

EDUPRISTINE

Empowering Professionals

Excel for Financial Modeling

Excel as the most important tool for modeling

☐ Excel is one of the most widely used tools in financial industry

- Easy to use
- High reach & access to software across geographies
- Flexibility
- Robustness
- Inbuilt features (Most people would not even be using 95% of the features) & Extendibility
- Modular and Object Oriented Architecture

☐ Excel as a data-store

- Easy to store and retrieve information
- Flexibility to put many data-types in the same sheet

☐ Functions and a range of features

- Excel is easily extendible to be used as a Modeling tool

☐ Modeling Context

- Understand the industry models being used
- Create your own models rather than just using them
- Improve & enhance productivity in work
- Extend these models for your use
- Debug Problems

Key aspects of Modeling & Excel Usage

❑ Building a **ROBUST** model is a must for other people to use your model

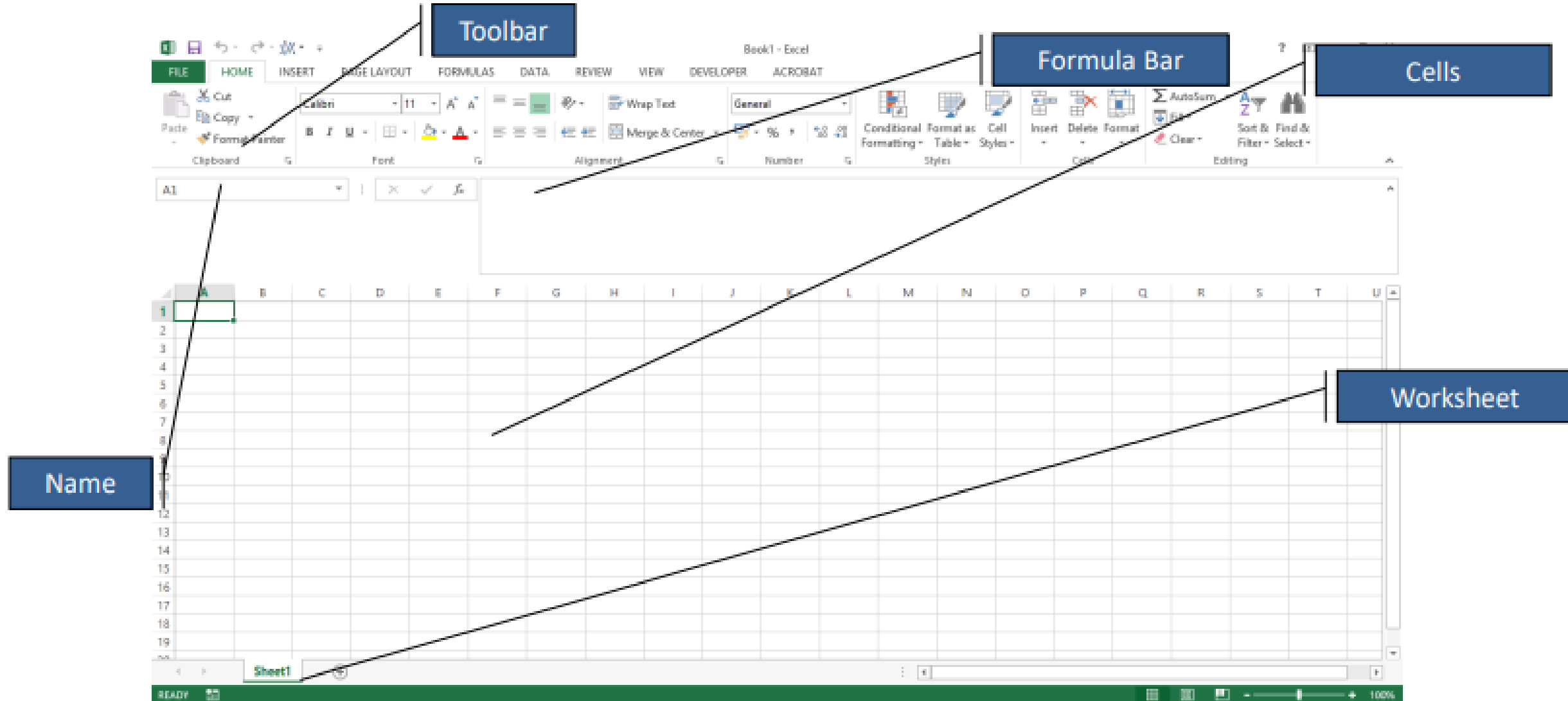
- It should generate the correct results
- It should have proper area for Inputs/ Outputs
- It should be able to handle errors properly
- Naming/ Labeling of data items should be done properly
- Accidental changing of model parameters should be avoided
- The model should be easy to understand on computer and in printout
- Reusable components can be made in the excel sheet, which can be made later

❑ **SPEED** is the key in modeling

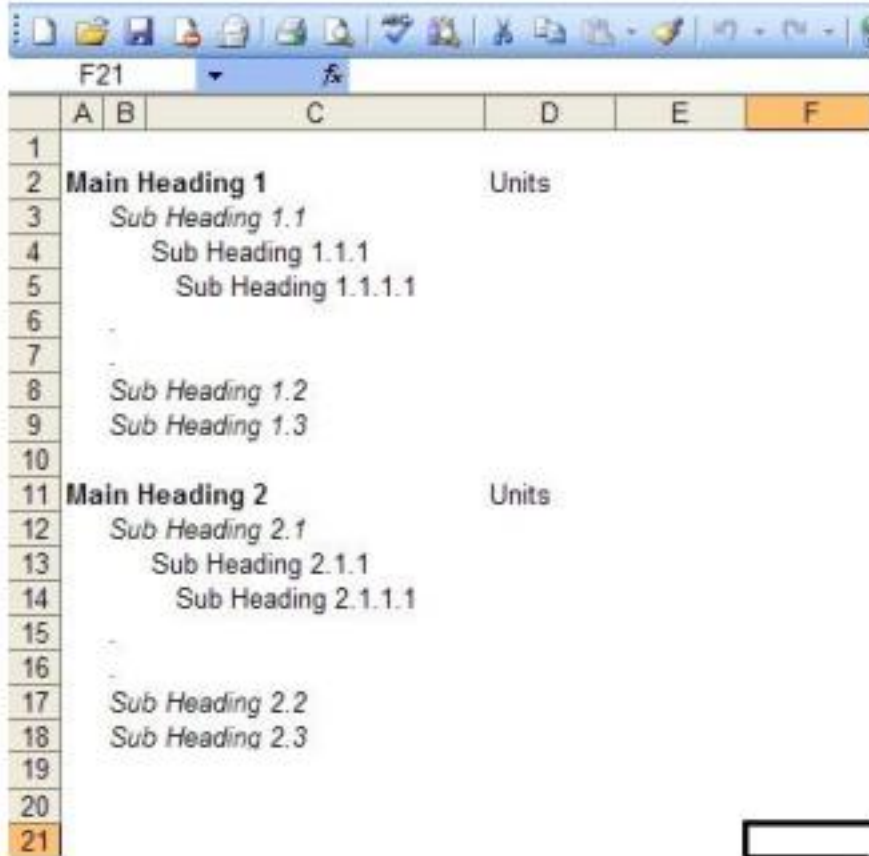
- A large model might have multiple excel sheets and a lot of formulas and calculations. It is necessary to navigate through the excel sheet in a speedy manner and understand it
- It is a fact that mouse is 5 times slower than using the keyboard to use excel. Due to heavy involvement of the users, having a strong command over the keyboard shortcuts is a must!
- A well designed excel sheet is easy to understand as well



Lets take a moment to understand components of Excel



Creating the template for financial modeling – Matrix Integrity across sheets and tower model for within the sheet



The screenshot shows an Excel spreadsheet with a hierarchical structure. The columns are labeled A, B, C, D, E, and F. The rows are numbered 1 through 21. The structure is as follows:

	A	B	C	D	E	F
1						
2			Main Heading 1	Units		
3			Sub Heading 1.1			
4			Sub Heading 1.1.1			
5			Sub Heading 1.1.1.1			
6						
7						
8			Sub Heading 1.2			
9			Sub Heading 1.3			
10						
11			Main Heading 2	Units		
12			Sub Heading 2.1			
13			Sub Heading 2.1.1			
14			Sub Heading 2.1.1.1			
15						
16						
17			Sub Heading 2.2			
18			Sub Heading 2.3			
19						
20						
21						

☐ Tower Model within sheet

- Reduce the size of the first 1-2 columns to create the headings
- Ctrl + arrow keys to move faster from 1 section to another
- Larger column width to put in the names and text information

☐ Matrix integrity to be maintained across multiple sheets

- Eases copy paste and faster dragging of formulas
- Reduces chances of errors in writing the formulas linked across sheets

Freeze panes at the right spots to ease navigation in the model

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1														
2		(All financials in	unless otherwise mentioned)	Units	FY05A	FY06A	FY07A	FY08A	FY09A	FY10E	FY11P	FY12P	FY13P	FY14P
3		Main Heading 1												
4		Sub Heading 1.1												
5		Sub Heading 1.1.1												
6		Sub Heading 1.1.1.1												
7		.												
8		.												
9		Sub Heading 1.2												
10		Sub Heading 1.3												
11														
12		Main Heading 2												
13		Sub Heading 2.1												
14		Sub Heading 2.1.1												
15		Sub Heading 2.1.1.1												
16		.												
17		.												
18		Sub Heading 2.2												
19		Sub Heading 2.3												
20														

- The years (indicating Actual and Projected) are put in one of the top row
- Rows and columns are frozen at the intersection of the left hand information column and the years row at the top
- Hint: Shortcut – Alt + w + f

Case: Formatting the Data

❑ Before we summarize the data or present it to the manager, we need to format the .csv in desired format so that we can apply excel formulas to summarize and present the same. For the same, we need to perform the following:

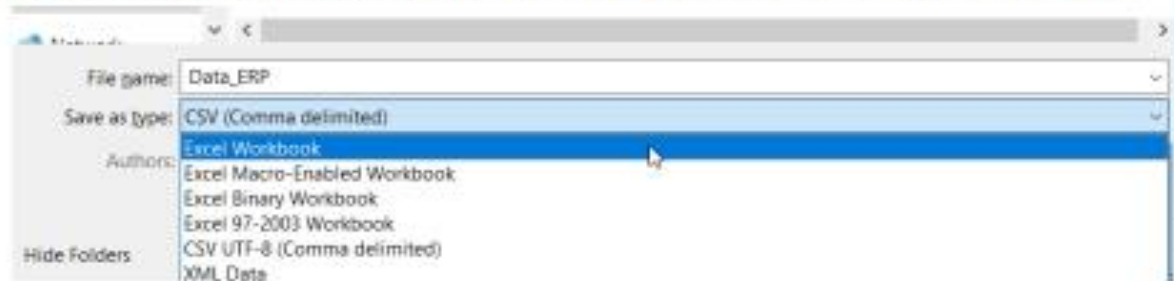
- Space fitting the data
- Formatting the imported file with text to columns
- Getting the relevant information from string of data using Left, Trim
- Using referencing frame work (usage of \$) to effectively use formulas
- Converting text to numerical using istext, isnumber, and text to columns



Formatting the Data

■ Step 1:

- For formatting open the imported file and do the **“space fitting”**
 - Lets open the Data_ERP.csv file
 - Save as .xlsx (Excel format)
 - Remove gridlines with “Alt”+ “W”+ “V”+ “G”
 - To Autofit data, select the Column A, B & C and press “Alt” + “O” + “C”+ “A”



A	B	C
Product Name: Vendor Name Revenue		
Product Name: Product A		
Sales Price: 250 per unit		
Cost: 175 per unit		
#####	Voyage En	52250
#####	Superpower	65250
5-Feb-17	Winson Ltd	4750
10-Apr-17	Donald Ltd	42750
#####	Donald Ltd	57000



A	B	C
Product Name		Vendor Name
Product Name: Product A		Revenue
Sales Price: 250 per unit		
Cost: 175 per unit		
28-Nov-17	Voyage Enterprises	52250
24-Feb-17	Superpower Co.	65250
5-Feb-17	Winson Ltd.	4750
10-Apr-17	Donald Ltd.	42750
10-Aug-17	Donald Ltd.	57000
3-Jun-17	Superpower Co.	60500
22-May-17	Bill & Co.	19750

Formatting the Data (Cont.)

■ Step 2:

- As you can see the image – Product Name, Sales Price and Cost is given in the same column (column A).
- So the first task is to take the numeric value (example: 250) in the separate column.
 - Insert a **new column** next to the data that needs to be separated
 - ❖ To select a column: "Ctrl" + "Spacebar"
 - ❖ To add a new column: "Ctrl" + "+" or "Ctrl" + "Shift" + "="

A	B	C
Product Name	Vendor Name	Revenue
Product Name: Product A		
Sales Price: 250 per unit		
Cost: 175 per unit		
28-Nov-17	Voyage Enterprises	52250
24-Feb-17	Superpower Co.	65250
5-Feb-17	Winson Ltd.	4750
10-Apr-17	Donald Ltd.	42750
10-Aug-17	Donald Ltd.	57000
3-Jun-17	Superpower Co.	60500
22-May-17	Bill & Co.	19750

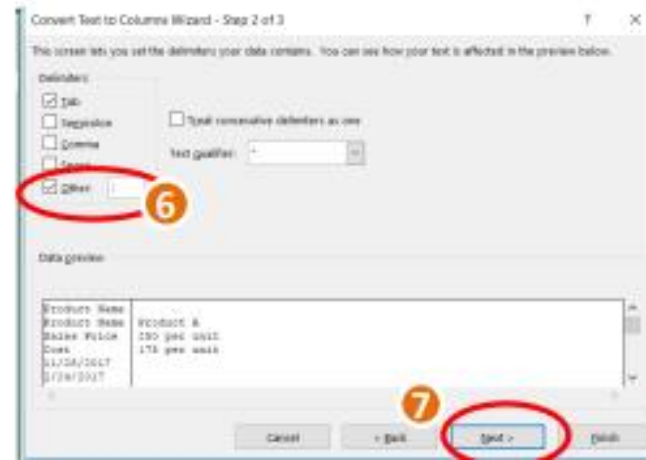
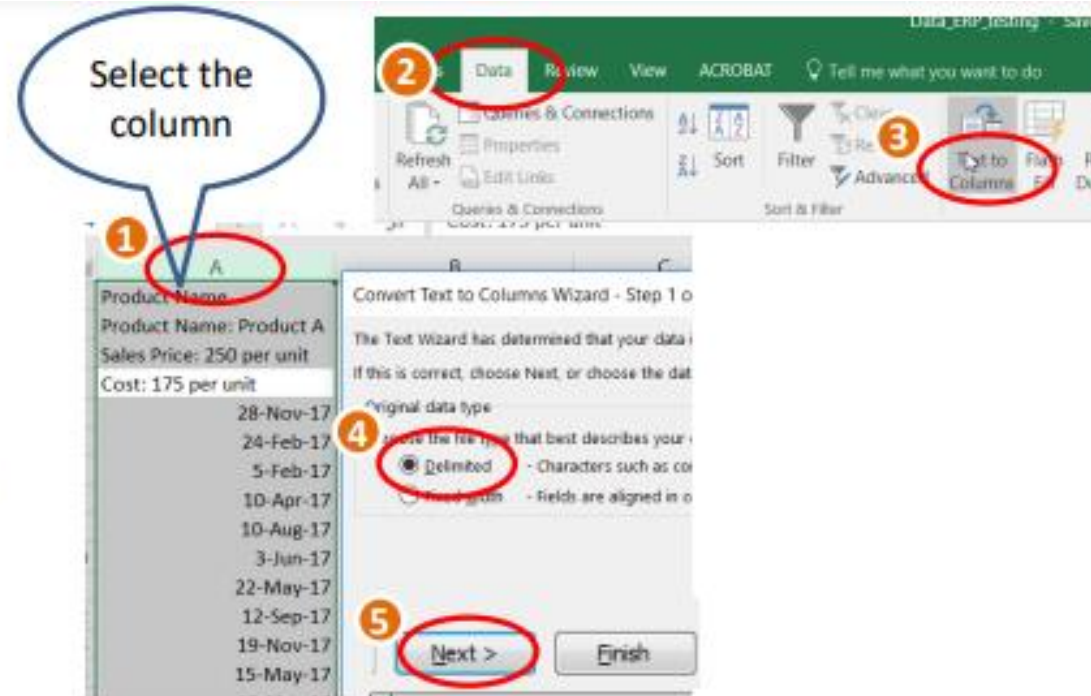


A	B	C	D
Product Name		Vendor Name	Revenue
Product Name: Product A			
Sales Price: 250 per unit			
Cost: 175 per unit			
28-Nov-17		Voyage Enterprises	52250
24-Feb-17		Superpower Co.	65250
5-Feb-17		Winson Ltd.	4750
10-Apr-17		Donald Ltd.	42750
10-Aug-17		Donald Ltd.	57000
3-Jun-17		Superpower Co.	60500
22-May-17		Bill & Co.	19750
12-Sep-17		Voyage Enterprises	57250

Formatting the Data (Cont.)

- **Select the subject column (column A) and use the “Text to Column” tab to separate the content of one excel cell into separate column.**
 - Pressing “Text to Column” tab a “Convert Text to Columns Wizard” will open, select the “**Delimited**” option and move to the “**Next**” part of the convert wizard.
 - In the Next part select “Other” and provide “Colon” (:) symbol in the blank box and press the “**Finish**” button.

A	B
Product Name	
Product Name	Product A
Sales Price	250 per unit
Cost	175 per unit
28-Nov-17	
24-Feb-17	
5-Feb-17	
10-Apr-17	
10-Aug-17	
3-Jun-17	
22-May-17	
19-Nov-17	
15-May-17	
12-Sep-17	



Formatting the Data (Cont.)

■ Step 3:

- We need to take the Product information in a separate column and for that need to write a logic.
 - We need to pick Product name as “Product XX” if it is written in the column B or just the upper cell name

A	B	C	D	E	F
Product Name		Vendor Name	Revenue	Product Name	Sales Price
Product Name	Product A			=IF(\$A2=E\$1,\$B2,E1)	

- Copy the cell which has logic and select the cells in which you want the logic to be followed and press enter.

Formatting the Data (Cont.)

■ Step 4:

- We need sales price and cost in separate columns
 - For sales price and cost, we need to extract the number portion from the string. We can extract a part from a string with the help of "LEFT", "RIGHT" or "MID"

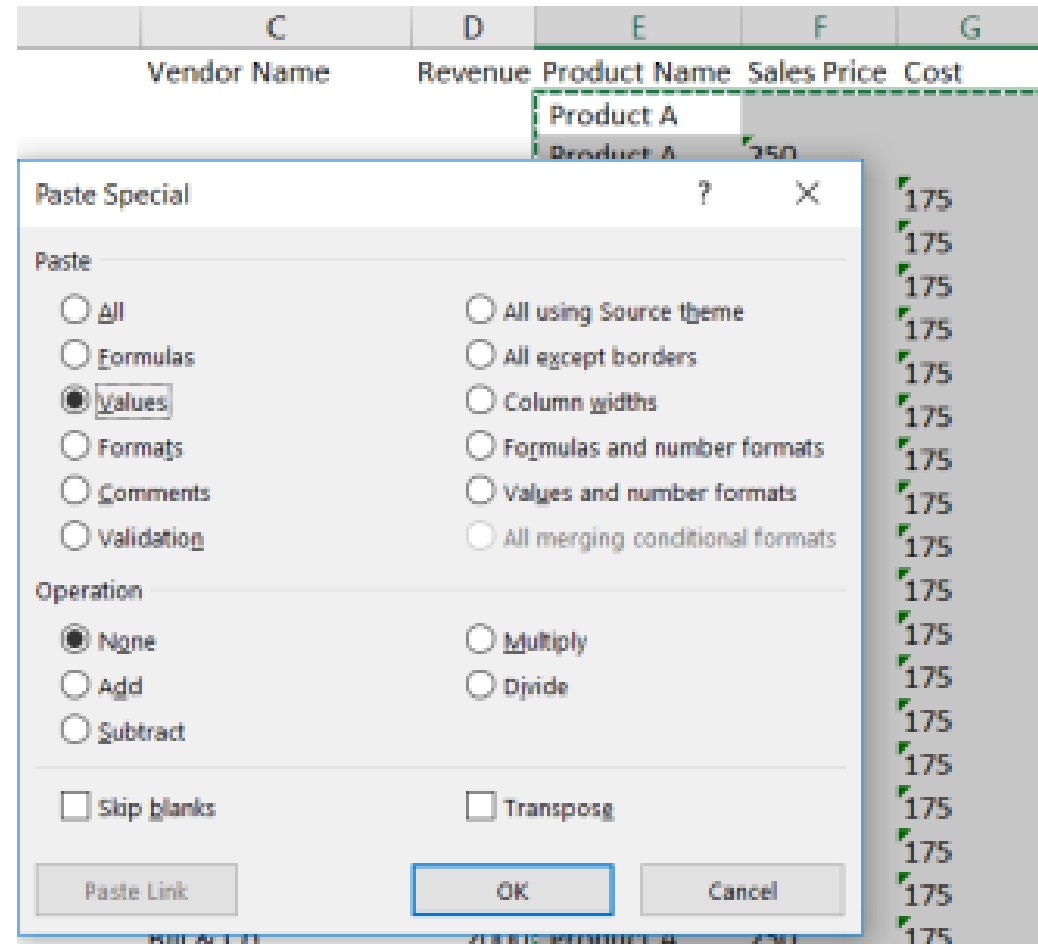
A	B	C	D	E	F	G	H	I	J
Product Name		Vendor Name	Revenue	Product Name	Sales Price	Cost			
Product Name	Product A			Product A					
Sales Price	250 per unit			Product A	=IF(\$A3=F\$1,LEFT(TRIM(\$B3),FIND(" ",TRIM(\$B3))-1),F2)				

A	B	C	D	E	F	G	H	I	J	K
Product Name		Vendor Name	Revenue	Product Name	Sales Price	Cost				
Product Name	Product A			Product A						
Sales Price	250 per unit			Product A	250					
Cost	175 per unit			Product A	250	=IF(\$A4=G\$1,LEFT(TRIM(\$B4),FIND(" ",TRIM(\$B4))-1),G3)				

- Use reference frame work (\$), so that we can copy the same formula in the next column

Formatting the Data (Cont.)

- Step 5:
 - Copy the Product Name, Sales Price and cost column and paste it as value.
 - To paste as value press Alt + E+ S + V

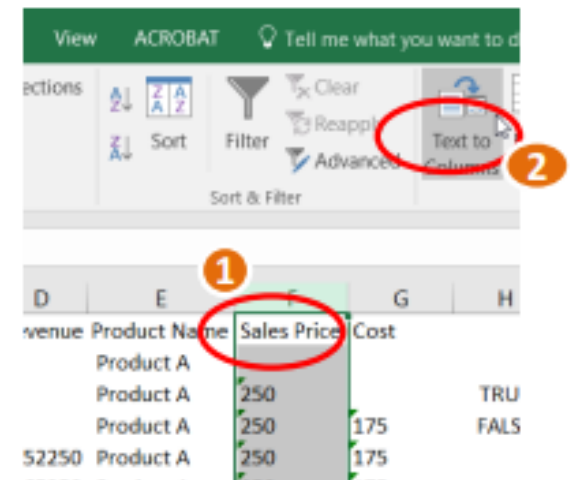
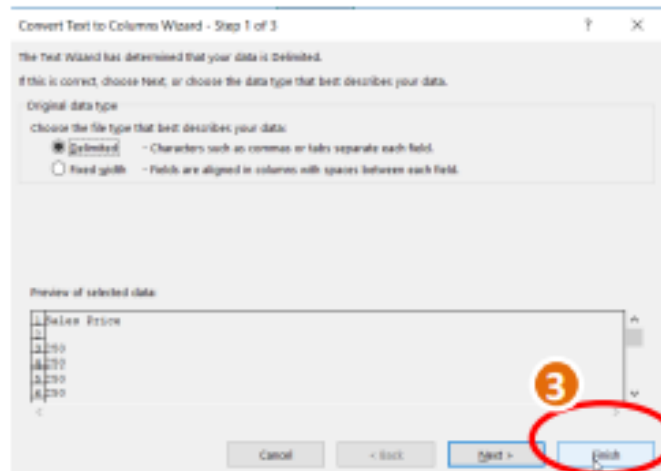


Formatting the Data (Cont.)

- If you notice, Sales price and cost are written as text
- To convert from text to number, we can follow following steps:
 - Select one column, lets start with sales price
 - Go to Text to columns
 - Just press Finish, now sales price column is numerical
 - Repeat the same for next column

F	G	H	I	J
Sales Price	Cost			
250		TRUE	=ISTEXT(F3)	
250	175	FALSE	=ISNUMBER(F4)	
250	175			

F	G	H	I	J
Sales Price	Cost			
250		FALSE	=ISTEXT(F3)	
250	175	TRUE	=ISNUMBER(F4)	
250	175			
250	175			
250	175			

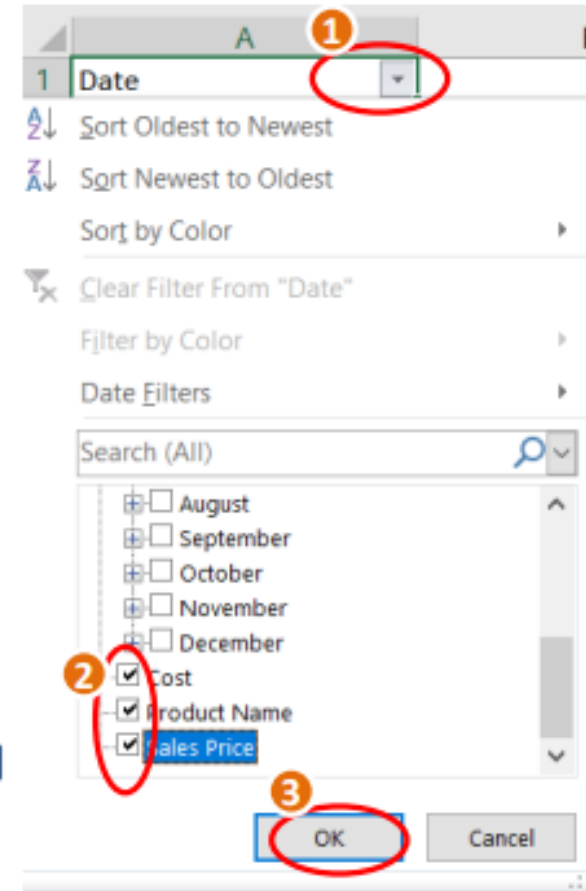


Formatting the Data (Cont.)

■ Step 6:

- Change the name of the column A from “Product Name” to “Date”
- Filter the data and delete the unwanted text .
 - To filter press - Ctrl + Shift + L
- Select “Items” (as shown in the image) in “Column A” which you want to remove (which are not dates)
- As shown in the image (below) excel will sort the data that needs to be deleted.

A	B	C	D	E	F	G
Date	Vendor Name	Reven	Product Name	Sales Price	Cost	
Product A	Product A		Product A			
Sales Price	250 per unit		Product A	250		
Cost	175 per unit		Product A	250	175	
Product Name	Product B		Product B	250	175	
Sales Price	275 per unit		Product B	275	175	
Cost	225 per unit		Product B	275	225	
Product Name	Product C		Product C	275	225	
Sales Price	180 per unit		Product C	180	225	
Cost	130 per unit		Product C	180	130	
Product Name	Product D		Product D	180	130	
Sales Price	230 per unit		Product D	230	130	
Cost	220 per unit		Product D	230	220	
Product Name	Product E		Product E	230	220	
Sales Price	400 per unit		Product E	400	220	
Cost	320 per unit		Product E	400	320	



Formatting the Data (Cont.)

■ Step 7:

- Select the sorted data
- Delete the selected visible cells
 - To delete – press Ctrl –
- Once the data in visible cells is deleted, remove the “Filter”
 - To remove Filter – press “Ctrl + Shift + L”

A	B	C	D	E	F	G
Date	Y	Vendor Name	Revenue	Product Name	Sales Price	Cost
Product Name	Product A			Product A		
Sales Price	250 per unit			Product A	250	
Cost	175 per unit			Product A	250	175
Product Name	Product B			Product B	250	175
Sales Price	275 per unit			Product B	275	175
Cost	225 per unit			Product B	275	225
Product Name	Product C			Product C	275	225
Sales Price	180 per unit			Product C	180	225
Cost	130 per unit			Product C	180	130
Product Name	Product D			Product D	180	130
Sales Price	230 per unit			Product D	230	130
Cost	230 per unit			Product D	230	220
Product Name	Product E			Product E	230	220
Sales Price	400 per unit			Product E	400	220
Cost	320 per unit			Product E	400	320



A	B	C	D	E
Date	Y	Vendor Name	Revenue	Product Name



A	B	C	D	E	F	G
Date		Vendor Name	Revenue	Product Name	Sales Price	Cost
28-Nov-17		Voyage Enterprises	52250	Product A	250	175
24-Feb-17		Superpower Co.	65250	Product A	250	175
5-Feb-17		Winson Ltd.	4750	Product A	250	175
10-Apr-17		Donald Ltd.	42750	Product A	250	175
10-Aug-17		Donald Ltd.	57000	Product A	250	175
3-Jun-17		Superpower Co.	60500	Product A	250	175
22-May-17		Bill & Co.	19750	Product A	250	175
12-Sep-17		Voyage Enterprises	57250	Product A	250	175
19-Nov-17		Donald Ltd.	11000	Product A	250	175
15-May-17		Voyage Enterprises	43000	Product A	250	175
12-Mar-17		Superpower Co.	77750	Product A	250	175

Excel
image
after
deleting
&
removing
filter

Formatting the Data (Cont.)

Step 8:

- Delete the "Column B," as it contains no data.
 - To **delete** select the entire column, right click and to delete – press Ctrl –

A	B	C	D	E	F	G	H
Date		Vendor Name	Revenue	Product Name	Sales Price	Cost	
28-Nov-17		Voyage Enterprises	52250	Product A	250	175	
24-Feb-17		Superpower Co.	65250	Product A	250	175	
5-Feb-17		Winson Ltd.	4750	Product A	250	175	
10-Apr-17		Donald Ltd.	42750	Product A	250	175	
10-Aug-17		Donald Ltd.	57000	Product A	250	175	
3-Jun-17		Superpower Co.	60500	Product A	250	175	
22-May-17		Bill & Co.	19750	Product A	250	175	
12-Sep-17		Voyage Enterprises	57250	Product A	250	175	
19-Nov-17		Donald Ltd.	11000	Product A	250	175	
15-May-17		Voyage Enterprises	43000	Product A	250	175	
23-Mar-17		Superpower Co.	22750	Product A	250	175	
8-Sep-17		Indica Corp.	27250	Product A	250	175	
8-May-17		Studytime Corp.	25000	Product A	250	175	

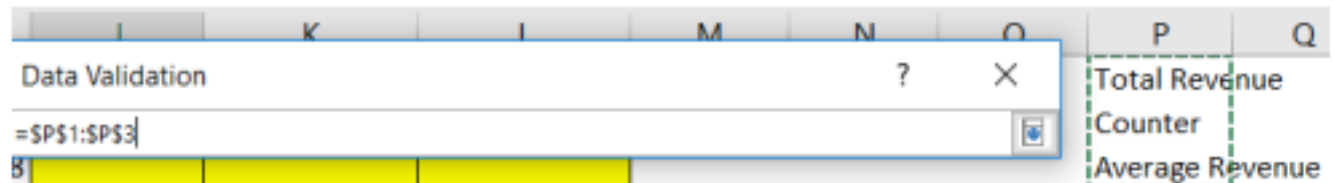
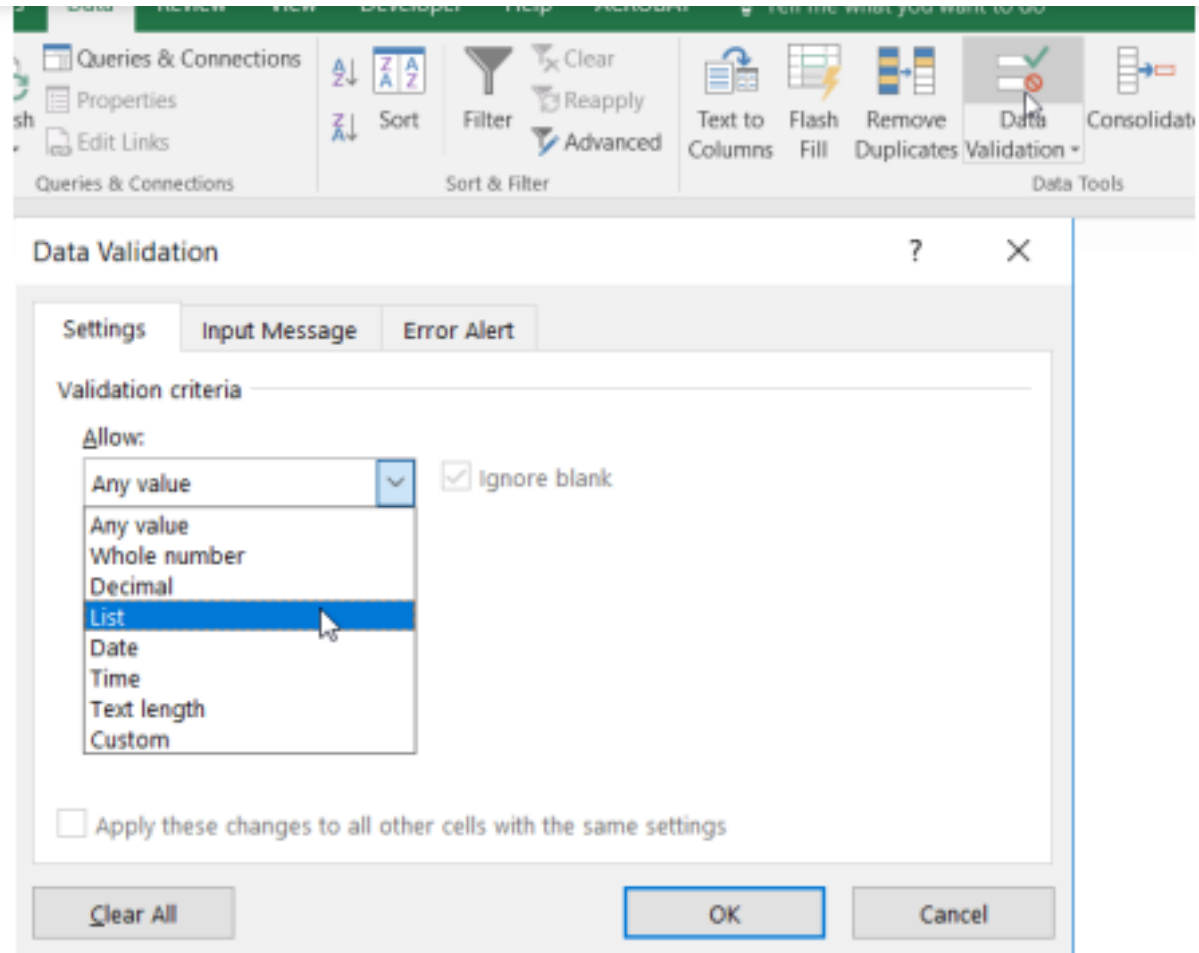
A	B	C	D	E	F
Date	Vendor Name	Revenue	Product Name	Sales Price	Cost
28-Nov-17	Voyage Enterprises	52250	Product A	250	175
24-Feb-17	Superpower Co.	65250	Product A	250	175
5-Feb-17	Winson Ltd.	4750	Product A	250	175
10-Apr-17	Donald Ltd.	42750	Product A	250	175
10-Aug-17	Donald Ltd.	57000	Product A	250	175
3-Jun-17	Superpower Co.	60500	Product A	250	175
22-May-17	Bill & Co.	19750	Product A	250	175
12-Sep-17	Voyage Enterprises	57250	Product A	250	175

Final View of Imported
Data in Excel

Creating Drop-down button

- Creating a drop-down
- Selecting list from the “Allow”
- Selecting source of the list
- Press OK

Total Revenue	Product D
Donald Ltd.	Product A
	Product B
	Product C
	Product D
	Product E



Extracting information with two dimensions

- VLOOKUP and HLOOKUP helps in looking value with one dimension
- For two dimensions, we can use INDEX along with MATCH
- MATCH helps in finding the position of a value within an array, so it will help in finding out the row and column number for the “Vendor Name” and “Product Name” respectively
- INDEX extracts the value in a given cell (combination of row and column number) within a given array

Total Revenue	Product D	Average Reven	Product B
Donald Ltd.	=INDEX(J6:N12,MATCH(I33,I6:I12,0),MATCH(J32,J5:N5,0))		

Extracting information with three dimensions

- INDEX helps even when we have 3 dimensions
- Third dimension is the Area selection – we have 3 different arrays to choose from
- To make things easy and interesting, create “Name Ranges” – Give names to these different arrays

- Go to “Name Manager”
- Create “New” name
- Give “Name” and “Reference”

New Name

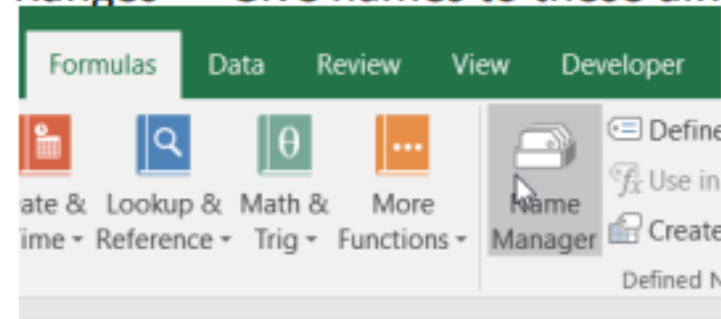
Name: Revenue

Scope: Workbook

Comment:

Refers to: =Data_ERP!\$J\$6:\$N\$12

OK Cancel



Name Manager

New...	Edit...	Delete
Name	Value	Refers To
Table1	{28-Nov-17", "Voyage...	=Data_ERP!\$A\$2:\$G\$1...

- Using “Name Ranges” in the INDEX formula with 3 dimensions

Average Reven	Product B
Bill & Co.	=INDEX([Revenue,Counter,Ave),MATCH(L33,I24:I30,0),MATCH(M32,J23:N23,0),MATCH(L32,P1:P3,0))

Converting Table Format into Range

- Suppose now, you want to stop working with your data in a table without losing any table style formatting that you applied.
 - So for this you need to convert the table to a regular range of data on the worksheet.
 - The procedure is....
 - Click anywhere in the table, this displays the **Table Tools**, adding the **"Design"** tab.
 - On the Design tab, click **"Convert to Range"** option.

Click on the "Table"

Microsoft Excel

Do you want to convert the table to a normal range?

Yes No

Vendor Name	Revenue	Product Name	Sales Price	Cost	Profit
7 Voyage Enterprises	52250	Product A	250	175	75
7 Superpower Co.	65250	Product A	250	175	75
7 Winsom Ltd.	4750	Product A	250	175	75
7 Donald Ltd.	42750	Product A	250	175	75
7 Donald Ltd.	57000	Product A	250	175	75
7 Superpower Co.	60500	Product A	250	175	75
7 Bill & Co.	19750	Product A	250	175	75
7 Voyage Enterprises	57250	Product A	250	175	75
7 Donald Ltd.	11000	Product A	250	175	75
7 Voyage Enterprises	43000	Product A	250	175	75
7 Superpower Co.	22750	Product A	250	175	75
7 Indica Corp.	27250	Product A	250	175	75
7 Studytime Corp.	25000	Product A	250	175	75
7 Vovase Enterprises	65000	Product A	250	175	75

Date	Vendor	Product Name
2-Jan-17	Superpower Co.	Product E
1-Jan-18	XXXXXX	YYYYY

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Thank You!

For queries, write to us at: care@edupristine.com