# **EXCEL INTERMEDIATE**

PRESENTED BY:



A member of Minnesota State

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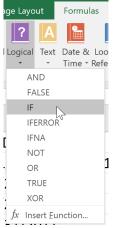
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# IF Statement

The Excel IF Function returns one value if a specified condition evaluates to TRUE, or another value if it evaluates to FALSE. In this example, each employee received a Job rating with 1 being the worst rating and 5 being the best rating. Each employee that has a job rating of 4 or 5 will receive a \$250 bonus. The IF function can run the logical reference (greater than 3) and put the number 250 in each cell that meets that requirement. If the job rating is less than 4, the IF statement will put a zero in the cell.

G	Н	I	J
Benefits	Salary	Job Rating	Bonus
DMR	\$ 29,260	പ്പം4	
DMR	\$ 39,000	5	
D	\$ 49,260	3	
R	\$ 24,840	1	
R	\$ 39,000	3	
	\$ 74,500	4	
DMR	\$ 79,730	2	

1. From the Formulas Tab >> Function Library select Logical and then IF.



2. The Function Arguments window should be filled out as shown below.

Function Arguments		?	×
IF			
Logical_test	12>3 = TRUE		
Value_if_true	250 = 250		
Value_if_false	0 = 0		
Checks whether a condition is me	= 250 , and returns one value if TRUE, and another value if FALSE.		
	_ <b>if_false</b> is the value that is returned if Logical_test is FALSE. If omitt returned.	ed, FALSE is	5
Formula result = 250			
Help on this function	ОК	Ca	ancel

3. Use the AutoFill handle to copy the function.

Н	I	J
Salary	Job Rating	Bonus
\$ 29,260	■ 1	250 <sub>[</sub>
\$ 39,000	5	250
\$ 49,260	3	0
\$ 24,840	1	0
\$ 39,000	3	0
\$ 74,500	4	250

# IFS

Tired of typing complicated, nested IF functions? The IFS function is the solution. With this function, conditions are tested in the order that you specify. If passed, the result is returned. You can also specify an else "catch all" if none of the conditions are met. To specify a default result, enter TRUE for your final logical\_test argument. We can use the IFS function to apply bonuses in the table below. A Job rating greater than 3 will receive \$1000, a Job rating greater than 1 will receive \$500 and all others will receive \$0.

Job Rating	Bonus
5	\$1000
4	\$1000
3	\$500
2	\$500
1	\$0

4. 5.

- 1. Formulas Tab >> Logical >> IFS
- 2. Enter in your logical test: E2>3
- 3. Value\_if\_true1: 1000

Function Arguments							
IFS							
Logical_test1	E2>3	=	FALSE				
Value_if_true1	1000	=	1000				
Logical_test2	<u>↑</u>	=	logical				
Logical_test2: E2>1							
Value_if_true2: 50	0						
IES							

11.5				
Logical_test1	E2>3	Ť	=	FALSE
Value_if_true1	1000	Ť	=	1000
Logical_test2	E2>1	Ť	=	FALSE
Value_if_true2	500	Ť	=	500
Logical_test3		Ť	=	logical

6. Logical-test3: True

#### 7. Value\_if\_true3: 0

Logical_test3	TRUE	<u>↑</u>	= TRUE
Value_if_true3	ol	<u>↑</u>	= 0
			= 0

# VLOOKUP

There are several Excel functions that you can use to look up and return information within a table. The most popular function for most users is VLOOKUP, which searches the first column of a range of cells and then returns a value from any cell on the same row.

The inherent limitation of VLOOKUP is that whatever value you want to return *must* be to the right of that first search row.

•••			. anac, cabi		_macx_						
	A	В	С	D	E	F	G	Н			
1	Orders										
2	Date	Code	Product	Price		Code	Product	Price			
3	1/5/2009	A23	1\$6,2,false)			A23	Paper	\$ 5.00			
4	1/6/2009	B14	Function Arguments			? >	amp	\$ 40.00			
5	1/7/2009	A27	VLOOKUP 🖓				esk	\$ 179.00			
6	1/8/2009	C45	Lookup_value		- "A23"		hair	\$ 92.00			
7	1/9/2009	B14	Table_array Col_index_num		<ul> <li>("A23","Paper",</li> <li>= 2</li> </ul>	5;"B14","Lamp",40;"A27",	°C				
8	1/12/2009	B14	Range_lookup		FALSE						
9	1/13/2009	B14			- "Paper"						
10	1/14/2009	C54		Looks for a value in the leftmost column of a table, and then returns a value in the same row from a column you specify. By default, the table must be sorted in an ascending order.							
11	1/15/2009	C45		Range_lookup is a logical value: to find the closest match in the first column (sorted in							
12	1/16/2009	C45		ascending order) =	TRUE or omitted; find an	n exact match = FALSE.					
13	1/19/2009	A23	Formula result = Paper								
14	1/20/2009	A23	Help on this function			OK Cancel					
15	1/21/2009	R14				Cancer					
	A	В	С	D	E	F	G	Н			
1	Orders										
2	Date	Code	Product	Price		Code	Product	Price			
С	1/5/2000	A 2 2	Danar	¢ 5.00		A 2 2	Danar	¢ 5.00			

#### =VLOOKUP(lookup value,table array,col index num,[range lookup])

	A	В	С			D	E	F	G	Н
1	Orders									
2	Date	Code	Product		Price			Code	Product	Price
3	1/5/2009	A23	Paper	57	\$	5.00		A23	Paper	\$ 5.00
4	1/6/2009	B14	Lamp		\$	40.00		B14	Lamp	\$ 40.00
5	1/7/2009	A27	Desk		\$	179.00		A27	Desk	\$ 179.00
6	1/8/2009	C45	Chair		\$	92.00		C45	Chair	\$ 92.00
7	1/9/2009	B14	Lamp		\$	40.00				
8	1/12/2009	B14	Lamp		\$	40.00				
9	1/13/2009	B14	Lamp		\$	40.00				

In this example we are using the Code in column B as the lookup value. Our table array is an absolute reference to cells F3:H6. Column F provides the lookup reference in the left most column of the table array, referred to as column 1. Column G, referred to as column 2, will return the product name. Column H, referred to as column 3, will return the product price.

# XLOOKUP

The Excel XLOOKUP function is a modern and flexible replacement for older functions like VLOOKUP, HLOOKUP, and LOOKUP. XLOOKUP supports approximate and exact matching, wildcards (\* ?) for partial matches, and lookups in vertical or horizontal ranges.

Unlike the other match functions, XLOOKUP supports an optional argument called not\_found that can be used to override the #N/A error when it would otherwise appear. Typical values for not\_found might be "Not found", "No match", "No result", etc. When providing a value for not\_found, enclose the text in double quotes ("").

#### Match type

By default, XLOOKUP will perform an *exact match*. Match behavior is controlled by an optional argument called **match\_type**, which has the following options:

Match type	Behavior
0 (default)	Exact match. Will return #N/A if no match.
-1	Exact match or next smaller item.
1	Exact match or next larger item.
2	<u>Wildcard match</u> (*, ?, ~)

#### Search mode

By default, XLOOKUP will start matching from the first data value. Search behavior is controlled by an optional argument called **search\_mode**, which provides the following options:

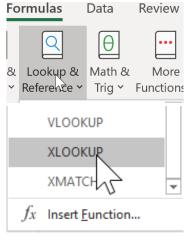
Search mode	Behavior
1 (default)	Search from first value
-1	Search from last value (reverse)
2	Binary search values sorted in ascending order
-2	Binary search values sorted in descending order

Binary searches are very fast, but *data must be sorted as required*. If data is not sorted properly, a binary search can return invalid results that look perfectly normal.

1. In this example we will use XLOOKUP instead of VLOOKUP to find the Employee Name and Department by entering the Employee ID in cell A2. NOTE: the data (A4:C14) is a table. This will allow for a user to add/delete data into the table and have the range automatically updated.

	А	В	С
1	Employe⊓LD	Employee Name	Department
2	4390		
3			
4	Employee ID 🖃	Employee Name 🛛 👻	Department 🗸
4 5		Employee Name Ved Lanning	Department ✓ Marketing
4 5 6	4390		

2. Click in cell B2 (Employee Name). Formulas Tab >> Lookup and Reference >> XLOOKUP.



3. The Lookup\_value is the Employee ID – Cell A2.

	А		В			С		D
1	Employee ID	Employe	e Name	Departm	er	nt		
2	<b>4</b> _ <b>−</b> 0	=XLOOKI	JP(A2)					
3								
4	Employee ID 💌	Employe	e Name 💽	Departm	er	nt 🔹		
5		Nod Lan		Markotin	<b>a</b>		2	×
6	8	OKUP					ſ	^
7	8		A2	Ť	_	4390		^
8	4	Lookup_rulue		1		reference		
9	8	Return_array		Î	-	reference		
10	2	If not found		•	_	5331 <i>1</i>		

4. Click in Lookup\_Array. Highlight the Employee ID Range below A4:A14 – notice the range is a table reference instead of an exact cell range.

Function Arguments	N			?	×
XLOOKUP	2				
Lookup_value	A2	1	=	4390	^
Lookup_array	Table2[[#All],[Employee ID]]	Ť	=	{*Employee ID*;4390;8604;8389;4937;829	
Return_array		Ť	=	reference	

5. Click in Return\_array. This is the column of data you want to return which is the Employee Name (B4:B14).

Function Arguments				?	×
XLOOKUP					
Lookup_value	A2	Ť	=	4390	^
Lookup_array	Table2[[#All],[Employee ID]]	Ť	=	{*Employee ID*;4390;8604;8389;4937;829	
Return_array	Table2[[#All],[Employee Name]]	Ť	=	{"Employee Name";"Ned Lanning";"Marg	
lf_not_found		Ť	=	any	
Match_mode		Ť	=	number	~
			=	"Ned Lanning"	

6. If\_not\_found can be used to return text such as "Employee Not Found" instead of the error message #N/A.

Lookup_value	A2	Ť	=	4390	^
Lookup_array	Table2[[#All],[Employee ID]]	Ť	=	{*Employee ID*;4390;8604;8389;4937;829	
Return_array	Table2[[#All],[Employee Name]]	Ť	=	{"Employee Name";"Ned Lanning";"Margo	
lf_not_found	"Employee Not Found"	Ť	=	"Employee Not Found"	
Match_mode	6	Ť	=	number	~

7. Click OK.

	А	В	С
1	Employee ID	Employee Name	Department
2	4390	Ned Lanning	
2			

Click in C2 to use XLOOKUP to find the Department. Formulas Tab >> Lookup and Reference >> XLOOKUP. The following should be entered: Lookup\_Value (A2), Lookup\_array (A4:A14), Return\_array (C2:C14), If\_not\_found

("") – this returns a blank cell.	CLICK OK.
1	

Function Arguments	;			?	$\times$
XLOOKUP					
Lookup_value	A2	Ť	=	4390	^
Lookup_array	Table2[[#All],[Employee ID]]	Ť	=	{"Employee ID";4390;8604;8389;4937;829	
Return_array	Table2[[#All],[Department]]	Ť	=	{"Department"; "Marketing"; "Sales"; "Finance	
lf_not_found	**	Ť	=		
Match_mode		Ť	=	number	~
			=	"Marketing"	
	A 1 1 1 1 1		11		1.

9. Change the Employee ID to lookup a new Employee Name and Department.

	A	В	С
1	Employee ID	Employee Name	Department
2	8604	Margo Hendrix	Sales
3			
4	Employee ID 🕞	Employee Name 🛛 🚽	Department 🗾
4 5		Employee Name Ved Lanning	Department Marketing
4 5 6	4390		

10. Results if an employee ID does not exist.

	A	В	С
1	Employee ID	Employee Name	Department
2	1234	Employee Not Found	
2			

# CONCAT

This new function is like CONCATENATE, but better. First, it's shorter and easier to type. But it also supports range references, in addition to cell references. The CONCAT function combines the text from multiple ranges and/or strings. Formulas Tab >> Text >> CONCAT

А	В	(	2		D	E	F		(
1	2	3	<b>З</b> ф		4	5	Result		
A	В	С		D		Е	=CONCAT(A2:E2)		
Alextech	.edu			[					
Monday	Tuesday	Wedne	Function	Argum	ents	Enida		2	×
I	Love	Saturd							~
				Text1	A2:E2		1 = {"A","B","C","D","E"}		
				Text2			1 = text		

A	В	Ĺ	D	E	F
ђ	2	3	4	5	Result
A	В	С	D	E	ABCDE
Alextech	.edu				Alextech.edu
Monday	Tuesday	Wednesday	Thursday	Friday	Monday Tuesday Wednesday Thursday Friday
1	Love	Saturdays			ILoveSaturdays

# **TEXTJOIN**

This function combines text from multiple ranges, and each item is separated by a delimiter that you specify.

1	2	3	4	4	5	Resul	t	
Α	В	С	D		E	=TEXTJOIN(" ",,A2:E2)		
Alextech	.edu					Alextech .edu		
Monday	Tuesday	Wednes	Function Argum		Estates	NA	- <b></b> - <b>-</b>	
I	Love	Saturda	TEXTJOIN		6	2		
			Delimiter	11		± - · ·		
			Ignore_empty			1 = logical		
			Text1	A2:E2		1 = {"A","B","C","D","E"}		

1	2	3	4	5	Result
A	В	С	D	E	ABCDE
Alextech	.edu				Alextech .edu
Monday	Tuesday	Wednesday	Thursday	Friday	Monday Tuesday Wednesday Thursday Friday
I	Love	Saturdays			I Love Saturdays
•	LOVC	Saturadys			

### MAXIFS

The MAXIFS function returns the maximum value among cells specified by a given set of conditions or criteria: numbers, dates, text, etc.

	Α	В	С	D	E	F	G	Н		I	J	К	L		M
1	Country	Salespersor	Order Date	OrderID	Order Amount	:	Salespersor	Max N	Vlin						
2	UK	Suyama	11/12/2021	10249	\$1,863.40		Suyama	=MAXIFS(E:E,B:B	,G2)						
з	USA	Peacock	11/13/2021	10252	\$3,597.90		Peacock								
4	USA	Peacock	11/14/2021	10250	\$1,552.60		Leverling	Function Argume	ents						
5	USA	Leverling	11/17/2021	10251	\$654.06		Dodsworth	MAXIES							
6	UK	Dodsworth	11/17/2021	10255	\$2,490.50		Buchanan	1	range	E.E		Ţ	] = E		
7	UK	Buchanan	11/18/2021	10248	\$440.00		Davolio						÷		
8	USA	Leverling	11/18/2021	10253	\$1,444.80		Callahan	Criteria_r	-	B:B		<u>↑</u>	÷	3:В	
9	USA	Leverling	11/19/2021	10256	\$517.80		Fuller	G	riteria1	G2		Ť	-	Suyama	e -
10	USA	Peacock	11/24/2021	10257	\$1,119.90		King	Criteria_r	range2			<u>↑</u>	= 1	eferenc	e
11	UK	Buchanan	11/25/2021	10254	\$556.62										
12	USA	Davolio	11/25/2021	10258	\$1,614.88								= 4	707.54	
10	нсл	Deeeeek	11/27/2021	10250	¢100.00			Returns the maxim	ium value	e amono ce	lls specified	bv a given se	t of cor	nditions	s or cri

# **MINIFS**

The MINIFS function returns the minimum value among cells specified by a given set of conditions or criteria.

	A	В	С	D	E	F	G	н	I. I.	J	К	L	M		N
1	Country	Salesperson	Order Date	OrderID	Order Amount		Salespersor	Max	Min						
2	UK	Suyama	11/12/2021	10249	\$1,863.40		Suyama	4707.54	=MINIFS(E:E,B:B,G2	)					
3	USA	Peacock	11/13/2021	10252	\$3,597.90		Peacock	11188.4	C						
4	USA	Peacock	11/14/2021	10250	\$1,552.60		Leverling	10952.84	Function Arguments						
5	USA	Leverling	11/17/2021	10251	\$654.06		Dodsworth	11380	MINIFS						
6	UK	Dodsworth	11/17/2021	10255	\$2,490.50		Buchanan	9210.9	Min_ra	nge E:E			Ť	= E:B	E
7	UK	Buchanan	11/18/2021	10248	\$440.00		Davolio	15810	Criteria_ran	ge1 B:B			Ť	= B:B	в
8	USA	Leverling	11/18/2021	10253	\$1,444.80		Callahan	4825	Crite	ria1 G2			Ť	= "Si	iuyama'
9	USA	Leverling	11/19/2021	10256	\$517.80		Fuller	16387.5	Criteria_ran	ae2			Î	= ref	ference
10	USA	Peacock	11/24/2021	10257	\$1,119.90		King	12615.05							
11	UK	Buchanan	11/25/2021	10254	\$556.62										
12	USA	Davolio	11/25/2021	10258	\$1,614.88				Peturos the minimum			a station of the second		= 48	

#### Results

G	Н	I					
Salesperson	Salesperson Max						
Suyama	\$4,707.54	\$48.00					
Peacock	\$11,188.40	\$18.40					
Leverling	\$10,952.84	\$45.00					
Dodsworth	\$11,380.00	\$12.50					
Buchanan	\$9,210.90	\$103.20					
Davolio	\$15,810.00	\$33.75					
Callahan	\$4,825.00	\$36.00					
Fuller	\$16,387.50	\$40.00					
King	\$12,615.05	\$60.00					

# **SWITCH**

The SWITCH function evaluates one value (called the expression) against a list of values and returns the result corresponding to the first matching value.

	D	E	F	G	Н	I.	J	К		L		
ars	Status	Job Rating	g Bonus		=		Job Rating	Bonus				
7	Full Time	1	=SWITCH	(E2,5,20	00,4	,2000)	5	2000				
5	Half-Time	4			>=		4	2000				
.6	Hourly	3			<		3	1000			Job Rating	Bonus
9	Full Time	2			<=		2	1000			Job Hating	Donas
1	Full Time	4			$\diamond$		1	0			1	0
3	Contract	5 Fu	nction Arguments	s					?	×	4	2000
7	Full Time	1 5	VITCH								-	
5	Full Time	5	Expressio	E2			<u>↑</u> = 1			^	3	1000
2	Full Time	1		e <b>1</b> 5			<u>↑</u> = 5				2	1000
.6	Full Time	3		1 2000			<u>↑</u> = 2000				_	
5	Full Time	4	Default_or_value				<u>↑</u> = 4				4	2000
4	Full Time	3	Result	t2 2000			<u>↑</u> = 2000			*	5	2000
ι <b>Γ</b>	Full Time	<u> </u>										

# Date & Time Functions

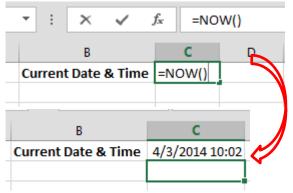
# **Now & Today Functions**

# Manipulating Dates, Times & Text

NOW

In Excel, the **NOW** function returns the current system date and time. This function will refresh the date/time value whenever the worksheet recalculates. The syntax for the **NOW** function is: NOW()

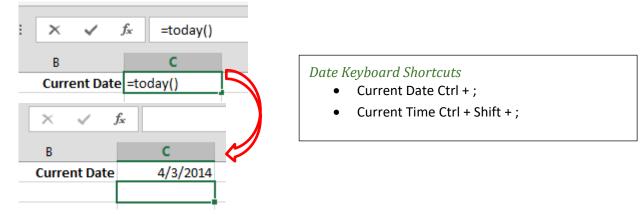
- 1. Click in the cell you wish the current date to appear.
- 2. Type in the following: **=NOW()** and press the enter key.



#### TODAY

In Excel, the **TODAY** function returns the current system date. This function will refresh the date whenever the worksheet recalculates. The syntax for the **TODAY** function is: TODAY()

- 1. Click in the cell you wish the current date to appear.
- 2. Type in the following: **=TODAY()** and press the enter key.



# **YEARFAC**

#### Age from Birthday

You can calculate a person's age from their birthdate by using the INT, YEARFRAC, and TODAY functions. =(INT(YEARFRAC(birthdate,TODAY()))

YEARFRAC calculates a decimal number representing the fraction of a year between two dates. The INT function rounds down that number to the integer value. The TODAY function always calculates the age in comparison to the current date.

- 1. Formulas Tab >> Math & Trig >> INT
- 2. Use the name box dropdown >> More Functions and find the YEARFRAC Function.

3. The Start Date is the Birth Date. The End Date is Today().

FRAC	• : ×	✓ fx	=INT(Y	EARFRAC <mark>(</mark>	A2, today())		
	А	В			С		D
	Birth Date		Age	¢			
	10/31/1933	=INT(YE	EARFR	RAC(A2	2,today()	))	
	8/16/1996						
	4/20/2004	Function Arguments					
	9/9/2012	YEARFRAC					
		Start_date	A2			= 13	2358
-		End_date	today()		<b>.</b>	= V	olatile
-		Basis				= a	ny
		_				= V	olatile

4. Click OK.

А	Вç
Birth Date	Age _
10/31/1933	85
8/16/1996	22
4/20/2004	14
9/9/2012	6

#### **NETWORKDAYS FUNCTION**

Returns the number of whole working days between start\_date and end\_date. Working days exclude weekends and any dates identified in holidays. Use NETWORKDAYS to calculate employee benefits that accrue based on the number of days worked during a specific term.

- 1. Click Formulas>>Date & Time>>NETWORKDAYS
- 2. Enter in the following cell references.

Function Arguments			? ×				
NETWORKDAYS							
Start_date	D2	=	43471				
End_date	E2 1	=	43511				
Holidays	\$A\$2:\$A\$19	=	{43466;43486;43514;43612;43650;43710;				
= 29 Returns the number of whole workdays between two dates. <b>Start_date</b> is a serial date number that represents the start date.							
Formula result =	29						
Help on this function			OK Cancel				

3. Click OK. Your result will be displayed.

D	Е	F		
Start	Project	Project		
Date	Finish Date	Length		
1/6/2019	2/15/2019	29		
2/11/2019	3/12/2019	21		
6/10/2019	6/28/2019	15		
7/28/2019	10/15/2019	56		
11/16/2019	1/15/2020	39		

NOTE: if you want the word **Days** to be displayed in the cell along with the number, click in the formula bar and use the ampersand (&) to add text. Text needs to be wrapped in quotes " Days".

=NETWORKDAYS(D2,E2,\$A\$2:\$A\$19)&" Days"

	Ŷ	
D	E	F
Start	Project	Project
Date	Finish Date	Length
1/6/2019	2/15/2019	29 Days
2/11/2019	3/12/2019	21 Days
6/10/2019	6/28/2019	15 Days
7/28/2019	10/15/2019	56 Days
11/16/2019	1/15/2020	39 Days

Remarks

• Microsoft Excel stores dates as sequential serial numbers so they can be used in calculations. By default, January 1, 1900 is serial number 1, and January 1, 2008 is serial number 39448 because it is 39,448 days after January 1, 1900.

# **WORKDAY FUNCTION**

#### WORKDAY()

Occasionally, it may be useful to count ahead based on workdays (Monday-Friday) instead of all 7 days of the week... For that, Excel has provided **WORKDAY**.

The *start\_date* is as above.

The *days* input is the number of workdays ahead (or behind) of the present day you would like to move.

D	Е	F	
Start	Project	Project	
Date	Length	Finish Date	
1/6/2019	5		
2/11/2019	60		
6/10/2019	45		
7/28/2019	45		
11/16/2019	80		

The *[holidays]* input is optional, but lets you disqualify specific days (like Thanksgiving or Christmas, for example), which might otherwise fall during the work week.

Function Arguments		? ×	D	E	F
WORKDAY			Start	Project	Project
Start_date Days		= 43471 = 5	Date	Length	Finish Date
Holidays	\$A\$2:\$A\$19	= {43466;43486;43514;43612;43650;43710;42 = 43476	1/6/2019	5	1/11/2019
Returns the serial number of t	he date before or after a specified number	of workdays.	2/11/2019	60	5/7/2019
		r more serial date numbers to exclude from the ate and federal holidays and floating holidays.	6/10/2019	45	8/13/2019
Formula result = 1/11/2019			7/28/2019	45	9/30/2019
Help on this function	12	OK Cancel	11/16/2019	80	3/16/2020

#### Weekday

The WEEKDAY function returns a number from 1 (Sunday) to 7 (Saturday) representing the day of the week of a date. The 6 in this example means it is Friday. **=Weekday(A1)** 

=WEEKDAY(D14)

2	D	E	
	10/7/2019	2	

You can custom format the number using ddd (Fri) or dddd (Friday). To do so, right mouse click the cell and select Format Cells. Select Custom. Enter in ddd or dddd. Click OK.

10/7/201	*				
Format Cells	15 <sup>2</sup>	? ×			
Number Alignment	Font Border Fill Protection				
<u>C</u> ategory:					
General ^ Number	Sample		=WEEKD	AY(D14)	1 <u>2</u>
Currency	Monday				
Accounting	Iype:		6		-
Date Time	dddd		C	D	E
Percentage	General	^			
Fraction	0				
Scientific	0.00			r	
Text	#,##0			10/7/2019	Monday
Special	#,##0.00			10/7/2019	wonuay
Custom	#,##0_);(#,##0) # ##0_):[Red](# ##0)		-		

### EDATE

The EDATE Function returns a date that is a specified number of months before or after a supplied start date. Example: New employees are on a probationary period for a predetermined number of months. The probationary period length varies according to each job. Use EDate to figure out the end date of the probationary period.

From the Formulas Tab >> Date & Time, select EDATE. Select the start date (this date should be in your worksheet) and select the number of months (this date can be entered in manually as well). Click OK.

				ayres areas				•	
× ✓ fx	=EDATE(B2,C2)								
В	C		D	E					
5	Start Probatio	nary	Probationary	Permanent Status starts on		F .	1	1	1
L I	Date Period (in I	nonths) <sub>,</sub>	Period ends	last day of month					
5/28/2	2016 3	۰ 	=EDATE(B2,C2)						
9/5/2	2016 6	Functi	on Arguments	? ×					
5/25/2	2015 3	EDAT							
7/31/2		Start	date 82	- 42518					
1/29/2	2014 3	M	onths C	<b>*</b> = 3			А	A B	A B <sup>*</sup> C
5/25/2	2016 3			= 42610	l				
10/30/2			the serial number of the date that	is the indicated number of months before or after the start			Employee	Employee Start	Employee Start Probationary
10/31/2	2015 3	date.				1	- 1 ID	1 ID Date	1 ID Date Period (in months)
8/25/2	2014 5		Months	is the number of months before or after start_date.					
9/27/2	2014 6					2		2 42665 5/28/2016	2 42665 5/28/2016 3
10/12/2		Formula	a result = 8/28/2016			3	3 71563	3 71563 9/5/2016	3 71563 9/5/2016 6
11/3/2	2015 4		this formation	OK Cancel		-			
12/6/2	2016 5	Help of	this function	OK Cancel		4	4 16516	4 16516 5/25/2015	4 16516 5/25/2015 3

# EOMONTH

Returns a date that is the last day of the month which is a specified number of months before or after an initial supplied start date.

Example: New employees are on a probationary period for a predetermined number of months and ends on the last day of the month. The probationary period length varies according to each job. Use EOMONTH to figure out the end date of the probationary period.

From the Formulas Tab >> Date & Time, select EOMONTH. Select the start date (this date should be in your worksheet) and select the number of months (this date can be entered manually as well). Click OK.

В	C	D	E					
Start	Probationary	Probationary	Permanent Status starts on	Permane				
Date	Period (in month	s) Period ends	last day of month	first da				
5/28/2016	3	8/28/2016	=EOMONTH(B2,C2)					
9/5/2016	6 [	Function Arguments	? ×					
5/25/2015	3	EOMONTH						
7/31/2015	4	Start_date B2	= 42518					
1/29/2014	3	Months (2)	= 3					
5/25/2016	3		= 42613					
10/30/2014	4	Returns the serial number of the last day	y of the month before or after a specified number of month	s.				
10/31/2015	3	Mont	hs is the number of months before or after the start_date.					
8/25/2014	5							
9/27/2014	6				В	C	D	E .
10/12/2015	3	Formula result = 8/31/2016			Start	Probationary	Probationary	Permanent Status starts on
11/3/2015	4	Help on this function	OK Cancel		Date	Period (in months)	Period ends	last day of month
12/6/2016	5				5/28/2016	3	8/28/2016	8/31/2016

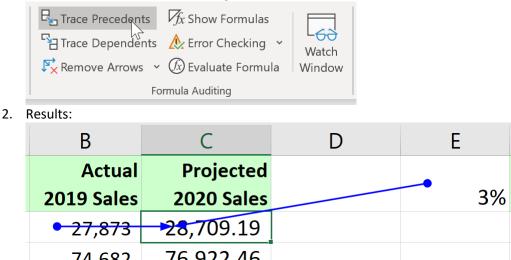
# **Troubleshooting Formulas**

# **TRACE PRECEDENTS AND DEPENDENTS**

#### **Trace Precedents**

The Trace Precedents command is used to backtrack through all the cells that are used to calculate the current formula.

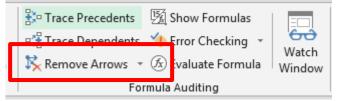
1. Formulas Tab >> Formula Auditing >> Trace Precedents



 71 687
 76 977 16

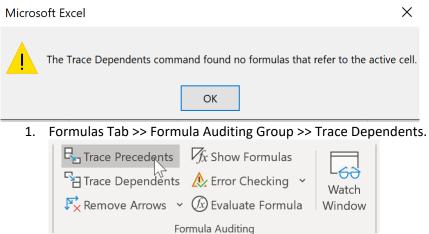
 Each blue dot corresponds to a value used in the formula. An arrow points to the end value. If you click the Trace Precedents command again, any values that were used to calculate any precedent formulas are also highlighted. This means you can keep clicking Trace Precedents to go back multiple levels of precedents.

3. You can remove these arrows by clicking Remove Arrows in the Formula Auditing group:

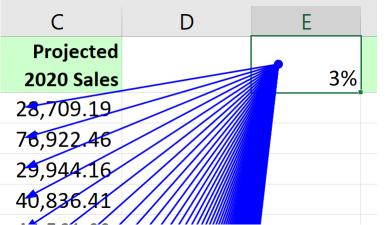


#### **Trace Dependents**

The Trace Dependents command works the opposite way of Trace Precedents: it highlights all the items that depend on the value in the current cell. Excel will alert you if you click this command when it doesn't apply:



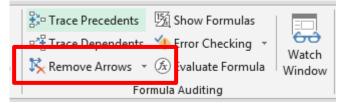
2. Results



This command can also be clicked multiple times to continue stepping through each level of dependency.

#### **Remove Arrows**

1. You can remove these arrows by clicking Remove Arrows in the Formula Auditing group:



### **SHOW FORMULAS**

The Show Formulas command will show all the formulas in the worksheet rather than their computed value. This is a toggle command that also expands the column widths, so the formulas are easier to read:

	E	F
	Job Rating	Bonus
1	<u>съ</u>	=IF(E2>3,250,0)
4	Ъ.	=IF(E3>3,250,0)
3		=IF(E4>3,250,0)
2		=IF(E5>3,250,0)
4		=IF(E6>3,250,0)
5		=IF(E7>3,250,0)

This mode is very useful when you are creating formulas for a large sheet. You can ensure that the formulas are correct before adding or computing data. Viewing formulas also makes it easier for others to view your work and understand how values are calculated instead of clicking cells one at a time and looking at the formula bar.

Click this command again to show the calculated values. The columns will also return to their normal widths.

### **EVALUATE FORMULA**

As we have seen by examining the other commands in this section, there are a number of commands you can use to easily and accurately track what a formula is doing. The Evaluate Formula command takes this concept one step further by showing you **every single calculation** that was used to reach a particular value. This command is extremely useful for making sure a complex formula is doing exactly what you intend it to do, or for finding that one small piece that is causing your calculation to fail along the way. Here, we have selected a value in the Profit column of our sales worksheet and will step through the formula: OBAT

Define	Name	- I	: Trace Precedent	s 😼 Sho	w Formulas			
Jse in F	Formul							
Create	from S	election	Remove Arrows	🔊 🕼 Eva	luate Formula			
ined Na	ames		I	Formula Au	diting			
C2			- · ·	× 🗸	<i>fx</i> =A2*B2*F1+A2	2*B2		
		А	В		С	D	E	F
1	Pric	e	Quantity	Total			Tax:	6.875%
2	\$	8.75	15	\$	140.27			
3	\$	2.59	18					
4	\$	14.25	9					
5	\$	2.99	12					

The Evaluate Formula dialog box will appear and show the formula that will be evaluated:

Evaluate Formula		?	$\times$
Reference:	E <u>v</u> aluation:		
Worksheet!\$C\$7	= <u>A2*B2*G1+A2*B2</u>		
To show the result of the upper	ierlined expression, click Evaluate. The most recent result appe	2015	~
italicized.	ierlined expression, click Evaluate. The most recent result appe	ears	
	Evaluate Step In Step Out	<u>C</u> lose	

Click Evaluate to step into the first part of the formula. It turns the first reference into the number.

Evaluate Formula		?	×
<u>R</u> eference:	E <u>v</u> aluation:		
Worksheet!\$C\$2	= <u>8.75*<i>15</i>*</u> F1+A2*B2		
			$\sim$
To show the result of the unc italicized.	lerlined expression, click Evaluate. The most recent result appe	ears	
	<b>Evaluate</b> Step In Step Out	<u>C</u> lose	•

Now, the next value is highlighted and the option to Step In is available again. Click Evaluate to continue checking and evaluating the formula:

Evaluate Formula			? >	<
<u>R</u> eference: Formulas!\$G\$2	E <u>v</u> aluation: = 1996-(400* <u>E2</u> +F2)			^
				~
To show the result of the	nderlined expression, click Evaluate. The most red	ent result appears italicized.		
	<u>Evaluate</u> Step <u>I</u> n	Step Out	<u>C</u> lose	

Eventually, the checker will step through all the calculations one at a time before showing you the final step: Evaluate Formula ?  $\times$ 

<u>R</u> eference:	E <u>v</u> aluation:		
Worksheet!\$C\$2	^		
To show the result of the un italicized.	derlined expression, click Evaluat	e. The most recent result app	ears
	<u>E</u> valuate St	ep In Step Out	<u>C</u> lose
Evaluate Formula		Evaluate Formula	
Reference: Worksheet!\$C\$2	Evaluation: = $9.0234375 + 131.25$	<u>R</u> eference: Worksheet!\$C\$2	E <u>v</u> aluation: = \$140.27

Clicking Evaluate once more will perform the final calculation and show the result. Clicking Evaluate a final time will start the process over from the beginning.

# List Management

# SORT BY VALUES, CELL COLOR, FONT COLOR, CELL ICONS

1) If several cells in a list have a specific cell color, font color, etc. you can right mouse click >> Sort and select from the list.

1	
S <u>o</u> rt →	A J Sort Smallest to Largest
<u>G</u> et Data from Table/Range	$\begin{array}{c} Z \\ A \end{array} \downarrow S_{\underline{O}}$ rt Largest to Smallest
t⊐ New Co <u>m</u> ment	Put Selected <u>C</u> ell Color On Top
🖞 🗋 New Note	Put Selected <u>F</u> ont Color On Top
Eormat Cells	Put Selected Eormatting Icon On Top
Pic <u>k</u> From Drop-down List	↓↑ C <u>u</u> stom Sort

2) In this example Put Selected Cell Color On Top was selected.

s	Salary	Job Ra			
	54,550	1			
	26,795	4	:s	Salary	Job Rating
	42,540	5		26,795	4
	35,680	2		35,680	2
	72,830			60,830	2
	60,830	2		54,550	1
	45 040			54,550	1

# NUMBER, TEXT, AND DATE FILTERS

1) You can use AutoFilter (Home Tab >> Editing Group >> Sort & Filter

~	<mark>A</mark> ∠	$\mathcal{O}$	4
*		Find & Select ~	Analyze Data
	<mark>A</mark> ↓ ⊊	Sort A to Z	sis
	Z↓ S	Sort Z to A	
	<b>↓</b> ↑ (	C <u>u</u> stom So	rt
	T I	ilter	
		10	

- 2) Each filter dropdown contains content specific filters.
  - a. Text Filters

	Filter by Color	/	10	-Anr-99	22	DMR
	Text <u>Filters</u>	>		<u>E</u> quals		R
	Search	0		Does <u>N</u> ot	Equal	R
_	✓ (Select All) ✓ Contract			Begins Wi	ith	
_	✓ Full Time			Ends Wi <u>t</u> h	۱	R
_	<ul> <li>✓ Half-Time</li> <li>✓ Hourly</li> </ul>			Cont <u>a</u> ins	•	R
				<u>D</u> oes Not	Contain.	
				Custom <u>F</u>	ilter	
-						

#### b. Number Filters

Does <u>N</u> ot Equal
<u>G</u> reater Than
Greater Than <u>O</u> r Equal To
<u>L</u> ess Than
Less Than Or Equal To
Bet <u>w</u> een
<u>T</u> op 10
Above Average
Below Average
bel <u>e</u> n mendge

#### c. Date Filters

С	D		E	Equals
epartment	• Status	- H	lire Da 🔻	<u>E</u> quais
D 2↓ Sort Oldest t				<u>B</u> efore
D A↓ Sort Newest	to Oldest			After
D Sor <u>t</u> by Color			>	Bet <u>w</u> een
Sheet <u>V</u> iew			>	Tomorrow
"a	rom "Hire Da	te"		T <u>o</u> day
Filter by Color			>	Yester <u>d</u> ay
a Date Eilters			₽,	Next Week
a Search (All)			<u>ب</u> کر	This Week
a ♥(Select A ± ♥ 2012	II)		^	Last Week
a a + ♥ 2011 + ♥ 2010				Next Month
a € 2009				
ra + 2008				Thi <u>s</u> Month
ra + 2007 ra + 2006				Last Mo <u>n</u> th
ra + ✓ 2004 + ✓ 2003				Next <u>Q</u> uarter
₹ 2002				This Quarter
+ ✓ 2001 + ✓ 2000				Last Qua <u>r</u> ter
וע 1999 ₪ רע שיל 1908			~	Next Year
n\				-
nv	ОК	0	Cancel	Th <u>i</u> s Year
nv			.:	Last <u>Y</u> ear
nvironmental Comp nvironmental Comp			1-Sep-06 0-Oct-09	Year to D <u>a</u> te
nvironmental Comp			-Nov-11	All Dates in the <u>P</u> eriod
e Ref FlashFill	Duplicate	Print	Mixed R	Custom Eilter

### **SEARCH CRITERIA**

1) You can type in specific search criteria in the Search Text box. Items will be automatically selected based on the criteria you provide.

Search	Text <u>F</u> ilters
<ul> <li>✓ (Select All)</li> <li>✓ Contract</li> <li>✓ Full Time</li> <li>✓ Half-Time</li> <li>✓ Hourly</li> </ul>	full × ✓ (Select All Search Results) – Add current selection to filter – ✓ Full Time

2) You can also use the select checkmarks to select the criteria you want to filter.

### **CREATE SUBTOTALS**

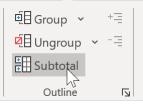
1) The first step in creating subtotals is to sort by the field you want the subtotals grouped by. In this example we have sorted by Status and will have subtotals add up the amount of salary in each Status group: Full, Half-Time, Contract, Hourly.

	A	В	C	D	E	F	G	н	
I	Employee Name	Building	Department	Status	Hire Date	Years	Benefits	Salary	Job Rating
2	Dawson, Jonathan	West	ADC	Contract	6-Mar-07	14		42,540	5
3	Spencer, Boyd	Main	Training	Contract	17-Apr-07	14		66,580	5
Ł	Rowe, Ken	West	Training	Contract	8-Sep-00	20		76,690	3
5	Phelps, Gretchen	South	Environmental Complia	Contract	26-Nov-10	10		58,130	2
:	Wheeler Meegen	\A/act	Essilition/Engineering	Contract	12 Jan 07	1 /		00 000	Λ

To sort, click in one cell in the column you wish to sort the entire list >> Home Tab >> Editing Group >> Sort and Filter >> Sort and Filter.



2) To insert Subtotals, Data Tab >> Outline Group >> Subtotal



3) Select the column you sorted by at the At each change in: dropdown. Here we will select Status.

ç	Subtotal	?	$\times$
	<u>A</u> t each change in:		
	Employee Name		$\sim$
8	Employee Name		^
E	Building		
	Department		
4	Status		
5	Hire Date		
4	Years		~
	Status Hire Date		~

4) We will select Sum in the Use Function: dropdown. Notice you can find average, max, min, etc., as well.
 Use function:

1	—	
E	Sum	X
1	Sum	Try.
1	Count	
4	Average	
	Max	
1	Min	
	Product	~
S	Select where you want to add the subto	otal.
Δ	<u>d</u> d subtotal to:	
l	Years	

5)



6) You will now have outline levels you can click on the right-hand side of the data. Level 1 will display the Grant Total.

1 2 5	D	E	F	G	Н	
1	Status	Hire Date	Years	Benefits	Salary	Jc
+ 747	Grand Total				37,867,107	
748						
749						

7) Level 2 displays subtotals and the grand total.

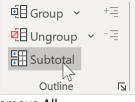
1	2 3		D	E	F	G	Н
	12	1	Status	Hire Date	Years	Benefits	Salary
	+	200	Contract To	tal			11,422,547
	+	594	Full Time To	otal			22,052,615
	+	691	Half-Time T	otal			2,984,325
	+	746	Hourly Tota				1,407,620
-		747	Grand Total				37,867,107

8) Level 3 displays all data.

1 2 3		D	Е	F	G	Н	I
L	∿ີ 1	Status	Hire Date	Years	Benefits	Salary	Job Rating
	2	Contract	6-Mar-07	14		42,540	5
	3	Contract	17-Apr-07	14		66,580	5
	4	Contract	8-Sep-00	20		76,690	3

# **REMOVE SUBTOTALS**

1) Data Tab >> Outline Group >> Subtotal



2) Remove All

Replace <u>c</u> urrent subtotals						
Page break between groups						
✓ Summary below data						
Remove All OK Cancel						

# Creating a Table

There are two ways to create a table. You can either insert a table directly in the default table style or you can convert an existing range into a table. The second approach is by far the most common:

- 1. On a worksheet, click anywhere in your list of information.
- 2. On the Home tab, within the Styles group, select Format at Table.
- 3. A **Create Table** dialog box will appear. Your selected range appears as an absolute cell reference. Your range will already be selected and displayed in the **Where is the data for your table**?

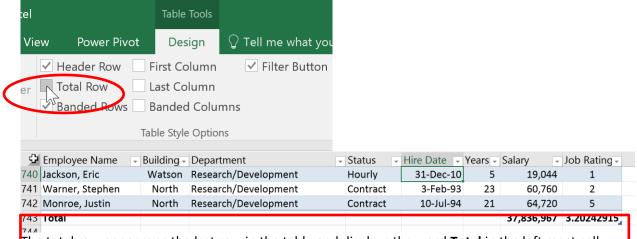
	Create Tab	?	×
Į	<u>W</u> here is the data for your tab	le?	
Į	=\$A\$1:\$H\$742		
Į	✓ My table has headers		
2	ОК	С	ancel

- 4. If your selected range contains data that you want to display as table headers, select the **My table has headers** check box.
- 5. Click the **OK** command button to create the table.
- 6. When you have an Excel table selected, you will have access to a **Table Tools** contextual tab with a single **Design** sub-tab.

Each time you create a table, Excel creates a default table name in the Properties group (e.g., Table1, Table2, etc.). The scope of the table name is for the entire workbook.

# ADD A TOTAL ROW

- 1. Click anywhere in the table
- 2. On the Design Tab, within the Table Style Options group, select **Total Row** check box.



The total row appears as the last row in the table and displays the word **Total** in the left most cell.

- 3. In the total row, click the cell in the column for which you want to calculate a total, and then click the dropdown that appears.
- 4. In the dropdown list, select the function that you want to use to calculate the total.

	Employee Name 📼	Building 🗸	Departmer
737	Greene, Alexander	Main	Research (
738	Solomon, Michael	Taft	Research/
739	McCall, Keith	Watson	Research/
740	Jackson, Eric	Watson	Research/
741	Warner, Stephen	North	Research/
742	Monroe, Justin	North	Research/
743	Total	<u></u>	•

#### **CONVERT TO NORMAL RANGE**

- 1) Click with in the table.
- 2) Table Design Tab >> Tools Group >> Convert to Range

	Summarize with PivotTable Remove Duplicates Convert to Range Tools <sup>3</sup>	Insert Slicer
3)	Click Yes to confirm.	
	Microsoft Excel	×
	Do you want to convert the	table to a normal range?
	Yes	No

4) Any formatting will stay.

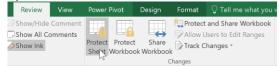
# Protecting / Unprotecting Worksheets

Protecting a worksheet prevents editing of cells (unless they are unlocked) and can also prevent other commands from being used.

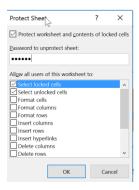
#### **Cell Formatting**

We first unlock the cells we want users to be able to change.

- 1) Select the cell(s) >> Right mouse click >> Cell Format
- 2) Protection Tab >> Deselect the Locked checkmark.
- Turn on protection by choosing Review >> Protect sheet. Select specific actions to permit. A password is
  optional.



2. To unprotect, choose Review >> Unprotect Sheet. Enter the password if prompted



# **PASSWORD PROTECT WORKBOOK**

This will protect users from deleting, moving, renaming worksheet tabs.

- 1. Review Tab >> Protect Workbook.
- 2. Enter in your password. Click OK

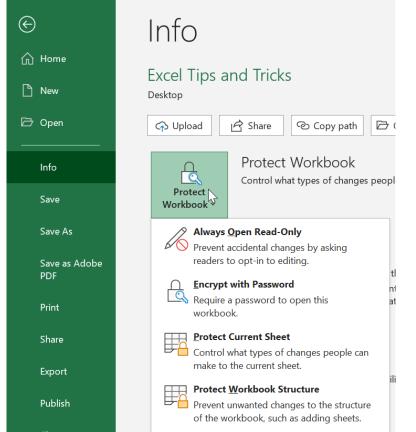
Protect Structure and W	?	$\times$
Password (optional):		
•••		
Protect workbook for		
✓ <u>S</u> tructure		
Windows		
ОК	Ca	ncel

- 3. Confirm your Password. Click OK.
- 4. Users will not be able to create new worksheets, add, rename, hide/unhide worksheets.

		Insert		
_	瞑	<u>D</u> elete		
	P	<u>R</u> ename		
		<u>M</u> ove or Copy		
1	Q	<u>V</u> iew Code		
_	4	Protect Sheet		
		Tab Color >		
		<u>H</u> ide		
		<u>U</u> nhide		
IFN	KKU	Select All Sheets	UMIF   Sa	lesp (+)
$\neg$	u <sup>2</sup>			

# **PASSWORD PROTECT YOUR ENTIRE FILE**

 Click the File Tab >> Info >> Encrypt with Password. NOTE: you can protect your current sheet and workbook structure here as well.



2. Enter and confirm your password.

	Encrypt Document ?	×
	Encrypt the contents of this file	
	Passwo <u>r</u> d:	
	•	
u U 1	Caution: If you lose or forget the password, it cannot b recovered. It is advisable to keep a list of passwords an their corresponding document names in a safe place. (Remember that passwords are case-sensitive.)	
	OK Canc	el

3. Excel will inform you that a password is required.

▷ Open	Copy path P Open file location
Info	Protect Workbook
Save	Protect Workbook ~
Save As	

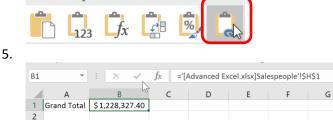
# Linking Data

Linking allows data stored on a worksheet to be referenced by another worksheet. This can be within the same workbook, or in separate workbooks.

### Linking worksheets

- 1. Open the file containing worksheets that you want to link together.
- 2. Copy the cell you wish to link to another worksheet.
- 3. Switch to that worksheet and select the desired cell.
- 4. Right mouse click >> Select the Paste Link option.

#### **Paste Options:**





If the data is changed for a source cell, it is automatically updated in the destination cell, provided the changes to the source are saved.

### **EDIT LINKS**

One file could be linked to one or more other files through formulae. During the course of time, as these workbooks get updated / changed, there could be a need to change the links in these workbooks. Changing the source link allows the user to change the location of the source where the data exists or to change the link to a new workbook altogether.

To change the source link, you must use the "Edit Links" option. This option gives the user a view of all the other files the current file is linked to, so that the user can update or remove the links.

1. From the Data Tab select Edit Links.



2. This window allows you to Change the source, open the source, break the link, or check the status.

Edit Links	L.				?	×
Source	Туре	Update	Status		Update Va	alues
Advanced Excel.xlsx	Worksheet	А	Unknown			
					Cha <u>n</u> ge So	urce
					<u>O</u> pen So	urce
					<u>B</u> reak Li	ink
٢				>	<u>C</u> heck St	atus
Location: C:\Users\k	5349yd\Doc	uments\2(	013 curriculum\2013			
Item:						
Update: 🔘 <u>A</u> utom	atic 🔘 Mai	nual				
Startup Prompt					Close	•

# Data Validation

### To limit entry to a list of values:

- 1. Ahead of time, enter the possible values on the same worksheet but far away from anywhere that will contain values or be subjected to possible deletion.
- 2. Click in the cell(s) where you want to control what gets entered.
- 3. Select Data ribbon > Data Tools group > Data Validation
- 4. On the **Settings** tab, select **List** under **Allow**:
- 5. Enter or select the source for possible responses.

Settings Input Message Error Alert Validation criteria		
Allow:	COUR	г
List v Ignore blank Data: In-cell dropdown	2009 A23	
Source: =\$F\$3:\$F\$6	2( A23	- \
Apply these changes to all other cells with the same settings	20 <sup>B14</sup> A27	
Clear All OK Cancel	20 <sub>C45</sub>	

6. Under Input Message, you can provide a prompt to assist during data entry:

Cata Validation	?	×			
Settings Input Message Error Alert					
$\checkmark$ Show input message when cell is selected					
When cell is selected, show this input message:					
<u>I</u> itle:					
Code					
Input message:					
Please choose from the dropdown list.		^			

- 7. Under **Error Alert**, you can provide remedial support to encourage the correct selection. You can also choose to make the error only a warning instead of refusing to take their value.
- 8. Click on **OK** to finalize your choices.

#### To restrict entry to other specific types:

At times it is useful to set cells to only accept certain kinds of information. These are things such as whole numbers, decimals, and dates.

- 1. Click in the cell(s) where you want to control what gets entered
- 2. Select Data ribbon > Data Tools group > Data Validation Data Validation ? × Settings Input Message Error Alert Validation criteria Allow: Whole number Any value

Allow: Whole number	N	☑ Ignore <u>b</u> lank
Any value	hà	
Whole number		
Decimal		
List		
Date		
Time		
Text length		
Custom		

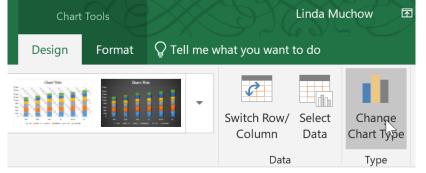
# **Charting Tools**

- 1. Insert Tab >> Charts group >> select a chart (Line, Pie, Bar).
- Excel offers a Recommended Charts tool. The way this works is very intuitive and is based on the data you
  have selected. For instance, a table with a simple layout of two rows and four columns will result in a
  suggestion of a simple chart such as a line chart. However, you can always choose a different chart if you don't
  like the results.



Recommended charts are available from the INSERT >> Charts Group >> Recommended Charts.

3. Change the chart type by selecting Chart Tools >> Design Tab >> Change Chart type.



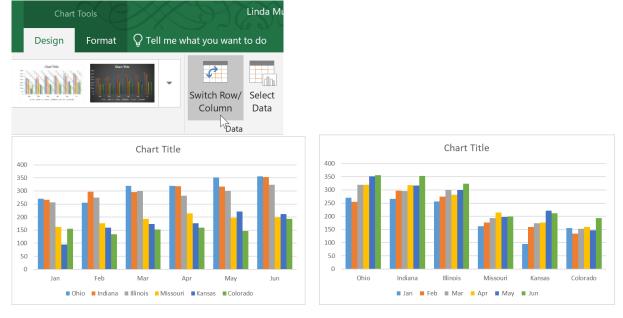
4. Select from the left column (Column, Line, Bar). Select the chart type on the right. Click OK.



#### Switch Row/Column

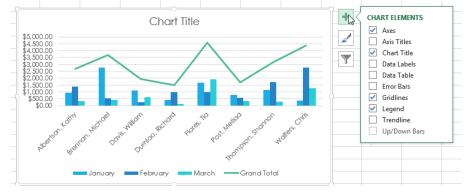
If you want to switch the Legend and the Axis information, use Switch Row/Column.

1. Select the Chart. Design Tab >> Data Group >> Switch Row/Column



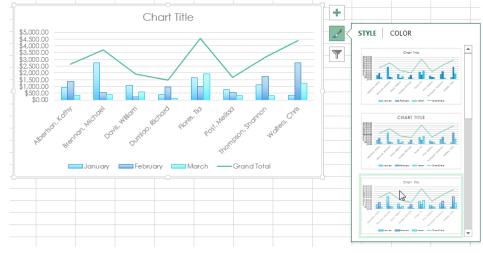
#### **Chart Elements**

Use chart elements to move the Legend, add Data Labels and customize your chart axis.

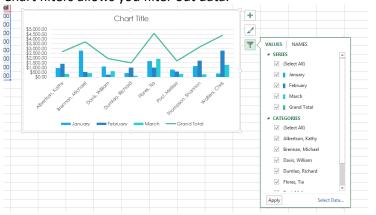


### **Chart Style**

Chart Styles allows you to change the style and colors of your chart.



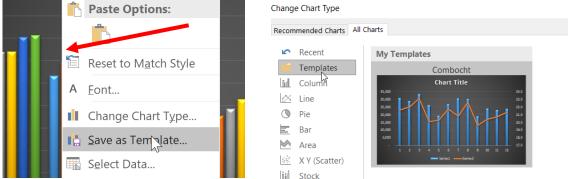
**Chart Filter** Chart filters allows you filter out data.



# SAVING A CHART AS A TEMPLATE

Once you get your chart looking just the way you like it, you can save the chart type, colors, and formatting as a template that can be reused to make on future charts.

To save this chart as a template, right mouse click the chart (either in the plot area or chart area) and choose Save as Template. This will display a Save Chart Template dialogue box; it's virtually identical to the regular Save dialog. Just enter an appropriate name for your chart template and then click the Save button. By default, the templates will be saved in an Excel chart folder. Then, you can apply the template right away by selecting it from the Templates folder.



If you select Templates in the pane on the left of the box, you will see the chart template that you saved displayed on the right side. Just click the template icon to apply the template to the selected data.

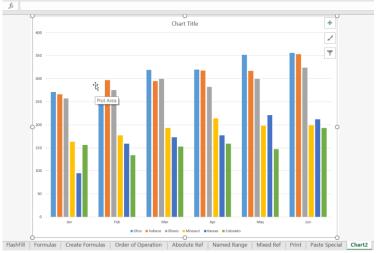
# **CREATE CHARTS WITH KEYBOARD SHORTCUTS**

You can quickly add charts to your workbook using two different keyboard shortcuts.

1. To add a chart into the worksheet that is currently active, select the data you wish to chart and press Alt + F1.

		<b>C</b>				Ĭ	Chart Title						
		Coll	umn, Line, B	ar, Pie		40							
State	Jan	Feb	Mar	Apr	May	35						1	
Ohio	271	255	319	320	352	30							
Indiana 🗘	266	297	295	318	317	25							
Illinois	257	275	300	282	300	20				<b></b>	<b></b>		
Missouri	163	177	193	214	198	15		<b>.</b>					
Kansas	95	159	173	177	221	10							
Colorado	156	134	153	159	147								
						5							
						_		Feb	Mar	Apr	May	Jun	
							Ohio 📕	Indiana	🔳 Illinois 🗧 M	issouri 🔳 Kan	sas 🔳 Colora	ido	
						6			0	1			

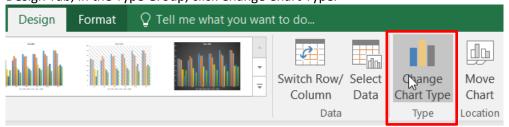
2. To insert a chart into a new worksheet in your workbook, select the data you wish to chart and press the F11 key. This chart your data and place in a worksheet of its own.



#### Change the Default Chart Type

You can change the default chart type that is inserted into your worksheets.

1. Open the Change Chart Type dialog box by inserting a chart. Then, from the Chart Tools Ribbon Option, on the Design Tab, in the Type Group, click Change Chart Type.



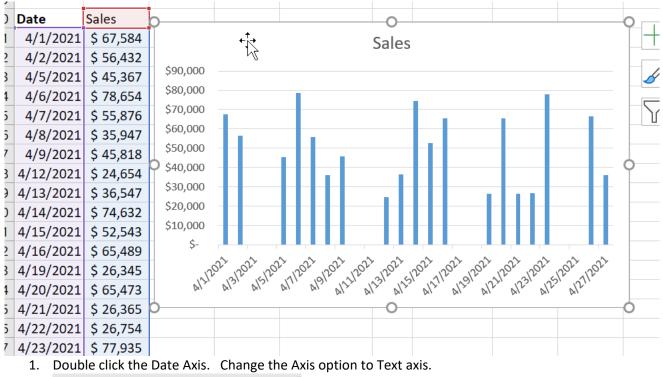
2. In the Change Chart Type dialog box, right mouse click the chart you wish to set as your default. Select Set as Default Chart.



3. Click OK.

#### Dates

Excel will choose how it charts dates. If you want each date to show up on your chart you must change the Axis option to Text.



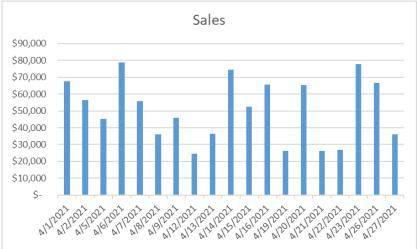
#### Axis Options

Axis Type

- Automatically select based on data
- <u>T</u>ext axis
- Date a<u>x</u>is

Vertical axis crosses

2. Results:



#### Use a Table to Create a Chart

Format your source data as a table, then create a chart based on that table. When you add more data below the table, it will automatically be included in both the table and the chart, keeping everything consistent and up to date.