

Excel for Statistics

Chapter 1

Introduction & Organizing Data

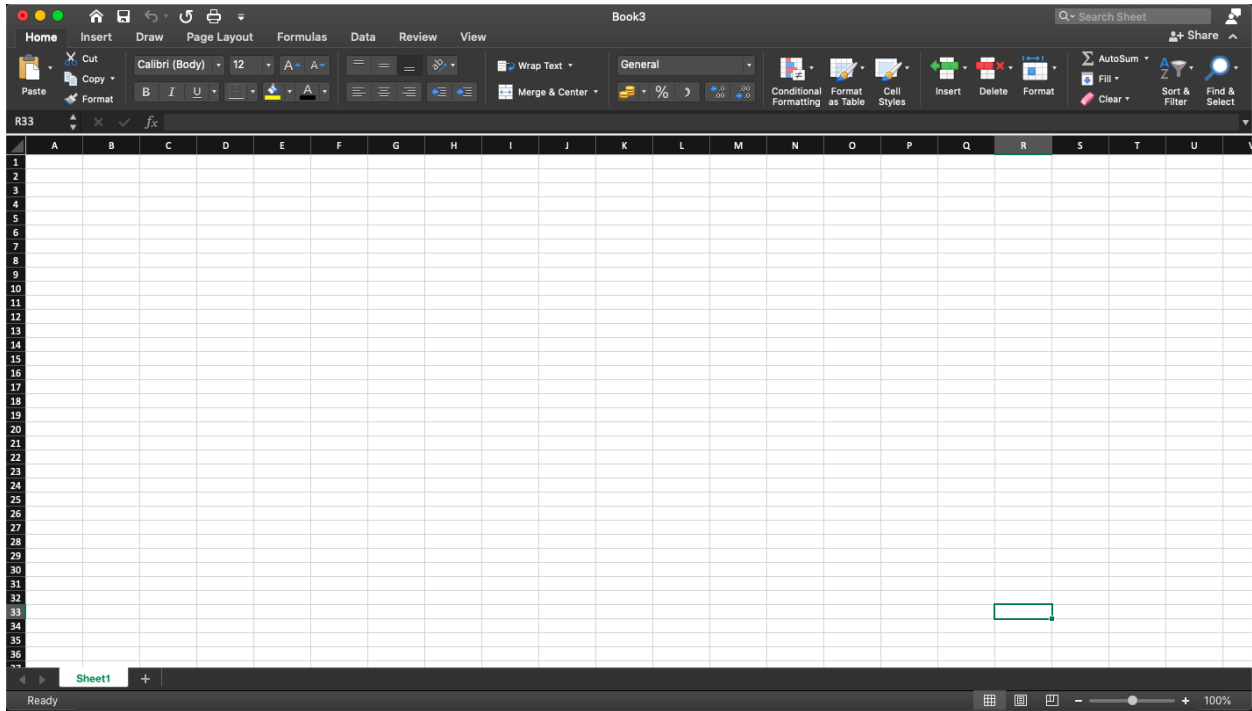
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Introduction to statistics

- What is statistics? Statistics are tools and concepts that are used to analyze data and make decisions from data.
- What is data? Data is recorded symbols that represent things or event.
- There are two types of data, qualitative and quantitative.
- Qualitative data: data that identify or classify.
- Quantitative data: numbers that measure something
- What is variable? Variable refers to underlying entity that is being represented with data. If we have data that are currency amounts, the underlying variable that is being measured is value.
- Levels of measurement:
 - Nominal: refers to qualitative data
 - Ordinal: refers to sequencing or ranking
 - Interval: refers to data with constant units but no absolute zero
 - Ratio: refers to data with constant units and absolute zero.
- What is population? Population is the entire universe of objects we are studying.
- What is sample? Sample is a subset of a population.

Introduction to Microsoft Excel

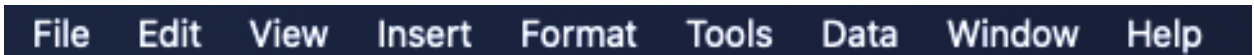
- Microsoft Excel is a number processing software that will help users to perform calculations on documents. To get into Excel, simply double click on the Microsoft Excel icon if there is one on the computer desktop. Below is a display of the basic excel screen.

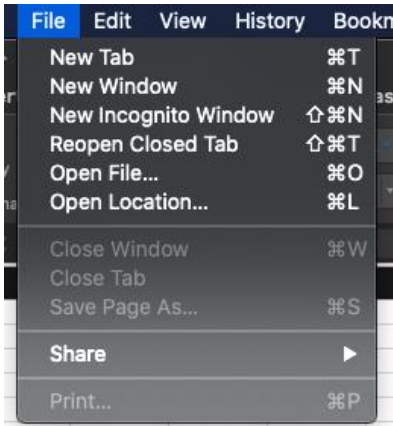


- The title bar is the middle top part of the worksheet or workbook that shows the name or title of the excel document that is being worked on. You can change the name or title of your document by saving your document first.

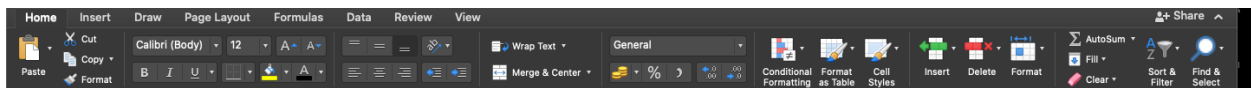


- The menu bar is a row of tabs or menus that contain horizontally arranged titles. Each title contains a set of associated toolbars. The titles that can be found on this menu bar include File, Edit, View, Insert, Formula, Data, Window and others.





- Toolbar is a navigation button that contains a set of icons, usually located on top or on the side. The toolbar functions to make it easier for users to run features in an application.



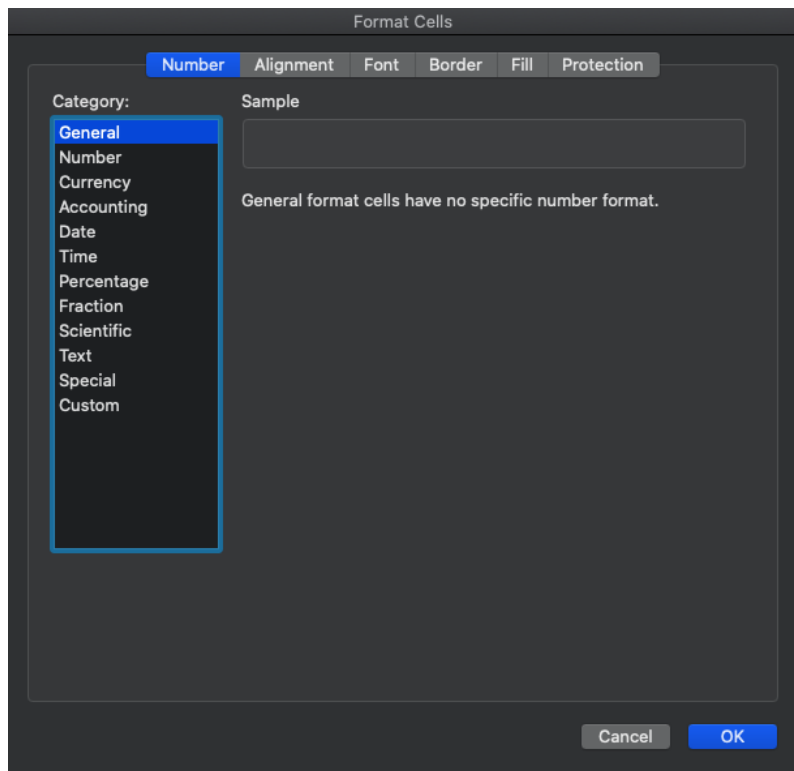
- The content of the formula bar is the input of the cell you are working with. The input in question can be in the form of data or formulas. This depends on the document you are creating. Actually, the function of the Formula Bar is very much. However, there are three main functions, namely:
 - View and edit the formula or formulas in the cell you are currently using. The formula you use will be seen clearly, even though the formula is very long.
 - Activate the formula builder feature in Excel.
 - Knowing the final result of the document creation process in a cell, whether it is accepted or rejected.



- Format cell is a formatting feature in Microsoft Excel to change the appearance of data in cells for a specific purpose without changing the data itself. For example, you don't need to

type the thousands separator operator to type numbers. These are main features of format cells in Excel:

- Number: useful for formatting (changing) the appearance of data in the form of Numbers, Text (letters) or a combination of numbers and text
- Alignment: is a format cell feature for data alignment based on horizontal or vertical to combine 2 or more cells
- Font: you can choose the type of font, style, size, color, font effect according to your liking through this feature
- Border: used to create a table as desired
- Fill: useful for setting cell color
- Protection: you can set protection/security and lock/hide formulas with this feature



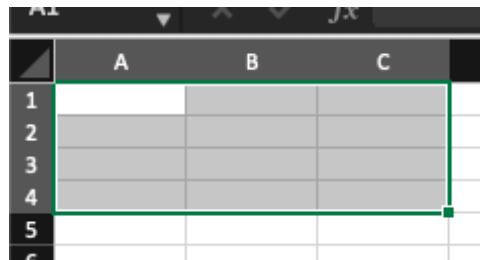
- Row: the part of the worksheet that is horizontal (right to left) and is marked with the numbers 1,2,3 and so on.



- Column: the part of the worksheet that runs vertically (top to bottom) and is marked with the letters A, B, C and so on.



- Range: a combination or a collection of several cells. It can consist of several rows, columns or a combination of both. For example, the range B3:C4 is a combination of cells B3, B4, C3 and C4.



- Sorting data is an integral part of data analysis. Sorting data helps you quickly visualize and understand your data better, organize and find the data you want, and ultimately make more effective decisions. You can sort data by text (A to Z or Z to A), numbers (smallest to largest or largest to smallest), and date and time (oldest to newest and newest to oldest) in one or more columns. You can also sort by custom created lists (such as Large, Medium, and Small) or by format, including cell color, font color, or icon set.

- You can enter simple formulas to add, divide, multiply, and subtract two or more numeric values. Plus sign (+) for addition, the minus sign (-) for subtraction, the asterisk (*) for multiplication, or the forward slash (/) for division.
- In Excel, a formula is an expression that operates on values in a range of cells or a cell. For example, =D14+D15+D16. Functions are predefined formulas in Excel. They eliminate laborious manual entry of formulas while giving them human-friendly names. For example: =SUM(D14:D16). The basic excel formulas that you can learn are:
 - SUM: the SUM function adds values. You can add individual values, cell or range references, or a mix of all three
 - AVERAGE: one of the functions of Microsoft Excel that is used to calculate the average of a group of argument values given in several cells or data ranges. In other words, the AVERAGE function is a function in excel that is used to calculate the average of a group of values
 - COUNT: the COUNT function counts the number of cells that contain numbers, and counts the numbers in the argument list. You can use the COUNT function to get the number of entries in a number field that are in a range or array of numbers.
 - MAX & MIN: In statistics, the maximum and minimum values of a data set can give an idea of the range of data from the highest to the lowest value. The maximum value indicates the highest number. While the minimum value indicates the lowest number from the data set. You can use the MAX formula to find the highest number and the MIN formula to find the lowest number in a data set.

EXERCISE 1

ANIMAL

Dog

Cat

Fish

Monkey

Bird

Please create cell borders, cell shading, and basic formatting on the data above!

EXERCISE 2

SALES DATA

1st Week	2nd Week
10	5
6	3
8	4
4	2
9	3

Please do addition, subtraction, multiplication, and division of the data above!

EXERCISE 3

SALES DATA									
1st Week	2nd Week	3rd Week	4th Week	Sales (Monthly)	Sales (Average Weekly)	Net Price	Total Sales	Bonus	Company Cash
6	4	8	4			\$ 1.000,00			
8	8	4	6			\$ 1.000,00			
2	10	6	4			\$ 1.000,00			
4	4	10	8			\$ 1.000,00			
6	6	8	6			\$ 1.000,00			
8	6	4	2			\$ 1.000,00			
10	8	6	4			\$ 1.000,00			
4	2	6	8			\$ 1.000,00			
12	8	4	6			\$ 1.000,00			
8	4	12	10			\$ 1.000,00			

Instruction:

A. Sales (Monthly) = 1st Week + 2nd Week + 3rd Week + 4th

B. Sales (Average Weekly) = Sales (Monthly)/4

C. Total Sales = Sales (Monthly) * Net Price

D. Bonus = Total Sales * 5%

E. Company Cash = Total Sales – Bonus

Fill in the blank!

EXERCISE 4

SALES DATA									
1st Week	2nd Week	3rd Week	4th Week	Sales/Month	Sales (Average Weekly)	Net Price	Total Sales	Bonus	Company Cash
6	4	8	4	22	5,5	\$ 1.000,00	\$ 22.000,00	\$ 1.100,00	\$ 20.900,00
8	8	4	6	26	6,5	\$ 1.000,00	\$ 26.000,00	\$ 1.300,00	\$ 24.700,00
2	10	6	4	22	5,5	\$ 1.000,00	\$ 22.000,00	\$ 1.100,00	\$ 20.900,00
4	4	10	8	26	6,5	\$ 1.000,00	\$ 26.000,00	\$ 1.300,00	\$ 24.700,00
6	6	8	6	26	6,5	\$ 1.000,00	\$ 26.000,00	\$ 1.300,00	\$ 24.700,00
8	6	4	2	20	5	\$ 1.000,00	\$ 20.000,00	\$ 1.000,00	\$ 19.000,00
10	8	6	4	28	7	\$ 1.000,00	\$ 28.000,00	\$ 1.400,00	\$ 26.600,00
4	2	6	8	20	5	\$ 1.000,00	\$ 20.000,00	\$ 1.000,00	\$ 19.000,00
12	8	4	6	30	7,5	\$ 1.000,00	\$ 30.000,00	\$ 1.500,00	\$ 28.500,00
8	4	12	10	34	8,5	\$ 1.000,00	\$ 34.000,00	\$ 1.700,00	\$ 32.300,00
							TOTAL		
							AVERAGE		
							MAX		
							MIN		

Fill in the blank!

Source:

Basic Statistics Using Excel and Megastat, J.B. Orris, Ph.D., McGraw-Hill, 2007