



## Module 1: Practice Quiz

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### Question 1

1/1 point (ungraded)

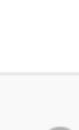
Of the following, which one would be considered a core capability of spreadsheets?

Storage

Statistical analysis

Selling stocks

Converting documents



Submit

Reset

Show answer

✓ Correct (1/1 point)

### Question 2

1/1 point (ungraded)

What is the Excel keyboard shortcut to move to the last cell on a worksheet?

Ctrl+Page Down

Ctrl+End

Ctrl+Down arrow

Ctrl+Shift+End



Submit

Reset

Show answer

✓ Correct (1/1 point)

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Graded Quiz due Apr 13, 2024

# Question 1

## Analyzing data

100

15

## Collection

## Cleaning

Submit	You have used 2	Show ans
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- ## Question 2

- # What is the Excel key move to the beginning

- Alt+Page Up



used 2  
of 2  
attempt

---

1

10 of 10

Which of the following  
shortcuts could be used?

assuming you have  
data? Select all that apply.

- CTRL+Home

-  CTRL+End

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## Module 2: Practice Quiz

Bookmark this page

### Question 1

1/1 point (ungraded)

How can you zoom to a specific area of data in an Excel spreadsheet?

Use the Zoom button

Use the Zoom to Selection button

Use the Freeze Frames option

Use the 100% button



Submit

Reset

Show answer

### Question 2

1/1 point (ungraded)

What is one of the key components of a typical formula?

Calculation

Reference

Division

Percentage



Submit

Reset

Show answer

### Question 3

1/1 point (ungraded)

What happens when you use the median calculation but select an even number of values in a range?

Divides the selected range in half

Returns middle figure between the two middle values in the selected range

Returns one of the middle value of the selected range

Returns both of the middle values of the selected range



Submit

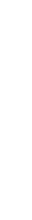
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## Module 2: Graded Quiz

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Graded Quiz due Apr 16, 2024

Completed

04:09 IST

### Question 1

0/1 point (graded)

Which of the following is a valid way of editing existing data in a cell? Select all that apply

Press F2



Select the cell you want to edit and press Enter

Select the cell you want to edit and then click in the formula bar



Press CTRL+N

Submit

You  
have  
used 2  
of 2  
attempts

Show answer

**i** Answers are displayed within the problem

### Question 2

0/1 point (graded)

In Excel for the web, how can you format data in cells to use a currency? Select all that apply

Select the data and click the Decrease Decimal button

Select "Format cells" from the Format drop-down list in the Cells group

Select "More Number Formats" from the Number Format drop-down list in the Number group



Right-click on a cell and select Number Format



Submit

You  
have  
used 1  
of 2  
attempts

Show answer

**i** Answers are displayed within the problem

### Question 3

1/1 point (graded)

What is one of the functions found in the AutoSum drop-down list?

General

Accounting

Count Numbers



Number



Submit

You  
have  
used 1  
of 2  
attempts

Show answer

**i** Answers are displayed within the problem

### Question 4

1/1 point (graded)

In Excel Desktop, what is one of the function categories on the Formulas tab, in the Function Library group?

Medical

Analytical

Lookup and Reference



Functional



Submit

You  
have  
used 1  
of 2  
attempts

Show answer

**i** Answers are displayed within the problem

### Question 5

1/1 point (graded)

How do you make a cell reference absolute in a formula?

Put a plus sign (+) between the column and row identifiers in the formula

Put a percentage sign (%) behind the column or row identifiers in the formula

Put a dollar sign (\$) in front of the column and/or row identifiers in the formula



Put an asterisk (\*) in front of the column or behind the row identifiers in the formula



Submit

You  
have  
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of 2  
attempts

Show answer

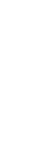
**i** Answers are displayed within the problem

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## Module 3: Practice Quiz

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### Question 1

1/1 point (ungraded)

What is the first and most significant part of data quality?

Relevance

Accuracy

Completeness

Reliability



Submit

Reset

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### Question 2

1/1 point (ungraded)

What is a delimited file?

file with data fields separated by fixed-widths

file with data fields separated by characters like commas or tabs

file with text qualifiers between data fields

file with no spaces between data fields



Submit

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### Question 3

1/1 point (ungraded)

What feature do you use to import data from a text file?

Function Wizard

Text Import Wizard

Formula Wizard

Chart Wizard



Submit

Reset

Show answer

### Question 4

1/1 point (ungraded)

What are the fundamentals of data privacy? Select all that apply.

Confidentiality

Collection and Use

Compliance

Completeness



Submit

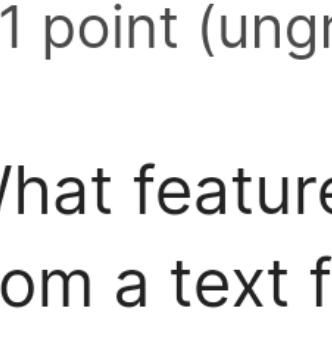
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## Module 3: Graded Quiz

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Graded Quiz due Apr 19, 2024

Completed

02:09 IST

### Question 1

1/1 point (graded)

Which data quality trait refers to the availability and accessibility of the data?

Timeliness

Relevance

Completeness

Accuracy



You  
have  
used 2  
of 2  
attempts

[Submit](#)

[Show answer](#)

### Question 2

1/1 point (graded)

After importing a text file into Excel, you find some columns aren't showing all data. How can you fix all column widths at the same time?

drag a divider across

click the Format button

select all columns and double-click one of the selected column dividers

shorten the text so it fits



You  
have  
used 1  
of 2  
attempts

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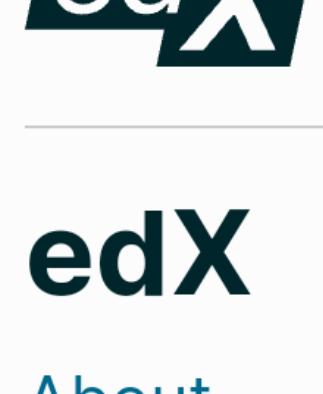
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## Module 4: Practice Quiz

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### Question 1

1/1 point (ungraded)

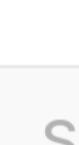
According to the video, what's one of the easiest common errors or inconsistencies to fix when importing data?

Duplicated data

Spelling mistakes

Extra white space

Empty rows



Submit

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### Question 2

1/1 point (ungraded)

What is the first thing you should do when checking spelling errors in Excel?

Click the Spelling button

Select the data you want to check for spelling

Find the misspelled data

Use a dictionary



Submit

Reset

Show answer

### Question 3

1/1 point (ungraded)

What is one of the functions you can use to change the text case in your data?

STRUCTURE

LOWER

CASE

CAP



Submit

Reset

Show answer

### Question 4

1/1 point (ungraded)

Which of the following tasks can Flash Fill do? Select all that apply.

Set column width

Remove empty rows

Combine two columns of data into one

Split one column of data into two



Submit

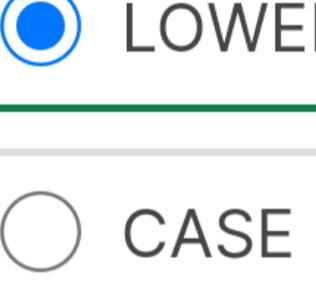
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## Module 4: Graded Quiz

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Graded Quiz due Apr 22, 2024

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00:09 IST

### Question 1

1/1 point (graded)

What is one of the issues that empty rows cause in your spreadsheet?

Spell-check will fail

Formula errors

Data will be hidden

Indexing function error



Submit

You  
have  
used 1  
of 2  
attempts

Reset

Show answer

### Question 2

1/1 point (graded)

There are two methods to locate and remove duplicated rows in Excel, what is the easiest way?

Select a column and choose Conditional Formatting > Highlight Cells Rules > Duplicate Values

Search for the first character in rows

Select all data and click the Remove Duplicates button

Use the HLOOKUP function



Submit

You  
have  
used 1  
of 2  
attempts

Reset

Show answer

### Question 3

1/1 point (graded)

What does the PROPER function do?

Converts upper case text to lower case

Converts lower case text to upper case

Changes text to sentence case

Repairs a REF error



Submit

You  
have  
used 1  
of 2  
attempts

Reset

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### Question 4

0/1 point (graded)

Why do you need to use the Paste Values option when you paste contents from a helper row to the original row?

Ensures consistency

Validates the copied function

Makes sure formulas aren't also copied

Keeps cell formatting the same



Submit

You  
have  
used 1  
of 2  
attempts

Reset

Show answer

**i** Answers are displayed within the problem

### Question 5

1/1 point (graded)

What is one of the ways to apply new data formats to the rest of a column?

Format button

Paste Special tool

Format Painter tool

Text Import wizard



Submit

You  
have  
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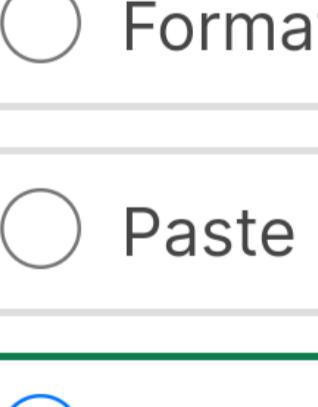
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## Module 5: Practice Quiz

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### Question 1

0.75/1 point (ungraded)

Which of the following are valid sorting orders you can choose when adding sorting levels to your data? Select all that apply.

Youngest to Oldest

Z to A

Oldest to Newest

Smallest to Largest

\*

Submit

Reset

### Question 2

1/1 point (ungraded)

After filtering a column and getting the results, in which two ways can you return to showing all the data in a column? Select two answers.

refresh the worksheet

refresh the column

clear the filter

turn filtering off

✓

Submit

Reset

Show answer

### Question 3

1/1 point (ungraded)

According to the video 'Useful Functions for Data Analysis', what is one of the most common functions a Data Analyst might use?

Average

Countif

Randbetween

Int

✓

Submit

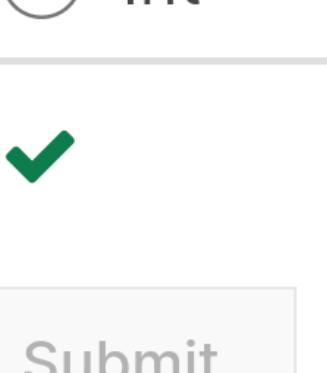
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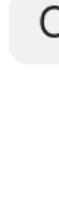
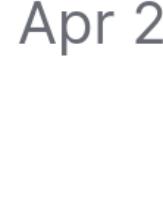
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## Module 5: Graded Quiz

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Graded Quiz due Apr 24, 2024

Completed

22:09 IST

### Question 1

1/1 point (graded)

If you have multiple filters set, how can you clear all of them at once?

You must clear each filter separately

Data tab> Sort and Filter group> Clear

Refresh the column

Turn sorting off



You  
have  
used 1  
of 2  
attempts

Submit

Reset

Show answer

### Question 2

1/1 point (graded)

After enabling Filtering, where can you see and access the filter controls?

Each column header now has a filter control

Only selected cells have filter controls

Each row has filter controls



You  
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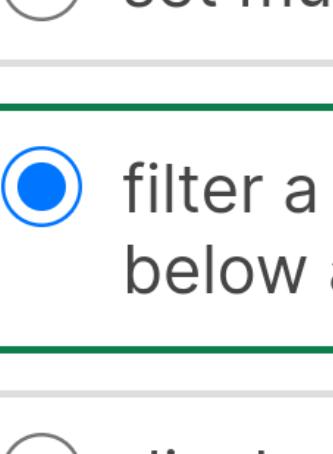
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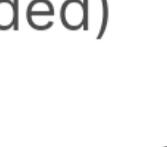
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## Module 6: Practice Quiz

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### Question 1

1/1 point (ungraded)

Before creating a pivot table, how should you format your data?

 Cell size Sort and filter As a table Conditional formatting[Submit](#)[Reset](#)[Show answer](#)

### Question 2

1/1 point (ungraded)

How can you add more filters to the pivot table?

 use a formula drag a field to the Filters area of the PivotTable Fields pane use a function first add filters to the original table data[Submit](#)[Reset](#)[Show answer](#)

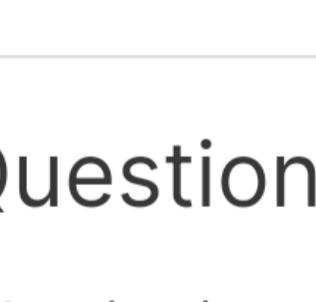
### Question 3

1/1 point (ungraded)

What are slicers?

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## Module 6: Graded Quiz

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Graded Quiz due Apr 27, 2024

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20:09 IST

### Question 1

1/1 point (graded)

According to the video checklist, what should you remove before making a Pivot Table?

Value fields

Blank rows, columns, and cells

Row labels

Date fields



You

have

[Submit](#)

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[Reset](#)

of 2

attempts

[Show answer](#)

### Question 2

1/1 point (graded)

What is automatically added after formatting data as a table?

Filter drop-downs at top of columns

Column headers

Alternate light/dark rows

Data bars



You

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[Submit](#)

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[Reset](#)

of 2

attempts

[Show answer](#)

### Question 3

1/1 point (graded)

After creating a pivot table and selecting it, what pane appears to the right of the pivot table?

The PivotTable Properties pane

The PivotTable Metadata pane

The PivotTable Fields pane

Additional pivot table examples



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# Reading: Excel Keyboard Shortcuts

**Estimated time needed:** 30 minutes

The table below lists keyboard shortcuts for some of the most common Excel tasks.

Task	Shortcut
Close a workbook	Ctrl+W
Open a workbook	Ctrl+O
Save a workbook	Ctrl+S
Copy	Ctrl+C
Cut	Ctrl+X
Paste	Ctrl+V
Undo	Ctrl+Z
Remove cell contents	Delete
Bold	Ctrl+B
Open context menu	Shift+F10
Expand or collapse the ribbon	Ctrl+F1
Move up one cell in the worksheet	Up arrow key
Move down one cell in the worksheet	Down arrow key
Move one cell left in the worksheet	Left arrow key
Move one cell right in the worksheet	Right arrow key
Move to the edge of the current data region in the worksheet (e.g. end of column)	Ctrl+Arrow key (e.g. Ctrl+Down arrow)
Move to the last cell on a worksheet	Ctrl+End
Move to the beginning of a worksheet	Ctrl+Home
Extend the selection of cells to the last used cell on a worksheet (lower right corner)	Ctrl+Shift+End
Move to the cell in the upper-left corner of the window (when Scroll Lock is On)	Home+Scroll Lock
Move one screen down in a worksheet	Page Down

<b>Task</b>	<b>Shortcut</b>
Move one screen up in a worksheet	Page Up
Move one screen to the right in a worksheet	Alt+Page Down
Move one screen to the left in a worksheet	Alt+Page Up
Move to the next sheet in a workbook	Ctrl+Page Down
Move to the previous sheet in a workbook	Ctrl+Page Up
Edit the active cell and put the cursor at the end of the cell's contents	F2
Enter the current time	Ctrl+Shift+colon (:)
Enter the current date	Ctrl+semi-colon (;)

## Author(s)

- [Steve Ryan](#)

## Changelog

Date	Version	Changed by	Change Description
2020-10-23	1.0	Steve Ryan	Initial version created

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## Hands-on Lab 2: Spreadsheet Basics

**Estimated time needed:** 20 minutes

To get started with a spreadsheet app, you need to know:

- Some of the common terminology around it
- What its key features are
- How to use some basic tools on the ribbon
- How to move around a worksheet
- How to select data in it.

In this lab, you will go through some basic spreadsheet elements, explore the ribbon, navigate around a worksheet and select data.

## Software Used in this Lab

The instruction videos in this course use the full Excel Desktop version as this has all the available product features, but for the hands-on labs we will be using the free ‘Excel for the web’ version as this is available to everyone.

Although you can use the Excel Desktop software if you have access to this version, it is recommended that you use Excel for the web for the hands-on labs as the lab instructions specifically refer to this version, and there are some small differences in the interface and available features.

## Dataset Used in this Lab

The dataset used in this lab comes from the following source: <https://www.kaggle.com/sudalairajkumar/indian-startup-funding> under a [CC0: Public Domain license](#). Acknowledgement and thanks also goes to <https://trak.in> who were generous enough to share the data publicly for free.

We are using a modified subset of that dataset for the lab, so to follow the lab instructions successfully please use the dataset provided with the lab, rather than the dataset from the original source.

# Objectives

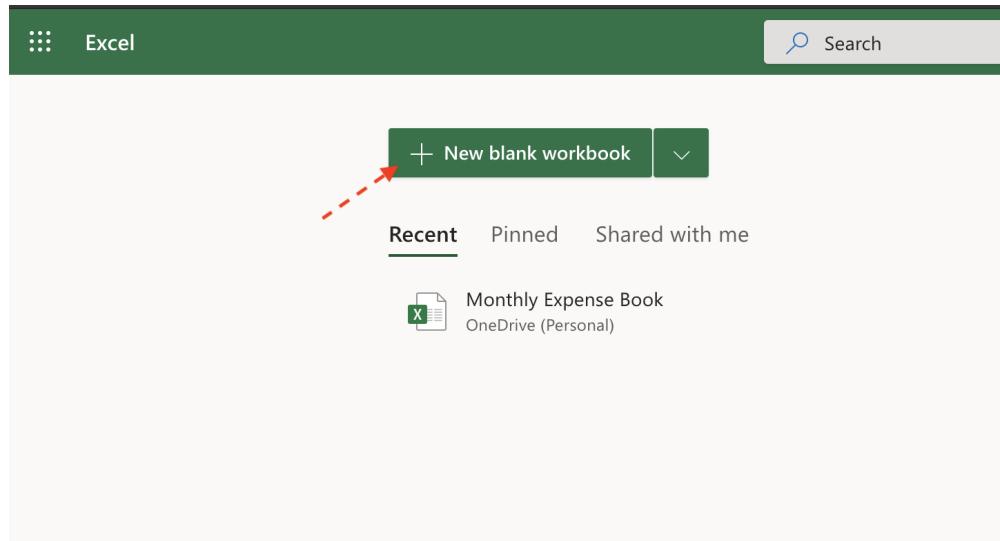
After completing this lab, you will be able to:

- Understand and use the basic elements of a spreadsheet.
- Explore the ribbon, navigate around a worksheet and select data.

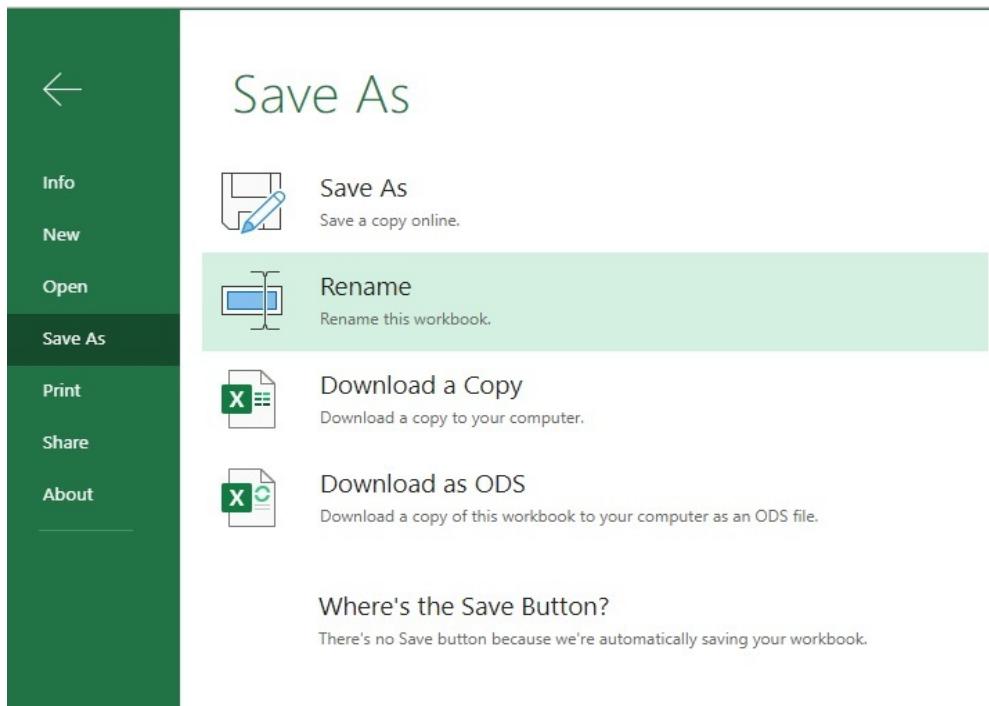
## Exercise 1: Introduction to Basic Spreadsheet Elements

In this exercise, you will learn about some common spreadsheet elements.

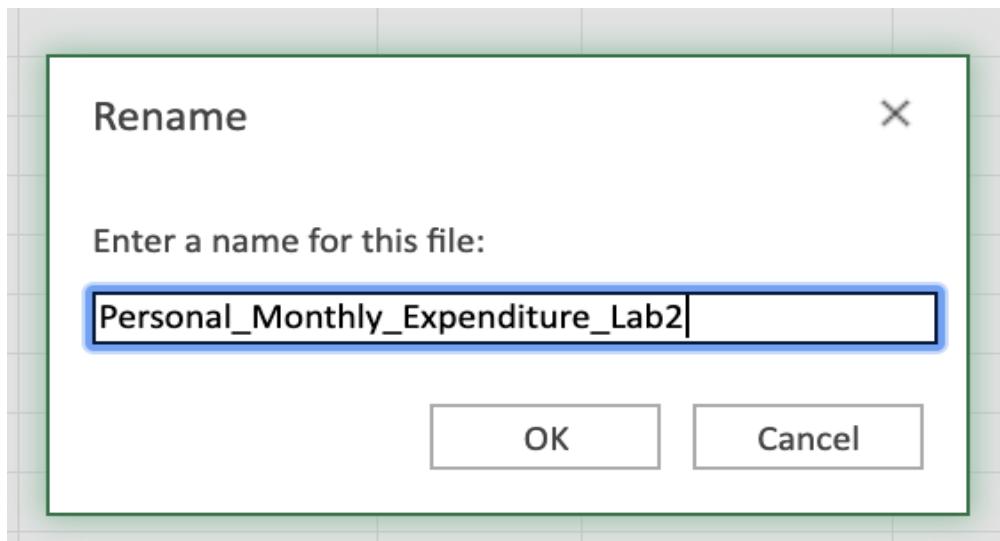
1. Open **Excel for the web**. Click on **New blank workbook**.



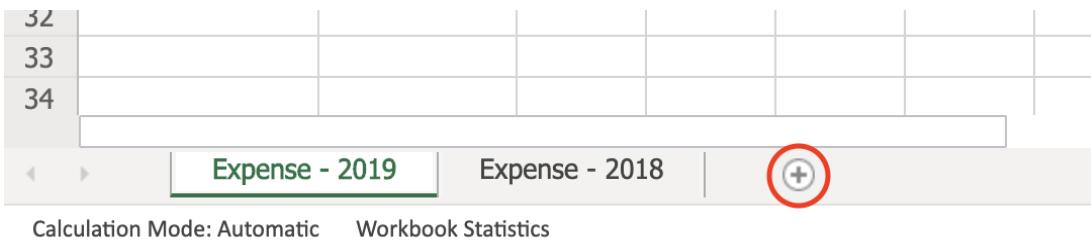
2. The new blank workbook will automatically be saved in Excel for the web as **Book**. To rename the workbook to something more meaningful, click **File**, **Save As**, then choose **Rename**.



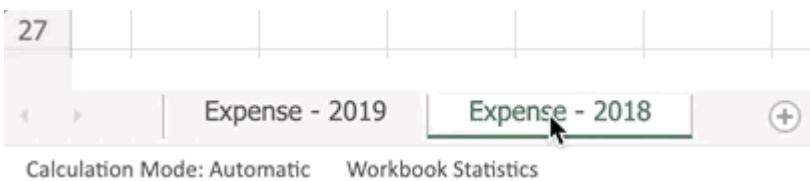
3. In the file name box, type **Personal\_Monthly\_Expenditure\_Lab2** and click **OK**.



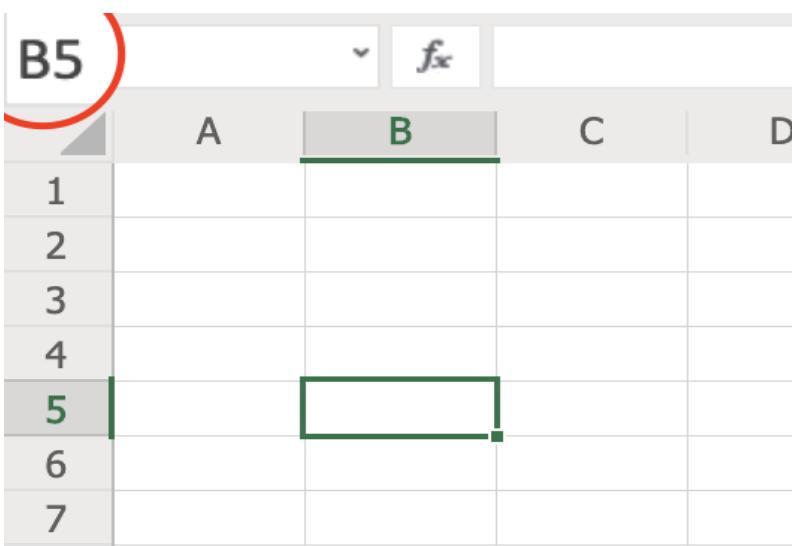
4. In the saved workbook, you will have one worksheet opened, named *Sheet1*. Click + once to add another worksheet. Then, double-click the sheet name tab for **Sheet1** and rename it to **Expense - 2019**. Similarly, rename **Sheet2** as **Expense - 2018**.



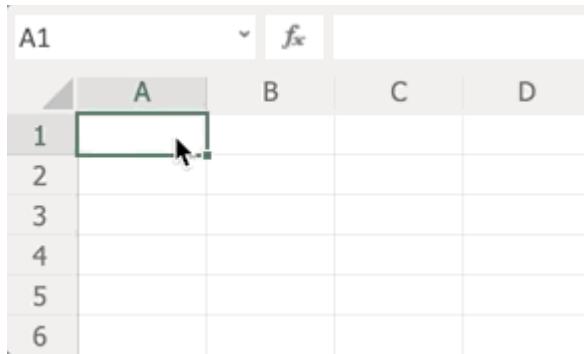
5. To maintain an appropriate worksheet tab sequence, click on the worksheet tab **Expense - 2018**, then drag and drop it before the **Expense - 2019** tab.



6. Click on the **Expense - 2018** tab. Select an entire column by clicking on **B** in the top of the worksheet, then select an entire row by clicking on the number **5** in the left of the worksheet. Click cell **B5**, and a green outline will appear around the cell. Now check if you have clicked the correct cell by looking at the cell name box in the top left corner, circled in red below.



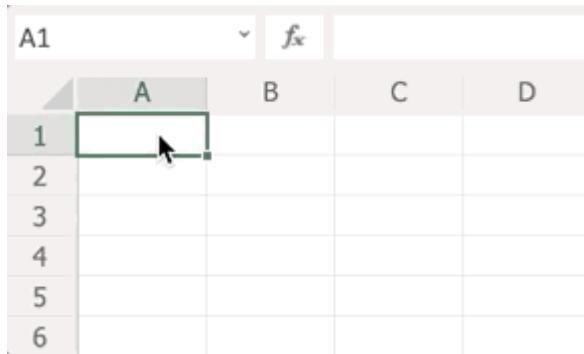
7. Select several cells in the same row, such as A1:D1 by clicking cell **A1** and then drag the cursor across to **D1**. Similarly, select a cell range in the same column, such as A1:A5 by clicking **A1** and dragging the cursor down to **A5**.



A screenshot of a Microsoft Excel spreadsheet. The top-left cell is A1, which is highlighted with a green border. The row header '1' and column headers 'A', 'B', 'C', and 'D' are visible. The cells from A1 to D1 are all selected, indicated by a green border around the entire range.

	A	B	C	D	
1	A1				
2					
3					
4					
5					
6					

8. Now select a cell range which includes several rows and columns together, such as A1:C5 by clicking **A1** and then dragging the cursor across and down to cell **C5**.



A screenshot of a Microsoft Excel spreadsheet. The top-left cell is A1, which is highlighted with a green border. The row header '1' and column headers 'A', 'B', and 'D' are visible. The cells from A1 to C5 are all selected, indicated by a green border around the entire range.

	A	B	C	D	
1	A1				
2					
3					
4					
5					
6					

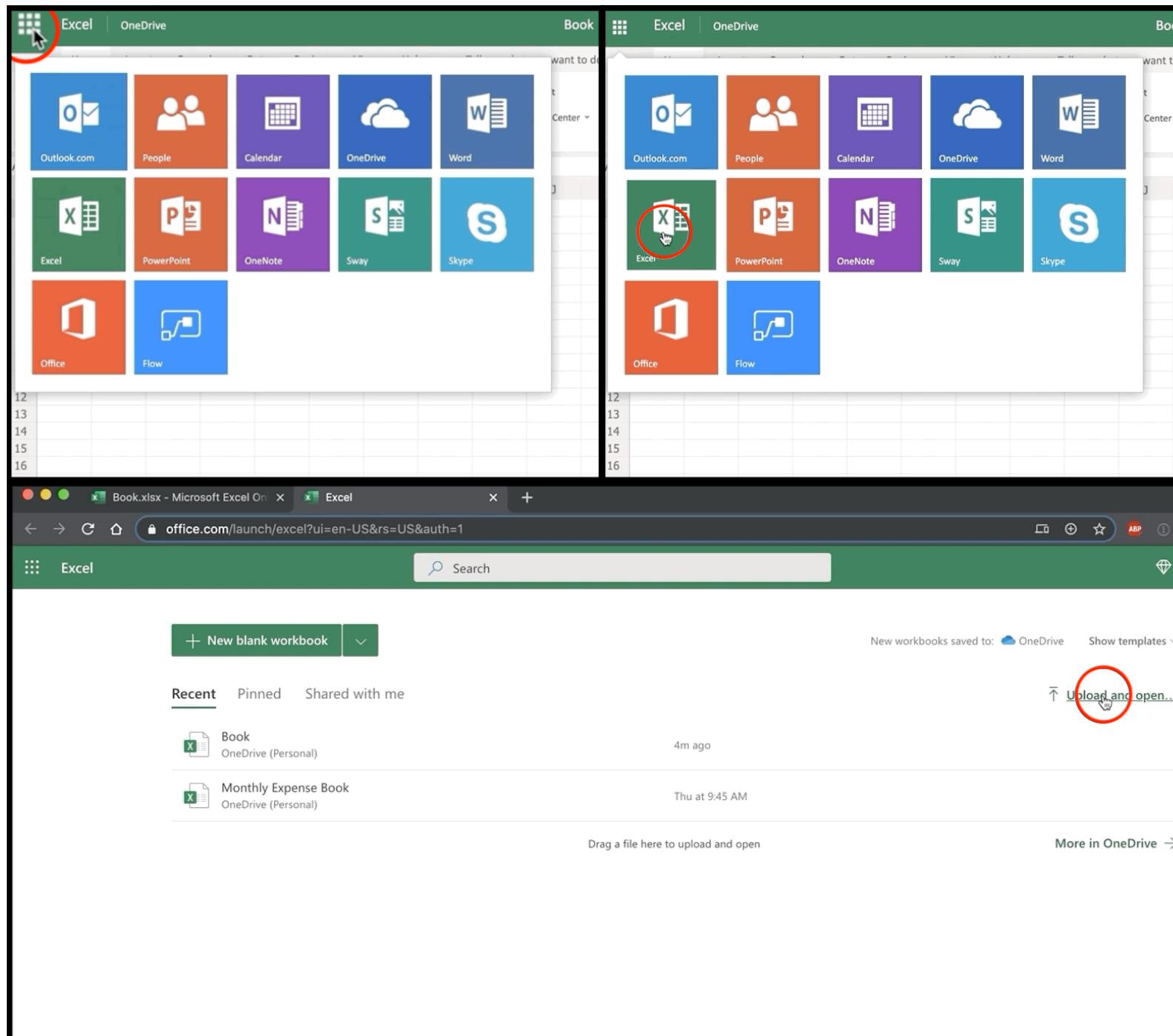
## Exercise 2: Explore the Ribbon, Navigate around a Worksheet, and Select Data

In this exercise, you will explore the ribbon, then navigate around a worksheet, and select data.

### Task A: Explore the ribbon

1. Download the file [indian\\_startup\\_funding\\_Lab2.xlsx](#).

2. To open a sample file in Excel for the web, click the **App Launcher** (cube of dots) in the top left corner. Click **Excel**, and then click **Upload and open...** and select the **indian\_startup\_funding\_Lab2.xlsx** file.



3. Click each of the following tabs in the ribbon; **File**, **Home**, **Insert**, **Formulas**, **Data**, **Review**, **View** to explore each of them and get acquainted with the ribbon. Double-click any of the tabs to hide the ribbon, then do the same again to unhide it.

## Task B: Navigate around a worksheet

1. Click on **any cell** and move around the worksheet using the arrow keys; **Up**, **Down**, **Left**, **Right**.

1	Sr No	Date	Startup Name	Industry Vertical	SubVertical	City	Location
2	17	2019-12-20	Lenskart.com	E-Commerce	Online Eyewear Shopping Portal	Faridabad	
3	12	2019-12-17	Healthians	B2B-focused foodtech startu	Food Solutions For Corporate	Bengaluru	
4	13	2019-12-16	Licious	E-Commerce	Online Meat And Seafood Ordering Start	Bengaluru	
5	14	2019-12-16	InCred	Finance	Non-Banking Financial Company	Mumbai	
6	15	2019-12-14	Trell	Video	Experience Discovery Platform	Bengaluru	
7	11	2019-12-13	Rivigo	Technology	Logistics Services and Solutions	Gurgaon	
8	8	2019-12-12	Ecozen	Technology	Agritech	Pune	
9	16	2019-12-11	Rein Games	Gaming	Real money based gaming startup	Noida	
10	9	2019-12-06	CarDekho	E-Commerce	Automobile	Gurgaon	
11	10	2019-12-03	Dhruva Space	Aerospace	Satellite Communication	Bengaluru	
12	32	2019-11-25	Paytm	FinTech	Mobile Wallet	Noida	
13	24	2019-11-20	Aye Finance	FinTech	Financial Services To MSMEs	Gurgaon	
14	26	2019-11-20	Clumio	SaaS	Recovery software	San Jose	

2. Click **Page Down** twice, and then **Page Up** twice to move around a bit faster, which is useful if you have lots of rows of data.

3. Click and drag the **horizontal scroll bar** and then the **vertical scroll bar** to move even quicker up, down, and across a large datasheet.

4. Try out these useful shortcuts in your worksheet:

- Press **CTRL+End** to take you to the cell at the end of your data in the worksheet.
- Press **CTRL+Home** to take you back to the start of the data in the worksheet (i.e. cell A2).
- Press **CTRL+Down Arrow** to take you to the end of the column you're in
- Press **CTRL+Up Arrow** to take you back to the top of the column.

## Task C: Select data

Perform the following steps to learn how to select different parts of your data (you can use the mouse to select cells if you prefer):

1.

- To select cells in a single row: Select cell A1, then select cells **A1 to D1** by using **SHIFT+right arrow**.
- To select cells in a single column: Select cell A1, then select cells **A1 to A10** by using **SHIFT+down arrow**.

A1	B	C	D	E	
1	Sr No	Date	Startup Name	Industry Vertical	SubVertical
2	17	2019-12-20	Lenskart.com	E-Commerce	Online Eyewear Shopping Portal
3	12	2019-12-17	Healthians	B2B-focused foodtech startu	Food Solutions For Corporate
4	13	2019-12-16	Licious	E-Commerce	Online Meat And Seafood Ordering Start
5	14	2019-12-16	InCred	Finance	Non-Banking Financial Company
6	15	2019-12-14	Trell	Video	Experience Discovery Platform
7	11	2019-12-13	Rivigo	Technology	Logistics Services and Solutions
8	8	2019-12-12	Ecozen	Technology	Agritech
9	16	2019-12-11	Rein Games	Gaming	Real money based gaming startup
10	9	2019-12-06	CarDekho	E-Commerce	Automobile
11	10	2019-12-03	Dhruva Space	Aerospace	Satellite Communication

2. To select multiple contiguous cols/rows: Select column A, and use **SHIFT+ right arrow** to reach column E.

3. To select multiple non-contiguous cols/rows: Select column A, then hold **CTRL** and select column E.

4.

- To select the entire worksheet: Click the **corner button** (small grey triangle in top left corner of the worksheet).
- To select all your data: Select any cell in the data, then press **CTRL+A**.

**Note:** The first time you press **CTRL+A**, it selects the current region if the worksheet contains data, the second time it selects the current data region and its header row, and the third time it selects the entire worksheet.

A1      ffx Sr No

A	B	C	D	E	
1	Sr No	Date	Startup Name	Industry Vertical	SubVertical
2	17	2019-12-20	Lenskart.com	E-Commerce	Online Eyewear Shopping Portal
3	12	2019-12-17	Healthians	B2B-focused foodtech start	Food Solutions For Corporate
4	13	2019-12-16	Licious	E-Commerce	Online Meat And Seafood Ordering Star
5	14	2019-12-16	InCred	Finance	Non-Banking Financial Company
6	15	2019-12-14	Trell	Video	Experience Discovery Platform
7	11	2019-12-13	Rivigo	Technology	Logistics Services and Solutions
8	8	2019-12-12	Ecozen	Technology	Agritech
9	16	2019-12-11	Rein Games	Gaming	Real money based gaming startup
10	9	2019-12-06	CarDekho	E-Commerce	Automobile
11	10	2019-12-03	Dhruba Space	Aerospace	Satellite Communication

Congratulations! You have completed Lab 2, and you are ready for the next topic.

## Author

- [Sandip Saha Joy](#)

## Other Contributor(s)

- [Steve Ryan](#)

## Changelog

Date	Version	Changed by	Change Description
2020-09-10	1.4	Steve Ryan	Added software/dataset info
2020-06-12	1.3	Steve Ryan	Final Review
2020-06-10	1.2	Sandip Saha Joy	Post review edit
2020-06-10	1.1	Steve Ryan	Review and edit pass

Date	Version	Changed by	Change Description
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2020-06-04	1.0	Sandip Saha Joy	Initial version created
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# Hands-on Lab 3: Entering and Formatting Data

**Estimated time needed:** 30 minutes

In this lab, first you will learn some of the viewing options in Excel, and then learn how to enter and edit data in cells. Then, you will learn how to move, copy, paste, and fill data, and how to format cells and cell data in a worksheet.

## Software Used in this Lab

The instruction videos in this course use the full Excel Desktop version as this has all the available product features, but for the hands-on labs we will be using the free ‘Excel for the web’ version as this is available to everyone.

Although you can use the Excel Desktop software if you have access to this version, it is recommended that you use Excel for the web for the hands-on labs as the lab instructions specifically refer to this version, and there are some small differences in the interface and available features.

## Dataset Used in this Lab

The first dataset used in this lab comes from the following source: <https://www.kaggle.com/sudalairajkumar/indian-startup-funding> under a [CC0: Public Domain license](#). Acknowledgement and thanks also goes to <https://trik.in> who were generous enough to share the data publicly for free.

We are using a modified subset of that dataset for the lab, so to follow the lab instructions successfully please use the dataset provided with the lab, rather than the dataset from the original source.

The second dataset used in this lab is an internal dataset.

## Objectives

After completing this lab, you will be able to:

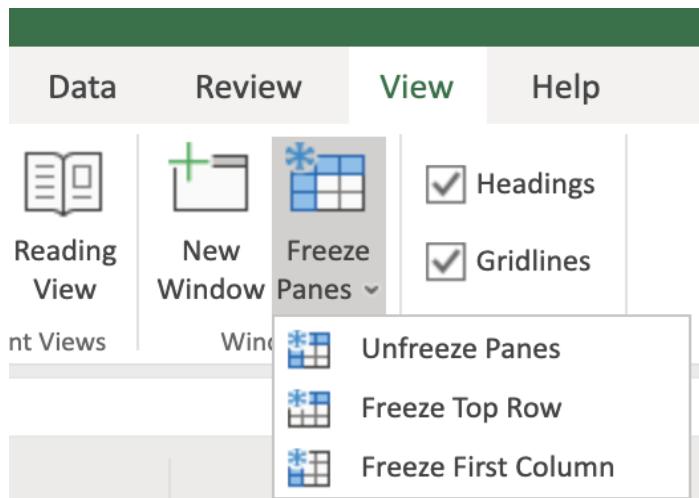
- Use viewing options, and enter and edit data
- Copy and fill data, and format cells and data

# Exercise 1: Viewing, Entering and Editing Data

In this exercise, you will learn some of the viewing options in Excel, how to enter and edit data in cells.

## Task A: Viewing Data

1. Download the file [indian\\_startup\\_funding\\_Lab3.xlsx](#). Upload and open it using Excel for the web.
2. Select **F20:H26** (if required, use the vertical and horizontal scroll bars to bring the selected cell range area to the center of the screen). Hold **CTRL and +** to zoom in closer to the specific area of the data. Then hold **CTRL and -** to zoom the worksheet back out to its original size. (**Note: Zoom to Selection** which is found under the **View** tab of Excel Desktop, is not available for Excel for the web)
3. On the ribbon, click **View**, **Freeze Panes**, **Freeze Top Row**. Now you have headings in your columns like a header row, which will remain static on screen while you move down the worksheet. Next, click **Unfreeze Panes**, and click **Freeze First Column**. The *Sr No* column will remain static on the screen while you move right across the worksheet. Lastly, click **Unfreeze Panes** to end this step.



4. To freeze both the top row and the first column at the same time, select cell **B2** and click **View**, **Freeze Panes**, **Freeze Panes**.

Sr No	Date	Startup Name	Industry Vertical	St
17	12/20/2019	Lenskart.com	E-Commerce	O
12	12/17/2019	Healthians	B2B-focused foodtech startu	F
13	12/16/2019	Licious	E-Commerce	O
14	12/16/2019	InCred	Finance	N
15	12/14/2019	Trell	Video	Ex
11	12/13/2019	Rivigo	Technology	Lc
8	12/12/2019	Ecozen	Technology	A

5. You can open multiple workbooks in multiple browser tabs in Excel for the web, and to switch between them, you just click each browser tab. (In Excel Desktop you have to click the **View** tab, then click **Switch Windows**)

## Task B: Entering Data

1. Download the file [Personal\\_Monthly\\_Expenditure\\_Lab3.xlsx](#). Upload and open it using Excel for the web. Go to the **Expense - 2018** worksheet.
2. In cell A1, type **Month** and press **Tab**. Then type **Housing** and press **Tab**, type **Food & Dining**, and press **Tab**, type **Personal**, and press **Tab**, type **Auto & Transport**, then press **Tab**, type **Health & Fitness**, then press **Tab**. You are now done with the header row.
3. To enter some data as rows in column A, in A2, type **Jan** and press **Enter**. Then type **Feb**, and press **Enter**, type **Mar**, and press **Enter**, type **Apr**, and press **Enter**.
4. To add another column between the **Housing** and **Food & Dining**, select column C, then right-click column C, and choose **Insert Columns**. In the top row header cell C1, type **Bills & Utilities**.

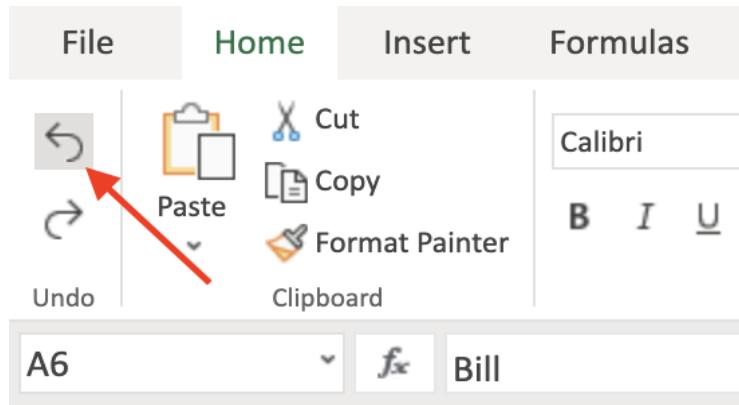
	A	B	C	D	E	F
1	Month	Housing	Food & Dining			
2						
3						
4						
5						
6						
7						
8						

5. Select columns A to G, then double-click the divider between A and B to adjust the column widths.

	A	B	C	D	E	F	G
1	Month	Housing	Bills & Utilities	Food & Dining	Personal	Auto & Transport	Health & Fitness
2							
3							

## Task C: Editing Data

1. Select cell C1 and press **Backspace** to clear the contents. Then type **Bills**.
2. Click **Undo** to undo the change.



## Exercise 2: Copying, Filling, and Formatting Cells and Data

In this exercise, you will learn how to move, copy, paste, and fill data, and how to format cells and cell data in a worksheet.

### Task A: Copying and Filling Data

1. Select **A2:A5**. Hover over the edge of the selected cells to get the **Move** pointer and then drag the selection to move the selected cells to **B6**. Click **Undo**.

	A	B	C
1	Month	Housing	Bills & Utilities
2	Jan		
3	Feb		
4	Mar		
5	Apr		
6			B6:B9
7			
8			
9			
10			
11			

2. Select cell **A5**. Hover over the bottom right corner of cell **A5** to get the **+(Fill Handle)** symbol, then drag to **A13**.

	A	B
1	Month	Housing
2	Jan	
3	Feb	
4	Mar	
5	Apr	
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

3. On the **Expense - 2018** sheet, select **A1:G13** and press **CTRL+C**. Then on the **Expense - 2019** sheet, select cell **A1** and press **CTRL+V**.
4. Select cell **A1** and press **CTRL+A** to select the whole datasheet. On the **Home** tab, in the **Cells** group, click the drop-down arrow under **Format**, and click **Auto-Fit Column Width**.

The screenshot shows the Microsoft Excel interface with the Home tab selected. A context menu is open over the range A1:G13, specifically over the header row. The menu is titled "Cell Size" and includes the following options:

- Row Height...
- Auto Fit Row Height
- Column Width...
- Auto Fit Column Width** (highlighted)

The main Excel window displays a table with columns labeled Month, Housing, Bills & Utilities, Food & Dining, Personal, Auto & Transport, and Health & Fitness. The rows are numbered 1 through 13, representing months from Jan to Dec.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Month	Housing	Bills & Utilities	Food & Dining	Personal	Auto & Transport	Health & Fitness								
2	Jan														
3	Feb														
4	Mar														
5	Apr														
6	May														
7	Jun														
8	Jul														
9	Aug														
10	Sep														
11	Oct														
12	Nov														
13	Dec														

## Task B: Formatting Cells and Data

### 1. Formatting Cells:

- a. Select A1:G13. On the **Home**, in the **Tables** group, click **Format as Table**, and choose a table style from the list. In the pop-up dialog box, ensure that the option **My table has headers**, is checked and then click **OK**.

A	B	C	D	E	F	G	H	I	J	K	L
1	Month	Housing	Bills & Utilities	Food & Dining	Personal	Auto & Transport	Health & Fitness				
2	Jan	800	210	400	100	100	60				
3	Feb	800	180	350	100	125	70				
4	Mar	800	170	420	100	120	60				
5	Apr	800	160	400	120	100	60				
6	May	800	150	420	100	100	80				
7	Jun	800	150	380	100	130	60				
8	Jul	800	150	420	120	100	60				
9	Aug	800	150	420	100	100	80				
10	Sep	800	150	400	120	110	60				
11	Oct	800	170	420	100	100	60				
12	Nov	800	200	390	120	100	50				
13	Dec	800	220	400	100	115	60				
14											
15											

- b. Select A2:A13. In the **Font** group click **Italic**. In the font size box, select **10**. In the font style drop-down box, select **Arial**.

## 2. Formatting Cell Data:

- a. Select column **B**, and use **SHIFT+right arrow** to select across to include column **G**. On the **Home** tab, in the **Number** group, click the **Number Format** drop-down list and choose **Currency**.
- b. Select columns **B** to **G** again. On the **Home** tab, in the **Number** group, click **Decrease Decimal** once.
- c. Select columns **B** to **G** again. On the **Home** tab, in the **Number** group, click the **Accounting Number Format (\$)** drop-down list, and select **£ English (United Kingdom)**.

	A	B	C	D	E	F	G
1	Month	Housing	Bills & Utilities	Food & Dining	Personal	Auto & Transport	Health & Fitness
2	Jan	£ 800.00	£ 210.00	£ 400.00	£ 100.00	£ 100.00	£ 60.00
3	Feb	£ 800.00	£ 180.00	£ 350.00	£ 100.00	£ 125.00	£ 70.00
4	Mar	£ 800.00	£ 170.00	£ 420.00	£ 100.00	£ 120.00	£ 60.00
5	Apr	£ 800.00	£ 160.00	£ 400.00	£ 120.00	£ 100.00	£ 60.00
6	May	£ 800.00	£ 150.00	£ 420.00	£ 100.00	£ 100.00	£ 80.00
7	Jun	£ 800.00	£ 150.00	£ 380.00	£ 100.00	£ 130.00	£ 60.00
8	Jul	£ 800.00	£ 150.00	£ 420.00	£ 120.00	£ 100.00	£ 60.00
9	Aug	£ 800.00	£ 150.00	£ 420.00	£ 100.00	£ 100.00	£ 80.00
10	Sep	£ 800.00	£ 150.00	£ 400.00	£ 120.00	£ 110.00	£ 60.00
11	Oct	£ 800.00	£ 170.00	£ 420.00	£ 100.00	£ 100.00	£ 60.00
12	Nov	£ 800.00	£ 200.00	£ 390.00	£ 120.00	£ 100.00	£ 50.00
13	Dec	£ 800.00	£ 220.00	£ 400.00	£ 100.00	£ 115.00	£ 60.00
14							

Congratulations! You have completed Lab 3, and you are ready for the next topic.

## Author(s)

- [Sandip Saha Joy](#)

## Other Contributor(s)

- [Steve Ryan](#)

## Changelog

Date	Version	Changed by	Change Description
2020-09-10	1.2	Steve Ryan	Added software/dataset info

Date	Version	Changed by	Change Description
2020-06-17	1.1	Steve Ryan	Tech & edit review completed
2020-06-11	1.0	Sandip Saha Joy	Initial version created

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# Hands-on Lab 4: Simple Use of Functions

**Estimated time needed:** 30 minutes

In this lab, first you will learn the basics of formulas, how to perform simple calculations, how to select ranges in formulas, and how to copy formulas. Next, you will learn the basics of functions, how to use some of the more common functions that a Data Analyst might employ, and look at some of the more advanced functions available in Excel. Finally, you will learn about referencing data in formulas; specifically how to differentiate between relative and absolute references, and you will also learn about error handling in formulas.

## Software Used in this Lab

The instruction videos in this course use the full Excel Desktop version as this has all the available product features, but for the hands-on labs we will be using the free ‘Excel for the web’ version as this is available to everyone.

Although you can use the Excel Desktop software if you have access to this version, it is recommended that you use Excel for the web for the hands-on labs as the lab instructions specifically refer to this version, and there are some small differences in the interface and available features.

## Dataset Used in this Lab

The dataset used in this lab is an internal dataset.

## Objectives

After completing this lab, you will be able to:

- Understand the basics of formulas
- Perform simple calculations
- Select ranges in formulas and copy formulas
- Understand the basics of functions

- Use common functions
- Understand the more advanced functions available
- Reference data in formulas
- Differentiate between relative and absolute references
- Understand how to handle formula errors

## Exercise 1: Basics of Formulas

In this exercise, you will learn the basics of formulas, how to perform simple calculations, how to select ranges in formulas, and how to copy formulas.

1. Download the file [Personal\\_Monthly\\_Expenditure\\_Lab4.xlsx](#). Upload and open it using Excel for the web. Go to the **Expense - 2018** worksheet.

	A	B	C	D	E	F	G
1	Month	Housing	Bills & Utilities	Food & Dining	Personal	Auto & Transport	Health & Fitness
2	Jan	£ 800.00	£ 210.00	£ 400.00	£ 100.00	£ 100.00	£ 60.00
3	Feb	£ 800.00	£ 180.00	£ 350.00	£ 100.00	£ 125.00	£ 70.00
4	Mar	£ 800.00	£ 170.00	£ 420.00	£ 100.00	£ 120.00	£ 60.00
5	Apr	£ 800.00	£ 160.00	£ 400.00	£ 120.00	£ 100.00	£ 60.00
6	May	£ 800.00	£ 150.00	£ 420.00	£ 100.00	£ 100.00	£ 80.00
7	Jun	£ 800.00	£ 150.00	£ 380.00	£ 100.00	£ 130.00	£ 60.00
8	Jul	£ 800.00	£ 150.00	£ 420.00	£ 120.00	£ 100.00	£ 60.00
9	Aug	£ 800.00	£ 150.00	£ 420.00	£ 100.00	£ 100.00	£ 80.00
10	Sep	£ 800.00	£ 150.00	£ 400.00	£ 120.00	£ 110.00	£ 60.00
11	Oct	£ 800.00	£ 170.00	£ 420.00	£ 100.00	£ 100.00	£ 60.00
12	Nov	£ 800.00	£ 200.00	£ 390.00	£ 120.00	£ 100.00	£ 50.00
13	Dec	£ 800.00	£ 220.00	£ 400.00	£ 100.00	£ 115.00	£ 60.00
14							

2. In A14, type **Totals** and in B14, type =SUM( then select cells B2 to B13 with the mouse, and press **Enter**.

3. Select the **fill handle** on cell B14 and drag to G14 to copy the formula.

	Nov	£ 800.00	£ 200.00	£ 350.00	£ 100.00	£ 115.00	£ 60.00	
13	Dec	£ 800.00	£ 220.00	£ 400.00	£ 100.00	£ 115.00	£ 60.00	
14	Totals	£ 9,600.00						
15								

3. In cell **H1**, type **Monthly Total** and double-click the divider between **H** and **I**.

4. In **H2**, type =SUM( then select cells **B2 to G2** with the mouse, and press **Enter**. If necessary, select the **fill handle** on cell **H2** and drag to **H14** to copy the formula.

5. Select columns **B to H**. On the **Home** tab, in the **Number** group, click the **Accounting Number Format (\$)** drop-down list, and select **\$ English (United States)**.

A	B	C	D	E	F	G	H	I
1	Month	Housing	Bills & Utilities	Food & Dining	Personal	Auto & Transport	Health & Fitness	Monthly Total
2	Jan	\$ 800.00	\$ 210.00	\$ 400.00	\$ 100.00	\$ 100.00	\$ 60.00	\$ 1,670.00
3	Feb	\$ 800.00	\$ 180.00	\$ 350.00	\$ 100.00	\$ 125.00	\$ 70.00	\$ 1,625.00
4	Mar	\$ 800.00	\$ 170.00	\$ 420.00	\$ 100.00	\$ 120.00	\$ 60.00	\$ 1,670.00
5	Apr	\$ 800.00	\$ 160.00	\$ 400.00	\$ 120.00	\$ 100.00	\$ 60.00	\$ 1,640.00
6	May	\$ 800.00	\$ 150.00	\$ 420.00	\$ 100.00	\$ 100.00	\$ 80.00	\$ 1,650.00
7	Jun	\$ 800.00	\$ 150.00	\$ 380.00	\$ 100.00	\$ 130.00	\$ 60.00	\$ 1,620.00
8	Jul	\$ 800.00	\$ 150.00	\$ 420.00	\$ 120.00	\$ 100.00	\$ 60.00	\$ 1,650.00
9	Aug	\$ 800.00	\$ 150.00	\$ 420.00	\$ 100.00	\$ 100.00	\$ 80.00	\$ 1,650.00
10	Sep	\$ 800.00	\$ 150.00	\$ 400.00	\$ 120.00	\$ 110.00	\$ 60.00	\$ 1,640.00
11	Oct	\$ 800.00	\$ 170.00	\$ 420.00	\$ 100.00	\$ 100.00	\$ 60.00	\$ 1,650.00
12	Nov	\$ 800.00	\$ 200.00	\$ 390.00	\$ 120.00	\$ 100.00	\$ 50.00	\$ 1,660.00
13	Dec	\$ 800.00	\$ 220.00	\$ 400.00	\$ 100.00	\$ 115.00	\$ 60.00	\$ 1,695.00
14	Totals	\$ 9,600.00	\$ 2,060.00	\$ 4,820.00	\$ 1,280.00	\$ 1,300.00	\$ 760.00	\$ 19,820.00
15								

## Exercise 2: Basics of Functions

In this exercise, you will have an introduction to functions, including using some common statistical functions, and then you will learn about some more advanced functions that a Data Analyst might also use.

1. In cells **A16-A20**, type the following:

- Avg
- Min
- Max
- Count
- Median

2. In **B16**, type =**AVERAGE(** then select cells **B2 to B13** with the mouse, and press **Enter**. Select the **fill handle** on cell **B16** and drag to **G16** to copy the formula.

3. In **B17**, type =**MIN(** then select cells **B2 to B13** with the mouse, and press **Enter**. Select the **fill handle** on cell **B17** and drag to **G17** to copy the formula.

4. In **B18**, type =**MAX(** then select cells **B2 to B13** with the mouse, and press **Enter**. Select the **fill handle** on cell **B18** and drag to **G18** to copy the formula.

5. In **B19**, type =**COUNT(** then select cells **B2 to B13** with the mouse, and press **Enter**. Select the **fill handle** on cell **B19** and drag to **G19** to copy the formula. Select row **19**. On the **Home** tab, click the **Number Format** drop-down list, and select **Number**.

6. In **B20**, type =**MEDIAN(** then select cells **B2 to B13** with the mouse, and press **Enter**. Select the **fill handle** on cell **B20** and drag to **G20** to copy the formula.

	A	B	C	D	E	F	G
16	Avg	\$ 800.00	\$ 171.67	\$ 401.67	\$ 106.67	\$ 108.33	\$ 63.33
17	Min	\$ 800.00	\$ 150.00	\$ 350.00	\$ 100.00	\$ 100.00	\$ 50.00
18	Max	\$ 800.00	\$ 220.00	\$ 420.00	\$ 120.00	\$ 130.00	\$ 80.00
19	Count	12.00	12.00	12.00	12.00	12.00	12.00
20	Median	\$ 800.00	\$ 165.00	\$ 400.00	\$ 100.00	\$ 100.00	\$ 60.00

7. Explore some more commonly used functions of a data analyst by clicking the arrow under **AutoSum**, then select **More Functions** and look at some of the functions in various categories to see what actions they perform:

- Financial : ACCRINT, INTRATE
- Logical : AND, IF, OR, NOT
- Text : CONCAT, FIND, SEARCH
- Date & Time : NETWORKDAYS, WEEKDAY
- Lookup & Reference : AREAS, SORTBY, VLOOKUP, HLOOKUP
- Math & Trig : POWER, SUMIF, SUMPRODUCT
- Statistical : AVERAGE, COUNTIF, MAX, MEDIAN, MIN

# Exercise 3: Referencing Data in Formulas (relative vs absolute) & Formula Errors

In this exercise, you will learn how to reference data in formulas; specifically differentiating between relative and absolute references, and you will also learn about error handling in formulas.

1. In cells **A31-A40**, type **1-10**. Select row **31 to 40**. On the **Home** tab, click the **Number Format** drop-down list, and select **General**.
2. Relative References : In cell **B33**, type **=A31+A32** and press **Enter**. Select the **fill handle** on cell **B33** and drag to **B40** to copy the formula. Here, both first and second cell reference will move 1 cell down. For example, on cell **B34** formula will be changed to **=A32+A33**, on cell **B35** formula will be changed to **=A33+A34** and so on.
3. Absolute References : In cell **C33**, type **=\$A\$31+\$A\$32** and press **Enter**. Select the **fill handle** on cell **C33** and drag to **C40** to copy the formula. Here, both first and second cell references will not change. For example, on cell **C34** formula will remain **=\$A\$31+\$A\$32**, on cell **C35** formula will remain **=\$A\$31+\$A\$32** and so on.
4. Mixed References : In cell **D33**, type **=\$A\$31+\$A32** and press **Enter**. Select the **fill handle** on cell **D33** and drag to **D40** to copy the formula. Here, first cell reference will stay the same, but the second reference will change. For example, on cell **D34** formula will be changed to **=\$A\$31+\$A33**, on cell **D35** formula will be changed to **=\$A\$31+\$A34** and so on.

	A	B	C	D
30				
31		1		
32		2		
33	3	3	3	3
34	4	5	3	4
35	5	7	3	5
36	6	9	3	6
37	7	11	3	7
38	8	13	3	8
39	9	15	3	9
40	10	17	3	10

5. In cell **B31**, type **=A16+A17**. Now this will lead to a formula error **#VALUE!** since cells **A16** and **A17** do not contain any number.

A	B	C	D	E
30	Relative	Absolute	Mixed	
31	1	#VALUE!		
32	2	Error in Value		
33	3	A value used in the formula is of the wrong data type.		
34	4			
35	5			
36	6			
37	7	11	5	7
38	8	13	3	8
39	9	15	3	9
40	10	17	3	10

6. Click the **question mark icon** in the error message box. This will open the **Help** for this topic. Read through this help file for more information about #VALUE! errors in formulas.

B31    fx =A16+A17

	A	B	C	D	E	F
30		Relative	Absolute	Mixed		
31	1	#VALUE!				
32	2					
33	3	3				
34	4	5				
35	5	7				
36	6	9				
37	7	11				
38	8	13		3	8	
39	9	15		3	9	
40	10	17		3	10	
41						
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63						

Expense - 2018   Expense - 2019   +

Calculation Mode: Automatic   Workbook Statistics

Help

Search help

Error in Value

A value used in the formula is of the wrong data type.

Help on this Error

How to correct a #VALUE! error

#VALUE is Excel's way of saying, "There's something wrong with the way your formula is typed. Or, there's something wrong with the cells you are referencing." The error is very general, and it can be hard to find the exact cause of it. The information on this page shows common problems and solutions for the error. You may need to try one or more of the solutions to fix your particular error.

Fix the error for a specific function

Which function are you using? ▾

Problems with subtraction

How to do basic subtraction ▾  
#VALUE! with basic subtraction ▾  
How to subtract dates ▾  
#VALUE! error subtracting dates stored as text ▾

Problems with spaces and text

Remove spaces that cause #VALUE! ▾  
Check for text or special characters ▾

Help Improve Office

Congratulations! You have completed Lab 4, and you are ready for the next topic.

Author(s)

- [Sandip Saha Joy](#)

## Other Contributor(s)

- [Steve Ryan](#)

## Changelog

Date	Version	Changed by	Change Description
2020-09-10	1.2	Steve Ryan	Added software/dataset info
2020-06-25	1.1	Steve Ryan	Reviewed version
2020-06-16	1.0	Sandip Saha Joy	Initial version created

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# Hands-on Lab 5: Cleaning Data

**Estimated time needed:** 45 minutes

In this lab, first you will learn how to deal with inaccurate data, how to remove empty rows, and how to remove duplicated data. Next, you will learn how to change the case of text, how to change date formatting, and how to trim whitespace from data. Finally, you will learn how to use the Flash Fill feature and functions in Excel to help clean data.

## Software Used in this Lab

The instruction videos in this course use the full Excel Desktop version as this has all the available product features, but for the hands-on labs we will be using the free ‘Excel for the web’ version as this is available to everyone.

Although you can use the Excel Desktop software if you have access to this version, it is recommended that you use Excel for the web for the hands-on labs as the lab instructions specifically refer to this version, and there are some small differences in the interface and available features.

## Dataset Used in this Lab

The dataset used in this lab comes from the following source: <https://dataplatform.cloud.ibm.com/exchange/public/entry/view/f8ccaf607372882403a37d9019b3abf4>. This dataset is published by **IBM**, and includes fictitious customer demographics and sales data.

We are using a modified subset of that dataset for the lab, so to follow the lab instructions successfully please use the dataset provided with the lab, rather than the dataset from the original source.

## Objectives

After completing this lab, you will be able to:

- Understand how to deal with irrelevant or inaccurate data

- Remove empty rows and duplicated data
- Change text case and date formatting
- Trim whitespaces from data
- Use Flash Fill and functions to clean data

## Exercise 1: Removing Duplicated, Irrelevant or Inaccurate Data

In this exercise, you will learn how to deal with inaccurate data, how to remove empty rows, and how to remove duplicated data.

### Task A: Check spelling

1. Download the file [Customer demographics and sales Lab5.xlsx](#). Upload and open it using Excel for the web.
2. Select column L (CREDITCARD\_TYPE), then click Review tab, and select Spelling.
3. Click the correct suggestion to change the spelling.
  - **Note:** Don't change 'jcb' spelling when doing the spell check. We will need 'jcb' for the Exercise 1 Task D.
4. Close the Spelling pane.

K	L
	NUMBER
I-8539	CREDITCARD_TYPE
I-8539	Master Card
1-8539	Master Card
1-8539	Master Card
473271	VISA
5-4321	American Express
5-4321	Diners Club
2037	Diners Club
2037	Diners Club
2037	Diners Club
1865	VISA
1865	VISA
4-7595	Diners Club

**Spelling**

Not in Dictionary

American Express

Suggestions

Express

Expires

Expresso

Ignore

Ignore All

## Task B: Remove empty rows

1. Press **CTRL+HOME**, then press **CTRL+SHIFT+END** to select the whole datasheet.
2. On the **Data** tab, click **Filter**.
3. Press **CTRL+HOME**, click the **filter arrow** in the **CUST\_NAME** column, and then click **Filter**.
4. Click the **Select All** checkbox to deselect all of them. Then select just **Blanks**, then **OK**.
5. Select **first row**, then press **CTRL+SHIFT+END** to select all rows.
6. Right-click the selected rows and then click **Delete Rows**.
7. Finally, on the **Data** tab, click **Clear**, then click **Filter**.

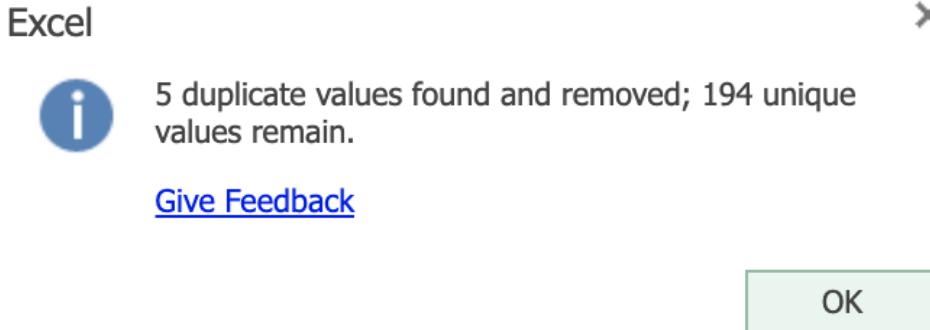
The screenshot shows a Microsoft Excel interface. The ribbon is visible at the top with the 'Data' tab selected. Below the ribbon, there are sections for 'Connections' (Refresh Selected Connection, Refresh All Connections), 'Data Types' (Stocks, Geography), and 'Sort & Filter' (Sort Ascending, Sort Descending, Custom Sort, Filter, Clear, Reapply). The main area shows a table with columns labeled CUSTNAME, GenderCode, ADDRESS1, and CITY. Row 1 is selected, and a context menu is open, listing options like Cut, Copy, Paste Options, Insert Rows, Delete Rows (which is highlighted with a cursor), Clear Contents, Row Height..., Hide Rows, Unhide Rows, and Number Format... . The address bar shows 'A71' and the formula bar has 'fx'.

	A	B	C	D
1	CUSTNAME	GenderCode	ADDRESS1	CITY
1048511				
1048512	Cut			
1048513	Copy			
1048514	Paste Options			
1048515	Insert Rows			
1048516	Delete Rows			
1048517	Clear Contents			
1048518	Row Height...			
1048519	Hide Rows			
1048520	Unhide Rows			
1048521	Number Format...			
1048558				

## Task C: Remove duplicate rows

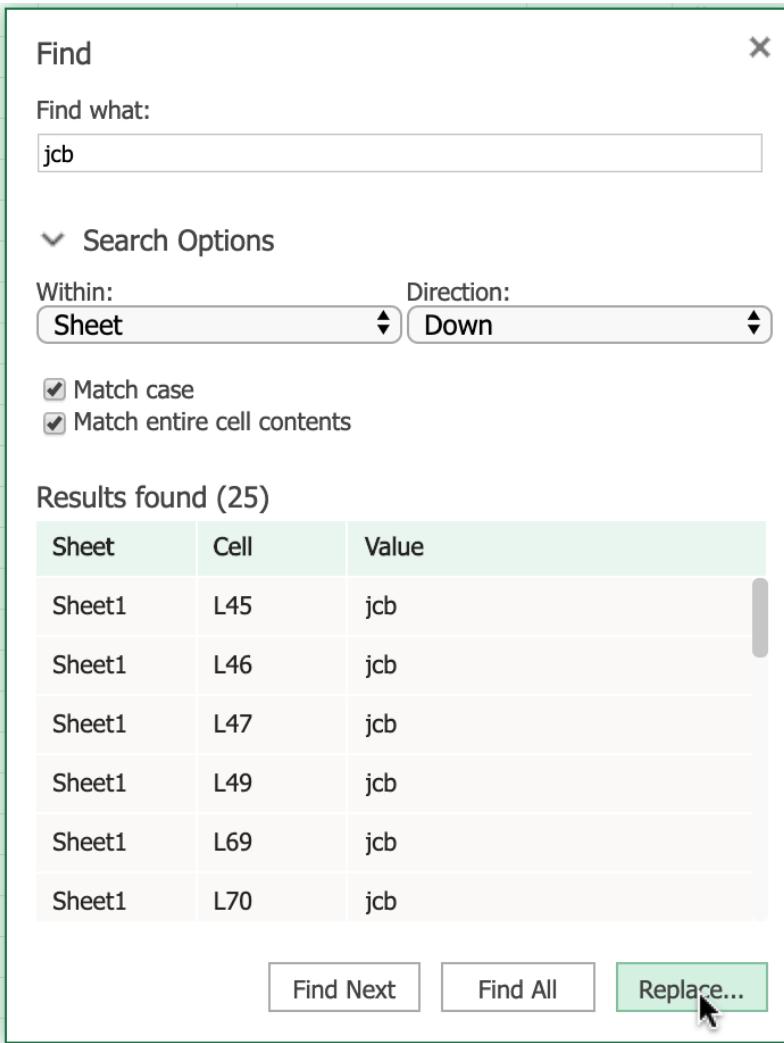
1. Select Column T (**ORDER\_ID**) since ORDER\_ID values are unique.
2. On the **Home** tab, click **Conditional Formatting** > **Highlight Cells Rules** > **Duplicate Values**, and then click **OK**.
3. Select the whole datasheet (**CTRL+SHIFT+END**)
4. On the **Data** tab, click **Remove Duplicates**.
5. In the Remove Duplicates dialog box, ensure that **Select all columns** is checked and that **My data has headers** is also checked, then click **OK**.

6. In the pop-up box informing you how many duplicate values were found and removed, click **OK**.



## Task D: Use Find & Replace to correct misspelling

1. On the **Home** tab, click **Find & Select**.
2. Click **Find**. In Find what, type **jcb**, and click **Find All**.
3. Click **Replace**.
4. In Replace with, type **JCB**, click **Replace All**, and then click the **Close** icon.
5. On the **Home** tab, click **Conditional Formatting> Clear Rules> Clear Rules from Entire Sheet**.



## Exercise 2: Dealing with Inconsistencies in Data

In this exercise, you will learn how to change the case of text, how to change date formatting, and how to trim whitespace from data.

### Task A: Use the PROPER function to change text from upper case to proper case

1. Select row 2, then right-click it and choose **Insert Rows**.
2. In cell **A2**, type **=PROPER(A1)** and press **Enter**.
3. Hover over the bottom-right corner of cell **A2**, and drag the **Fill Handle** across to the last column.

- If dragging across is too difficult with the mouse, then select the cells in the row 2 using **SHIFT+RIGHT ARROW**, then press **F2** to put the cursor focus back in cell **A2**, then hold **CTRL** while you press **Enter**.
4. Select row 2, then press **CTRL+C**.
  5. Select row 1, Right-click and choose **Paste Options>Values**.
  6. Select row 2, right-click it and choose **Delete Rows**.

## Task B: Use the **UPPER** function to change text from proper case to upper case

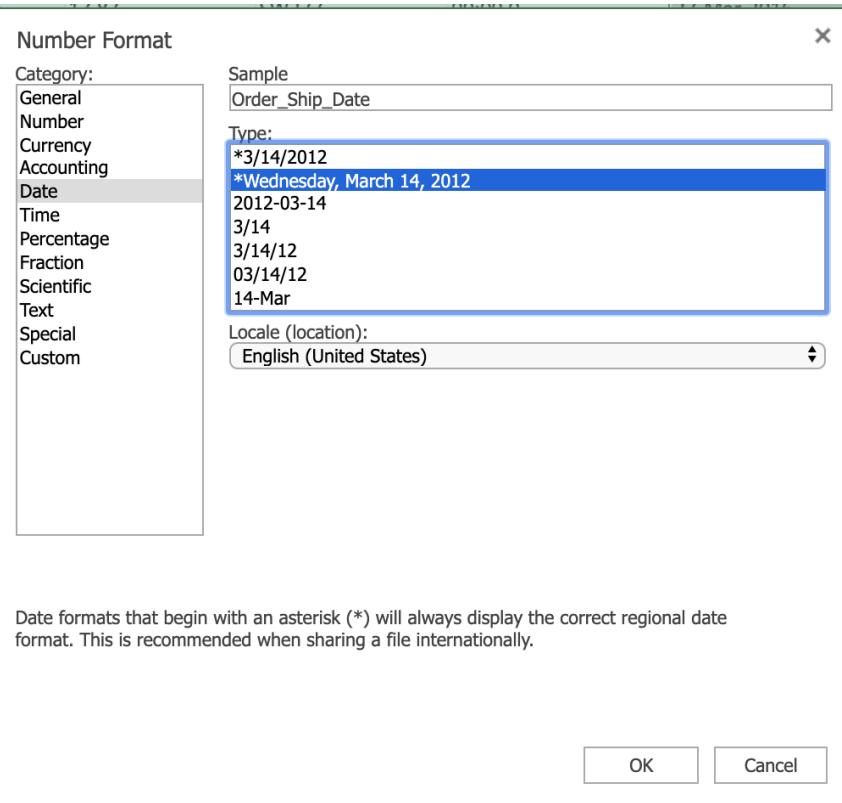
1. Select column **AG (Generation)**. Then right-click and choose **Insert Columns**. In cell **AG1**, type **Generation**.
2. In cell **AG2**, type **=UPPER(AH2)** and press **Enter**.
3. Hover over the bottom-right corner of cell **AG2** and double-click the **Fill Handle**.
4. Select column **AG**, then press **CTRL+C**.
5. Select column **AH**, right-click and choose **Paste Options>Values**.
6. Select column **AG**, right-click it and choose **Delete Columns**.

## Task C: Use the **LOWER** function to change text from proper case to lower case

1. Select column **AC (T\_Type)**. Then right-click and choose **Insert Columns**. In cell **AC1**, type **T\_Type**.
2. In cell **AC2**, type **=LOWER(AD2)** and press **Enter**.
3. Hover over the bottom-right corner of cell **AC2** and double-click the **Fill Handle**.
4. Select column **AC**, then press **CTRL+C**.
5. Select column **AD**, right-click and choose **Paste Options>Values**.
6. Select column **AC**, right-click it and choose **Delete Columns**.

## Task D: Change date formatting

1. Select column **Z (Order\_Ship\_Date)**.
2. On the **Home** tab, in the **Number** group click **Number Format> More Number Formats**.
3. In the Category list, select **Date**.
4. In the **Format Cells** box, under **Locale**, select **English (United States)**.
5. Under **Type**, select **Wednesday, March 14, 2012** and click **OK**.



## Task E: Use Find & Replace to trim whitespace

1. Click **CTRL+HOME**.
2. Select all the data using **CTRL+SHIFT+END**.
3. On the **Home** tab, click **Find & Select**, then **Replace**.
4. In **Find what**, type **2 spaces**. In **Replace with**, type **1 space**.
5. Click **Find All**, then click **Replace All**.
6. Click the **Close** icon.

## Exercise 3: More Excel Features for Cleaning Data

In this exercise, you will learn how to use the Flash Fill feature and functions in Excel to help clean data.

### Task A: Use the Flash Fill feature to clean data:

1. Select column A (**Cust\_Name**), right-click and choose **Insert Columns**.
2. In cell **A1** type **Customer\_Name** and press **Enter**.
3. In cell **A2**, type **Mr. Allen Perl** and press **Enter**.
4. Select column A (**Customer\_Name**), on the **Data** tab, click **Flash Fill**.
5. Click **Undo** to undo this step.

If you are using the desktop version of Excel, you could use the ‘Text to Columns’ feature to perform this next task (see the corresponding topic video for instructions).

If you are using ‘Excel for the web’ (the online version of Excel), the ‘Text to Columns’ feature is not available, but you can achieve the same results using functions, as shown in the steps below.

## Task B: Use LEFT, RIGHT, LEN, and SEARCH functions to clean data:

1. Select column A (**Cust\_Name**), right-click and choose **Insert Columns**.
2. Select column A again, right-click and choose **Insert Columns**.
3. In cell **A1**, type **Customer\_Firstname** and in cell **B1**, type **Customer\_Lastname**.
4. Click **C1**, then on the **Home** tab, click **Format Painter**, then drag across to **A1** and **B1**.
5. Double-click the **divider between columns A and B**.
6. In cell **A2** type **=LEFT(C2, SEARCH(" ",C2,1))** and press **Enter**.
7. In cell **B2** type **=RIGHT(C2,LEN(C2)-SEARCH(" ",C2,1))** and press **Enter**.
8. Double-click the **Fill Handle** on cell **A2**.
9. Double-click the **Fill Handle** on cell **B2**.

Congratulations! You have completed Lab 5, and you are ready for the next topic.

## Author(s)

- [Sandip Saha Joy](#)

## Other Contributor(s)

- [Steve Ryan](#)

## Changelog

Date	Version	Changed by	Change Description
2020-09-10	1.2	Steve Ryan	Added software/dataset info
2020-07-07	1.1	Steve Ryan	ID/Tech review pass
2020-07-01	1.0	Sandip Saha Joy	Initial version created

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Skills  
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# Hands-on Lab 6: Filtering and Sorting Data using Functions for Data Analysis

**Estimated time needed:** 30 minutes

In this lab, first you will learn how to use the Filter and Sort tools in Excel to filter and sort our data to enable us to control what information is displayed, and how it is displayed in our worksheets. Next, you will learn how to use some of the most common functions a Data Analyst might use; namely IF, IFS, COUNTIF, and SUMIF. Finally, you will learn how to use the VLOOKUP and HLOOKUP functions in Excel to reference data contained in both vertical and horizontal lookup tables.

## Software Used in this Lab

The instruction videos in this course use the full Excel Desktop version as this has all the available product features, but for the hands-on labs we will be using the free ‘Excel for the web’ version as this is available to everyone.

Although you can use the Excel Desktop software if you have access to this version, it is recommended that you use Excel for the web for the hands-on labs as the lab instructions specifically refer to this version, and there are some small differences in the interface and available features.

## Datasets Used in this Lab

The first dataset used in this lab comes from the following source: <https://dataplatform.cloud.ibm.com/exchange/public/entry/view/f8ccaf607372882403a37d9019b3abf4>. This dataset is published by **IBM**, and includes fictitious customer demographics and sales data.

The second dataset used in this lab comes from the following source: <https://www.kaggle.com/sudalairajkumar/indian-startup-funding> under a [CC0: Public Domain license](#).

Acknowledgement and thanks also goes to <https://trak.in> who were generous enough to share the data publicly for free.

We are using modified subsets of these datasets for the lab, so to follow the lab instructions successfully please use the datasets provided with the lab, rather than the datasets from their original sources.

The third dataset used in this lab is an internal dataset.

# Objectives

After completing this lab, you will be able to:

- Use the Filter and Sort tools
- Use IF, IFS, COUNTIF, and SUMIF functions for data analysis
- Use the VLOOKUP and HLOOKUP reference functions

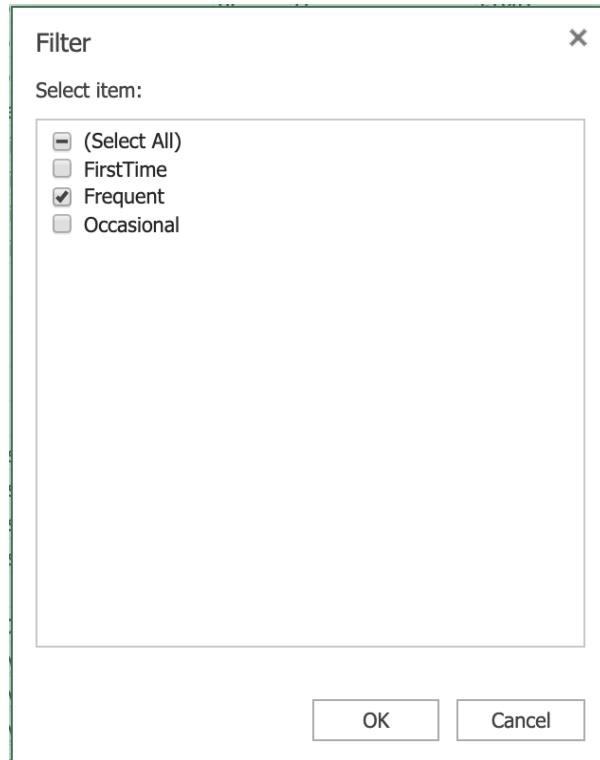
## Exercise 1: Filtering and Sorting Data

In this exercise, you will learn how to use the Filter and Sort tools in Excel to filter and sort our data to enable us to control what information is displayed, and how it is displayed in our worksheets.

### Task A: Filtering data

To use Auto Filters to filter data:

1. Download the file [Customer\\_demographics\\_and\\_sales\\_Lab6.xlsx](#). Upload and open it using Excel for the web.
2. Select **any cell** in the data, and click the **Data** tab, then click **Filter**.
3. Click the **filter drop-down** in column **AG (Purchase\_Status)**, and select **Filter....**
4. In the list, only select **Frequent** and click **OK**.



5. Click the filter drop-down in the column AG, and click **Clear Filter From “Purchase\_Status”**.

AG	AH	AI
Purchase_Status	<input type="button" value="▼"/>	Order_Type
Frequent	<input type="button" value="A Z"/>	Sort Ascending
Frequent	<input type="button" value="Z A"/>	Sort Descending
Frequent	<input type="button" value="Custom Sort"/>	Custom Sort
Frequent	<input type="button" value="Sheet View"/>	Sheet View >
Frequent	<input type="button" value="Clear Filter from 'Purchase_Status'"/>	Clear Filter from 'Purchase_Status'
Frequent	<input type="button" value="Text Filters"/>	>
Frequent	<input checked="" type="checkbox"/>	Filter...

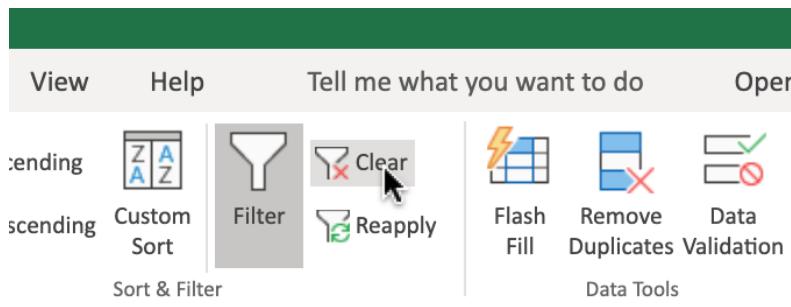
6. Click the filter drop-down in column AE (T\_Type), and select Filter....

7. In the list, only select **Cancelled** and click **OK**.

8. Click the filter drop-down in column AF (Purchase\_Touchpoint), and select Filter....

9. In the list, only select **Desktop** and click **OK**.

10. On the **Data** tab, click **Clear**.



To use Custom Filters to filter data:

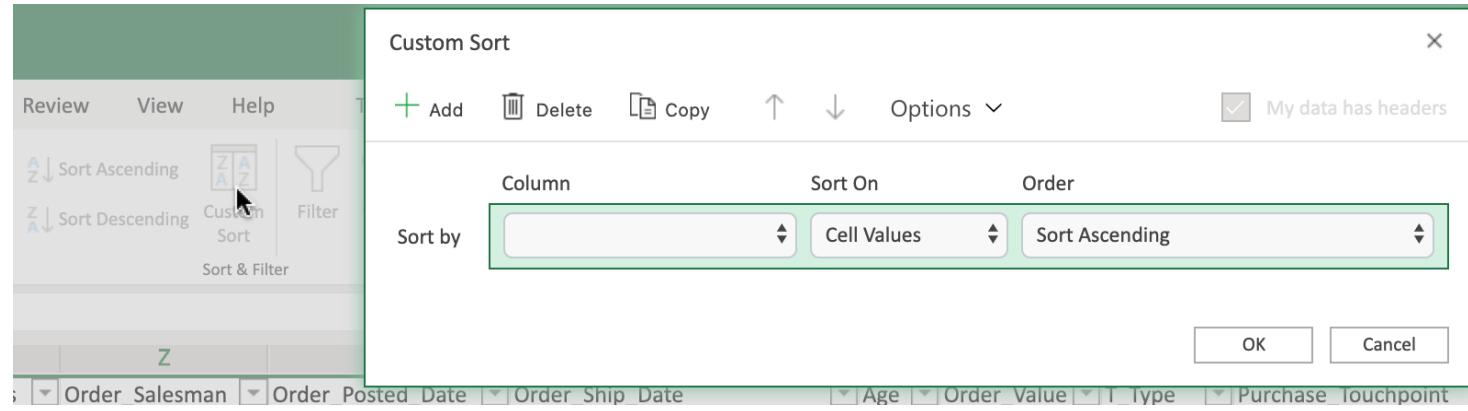
1. Click the filter drop-down in column AD (Order\_Value), then Number Filters>Top 10....

2. Change the value from **10 to 50** and Click **OK**.

3. Click the filter drop-down in the column AD, and click **Clear Filter From “Order\_Value”**.

## Task B: Sorting data

1. On the **Data** tab, click Custom Sort to open a dialog box like below.



2. Click the **Column drop-down** of row **Sort By**, select **Order\_Ship\_Date**.
3. Click the **Order drop-down** of row **Sort By**, select **Sort Ascending**.
4. Click **Add**.
5. Click the **Column drop-down** of row **Then By**, select **Order\_Value**.
6. Click the **Order drop-down** of row **Then By**, select **Sort Descending**.
7. Click **OK**.

## Exercise 2: Useful Functions for Data Analysis

In this exercise, you will learn how to use some of the most common functions a Data Analyst might use; namely IF, IFS, COUNTIF, and SUMIF.

### Task A: Use of IF to apply one condition

1. Select column **AF**, right-click, **Insert**.
2. In cell **AF1**, type **Complete?**.
3. In cell **AF2**, type **=IF(AE2="Complete","Yes","No")** and press **Enter**.
4. Double-click the **Fill Handle** of **AF2** to copy down the column.

### Task B: Use of Nested IF to apply multiple conditions

1. Select column **AE**, right-click, **Insert**.
2. In cell **AE1**, type **Order Size (IF)**.
3. In cell **AE2**, type **=IF(AD2>300,"Large",IF(AD2>100,"Medium",IF(AD2>0,"Small")))** and press **Enter**.
4. Double-click the **Fill Handle** of **AE2** to copy down the column.

## Task C: Use of IFS to apply multiple conditions (alternative of Nested IF)

1. Select column AE, right-click, **Insert**.
2. In cell AE1, type **Order Size (IFS)**.
3. In cell AE2, type **=IFS(AD2>300,"Large",AD2>100,"Medium",AD2>0,"Small")** and press **Enter**.
4. Double-click the **Fill Handle** of AE2 to copy down the column.

## Task D: Use of COUNTIF to count the number of cells that meet a specified criterion

1. Select cell BX2 and type **count VISA card**.
2. Select cell BY2 and type **=COUNTIF(N2:N195,"VISA")** and press **Enter**.

## Task E: Use of SUMIF function to sum the values within a specified range that meet a specified criterion

1. Select cell BX3 and type **sum Large order**.
2. Select cell BY3 and type **=SUMIF(AE2:AE195,"Large", AD2:AD195)** and press **Enter**.
  - Formula: **=SUMIF(range, criteria, [sum range])**.

## Task F: Use of SUMIFS function to sum the values within a specified range that meet multiple specified criteria

1. Select cell BX4 and type **sum Large order with Baby Gen**.
2. Select cell BY4 and type **=SUMIFS(AD2:AD195, AE2:AE195,"Large", AL2:AL195,"\*BABY\_BOOMERS\*")** and press **Enter**.
  - Formula: **=SUMIFS ([sum range], range1, criteria1, range2, criteria2, ...)**.

## Exercise 3: Using the VLOOKUP and HLOOKUP Functions

In this exercise, you will learn how to use the VLOOKUP and HLOOKUP functions in Excel to reference data contained in both vertical and horizontal lookup tables.

### Task A: Use of VLOOKUP to look up data in a table organized vertically

1. Download the file [indian\\_startup\\_funding\\_Lab6.xlsx](#). Upload and open it using Excel for the web.
2. In cell K2,L2,M2, type **VLOOKUP, Startup Name, Amount in USD** respectively.
3. Select and copy cells from C9 to C15 and paste in cell L3.
4. In cell M3, type **=VLOOKUP(L3, C2:I113, 7, FALSE)** and press **Enter**.
  - Formula: **=VLOOKUP (value, table, col\_index, [range\_lookup])**.

5. Hover over the bottom-right corner of cell **M3**, and drag the Fill Handle down to the cell **M9**.

6. Select cells from **M3** to **M9** and select **Number Format>Currency**.

K	L	M
VLOOKUP	Startup Name	Amount in USD
	Rein Games	=VLOOKUP(L3, C2:I113, 7, FALSE)
	CarDekho	\$70,000,000.00
	Dhruva Space	\$50,000,000.00
	Paytm	\$1,000,000,000.00
	Aye Finance	\$17,411,265.00
	Clumio	\$135,000,000.00
	Digital Mall Asia	\$220,000,000.00

## Task B: Use of HLOOKUP to look up data in a table organized horizontally

1. Download the file [Personal Monthly Expenditure Lab6.xlsx](#). Upload and open it using Excel for the web.

2. In cell **J2,K2,L2,M2**, type **HLOOKUP, Month, Food & Dining, Health & Fitness** respectively.

3. Select and copy cells from **A10** to **A12** and paste in cell **K3**.

4. In cell **L3**, type **=HLOOKUP(D1, A1:H14, 10, FALSE)** and press **Enter**.

◦ Formula: **=HLOOKUP (value, table, row\_index, [range\_lookup])**.

5. Hover over the bottom-right corner of cell **L3**, and drag the Fill Handle down to the cell **L5**.

6. Select cells from **L3** to **L5** and select **Number Format>Currency**.

7. In cell **M3**, type **=HLOOKUP(G1, A1:H14, 10, FALSE)** and press **Enter**.

8. Hover over the bottom-right corner of cell **M3**, and drag the Fill Handle down to the cell **M5**.

9. Select cells from **M3** to **M5** and select **Number Format>Currency**.

**Congratulations! You have completed Lab 6, and you are ready for the next topic.**

## Author(s)

- Sandip Saha Joy

## Other Contributor(s)

- Steve Ryan

# Changelog

Date	Version	Changed by	Change Description
2020-09-10	1.2	Steve Ryan	Added software/dataset info
2020-07-13	1.1	Steve Ryan	ID review
2020-07-07	1.0	Sandip Saha Joy	Initial version created



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## Hands-on Lab 7: Using Pivot Tables

**Estimated time needed:** 30 minutes

In this lab, first you will learn how to format data as a table, how to create a Pivot Table and use fields to arrange data in a Pivot Table, and how to perform calculations using Pivot Table data. Next, you will learn some other features that we can use with Pivot Tables, including Recommended Charts, Filters, Slicers, and Timelines.

## Software Used in this Lab

The instruction videos in this course use the full Excel Desktop version as this has all the available product features, but for the hands-on labs we will be using the free ‘Excel for the web’ version as this is available to everyone.

Although you can use the Excel Desktop software if you have access to this version, it is recommended that you use Excel for the web for the hands-on labs as the lab instructions specifically refer to this version, and there are some small differences in the interface and available features.

## Dataset Used in this Lab

The dataset used in this lab comes from the following source: <https://www.kaggle.com/sudalairajkumar/indian-startup-funding> under a [CC0: Public Domain license](#). Acknowledgement and thanks also goes to <https://trik.in> who were generous enough to share the data publicly for free.

We are using a modified subset of that dataset for the lab, so to follow the lab instructions successfully please use the dataset provided with the lab, rather than the dataset from the original source.

## Objectives

After completing this lab, you will be able to:

- Format data as a table
- Create a Pivot Table and use fields to arrange data in a Pivot Table

- Perform calculations using Pivot Table data
- Use the Recommended Charts feature (does not work with the ‘Basic’ Office for the web plan.)
- Use the Filters feature
- Use the Slicers feature
- Use the Timelines feature

## Exercise 1: Introduction to Creating Pivot Tables in Excel

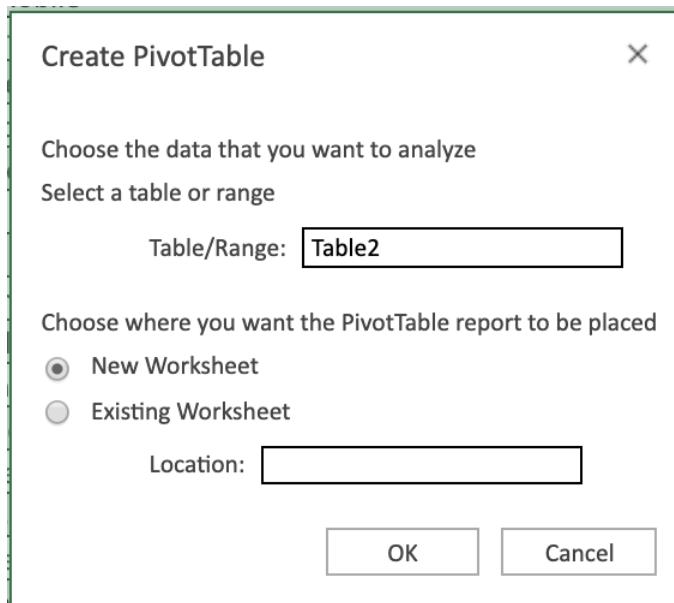
In this exercise, you will learn how to format data as a table, how to create a Pivot Table and use fields to arrange data in a Pivot Table, and how to perform calculations using Pivot Table data.

### Task A: Format data as a table

1. Download the file [indian\\_startup\\_funding\\_Lab7.xlsx](#). Upload and open it using Excel for the web.
2. Select cell **A2**.
3. On the **Home** tab, in the **Tables** group, click **Format as Table**.
4. Select **Light Gray, Table Style Medium 15**.

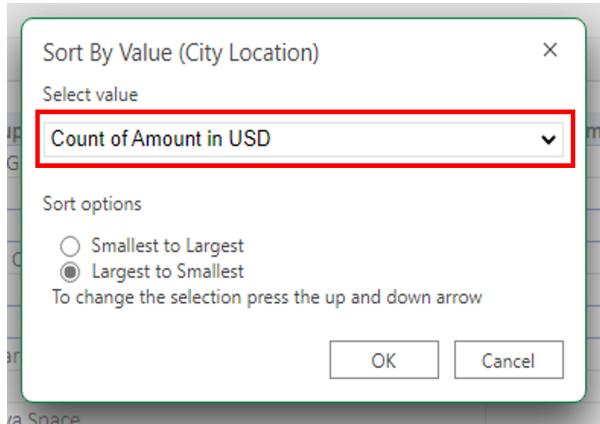
### Task B: Create a pivot table and use fields to arrange data in a pivot table

1. Select cell **D4**
2. On the **Insert** tab, click **PivotTable**.
3. Click **OK**.

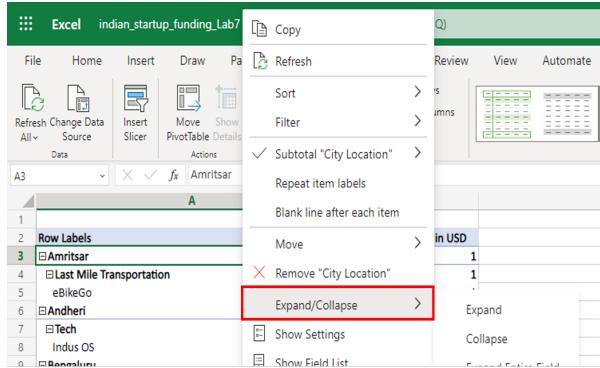


4. Double-click **Sheet1**, type **Pivot1** and click **OK**.
5. In the fields list, drag **Industry Vertical** to **Rows**.
6. In the fields list, drag **City Location** to **Rows** above **Industry Vertical**.
7. In the fields list, drag **Startup Name** to **Rows** below **Industry Vertical**.
8. In the fields list, drag **Amount in USD** to **Values**.
9. Use the drop down arrow for the **City Location** and Sort By Value in descending order (Largest to smallest) by the **Count of Amount in USD**.

This screenshot shows the context menu for the 'City Location' field in the PivotTable Fields list. The 'City Location' item is highlighted with a red box. A secondary menu is open under it, also with a red box around its header. The menu items are: 'Sort Ascending' (with A and Z arrows), 'Sort Descending' (with Z and A arrows), 'Sort By Value...', 'Clear Filter from 'City Location'', 'Label Filters', 'Value Filters', and 'Filter...'. The background shows other fields like 'Industry Vertical' and 'Startup' listed in the fields list.

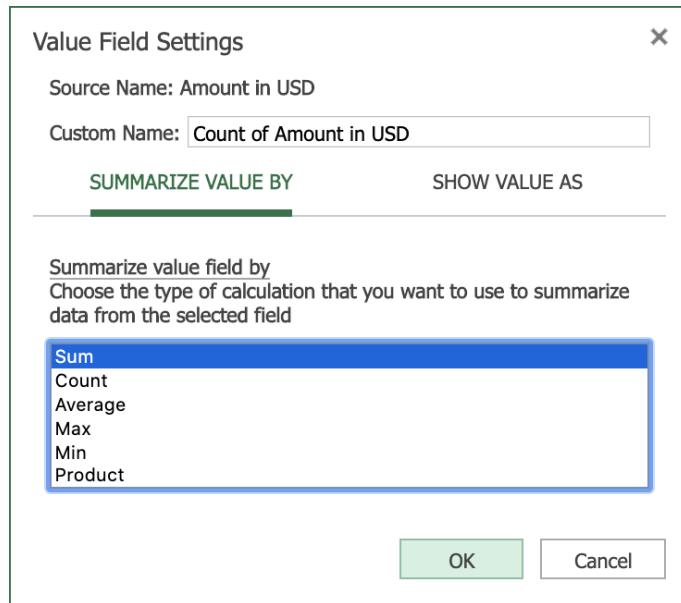


10. In the ribbon, select the **PivotTable** tab, click **Settings**, then in the **PivotTable Settings** pane, under **Layout**, select **Single column**.
11. Right-click on the row label Amritsar and select **Expand/Collapse** and **Collapse Entire Field**.



## Task C: Perform a simple calculation in a pivot table

1. In the **PivotTable Fields** pane, in the **Values** section, click the drop-down arrow next to **Count of Amount in USD**, and click **Value Field Settings**.
2. Select **Summarize value field by > Sum**.



3. Click **OK**.
4. Select the column called **Sum of Amount in USD** and then on the **Home** tab, select **Accounting Number Format > \$ English (United States)**.

## Exercise 2: Pivot Table Features

In this exercise, you will learn some other features that we can use with Pivot Tables, including Recommended Charts, Filters, Slicers, and Timelines.

**Note:** The ‘Recommended Charts’ feature only works with ‘full’ Office for the web plans (those plans that come with an Office 365 subscription). Recommended Charts do not work with the ‘basic’ plan that comes with a Microsoft Account.

### Task A: Use of the Recommended Charts feature (Optional: If you have a full Office for the web plan)

1. Switch to worksheet **indian-startup-funding**.
2. Select column **F (City Location)**.
3. On the **Insert** tab, select **Recommended Charts**.
4. Click + **Insert PivotChart**.

F

City Location	Investors Name
Faridabad	SoftBank Vision Fund
Bengaluru	Paytm, NPTK, Sabre Partners and Neoplux
Bengaluru	Vertex Growth Fund
Mumbai	
Bengaluru	Ruizheng Investment
Gurgaon	SAIF Partners, Spring Canter Investment Li
Pune	Sathguru Catalyzer Advisors
Noida	Manipal Education and Medical Group (M
Gurgaon	Ping An Global Voyager Fund
Bengaluru	Mumbai Angels, Ravikanth Reddy
Noida	Vijay Shekhar Sharma
Gurgaon	FinTech
San Jose,	Altimeter Capital, Sutter Hill Ventures
Delhi	Amour Infrastructure

Recommended Charts

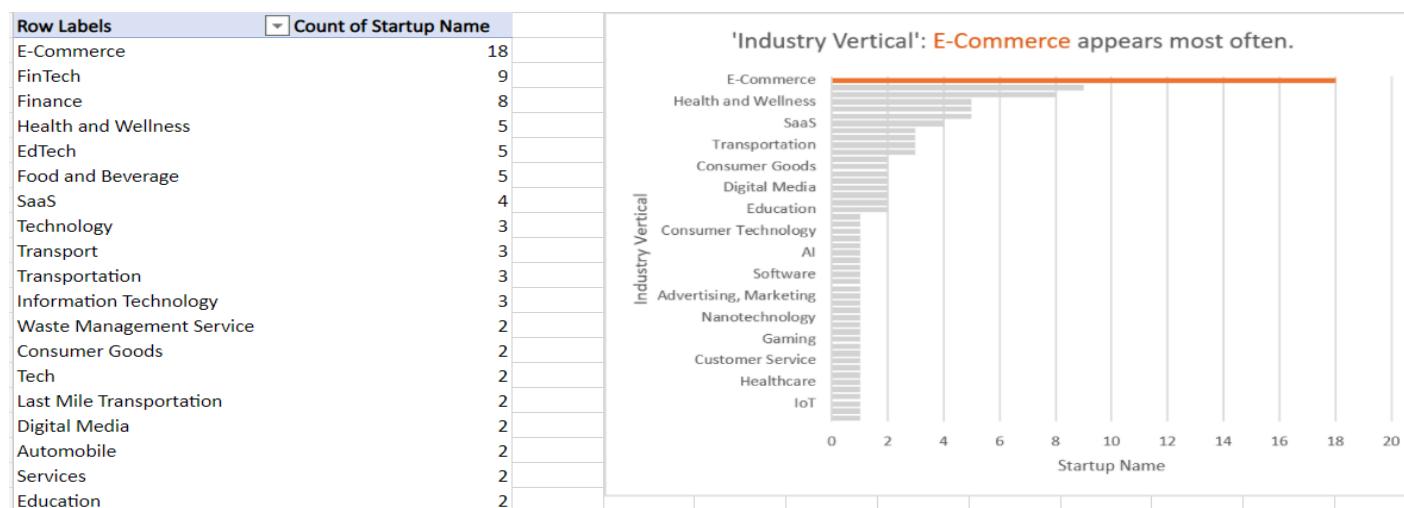
'City Location': Bengaluru appears most often.

Count of City Location

City Location	Count
Bengaluru	32
Mumbai	15
Faridabad	1
Gurgaon	1
Pune	1
Noida	1
Bengaluru	1
San Jose,	1
Delhi	1
Other	1

+ Insert PivotChart Is this helpful?

5. Switch to worksheet **indian-startup-funding** again.
6. Select column **C, D, E**.
7. On the **Insert** tab, select **Recommended Charts**.
8. Choose the recommended chart, and click **+ Insert PivotChart**.



## Task B: Use of the Filters feature

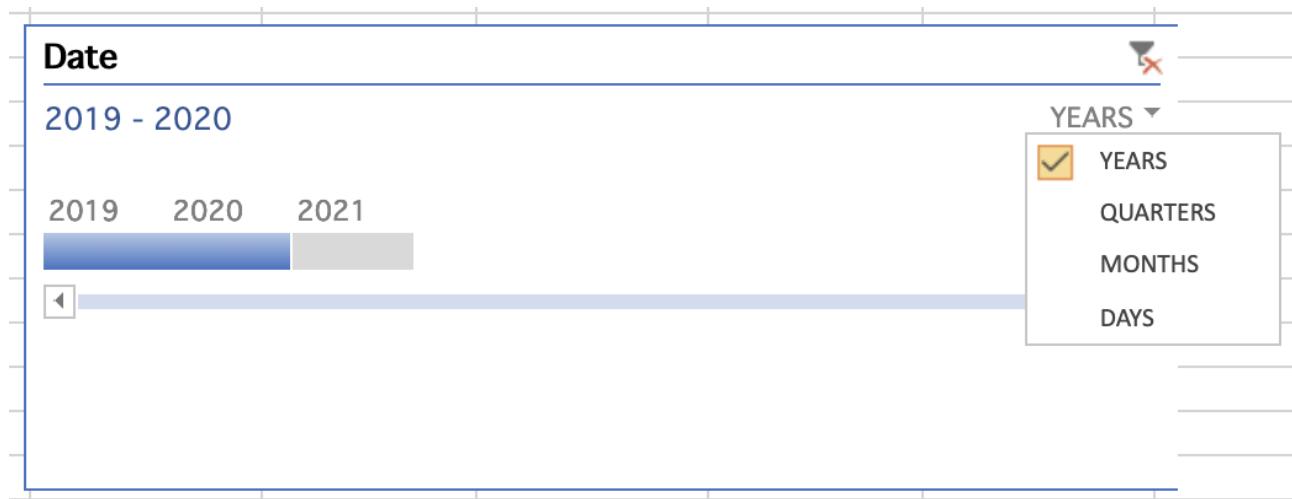
1. Switch to worksheet **Pivot1**.
2. In the Pivot Table, click the **Row Labels** arrow.
3. Select **City Location**, then **Filter....**
4. Just select **Burnsville, Delhi, New York**, then click **OK** to display the amounts for startups in these three cities only.
5. In the Pivot Table, click the **Row Labels** arrow.
6. Select **City Location**, then click **Clear Filter From ‘City Location’** to display the startups in all cities again.

## Task C: Use of the Slicers feature

1. Download the file [indian\\_startup\\_funding\\_Lab7\\_with\\_slicers\\_timelines.xlsx](#). Upload and open it using Excel for the web.
2. Switch to worksheet **Pivot1** if you are not there.
3. In the **City Location** slicer, select **Burnsville**, then **Delhi**, then **New York**.
4. To filter by multiple selection in the **City Location** slicer, with **New York** still selected, press **CTRL** and select **Burnsville**, and then **Delhi**.
5. To filter using more than one slicer, in the **Investors Name** slicer, select **Amour Infrastructure**, then press **CTRL** and select **Westbridge Capital**, and then **Breakthrough Energy Ventures**.
6. In the **City Location** slicer, click the **Clear Filter** button, then in the **Investors Name** slicer, click the **Clear Filter** button.

## Task D: Use of the Timelines feature

1. In the Date timeline, click **top right drop-down** and select **YEARS**, then scroll **left and right**.



2. In the Date timeline, click **top right drop-down** and select **QUARTERS**.
3. In the Date Timeline, select **2019 Q1**, then drag **2019 Q1 to 2019 Q3**.
4. In the Date timeline, click the **Clear Filter** icon.
5. In the Date timeline, click **top right drop-down** and select **YEARS**, then select **2020** only.

**Congratulations! You have completed Lab 7, and you are ready for the next topic.**

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## **Changelog**

Date	Version	Changed by	Change Description
2023-04-12	1.3	Anita Verma	Added sort by value and collapse
2020-09-10	1.2	Steve Ryan	Added software/dataset info
2020-07-23	1.1	Steve Ryan	ID review
2020-07-20	1.0	Sandip Saha Joy	Initial version created

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