BASICS of EXCEL

- Microsoft Excel is a commercial spreadsheet application, written and distributed by Microsoft.
- It is a spreadsheet tool capable of performing calculations, analyzing data and integrating information from different programs.
- It can apply to various tasks, including statistics, finance, data management, forecasting, analysis, inventory, billing, and business intelligence.
- By default, documents saved in versions later than Excel 2010 are saved with the .xlsx extension whereas the file extension of the prior Excel versions is .xls.
- Once Excel is started, a blank workbook will open on your screen. A workbook is an Excel file that contains one or more worksheets (sometimes referred to as spreadsheets). Excel will assign a file name to the workbook, such as Book1, Book2, Book3, and so on, depending on how many new workbooks are opened. The figure below shows a blank workbook after starting Excel. The screen may be slightly different based on the version you're using.

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- Here, we are not going to give a comprehensive Excel tutorial. Instead, some functions in Excel will be summarized.
- A formula is an expression that operates on values in a range of cells or a cell. In a formula, the operation is written after an equal sign (=). For example, =A1+A2+A3 finds the sum of the range of values from cell A1 to cell A3.

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.

SOME FUNCTIONS in EXCEL

1. VLOOKUP

VLOOKUP is an Excel function to lookup and retrieve data from a specific column in table. The "V" stands for "vertical". Lookup values must appear in the first column of the table, with lookup columns to the right.

The syntax is =VLOOKUP(lookup_value,table_array,col_index_num,[range_lookup]).

Arguments:

value - The value to look for in the first column of a table.

table - The table from which to retrieve a value.

col_index - The column in the table from which to retrieve a value.

range_lookup - [optional] TRUE = approximate match (default). FALSE = exact match.

VLOOKUP only looks right

VLOOKUP requires a lookup table with lookup values in the left-most column. The data you want to retrieve (result values) can appear in any column to the right:

		D3	- (° .	f _x	610			
	Α	В	С		D	E	F	G
1								
2		First	Last		ID	Email	Department	
3		Janet	Farley		610	j.farley@ace.com	Fulfillment	
4		Evelyn	Monet		841	e.monet@ace.com	Fulfillment	
5		Marilyn	Bradley		886	m.bradley@ace.com	Fulfillment	
6		Jonathan	Adder		622	j.adder@ace.com	Marketing	
7		Julie	Irons		869	j.irons@ace.com	Marketing	
8		Erica	Tan		867	e.tan@ace.com	Fulfillment	
9		Harold	Clayton		785	h.clayton@ace.com	Fulfillment	
10								
11 12		If we want to	use VLOOKU	Ρv	vith IC), we can only lookup Er	mail and Departmer	nt

VLOOKUP retrieves data based on column number

When you use VLOOKUP, imagine that every column in the table is numbered, starting from the left. To get a value from a particular column, provide the appropriate number as the "column index". For example, the column index to retrieve first name below is 2:

H4		Ŧ	: ×	$\checkmark f_x$	=VLOOKUP(H3,B4:E13,2	2,FALSE)	-	_	
	Α	В	С	D	E	F	G	Н	I.
1 2		1	2	3	4				
3	[ID	First	Last	Email		ID	622	
4	[610	Janet	Farley	j.farley@ace.com		First	Jonathan	2
5		798	Steven	Batista	s.batista@ace.com		Last	Adder	3
6		841	Evelyn	Monet	e.monet@ace.com		Email	j.adder@ace.com	4
7		886	Marilyn	Bradley	m.bradley@ace.com				
8		622	Jonathan	Adder	j.adder@ace.com				
9	[601	Adrian	Birt	a.birt@ace.com				
10		869	Julie	Irons	j.irons@ace.com				
11		867	Erica	Tan	e.tan@ace.com				
12		785	Harold	Clayton	h.clayton@ace.com				
13	[648	Sharyn	Castor	s.castor@ace.com				
14						_			
-\/\ C			1.E12 2 EAI	SE) // first	/				

=<u>VLOOKUP</u>(H3,B4:E13,2,FALSE) // first =<u>VLOOKUP</u>(H3,B4:E13,3,FALSE) // last =<u>VLOOKUP</u>(H3,B4:E13,4,FALSE) // email

VLOOKUP has two matching modes, exact and approximate

VLOOKUP has two modes of matching: exact and approximate, which are controlled by the 4th argument, called "range_lookup". Set range_lookup to FALSE to force exact matching, and TRUE for approximate matching.

2. IF

The formula makes a statement/question, if the answer is true then one response is obtained. If the answer if false, then another answer is obtained.

The	<pre>The syntax is =IF(logical_test,value_if_true,value_if_false)</pre>													
_														
	C5	- () fx	=IF(A5<2	0,"Amount is	s less than t	wenty","Am	ount is mor	e than twen	ty")				
	A	В	С	D	E	F	G	Н	1	J				
1	5.00000													
2	10.20000													
3	3.24978													
4														
5	18.45000		Amount is	ess than tw	venty									
6														
7	3													
8														

In the case that the formula is

=if(A5<20,"Amount is less than twenty","Amount is more than twenty"),

if the value found in A5 is less than twenty THEN display the comment 'Amount is less than twenty' ELSE display the comment 'Amount is more than twenty'.

3. COUNTIF

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										-
	А	В	С	D	E	F	G	Н		J
1	Year	Product	Cost							
3	2013	Oranges	12.25							
4	2012	Bananas	10.50		8	=COUN	TA(B3	B10)		=
5	2012	Apples	5.10							
6	2013	Bananas	8.35		3	=COUN	NTIF(B3	:B10,"C	ranges	")
7	2013	Oranges	13.45							
8	2011	Apples	7.95							
9	2013	Pears	6.00							
10	2009	Oranges	4.55							
11										-
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The COUNT function counts the number of cells in a range, that meets single criteria.

4. COUNTIFS

The COUNT function counts the number of cells in a range that meets multiple criteria.

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4	2012	Bananas	10.50		8	=COUN	NTA(B3	:B10)					_
5	2012	Apples	5.10										
6	2013	Bananas	8.35		3	=COUN	NTIF(B3	3:B10,"C	ranges	")			
7	2013	Oranges	13.45										
8	2011	Apples	7.95		2	=COUN	NTIFS(A	A3:A10,'	'=2013''	,B3:B1(),"=Ora	nges"))
9	2013	Pears	6.00										_
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5. AVERAGE: The Excel AVERAGE function returns the average of values provided. AVERAGE can handle up to 255 individual arguments, which can include numbers, cell references, ranges, arrays, and constants.

		E5	▼ (?	f_{x}	=AVERA	GE(B5:D5)				
	А	В	С		D	E				
1		AVERAGE fu	unction							
2		Calculate th	e average of	sup	plied nu	mbers				
3										
4		Test 1	Test 2	Tes	t 3	Average				
5		8	7		9	8				
6		9	9			9				
7		7	6		8	7				
8		8	8		8	8				
9		10	10		10	10				

The example below shows how values can be hardcoded directly into the AVERAGE function:

A1	-	: >	 √ f_x 	=AVERAG	GE(2,3,4)	
	А	В	С	D	E	F
1	3					
2						
3						

=AVERAGE(2,3,4) // returns 3

AVERAGE can also be used to calculate the average of a range of cells:

C1		: ×	$\checkmark f_x$	=AVERAG	GE(A1:A3)	
	А	В	С	D	E	F
1	2		3			
2	3					
3	4					
4						

=AVERAGE(A1:A3) // returns 3

6. SUM: The Excel SUM function returns the sum of values supplied. These values can be numbers, cell references, ranges, arrays, and constants, in any combination.

D1	2	*	:	×	\sim	f_x	=SUN	/(D6:D10
	А		в		С			D
1								
2		SUM	fun	ctio	n			
3		SUM	(nun	nber	1, num	ber2, .)	
4								
5		Item			Quanti	ty	Cost	
6		Appl	es			5		\$1.50
7		Oran	ges			4		\$1.00
8		Bana	nas			7		\$1.05
9		Peac	hes			5		\$2.50
10		Kiwis	5			3		\$3.00
11								
12		Tota						\$9.05
13								

=SUM(D6:D10) // returns 9.05