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## **IT-LAB-1 MANNUAL**

### **INTRODUCTION**

Microsoft Excel is one of the most popular spreadsheet applications that helps you manage data, create visually persuasive charts, and thought-provoking graphs. Excel is supported by both Mac and PC platforms. Microsoft Excel can also be used to balance a checkbook, create an expense report, build formulas, and edit them.

### **OPENING EXCEL USING WINDOWS**

1. Click on the Start Button.
2. In the Search Program and Files box type Excel.
3. Click on Excel 2007 from the Program results.
4. The Microsoft Excel 2007 program will open.

### **1. FORMULAS**

In Excel, a formula is an expression that operates on values in a range of cells or a cell. For example, =A1+A2+A3, which finds the sum of the range of values from cell A1 to Cell A3.

### **2. FUNCTIONS**

Functions are predefined formulas in Excel. They eliminate laborious manual entry of formulas while giving them human-friendly names. For example: =SUM(A1:A3). The function sums all the values from A1 to A3.

**CREATING A FORMULA IN EXCEL :**

1. Select a cell.
2. Type the equal sign =.

Formulas in Excel always begin with the equal sign.

3. Select a cell or type its address in the selected cell.

	Jan
Sale	120
Overhead	100
Profit	=B2

4. Enter an operator. For example, – for subtraction.
5. Select the next cell, or type its address in the selected cell.

	120
	100
	=B2-B3

6. Press Enter. The result of the calculation appears in the cell with the formula.

## ENTER A FORMULA THAT CONTAINS A BUILT-IN FUNCTION

1. Select an empty cell.
2. Type an equal sign = and then type a function. For example, =SUM for getting the total sales.
3. Type an opening parenthesis (.
4. Select the range of cells, and then type a closing parenthesis).

	Jan	Feb	Mar	Apr	May	Jun	Total
Sales	100	200	250	150	300	500	=SUM(B2:G2)

## AUTOSUM

If you need to sum a column or row of numbers, let Excel do the math for you. Select a cell next to the numbers you want to sum, click **AutoSum** on the **Home** tab, press **Enter**, and you're done.



When you click **AutoSum**, Excel automatically enters a formula (that uses the [SUM function](#)) to sum the numbers.

## COMMON FORMULAS IN EXCEL

1. SUM
2. IF
3. Percentage
4. Subtraction
5. Multiplication
6. Division
7. DATE

8. Array
9. COUNT
10. AVERAGE
11. SUMIF

## 1. SUM

All Excel formulas begin with the equals sign, =, followed by a specific text tag denoting the formula you'd like Excel to perform.

The SUM formula in Excel is one of the most basic formulas you can enter into a spreadsheet, allowing you to find the sum (or total) of two or more values. To perform the SUM formula, enter the values you'd like to add together using the format, **=SUM(value 1, value 2, etc)**.

The values you enter into the SUM formula can either be actual numbers or equal to the number in a specific cell of your spreadsheet.

- To find the SUM of 30 and 80, for example, type the following formula into a cell of your spreadsheet: **=SUM(30, 80)**. Press "Enter," and the cell will produce the total of both numbers: 110
- To find the SUM of the values in cells B2 and B11, for example, type the following formula into a cell of your spreadsheet: **=SUM(B2, B11)**. Press "Enter," and the cell will produce the total of the numbers currently filled in cells B2 and B11. If there are no numbers in either cell, the formula will return 0.

Keep in mind you can also find the total value of a *list* of numbers in Excel. To find the SUM of the values in cells B2 *through* B11, type the following formula into a cell of your

spreadsheet: `=SUM(B2:B11)`. Note the colon between both cells, rather than a comma. See how this might look in an Excel spreadsheet for a content marketer, below:

	A	B	C
1	<b>Source of Leads</b>	<b>Leads Generated</b>	
2	Blog Post 1	10	
3	Blog Post 2	4	
4	Blog Post 3	11	
5	Blog Post 4	2	
6	Blog Post 5	12	
7	Blog Post 6	6	
8	Blog Post 7	8	
9	Blog Post 8	17	
10	Blog Post 9	3	
11	Blog Post 10	8	
12		<code>=SUM(B2:B11)</code>	
13			
14			
15			

## 2. IF

The IF formula in Excel is denoted `=IF(logical_test, value_if_true, value_if_false)`. This allows you to enter a text value into the cell "if" something else in your spreadsheet is true or false. For example, `=IF(D2="Gryffindor","10","0")` would award 10 points to cell D2 if that cell contained the word "Gryffindor."

There are times when we want to know how many times a value appears in our spreadsheets. But there are also those times when we want to find the cells that contain those values, and input specific data next to it.

We'll go back to Sprung's example for this one. If we want to award 10 points to everyone who belongs in the Gryffindor house, instead of manually typing in 10's next to each Gryffindor student's name, we'll use the IF-THEN formula to say: *If* the student is in Gryffindor, *then* he or she should get ten points.

- The formula: **IF(logical\_test, value\_if\_true, value\_if\_false)**
  - **Logical\_Test:** The logical test is the "IF" part of the statement. In this case, the logic is `D2="Gryffindor"`. Make sure your Logical\_Test value is in quotation marks.
  - **Value\_if\_True:** If the value is true -- that is, if the student lives in Gryffindor -- this value is the one that we want to be displayed. In this case, we want it to be the number 10, to indicate that the student was awarded the 10 points. Note: Only use quotation marks if you want the result to be text instead of a number.
  - **Value\_if\_False:** If the value is false -- and the student does *not* live in Gryffindor -- we want the cell to show "0," for 0 points.
- Formula in below example: `=IF(D2="Gryffindor","10","0")`

The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F	G
1	First Name	Last Name	Email	House	House Points		
2	Harry	Potter	hpotter@hogwarts.edu	Gryffindor			
3	Hermione	Granger	hgranger@hogwarts.edu	Gryffindor			
4	Ron	Weasley	rweasley@hogwarts.edu	Gryffindor			
5	Draco	Malfoy	dmalfoy@hogwarts.edu	Slytherin			
6	Cho	Chang	cchang@hogwarts.edu	Ravenclaw			
7	Luna	Lovegood	llovegood@hogwarts.edu	Ravenclaw			
8	Nymphadora	Tonks	ntonks@hogwarts.edu	Hufflepuff			
9	Hannah	Abbott	habbott@hogwarts.edu	Hufflepuff			

The formula bar at the top shows the formula `=IF(D2="Gryffindor","10","0")` being entered into cell E2.

### 3. PERCENTAGE

To perform the percentage formula in Excel, enter the cells you're finding a percentage for in the format, **=A1/B1**. To convert the resulting decimal value to a percentage, highlight the cell, click the Home tab, and select "Percentage" from the numbers dropdown.

There isn't an Excel "formula" for percentages per se, but Excel makes it easy to convert the value of any cell into a percentage so you're not stuck calculating and reentering the numbers yourself.

The basic setting to convert a cell's value into a percentage is under Excel's **Home tab**. Select this tab, highlight the cell(s) you'd like to convert to a percentage, and click into the dropdown menu next to Conditional Formatting (this menu button might say "General" at first). Then, select "**Percentage**" from the list of options that appears. This will convert the value of each cell you've highlighted into a percentage. See this feature below.



The screenshot shows the Microsoft Excel interface. The 'Home' tab is active, and the 'Number' format dropdown menu is open. The menu lists various number formats, with 'Percentage' selected and highlighted in blue. The value '6.00%' is displayed next to the 'Percentage' option. In the background, a spreadsheet is visible with the following data:

	A	B	C	D	E	F	G	H
1								
2		Website URL	Traffic Increase					
3		https://blog.hubspot.com	0.05					
4		https://blog.hubspot.com	0.21					
5		https://blog.hubspot.com	0.097					
6		https://blog.hubspot.com	0.09					
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

Red annotations are present: a red arrow points to the 'Home' tab, a red '2.' is next to the 'Website URL' header, a red '1.' is next to the 'Traffic Increase' header, and a red '3.' is next to the 'Percentage' option in the format menu.

Keep in mind if you're using other formulas, such as the division formula (denoted  $=A1/B1$ ), to return new values, your values might show up as decimals by default. Simply highlight your cells before or after you perform this formula, and set these cells' format to "Percentage" from the Home tab -- as shown above.

#### 4. SUBTRACTION

To perform the subtraction formula in Excel, enter the cells you're subtracting in the format, **=SUM(A1, -B1)**. This will subtract a cell using the SUM formula by adding a negative sign before the cell you're subtracting. For example, if A1 was 10 and B1 was 6, **=SUM(A1, -B1)** would perform  $10 + -6$ , returning a value of 4.

Like percentages, subtracting doesn't have its own formula in Excel either, but that doesn't mean it can't be done. You can subtract any values (or those values inside cells) two different ways.

	A	B	C	D
1	Value 1	Value 2	Result	
2	75	85	10	
3				
4				
5				

- **Using the =SUM formula.** To subtract multiple values from one another, enter the cells you'd like to subtract in the format **=SUM(A1, -B1)**, with a negative sign (denoted with a hyphen) before the cell whose value you're subtracting. Press enter to return the difference between both cells included in the parentheses. See how this looks in the screenshot above.
- **Using the format, =A1-B1.** To subtract multiple values from one another, simply type an equals sign followed by your first value or cell, a hyphen, and the value or cell you're subtracting. Press Enter to return the difference between both values.

## 5. MULTIPLICATION

To perform the multiplication formula in Excel, enter the cells you're multiplying in the format, **=A1\*B1**. This formula uses an asterisk to multiply cell A1 by cell B1. For example, if A1 was 10 and B1 was 6, =A1\*B1 would return a value of 60.

You might think multiplying values in Excel has its own formula or uses the "x" character to denote multiplication between multiple values. Actually, it's as easy as an asterisk –

	A	B	C	D	E
1	Value 1	Value 2	Value 3	Result	
2	75	85	95	=A2*B2*C2	
3					
4					
5					

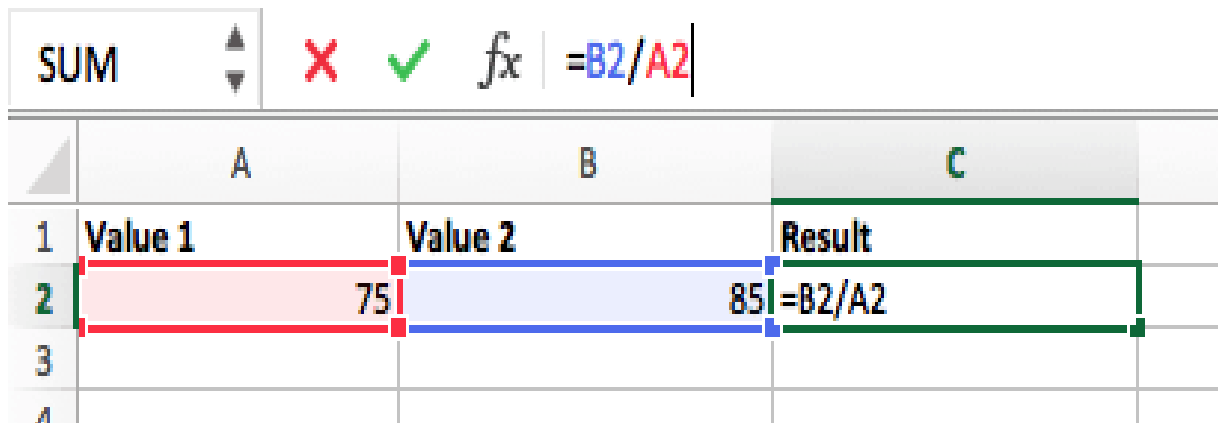
To multiply two or more values in an Excel spreadsheet, highlight an empty cell. Then, enter the values or cells you want to multiply together in the format, **=A1\*B1\*C1 ...** etc. The asterisk will effectively multiply each value included in the formula.

Press Enter to return your desired product. See how this looks in the screenshot above.

## 6. DIVISION

To perform the division formula in Excel, enter the cells you're dividing in the format, **=A1/B1**. This formula uses a forward slash, "/", to divide cell A1 by cell B1. For example, if A1 was 5 and B1 was 10, **=A1/B1** would return a decimal value of 0.5.

Division in Excel is one of the simplest functions you can perform. To do so, highlight an empty cell, enter an equals sign, "=", and follow it up with the two (or more) values you'd like to divide with a forward slash, "/", in between. The result should be in the following format: **=B2/A2**, as shown in the screenshot below.



	A	B	C
1	Value 1	Value 2	Result
2	75	85	=B2/A2
3			
4			

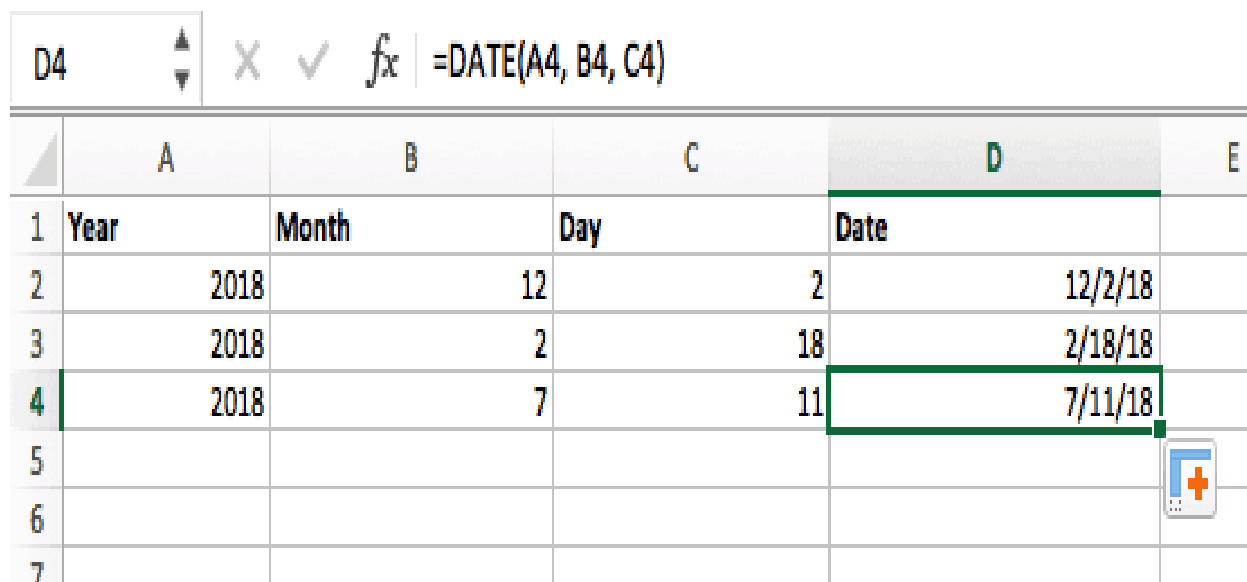
Hit Enter, and your desired quotient should appear in the cell you initially highlighted.

## 7. DATE

The Excel DATE formula is denoted **=DATE(year, month, day)**. This formula will return a date that corresponds to the values entered in the parentheses -- even values referred from other cells. For example, if A1 was 2018, B1 was 7, and C1 was 11, **=DATE(A1,B1,C1)** would return 7/11/2018.

Creating dates in the cells of an Excel spreadsheet can be a fickle task every now and then. Luckily, there's a handy formula to make formatting your dates easy. There are two ways to use this formula:

- **Create dates from a series of cell values.** To do this, highlight an empty cell, enter "=DATE," and in parentheses, enter the cells whose values create your desired date -- starting with the year, then the month number, then the day. The final format should look like this: =DATE(year, month, day). See how this looks in the screenshot below.
- **Automatically set today's date.** To do this, highlight an empty cell and enter the following string of text: =DATE(YEAR(TODAY()), MONTH(TODAY()), DAY(TODAY())). Pressing enter will return the current date you're working in your Excel spreadsheet.



	A	B	C	D	E
1	Year	Month	Day	Date	
2	2018	12	2	12/2/18	
3	2018	2	18	2/18/18	
4	2018	7	11	7/11/18	
5					
6					
7					

In either usage of Excel's date formula, your returned date should be in the form of "mm/dd/yy" -- unless your Excel program is formatted differently.

## 8. Array

An array formula in Excel surrounds a simple formula in brace characters using the format, **{=(Start Value 1:End Value 1)\*(Start Value 2:End Value 2)}**. By pressing ctrl+shift+enter, this will calculate and return value from multiple ranges, rather than just individual cells added to or multiplied by one another.

Calculating the sum, product, or quotient of individual cells is easy -- just use the =SUM formula and enter the cells, values, or range of cells you want to perform that arithmetic on. But what about multiple ranges? How do you find the combined value of a large group of cells?

Numerical arrays are a useful way to perform more than one formula at the same time in a single cell so you can see one final sum, difference, product, or quotient. If you're looking to find total sales revenue from several sold units, for example, the array formula in Excel is perfect for you. Here's how you'd do it:

1. To start using the array formula, type "=SUM," and in parentheses, enter the *first* of two (or three, or four) ranges of cells you'd like to multiply together. Here's what your progress might look like: **=SUM(C2:C5**
2. Next, add an asterisk after the last cell of the first range you included in your formula. This stands for multiplication. Following this asterisk, enter your second range of cells. You'll be multiplying this second range of cells by the first. Your progress in this formula should now look like this: **=SUM(C2:C5\*D2:D5)**
3. Ready to press Enter? Not so fast ... Because this formula is so complicated, Excel reserves a different keyboard command for arrays. Once you've closed the parentheses on your array formula, press **Ctrl+Shift+Enter**. This will recognize your formula as an array, wrapping your formula in brace characters and successfully returning your product of both ranges combined.

D6			
fx   {=SUM(B2:B5*C2:C5)}			
	A	B	C
1	<b>Product</b>	<b>Unit Price</b>	<b>Number of Units Sold</b>
2	Product A	\$40	5
3	Product B	\$50	3
4	Product C	\$60	8
5	Product D	\$70	4
6			<b>\$1,110.00</b>
7			

In revenue calculations, this can cut down on your time and effort significantly. See the final formula in the screenshot above.

### 9. COUNT

The COUNT formula in Excel is denoted **=COUNT(Start Cell:End Cell)**. This formula will return a value that is equal to the number of entries found within your desired range of cells. For example, if there are eight cells with entered values between A1 and A10, **=COUNT(A1:A10)** will return a value of 8. The COUNT formula in Excel is particularly useful for *large* spreadsheets, wherein you want to see how many cells contain actual entries. Don't be fooled: **This formula won't do any math on the values of the cells themselves.** This formula is simply to find out how many cells in a selected range are occupied with something.

Using the formula in bold above, you can easily run a count of active cells in your spreadsheet. The result will look a little something like this:

B2		
fx   =COUNT(A2:A30)		
	A	B
1	<b>Car Sales</b>	<b>Cars Sold</b>
2	\$	20,000.00
3	\$	17,995.00
4	\$	36,877.00
5	\$	16,500.00
6	\$	14,800.00
7	\$	19,900.00
8	\$	17,699.00
9	\$	34,899.00
10	\$	12,799.00
11	\$	19,895.00
12	\$	18,995.00
13		
14		
15		
16		
17		
18		
19		
20		
21		

## 10. AVERAGE

To perform the average formula in Excel, enter the values, cells, or range of cells of which you're calculating the average in the format, **=AVERAGE(number1, number2, etc.)** or **=AVERAGE(Start Value: End Value)**. This will calculate the average of all the values or range of cells included in the parentheses. Finding the average of a range of cells in Excel keeps you from having to find individual sums and then performing a separate division equation on your total. Using **=AVERAGE** as your initial text entry, you can let Excel do all the work for you.

For reference, the average of a group of numbers is equal to the sum of those numbers, divided by the number of items in that group.

## 11. SUMIF

The SUMIF formula in Excel is denoted **=SUMIF(range, criteria, [sum range])**. This will return the sum of the values within a desired range of cells that all meet one criterion. For example, **=SUMIF(C3:C12,">70,000")** would return the sum of values between cells C3 and C12 from only the cells that are greater than 70,000.

Let's say you want to determine the profit you generated from a list of leads who are associated with specific area codes, or calculate the sum of certain employees' salaries -- but only if they fall above a particular amount. Doing that manually sounds a bit time-consuming, to say the least.

With the SUMIF function, it doesn't have to be -- you can easily add up the sum of cells that meet certain criteria, like in the salary example above.

- **The formula: =SUMIF(range,criteria,[sum\_range])**

**Range:** The range that is being tested using your criteria.

**Criteria:** The criteria that determine which cells in Criteria\_range1 will be added together

**[Sum\_range]:** An optional range of cells you're going to add up in addition to the first **Range** entered. This field may be omitted.



## **AVERAGEIF**

The Microsoft Excel AVERAGEIF function returns the average (arithmetic mean) of all numbers in a range of cells, based on a given criteria. The AVERAGEIF function is a built-in function in Excel that is categorized as a *Statistical Function*. It can be used as a worksheet function (WS) in Excel. As a worksheet function, the AVERAGEIF function can be entered as part of a formula in a cell of a worksheet.

### **Syntax**

The syntax for the AVERAGEIF function in Microsoft Excel is:

```
AVERAGEIF( range, criteria, [average_range] )
```

### **Parameters or Arguments**

#### **RANGE**

The range of cells that you want to apply the *criteria* against.

#### **CRITERIA**

The criteria used to determine which cells to average.

#### **AVERAGE\_RANGE**

Optional. It is the cells to average. If *average\_range* is omitted, it uses *range* as the value for this parameter.

## EXAMPLE (AS WORKSHEET FUNCTION)

Let's look at some Excel AVERAGEIF function examples and explore how to use the AVERAGEIF function as a worksheet function in Microsoft Excel:

	A	B	C	D	E	F	G
1	Year	Value		8.2			
2	2012	6					
3	2012	10.4					
4	2013	7					
5	2011	12					
6	2011	8					
7	2010	15					
8							

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Based on the Excel spreadsheet above, the following AVERAGEIF examples would return:

```
=AVERAGEIF(A2:A7, 2012, B2:B7)
```

*Result:* 8.2

```
=AVERAGEIF(A:A, 2011, B:B)
```

*Result:* 10

```
=AVERAGEIF(A2:A7, ">=2012", B2:B7)
```

*Result:* 7.8

```
=AVERAGEIF(A2:A7, "<2013")
```

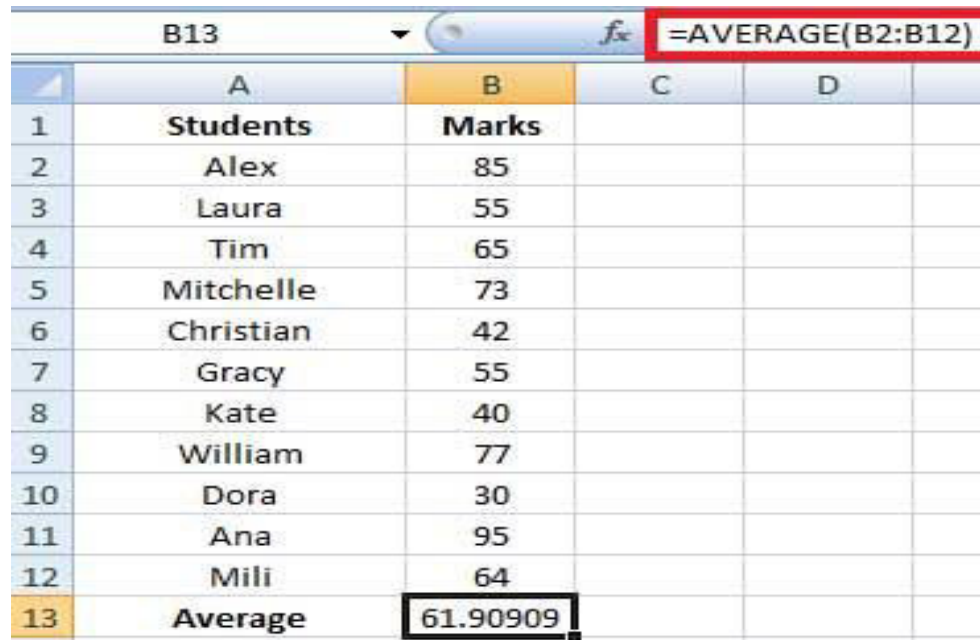
*Result:* 2011.2

## **STATISTICAL FUNCTIONS IN EXCEL**

People usually have love-hate relationship with statistics. When you get your formulas right you are in love with it and when your answers go wrong, your feelings take the opposite route. But when you are working on statistics in Excel, things are simpler and less complicated. So today, we bring to you the most used statistical functions of Excel.

### **AVERAGE FUNCTION IN EXCEL (MEAN)**

One of the most used statistical functions in Excel is Average. Calculating the Average in Excel is much simpler than it was in the school. Simply use the Average function and select the range which needs to be averaged. In the example below we want to know the average of the marks obtained by the students so we use =AVERAGE(B2:B12).



The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D
1	<b>Students</b>	<b>Marks</b>		
2	Alex	85		
3	Laura	55		
4	Tim	65		
5	Mitchelle	73		
6	Christian	42		
7	Gracy	55		
8	Kate	40		
9	William	77		
10	Dora	30		
11	Ana	95		
12	Mili	64		
13	<b>Average</b>	<b>61.90909</b>		

The formula bar at the top shows the formula `=AVERAGE(B2:B12)` in cell B13.

## MEDIAN IN EXCEL

Median is a function which is used to find the middle number in a given range of numbers. When you are finding median manually, you need to sort the data in an ascending order but in Excel, you can simply use the Median function and select the range and you will find your median. We take the same example as above to find the median of marks obtained by students. So we use `=MEDIAN(B2:B12)`.

	A	B	C	D
1	<b>Students</b>	<b>Marks</b>		
2	Alex	85		
3	Laura	55		
4	Tim	65		
5	Mitchelle	73		
6	Christian	42		
7	Gracy	55		
8	Kate	40		
9	William	77		
10	Dora	30		
11	Ana	95		
12	Mili	64		
13	<b>Average</b>	<b>61.90909</b>		
14	<b>Median</b>	<b>64</b>		

## MODE IN EXCEL

Mode helps you to find out the value that occurs most number of times. When you are working on a large amount of data, this function can be a lot of help. To find the most occurring value in Excel, use the MODE function and select the range you want to find the mode of. In our example below, we use =MODE(B2:B12) and since 2 students have scored 55 we get the answer as 55.

	A	B	C	D
1	<b>Students</b>	<b>Marks</b>		
2	Alex	85		
3	Laura	55		
4	Tim	65		
5	Mitchelle	73		
6	Christian	42		
7	Gracy	55		
8	Kate	40		
9	William	77		
10	Dora	30		
11	Ana	95		
12	Mili	64		
13	<b>Average</b>	<b>61.90909</b>		
14	<b>Median</b>	<b>64</b>		
15	<b>Mode</b>	<b>55</b>		

### One Way Analysis of Variance (ANOVA)

The one way analysis of variance allows us to compare several groups of observations, all of which are independent but possibly with a different mean for each group. A very common test is whether or not all the means between sample groups or across variables are equal.

### REGRESSION LINE

A regression line is a line drawn through the points on a scatter plot to summarise the relationship between the variables being studied. When it slopes down (from top left to bottom right), this indicates a negative or inverse relationship between the variables; when it slopes up (from bottom right to top left), a positive or direct relationship is indicated.

## CORRELATION COEFFICIENT

The Correlation Coefficient is calculated according to the following formula:

$$r = \frac{n \sum xy - \sum x \sum y}{\sqrt{[n \sum x^2 - (\sum x)^2] [n \sum y^2 - (\sum y)^2]}}$$

We would build a complicated formula like this in steps – incrementally - having broken it down to its component parts, each of which could be written simply using standard Excel features. If we have time, we will construct this formula in the training session

### Using an Excel function

**=CORREL(A1:A15,B1:B15)**

We will build this and see that the result from the hand built formula is more than tolerably close to Excel's result. When you have built it, you can compare your result with that in the spreadsheet pearson.xls.

### Simple Linear Regression

If the correlation coefficient indicates a sufficiently strong relationship (direct or inverse) between variables, you may wish to explore that relationship using regression techniques.

### Using an Excel function

Excel has three built in functions that give information about the line of best fit: *Slope(X\_values, Y\_values)* and *Linest(X\_values, Y\_values, Constant)*

The *Constant* is TRUE or FALSE. If False then the Y intercept of the line is set to 0. You must enter the formula as an *array* formula because it will return more than one value. To create an

array formula you select the cells in which you want the results (ie the slope and intercept) to appear, enter the formula and press *control-shift-enter* and Excel will enclose the formula in curly braces to signify that the result is an array of values.

The syntax to calculate each of the terms in the regression is as follows:

- Slope, m: **=SLOPE(known\_y's, known\_x's)**
- y-intercept, b: **=INTERCEPT(known\_y's, known\_x's)**
- Correlation Coefficient, r: **=CORREL(known\_y's, known\_x's)**
- R-squared, r2: **=RSQ(known\_y's, known\_x's)**

As an example, let's examine the equation of motion,  $v^2 = 2ax + v_i^2$ , for a car coming to a stop. If we measure the car's position and velocity we can determine its acceleration and its initial velocity with the use of the SLOPE( ) and INTERCEPT( ) functions. The equation of motion has the form of  $y = mx + b$ , so if the square of the car's velocity is plotted along the y-axis and its position along the x-axis, then the slope is  $2a$ , and the y-intercept is simply  $v_i^2$ .



## PIVOT TABLE

A PivotTable is an extremely powerful tool that you can use to slice and dice data. You can track and analyze hundreds of thousands of data points with a compact table that can be changed dynamically to enable you to find the different perspectives of the data. It is a simple tool to use, yet powerful.

The major features of a PivotTable are as follows

- Creating a PivotTable is extremely simple and fast•
- Enabling churning of data instantly by simple dragging of fields, sorting and filtering and different calculations on the data.
- Arriving at the suitable representation for your data as you gain insights into it
- Ability to create reports on the fly.
- Producing multiple reports from the same PivotTable in a matter of seconds.
- Providing interactive reports to synchronize with the audience.

### How to Create a Pivot Table

1. Enter your data into a range of rows and columns.
2. Sort your data by a specific attribute.
3. Highlight your cells to create your pivot table.
4. Drag and drop a field into the "Row Labels" area.
5. Drag and drop a field into the "Values" area.
6. Fine-tune your calculations.

## INTRODUCTION OF SORTING DATA IN EXCEL .

As you add more content to a worksheet, organizing this information becomes especially important. You can quickly **reorganize** a worksheet by **sorting** your data. For example, you could organize a list of contact information by last name. Content can be sorted alphabetically, numerically, and in many other ways.

### TO SORT A RANGE:

1. Select the cell range you want to **sort**. ...
2. Select the **Data** tab on the Ribbon, then click the **Sort** command.
3. The **Sort** dialog box will appear. ...
4. Decide the **sorting** order (either ascending or descending). ...
5. Once you're satisfied with your selection, click OK.
6. The cell range will be **sorted** by the selected column.

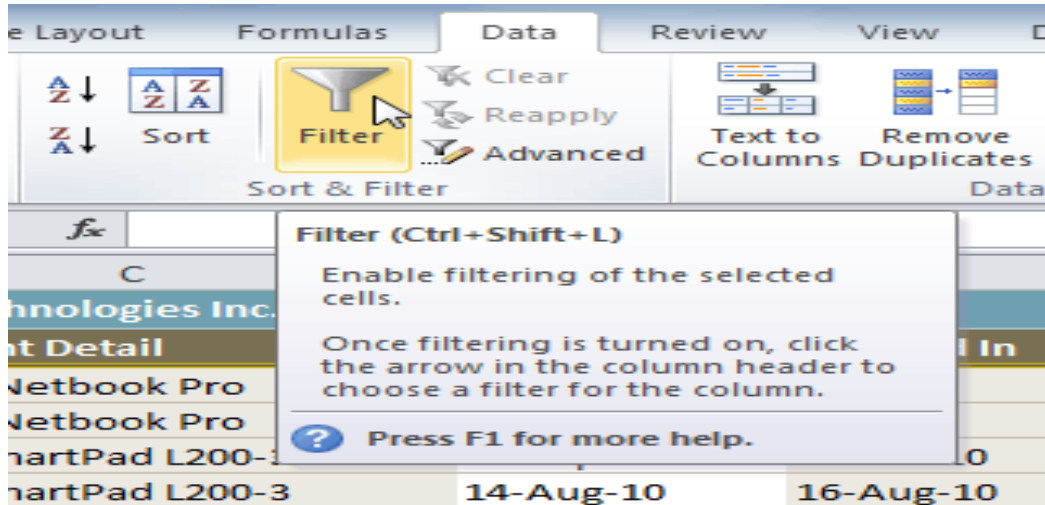
## INTRODUCTION FOR FILTERING DATA IN EXCEL

Filters can be used to narrow down the data in your worksheet and hide parts of it from view. While it may sound a little like grouping, filtering is different because it allows you to qualify and display only the data that interests you. For example, you could filter a list of survey participants to view only those who are between the ages of 25 and 34. You could also filter an inventory of paint colors to view anything that contains the word **blue**, such as **bluebell** or **robin's egg blue**. In this lesson, you'll learn how to **filter** the data in your worksheet to display only the information you need.

1. Begin with a worksheet that identifies each column using a header row.

	A	B	C	D
1	Equipment Log — Ragnar Technologies Inc.			
2	<b>ID #</b>	<b>Type</b>	<b>Equipment Detail</b>	<b>Checked Out</b>
3	1011	Laptop	10" Saris Netbook Pro	04-Oct-10
4	1012	Laptop	10" Saris Netbook Pro	29-Sep-10
5	1021	Laptop	15" EDI SmartPad L200-3	15-Sep-10
6	1022	Laptop	15" EDI SmartPad L200-3	14-Aug-10
7	1023	Laptop	15" EDI SmartPad L200-3	08-Aug-10
8	1025	Laptop	15" EDI SmartPad L200-4X	26-Sep-10
9	1031	Laptop	17" Saris X-10 Laptop	04-Oct-10
10	1032	Laptop	17" Saris X-10 Laptop	19-Sep-10
11	1033	Laptop	17" Saris X-10 Laptop	24-Sep-10
12	1034	Laptop	17" Saris X-10 Laptop	25-Aug-10
13	2050	Other	EDI SmartBoard L500-1	05-Oct-10
14	2051	Other	EDI SmartBoard L500-1	01-Oct-10
15	3000	Other	Saris Lumina Digital Camera	12-May-10

2. Select the **Data** tab, then locate the **Sort & Filter** group.
3. Click the **Filter** command.



4. Drop-down arrows will appear in the header of each column.
5. Click the **drop-down arrow** for the column you want to filter. In this example, we'll filter the Type column to view only certain types of equipment.

	A	B	C	D
1	Equipment Log — Ragnar Technologies Inc.			
2	ID #	Type	Equipment Detail	Checked Out
3	1011	Laptop	10" Core Netbook Pro	04-Oct-10
4	1012	Laptop	Netbook Pro	29-Sep-10
5	1021	Laptop	15" EDI SmartPad L200-3	15-Sep-10
6	1022	Laptop	15" EDI SmartPad L200-3	14-Aug-10
7	1023	Laptop	15" EDI SmartPad L200-3	08-Aug-10

6. The **Filter** menu appears.
7. **Uncheck** the boxes next to the data you don't want to view, or uncheck the box next to **Select All** to quickly uncheck all.

8. **Check** the boxes next to the data you do want to view. In this example, we'll check Laptop and Projector to view only these types of equipment.

	A	B	C	D
1	Equipment Log — Ragnar Technologies Inc.			
2	ID #	Type	Equipment Detail	Checked Out
		<input type="checkbox"/> (Select All)		
		<input checked="" type="checkbox"/> Laptop		
		<input type="checkbox"/> Other		
		<input checked="" type="checkbox"/> Projector		
		<input type="checkbox"/> TV		
22	4905	Other	7N Heavy Rolling Laptop Case	04-Oct-10
23	5020	TV	32" Paragon 440 Plasma TV	11-Aug-10

9. Click **OK**. All other data will be filtered, or temporarily hidden. Only laptops and projectors will be visible.

	A	B	C	D
1	Equipment Log — Ragnar Technologies Inc.			
2	ID #	Type	Equipment Detail	Checked Out
3	1011	Laptop	10" Saris Netbook Pro	04-Oct-10
4	1012	Laptop	10" Saris Netbook Pro	29-Sep-10
5	1021	Laptop	15" EDI SmartPad L200-3	15-Sep-10
6	1022	Laptop	15" EDI SmartPad L200-3	14-Aug-10
7	1023	Laptop	15" EDI SmartPad L200-3	08-Aug-10
8	1025	Laptop	15" EDI SmartPad L200-4X	26-Sep-10
9	1031	Laptop	17" Saris X-10 Laptop	04-Oct-10
10	1032	Laptop	17" Saris X-10 Laptop	19-Sep-10
11	1033	Laptop	17" Saris X-10 Laptop	24-Sep-10
12	1034	Laptop	17" Saris X-10 Laptop	25-Aug-10
26	6100	Projector	Omega VisX 1.0	28-Sep-10
27	6101	Projector	Omega VisX 1.0	26-Sep-10
28	6102	Projector	Omega VisX 1.0	22-Aug-10

Filtering options can also be found on the Home tab, condensed into the **Sort & Filter** command.