Excel & Business Math
Excel & Business Math **Video/Class Project #04** **Excel Built-in Functions, Data Types and Keyboards are Fast!**

Topics

1) Data Types and Default Alignment in Excel
   - **i. Text**
     1. Default Alignment = Left
     2. Examples of Text = Words and Alphanumeric items
   - **ii. Numbers**
     1. Default Alignment = Right
     2. Examples of Numbers: Numbers, Dates, Times
   - **iii. TRUE and FALSE**
   1. Default Alignment = Centered in all Capital Letters
     2. TRUE and FALSE values are referred to as either:
        - i. Boolean values
        - ii. Logical values

2) Default Alignment is your visual cue about what the Data Type is.

3) Understanding Default Alignment is important when dealing with numbers, dates and times in Excel because when a number, date or time has a left default alignment, it means that it is not a number and it will not work correctly in formulas.

4) **Note:** If you use the Alignment buttons in the Alignment group in the Home Ribbon Tab (a Style Number Formatting), you lose the "visual cue" of the default alignment.
   - i. Best practice is to NOT use the Alignment buttons to format numbers, Dates or Times when you are making formulas based on those numbers.
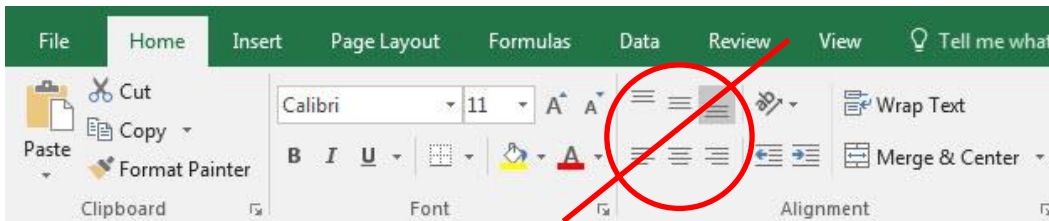
   - ii.

5) Examples from Video:

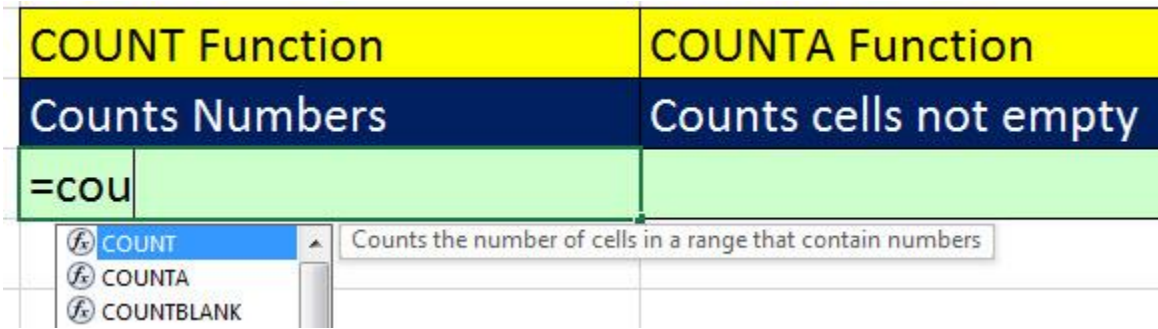|	A	B	C	D	E	F	G	H
1	Numbers			Data Types and Default Alignment in Excel:				
2	Number	10.23		Text = Left				
3	Date	1/2/2018		Numbers (Numbers, Dates, Time) = Right				
4	Time	8:00 AM		Logical = TRUE or FALSE = Centered & ALL Capitals				
5	Text			Best Practice is to **NOT** use the Alignment buttons				
6	Words	Abdi Smith		for Numbers that you will use in formulas				
7	Alphanumeric	001-GH-55/JYT						
8	Incorrect Number	10. 23		Sales				
9	Incorrect Date	1/2/20188		12.25				
10	Incorrect Time	8AM		109.3				
11	Logical	TRUE		59.87				
12	Logical	FALSE		45				
13	Empty Cells			63.01				

2) What is an Aggregate Calculation?

1) Anytime you are using many items to calculate a single answer, you are making an "Aggregate Calculation".

2) Examples:

    i. If we add the numbers 10, 5, 15 to get an answer of 30, we have made an aggregate calculation because we took three numbers and calculated a single answer.

    ii. If we try to find the maximum value amongst the numbers 10, 5, 15 to get an answer of 15, we have made an aggregate calculation because we took three numbers and found the maximum number.

    iii. If we count the names "Sioux", "Tyrone", "Abdi", "Gigi" and get an answer of 4, we have made an aggregate calculation because we took four names and calculated a single answer.
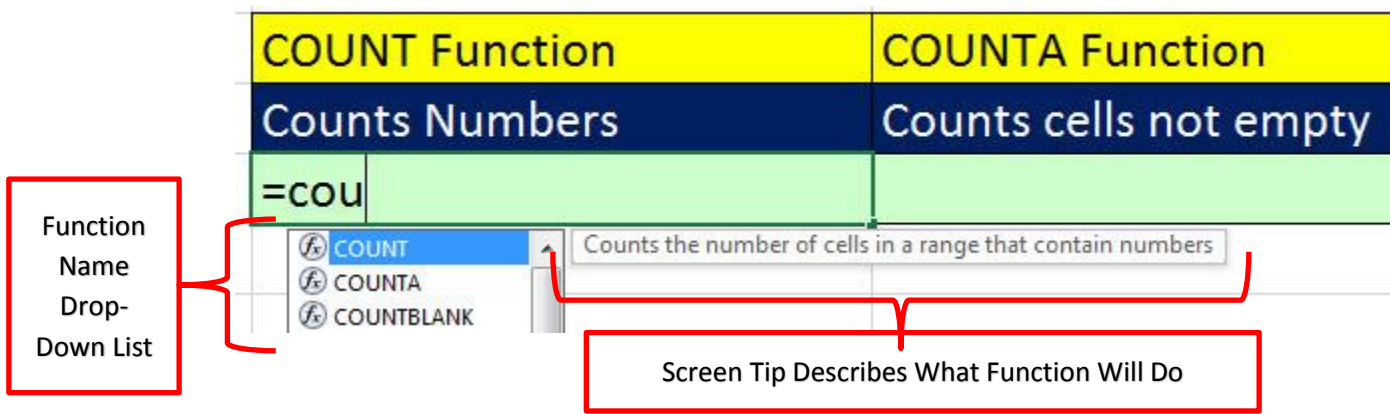
3) Excel Built-in Functions

1) Excel provides about 450 Built-in Functions that can be used to perform specific calculations or to return information about your spreadsheet data.

    i. Built-in Functions are used in formulas to help make complicated calculations less difficult.

    ii. Examples seen in the video that all do Aggregate Calculations:

        1. **SUM function**: Adds numbers in a range of cells.

            i. The Keyboard Shortcut for the SUM Function is Alt + =

        2. **COUNT function**: Counts numbers in a range of cells.

        3. **COUNTA function**: Count all the cells that are not empty in a range of cells, often used to count words.

        4. **MAX Function** will find the biggest (maximum) number in a range of cells.

        5. **MIN Function** will find the smallest (minimum) number in a range of cells.

        6. **AVERAGE Function** will calculate the average (add all numbers and then divide by the count) from a set of numbers in a range of cells.

    iii. Examples seen later in the class (these do not make aggregate calculations):

        1. **ROUND Function** will round a number to a specified position.

        2. **VLOOKUP Function** will lookup an item from a lookup table.

        3. **PMT Function** will calculate the monthly payment on a load.
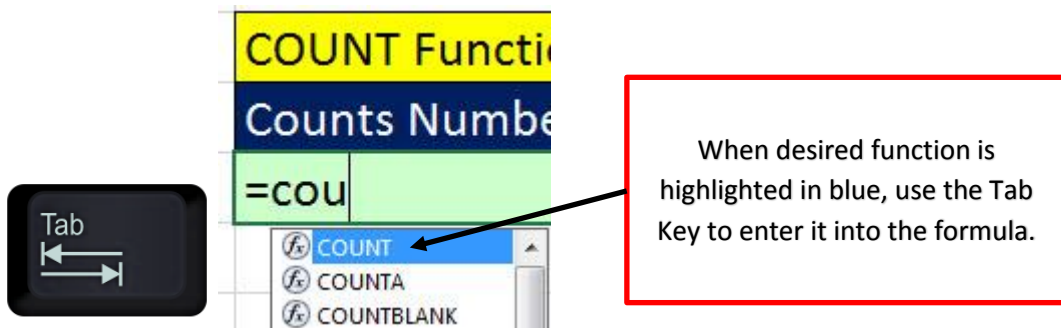
4) Steps to Insert a Function into a Cell:

1) Type an equal sign and then the first few letters in the function, as seen here:

COUNT Function	COUNTA Function
Counts Numbers	Counts cells not empty
=cou	

fx COUNT | Counts the number of cells in a range that contain numbers
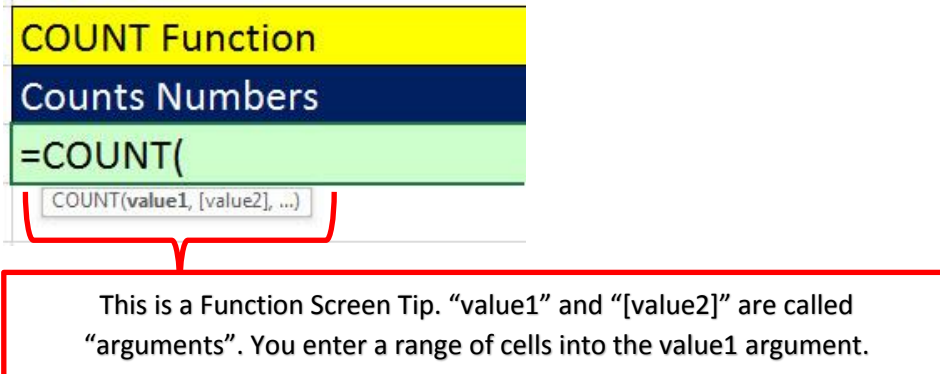*fx* COUNTA
fx COUNTBLANK

2) When a function is highlighted in blue in the function name drop-down list, you can see a screen tip that describes what the function will do, as seen here:

COUNT Function	COUNTA Function
Counts Numbers	Counts cells not empty
=cou	

Function Name Drop-Down List

fx COUNT | Counts the number of cells in a range that contain numbers
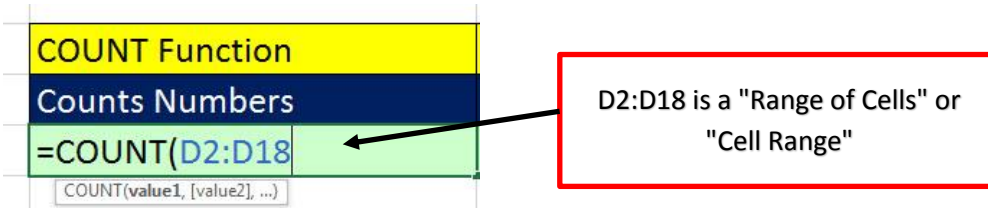*fx* COUNTA
fx COUNTBLANK

Screen Tip Describes What Function Will Do

3) When the function you want is highlighted in blue, you can use the Tab Key to enter the function into the formula, as seen here:

COUNT Functi
Counts Numbe
=cou

Tab

fx COUNT
fx COUNTA
fx COUNTBLANK

When desired function is highlighted in blue, use the Tab Key to enter it into the formula.
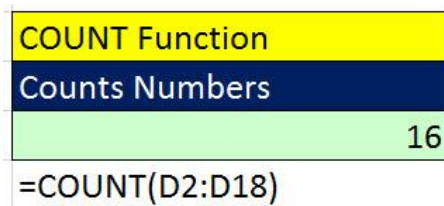
4) After you use the Tab Key to enter the function you want into the formula, you can read the screen tip that shows the function arguments
    i. In the below picture, the Screen Tip shows the arguments "value1" and "[value2]". The arguments are what is required to put into the function to get it to make the calculation.
    ii. The fact that one of the arguments is in square brackets means that that argument is optional, and you do not have to put it in to get the function to work.

COUNT Function
Counts Numbers
=COUNT(
COUNT(value1, [value2], ...)

This is a Function Screen Tip. "value1" and "[value2]" are called "arguments". You enter a range of cells into the value1 argument.

5) After you enter the range into the function argument "value1", it should look like this:

COUNT Function
Counts Numbers
=COUNT(D2:D18
COUNT(value1, [value2], ...)

D2:D18 is a "Range of Cells" or "Cell Range"

6) Type close parenthesis, and then hit the Enter Key, as seen here:

COUNT Function
Counts Numbers
16
=COUNT(D2:D18)
    i.
    ii. Note: for an aggregate function, if you do not type a close parenthesis, Excel will put it in for you automatically.

5) Examples of aggerate Built-in Excel Functions as seen in video:

	A	B	C	D	E	F	G	H
1	Date	Product Sold	SalesRep	Sales		Default Alignment in Excel:		
2	1/8/2018	Quad	Tyrone	169.2		Text = Left		
3	1/5/2018	Majestic Beaut	Gigi	453.67		Numbers (Numbers, Dates, Time) = Right		
4	1/6/2018	Aspen	Tyrone	367.54				
5	1/8/2018	Quad	Tyrone	449.88		Aggregate Calculation: many items used to calculate a single answer.		
6	1/8/2018	Majestic Beaut	Abdi	496.89				
7	13/1/2018	Aspen	Dawn	392.29				
8	1/7/2018	Quad	Gigi	192.05		COUNT Function	COUNTA Function	SUM Function
9	1/5/2018	Yanaki	Gigi	236.63		Counts Numbers	Counts cells not empty	Adds numbers
10	1/5/2018	Yanaki	Pham	134.83		15	17	4881.23
11	1.7.2018	Quad	Pham	114.12		=COUNT(D2:D18)	=COUNTA(C2:C18)	=SUM(D2:D18)
12	1/10/2018	Aspen	Chin	180.7				
13	1/9/2018	Quad	Abdi	480.1.		MAX Function	MIN Function	AVERAGE Function
14	1/6/2018	Yanaki	Tyrone	432.01		Finds Biggest Number	Finds Smallest Number	Adds, Divided by Count
15	1/5/2018	Yanaki	Pham	3 10.63		496.89	114.12	325.42
16	1/11/2018	Aspen	Gigi	405.46		=MAX(D2:D18)	=MIN(D2:D18)	=AVERAGE(D2:D18)
17	1/5/2018	Majestic Beaut	Tyrone	419.61				
18	1/9/2018	Quad	Abdi	436.35			Average long Method:	325.42
19								=H10/F10

	A	B	C	D	E	F	G	H
1	Class 1			Class 2			Class 3	
2								
3	Names	Score		Names	Score		Names	Score
4	Phil Medina	70		Exie Waugh	64		Tyrone Mccorkle	97
5	Jessie Thornton	79		Pearlie Baines	81		Deetta Noe	63
6	Roberta Briggs	53		Izetta Valadez	78		Dinorah Gann	83
7	Abdi Stephens	91		Lili Hathaway	80		Shawanda Sorensen	97
8	Amos Peterson	11		Laine Bernstein	72		Ruthanne Harley	89
9	Nadine Brock	67		Kyung Adam	75		Krysta Paz	64
10	Tammy Griffin	91		Gigi Jolly	89		Rochell Woodley	80
11	Chantel Roberts	101		Summer Lanham	71		Berneice Acevedo	83
12	Roderick Reynolds	81		Hai Herndon	72		Myong Gossett	98
13	Randall Love	62		Lien Marroquin	87		Maurita Lockhart	69
14								
15	Average	76.6		=AVERAGE(B4:B13,E4:E13,H4:H13)				
16	Max	101		=MAX(B4:B13,E4:E13,H4:H13)				
17	Min	11		=MIN(B4:B13,E4:E13,H4:H13)				

6) Keyboards Because They Are Fast

Keyboards so far in class:

1) Ctrl + Shift + N = Create a new folder in Save As dialog Box or Windows Explorer

2) ⊞ + E = Keyboard to open Windows Explorer

3) Ctrl + S = Save Changes in File

4) Ctrl + Z = Undo

5) Ctrl + Y = Re-do = Undo the Undo

6) Arrow Keys = Put Cell References into Formulas after you type an equal sign as first character in cell.

7) Ctrl + Enter = When you have a single cell in Edit Mode and you want to enter content and keep cell selected

8) Enter = When you have a single cell in Edit Mode and you want to enter content and keep cell selected

9) F2 = Puts a cell in Edit Mode

10) F4 Key Locks Cell Reference (makes it an Absolute Cell Reference)

New Keyboards in this video:

11) Alt + = is for SUM Function

12) Ctrl + C = Copy

13) Ctrl + X = Cut

14) Ctrl + V = Paste

15) Ctrl + P = Print

16) Ctrl + Shift + 8 or Ctrl + * (Number Pad) = Highlight Whole Table

17) Ctrl + Arrow = Jumps to end of "Current Region" (Last Cell with Data before an Empty Cell)

18) Ctrl + Shift + Arrow = Highlights to end of "Current Region" (Last Cell with Data before an Empty Cell)

   Note: Can be used in succession like Ctrl + Shift + Arrow, then second Arrow

19) Ctrl + Home = Jump to cell A1

20) Ctrl + Backspace = Jump back to Active Cell

21) F12 = Save As