouse and hold down while you drag your cells to a new location.

Task Instructions:

Move the data below into the cells highlighted blue by dragging it .

1
2
3
4
5

8 Copy and Paste a Column, Row or Cells

How To:

As above except hold down the CTRL key while hovering your mouse over the edge of the selected area. Then drag the cells (while holding down the CTRL key) and release the mouse where you want to paste the data.
Note: these mouse pointers may appear different on your computer if you have a different operating system or have customized how your mouse appears. Regardless, the shortcuts above will still work as described.

Task Instructions:

Copy and paste the data below into the cells highlighted blue using CTRL.

1
2
3
4
5

9 Convert Formulas to Values

How To:

Copy cells containing formulas > Paste Special > Paste Values.

Task Instructions:

Paste the values of the formulas in the data highlighted green into the cells highlighted blue below.

Formulas:	Paste:
12	
45	
15	
56	
36	

10 Freeze Rows and or Columns at the Top or Left of your Workbook so that Headings Stay in Place While you Scroll Down the Worksheet.

How To:

Place your cursor at the intersection of the rows/columns you want fixed in place (i.e., Frozen) > View tab of the ribbon > Freeze Panes.

Task Instructions:

Freeze the first column so that it keeps the first column visible while scrolling through the rest of the worksheet. Do not freeze any rows.

11 Hide Worksheet Tabs

How To:

Right click on the tab name > Select Hide

Task Instructions:

Hide the tab within this workbook that is called Sec 1 - Hide Me.

12 Use Text to Columns to Separate a Column of Data Containing First Names and Last Names

How To:

Let's say you have First Names and Last Names separated by a space in a column. Select the cells > Data > Text to Columns > Delimited > Next > Choose Delimiter (space in this example) > Next > Select column data format and Destination > Finish. The warning will tell you there is already data here if the destination includes the cells that include the text. You can click Ok.

Task Instructions:

Use Text to Columns to separate the names listed below into the First Name and Last Name columns.

Jane Moore	
Sam Jones	
Pat Smith	

13 Create Specific Data Validations

How To:

Data validation can restrict the type of information allowed in a given cell (or cells). You can also specify a range of valid data for numerical, time or date values, and even text length, or you can use data validation to limit data to a predefined list of acceptable items. Select the cells you wish to add a validation to > Data Tab > Click Data Validation in the Data Tools group > On the Settings tab, in the Allow box, click List > In the Source box, type the values, separated by commas, you want to allow. Type the options you want in the drop-down > Click OK. When you click on a cell within the range you selected, the drop-down arrow is available with the values you specified.

Task Instructions:

Create a data validation for the slides highlighted blue below. The validation should include a dropdown with the following options: Red, Yellow, Green.



14 Conditional Formatting

How To:

You can use conditional formatting to identify the following:

- o Top 10 or Bottom 10 using percentages, average or item
- o Greater than, less than or equal to
- o Text that contains a specific word or phrase
- o A date occurring
- o And even identify duplicate values

Select the range of cells you want formatted > From the Home tab go to the Styles group and select Conditional Formatting > The menu will appear with your formatting options > When you choose one of the options a cascading menu will appear > Depending on which option you choose you will be prompted to make more selections.

Task Instructions:

Use conditional formatting to highlight the duplicate values in the data listed below.

23
73
21
23
56
80

15 Delete Duplicate Values

How To:

When you remove duplicate values, only the values in the range of cells or table are affected. Any other values outside the range of cells or table are not altered or moved. As you are permanently deleting data, it's a good idea to copy the original range of cells or table to another worksheet or workbook before removing duplicate values.

Select the range of cells, or make sure that the active cell is in a table > On the Data tab, in the Data Tools group, click Remove Duplicates > Do one or more of the following: Under Columns, select one or more columns > To quickly select all columns, click Select All > To quickly clear all columns, click Unselect All > Click OK > A message is displayed indicating how many duplicate values were removed and how many unique values remain, or if no duplicate values were removed > Click OK.

Task Instructions:

Use the delete duplicates function to remove the duplicate values from the data listed below.

23
73
21
23
56
80

16 Sorting Data

How To:

Quickly reorganize a worksheet by sorting your data. Content can be sorted alphabetically, numerically, and in many other ways.

Sort sheet organizes all of the data in your worksheet by one column. Related information across each row is kept together when the sort is applied. For example, a Contact Name column can be sorted to display the names in alphabetical order.

o Select a cell in the column you want to sort by > Select the Data tab on the Ribbon, then click the A-Z command to sort A to Z, or the Z-A command to sort Z to A > The worksheet will be sorted by the selected column.

Sort range sorts the data in a range of cells, which can be helpful when working with a sheet that contains several tables. Sorting a range will not affect other content on the worksheet.

o Select the cell range you want to sort > Select the Data tab on the Ribbon, then click the Sort command > The Sort dialog box will appear. Choose the column you want to sort by > Decide the sorting order (either ascending or descending) > Once you're satisfied with your selection, click OK > The cell range will be sorted by the selected column. The other content in the worksheet is not affected by this sort.

Task Instructions:

Sort the sheet so that the data in column C is listed from smallest to largest.	
A	45
B	20
C	34
D	18
E	27

17 Copy Down Formulas

How To:

Quickly paste in a whole column of formulas using the fill handle. The fill handle is the little rectangle that sits in the lower right corner of all selections in Excel. As long as the formula sits in a column next to another column with a full set of data, you can just double-click the fill handle to copy the formula all the way down to the bottom of the table.

Task Instructions:

	Hours	Rate	Pay
Sue	5	18	90
Julia	8	18	
Mark	4.5	18	
Ryan	9	18	
Nick	13	18	
Amy	7	18	

PLEASE STOP HERE

You have **20 minutes** to complete Section 2. Please do not advance after you have completed the section.

1 SUM – totals one or more numbers in a range of cells.

How to:

Select a blank cell where you want the total to be. In that cell type =SUM([range of cells]) and then select the range of cells you wish to add together by clicking your mouse and dragging the cursor across the applicable cells. Then hit enter.

Task Instructions:

Use the SUM formula to sum the data below.

1
3
5
7
9

2 CONCAT (Concatenate) - combining data from multiple cells

How to:

If you have a cell that contains a first name and another cell that contains a last name, you can combine those cells together and also include arbitrary strings of characters such as a space (" ") or comma space (" , ") or even whole words or phrases. Select the empty cell where you want the function to be stored, and type =CONCAT([first cell selection], [second cell selection]). You can continue to combine cells by adding them to the formula.

In this example, the text elements for a last name, a comma followed by a space, and a first name are combined to make the text string "Beverly, Martha." You have to add ", " as a separate cell selection. If you wanted to combine the cells to say "Martha Beverly", add " " as a separate cell selection.

Task Instructions:

Use the CONCAT formula to combine the first and last names listed below into one cell per name. The first and last name should be separated by a space.

First Name	Last Name	Combined
Jane	Moore	
Sam	Jones	
Pat	Smith	

3 XLOOKUP Exact match - find corresponding information in a list of data

How to:

See the XLOOKUP tab

Task Instructions:

See the XLOOKUP tab

4 IF – tell Excel to perform different calculations depending on whether the answer to your question is true or false.

How to:

If the value in cell A1 is greater than the value in cell B1, then multiply the value in A1 by 5.
If not, multiply the value in B1 by 2.
Formula: =IF(A1>B1,A1*5,B1*2)

Operators you can use:

- = Equal to
- < Less Than
- > Greater Than
- <= Less than or equal to
- >= Greater than or equal to
- <> Less than or greater than

Task Instructions:

Create the following IF formula: if cell B50 is less than or equal to cell C50 then multiply cell C50 by 2. If not, multiply cell B50 by 3.

32 49

5 SUMIF - SUMIF extends the capabilities of the basic SUM function by allowing you to tell Excel to only SUM items that meet certain criteria.

How to:

Type =SUMIF(then select the range that you want Excel to find certain criteria in, COMMA, then type in the criteria you want Excel to look for (if using an alphabetized criteria then put it in quotations – for example a "Specific Name"), COMMA, then select the range you want Excel to sum from, and then close the parenthesis.

Task Instructions:

Use the SUMIF function to determine the total quantity of in-stock bananas.

Product	Supplier	# In Stock
Cherries	New Zealand	200
Bananas	Ecuador	350
Apples	China	180
Bananas	Philippines	400
Lemons	Oman	250
Apples	Poland	120
Bananas	Costa Rica	330

Formula:

PLEASE STOP HERE

3 XLOOKUP Exact match - find corresponding information in a list of data

How to:

The XLOOKUP function searches a range or an array, and then returns the item corresponding to the first match it finds. If no match exists, then XLOOKUP can return the closest (approximate) match.

The Syntax is:

XLOOKUP(lookup_value, lookup_array, return_array, [if_not_found], [match_mode], [search_mode])

Lookup Value: The value to search for. This value is required, and if it is omitted, XLOOKUP returns blank cells it finds in lookup array.

Lookup Array: The array or range to search.

Return Array: The array or range to return.

If not found: Where a valid match is not found, return the [if_not_found] text you supply. This value is optional.

Match mode: Specify the match type:

- 0 : Exact match. If none found, return #N/A. This is the default
- 1: Exact match. If none found, return the next smaller item
- 1 : Exact match. If none found, return the next larger item
- 2 : A wildcard match where *, ?, and ~ have special meaning.

Search mode: Specify the search mode to use:

- 1 : Perform a search starting at the first item. This is the default,
- 1: Perform a reverse search starting at the last item
- 2 : Perform a binary search that relies on lookup array being sorted in ascending order. *
- 2: Perform a binary search that relies on lookup array being sorted in descending order. *

*If not sorted, invalid results will be returned.

Translated further:

XLOOKUP(find this value, in that array, return the value in the array, character to display if lookup value is not found, return a result if you can match the value exactly, the direction you want the formula to search)

Tip: If you plan to copy your formula to use across more than one cell, you may wish to use **absolute cell references for the table array** so the cell references do not automatically adjust to a new range as the formula is copied. You can absolute the cells by pressing F4 when your cursor is in the cell number. It should look like this for example: \$B\$2:\$B\$11

Example: XLOOKUP to look up a country name in a range, and then return its telephone country code. It includes the lookup value (cell F2), lookup array (range B2:B11), and return array (range D2:D11) arguments. It doesn't include the match mode argument, as XLOOKUP produces an exact match by default

	A	B	C	D	E	F	G
1		Country	Abr	Prefix		What is the dial code?	
2		China	CN	+86			
3		India	IN	+91			
4		United States	US	+1			
5		Indonesia	ID	+62			
6		Brazil	BR	+55			
7		Pakistan	PK	+92			
8		Nigeria	NG	+234			
9		Bangladesh	BD	+880			
10		Russia	RU	+7			
11		Mexico	MX	+52			

Task Instructions:

Use the XLOOKUP function to determine what alpha ID was given to the number 21.

#	Alpha ID
1	AA
2	B
3	AD
4	DF
5	O
6	HJ
7	Y
8	QQ
9	XU
10	R
11	SN
12	LW
13	JE
14	IC
15	W
16	YF
17	Z
18	IX
19	KK
20	UL
21	EV
22	OI
23	BG
24	CP
25	MN
26	LA
27	KR
28	D
29	VE
30	M

Formula:

You have **10 minutes** to complete Section 3.

PivotTables

Working with PivotTables

Excel is arranged in rows and columns. Arranging your data in rows and columns — or columns and rows — will help you when it's time to run reports. Each row should be dedicated to a single item in your list. For example, if your spreadsheet contains data by customer, then each row could be dedicated to a single customer. Each column should be dedicated to a single attribute of the row item. Column "A" could be dedicated to the customer's ID and column "B" could be dedicated to the customer's name. So, row 6's "A" column might refer to "145" and the "B" column might say "Smith Goods," while row 7's "A" column might refer to "223" and the "B" column might say "KR Apparel."

Tip: Avoid blank rows and columns. Most people include blank rows or columns to make spreadsheets easier to read. For readability, consider adjusting row height or column width instead. Excel treats data on the other side of a blank row or column as unrelated information and will not automatically select it when you sort.

Create a PivotTable

A PivotTable is a reporting tool you can use to analyze data. With a PivotTable, you can create totals and subtotals. In addition, you can compare the totals of one column to another.

You can "pivot" the data in this kind of report to display it vertically or horizontally.

To create a PivotTable report:

1. Select the range of data you wish to include in the report. If the range of data on your worksheet contains neither blank rows nor columns, you can skip this step.
2. On the Insert tab, select PivotTable, then click OK. A new PivotTable appears on a new worksheet named Sheet 1.
3. Rename Sheet 1 as Pivot.

Anatomy of the PivotTable

A PivotTable consists of the following areas, the Report Filter, Column Labels, Row Labels, and Values.

- Row Labels: When you drag a field into this area, Excel creates a list of unique values found and displays each as its own row.
- Column Labels: When you drag a field into this area, Excel creates a list of unique values found and displays each as its own column.
- Values: When you drag a field into this area, Excel sums or counts the items according to the groupings within the Row or Column Labels. To force Excel to use another function such as Count or Average instead of Sum, right-click a pivot table cell in the column you wish to change. Choose Summarize Values By and then select the function you want.
- Report Filter: When you drag a field into this area, Excel creates a top level filter to control which data are displayed in the PivotTable.
- PivotTable Field List: The field list displays a list of all the column headers from the worksheet to which the PivotTable is linked.
- PivotTable Tools: A ribbon appears with tabs for controlling Options and Design.

Drag Fields Onto a PivotTable

1. In the Field List, drag a field and drop it in the Row Labels. Across the rows of data, Excel will display unique values it found — each value in its own row.
2. In the Field List, drag another field into the Values. Excel sums the items within each of the rows.

Pivot the Table

1. In the PivotTable, drag the field you entered into Rows and drag it to the Column Labels. Excel displays each of the unique items as its own column.
2. Drag that heading back to the Row Labels.

Add a Field to the Column Labels

Until now we have been dragging items into the various areas of the PivotTable. You can also “zap” items directly to the appropriate area of the PivotTable by selecting a field and clicking the button beneath the Field List.

1. Right-click on an item within the Field List
2. Click Add to Column Label

Add another column to the Data Area

You can summarize more than one column of information at a time in a PivotTable.

1. In the Field List, drag another numerical Field item and drop it in the Data Area.
2. Look at the Data Area to see totals of that new item next to what you had previously totaled.

When a PivotTable has more than one column or “field” in the Data Area, it creates a “Values” label and groups totals under it. You can drag the Data label to the Row Labels to display totals as stacked rows, or to the Column Labels to display as side-by-side columns.

Control Which Data Are Displayed

You can control which row or column values are displayed. Excel calculates totals based on which row or column values are visible.

1. Click the dropdown arrow next to the label within the pivot table.
2. Uncheck any items you do not wish to display, then click OK. Excel hides those rows and their totals.

Remove a Field From the PivotTable

1. Select a specific field heading in the Row Labels.
2. Click PivotTable menu, then click Hide.

Alternatively, you can drag the field heading outside the range of the PivotTable.

Drilling Down

After you have created a PivotTable, you might want to know where a particular total is coming from. Excel lets you drill into a particular total to see what rows of data comprise the total.

1. Filter the PivotTable.
2. Double-click a value that corresponds to that filter. Excel creates a new worksheet and populates it with a copy of the rows from your source data that contribute to the total on your PivotTable. Once you have viewed the data, you can safely delete the new worksheet without damaging your workbook.
3. Delete the newly created worksheet.

Refresh Your PivotTable

By default, PivotTables do not automatically refresh when you change information on the data worksheet. On the Options tab, click Refresh.

Task Instructions:

See the PivotTable Data tab for task instructions.

Task Instructions:

Create a PivotTable using the below dataset that shows the total invoice amount per city. Also add in the option to filter by customer name.

[illegible]

CREDLIM	INVNO	INV_DATE	AMOUNT
10000	0000463000000000	01-Dec-20	(107.86)
10000	120042499-00	04-Dec-20	125.00
10000	120043875-00	10-Dec-20	1,502.50
10000	120046828-00	24-Dec-20	1,935.50
10000	0000466160000000	31-Dec-20	(343.20)
50000	INT106	24-May-20	274.35
50000	INT1005	21-Jun-20	218.27
50000	INT4559	21-Oct-20	233.03
50000	INT5395	21-Nov-20	165.19
50000	INT6202	22-Dec-20	43.48
50000	120048043-00	31-Dec-20	3,628.20
50000	120048145-00	31-Dec-20	182.52
50000	0000468550000000	31-Dec-20	(10,170.73)
25000	20088	23-Jan-20	1,249.86
25000	20650	25-Jan-20	1,405.50
25000	20856	26-Jan-20	883.56
25000	21210	30-Jan-20	3,035.60
25000	21683	31-Jan-20	2,038.16
25000	21906	02-Feb-20	2,830.52
25000	INT107	24-May-20	442.78
25000	INT1006	21-Jun-20	693.86
25000	INT1914	22-Jul-20	960.30
25000	INT2826	21-Aug-20	1,063.92
25000	INT3687	21-Sep-20	1,412.89
25000	INT4560	21-Oct-20	681.35
25000	INT5396	21-Nov-20	436.64
25000	120046166-00	20-Dec-20	31.70
25000	INT6203	22-Dec-20	292.73
25000	120047488-00	27-Dec-20	2,548.68
25000	120047576-00	30-Dec-20	75.00
25000	120047922-00	31-Dec-20	3,952.72
50000	120041099-00	26-Nov-20	1,502.35
50000	120041132-00	26-Nov-20	345.72
50000	120041688-00	28-Nov-20	5,962.16
50000	120042225-00	03-Dec-20	1,995.52
50000	0000463010000000	01-Dec-20	(3,354.03)
50000	120042505-00	04-Dec-20	262.50
50000	120042912-00	05-Dec-20	4,860.78
50000	60000	02-Dec-20	(159.13)
50000	120043827-00	10-Dec-20	1,712.50
50000	120044533-00	12-Dec-20	2,921.34
50000	128003055-00	16-Dec-20	(62.15)
50000	120044919-00	17-Dec-20	15,811.20
50000	120045302-00	17-Dec-20	1,800.12
50000	120044922-00	19-Dec-20	8,823.04
50000	120045995-00	19-Dec-20	1,035.04
50000	120046787-00	24-Dec-20	3,968.75
50000	120048113-00	31-Dec-20	1,255.54
50000	0000466170000000	31-Dec-20	(5,260.03)