15CSE100: COMPUTATIONAL THINKING AND PROBLEM SOLVING

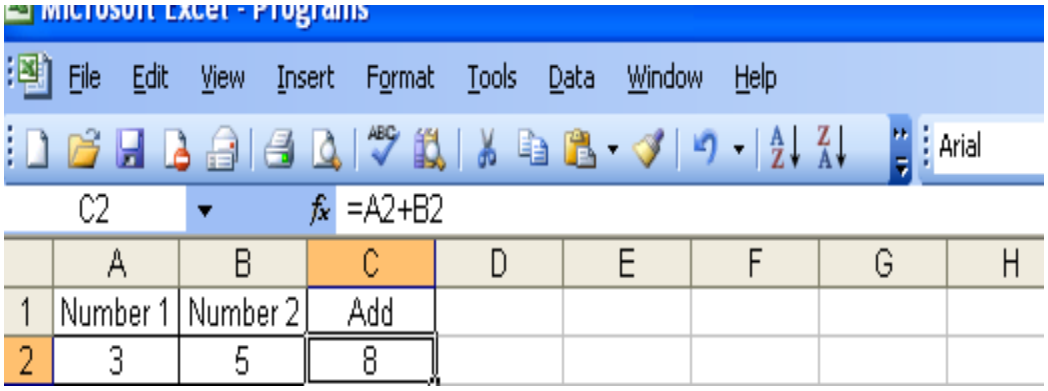
B.Tech I Year- 2017

Excel Lab Exercises

Practice and Take home Exercises

Simple arithmetic

Problem 1: Add two numbers

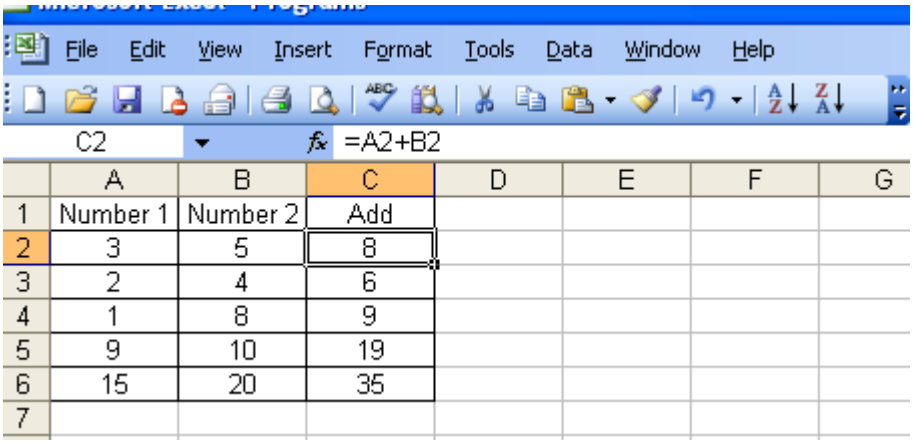


Steps:

1. Open a spread sheet and type in the labels called number 1 and number 2 in the cells A1 and B1 and add in the cell C1. This is just for us to identify the values and they are not involved in actual execution
2. In A2 and B2, type in the numbers to be added.
3. In C2, type in **=A2+B2** and press enter to display the result. In excel calculations are prefixed with = sign followed by the operation on cells
4. The cell number represents the numbers (For e.g A2 and B2 are used which denote 3 and 5 respectively with a plus sign in between as in the case of normal addition.
5. To add more than two numbers, add as many columns (number1, number2, number3 etc., and extend the formula as =A2+B2+C2+….

Extending an operation by clicking and dragging

Problem 2: Add 5 sets of two numbers



	A	B	C	D	E	F	G
1	Number 1	Number 2	Add				
2	3	5	8				
3	2	4	6				
4	1	8	9				
5	9	10	19				
6	15	20	35				
7							

Steps:

1. Type in as many number of sets of numbers you want under the columns number1 and number2 and then click on the cell C2 and move your cursor to the bottom right corner of the cell
2. The cursor changes to + sign. Now keeping the left mouse button down drag the cursor till the last set of numbers and you can see that the cells are filled with the results.

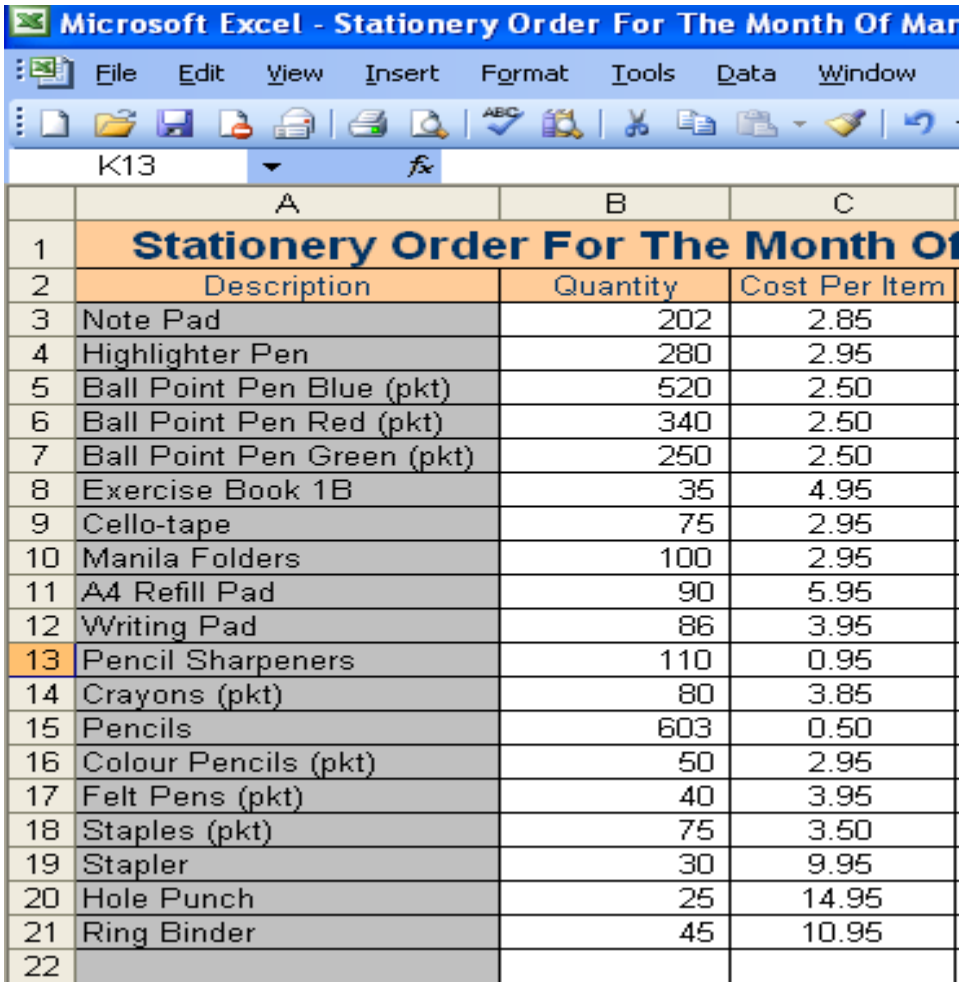
Absolute and Relative referencing

Problem 3:

Consider the problem of preparing a stationary order for the month of March. The item description, quantity and cost per item are available. The total cost per item is to be calculated and the final cost per item involves a sales tax of 2% over the total cost. The gross total and the net total are to be displayed.

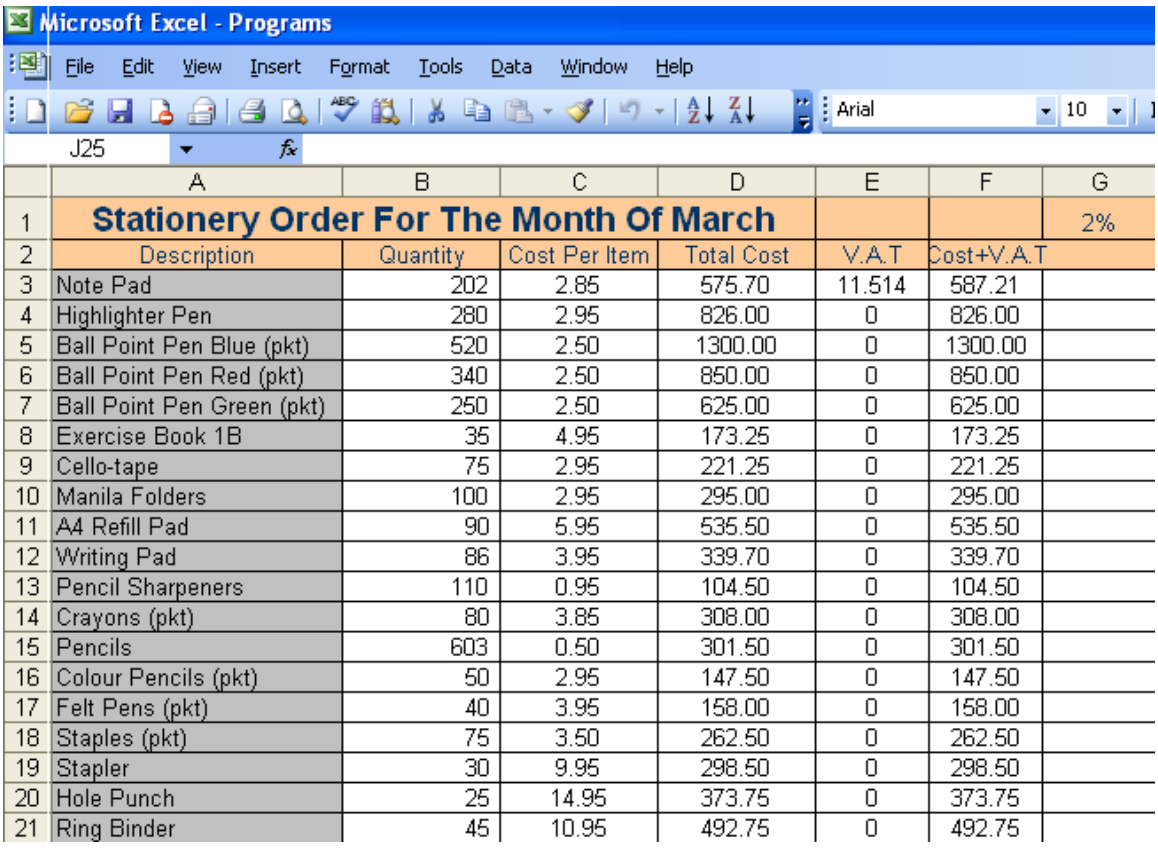
Steps:

1. Create an excel sheet with the available data as shown below:



	A	B	C
1	Stationery Order For The Month Of		
2	Description	Quantity	Cost Per Item
3	Note Pad	202	2.85
4	Highlighter Pen	280	2.95
5	Ball Point Pen Blue (pkt)	520	2.50
6	Ball Point Pen Red (pkt)	340	2.50
7	Ball Point Pen Green (pkt)	250	2.50
8	Exercise Book 1B	35	4.95
9	Cello-tape	75	2.95
10	Manila Folders	100	2.95
11	A4 Refill Pad	90	5.95
12	Writing Pad	86	3.95
13	Pencil Sharpeners	110	0.95
14	Crayons (pkt)	80	3.85
15	Pencils	603	0.50
16	Colour Pencils (pkt)	50	2.95
17	Felt Pens (pkt)	40	3.95
18	Staples (pkt)	75	3.50
19	Stapler	30	9.95
20	Hole Punch	25	14.95
21	Ring Binder	45	10.95
22			

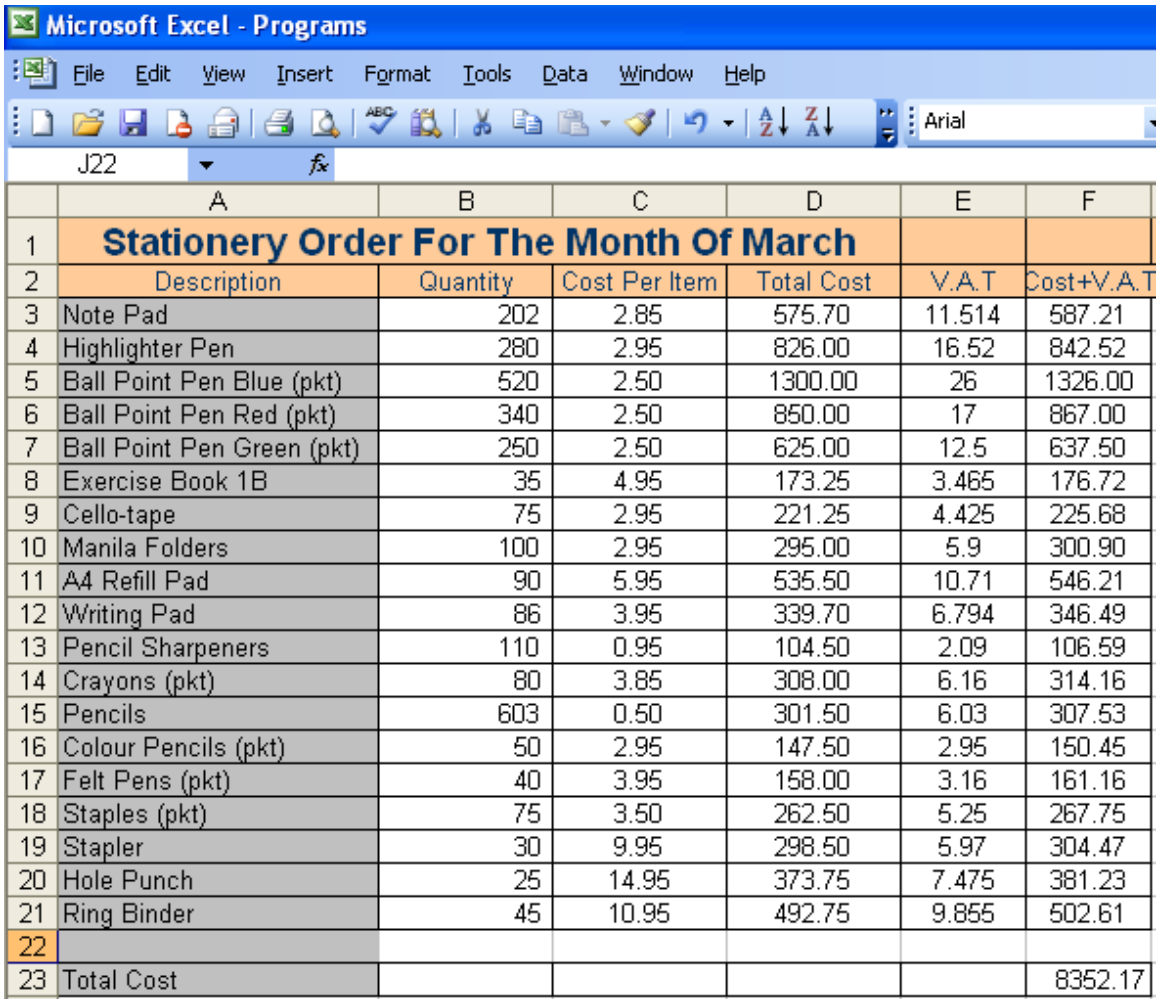
2. Add the columns total cost per item, VAT and Cost + VAT
3. Fill in the V.A.T value (2%) in one of the cells say G1 so as to not to affect the other calculations.
4. Multiply quantity*cost per item to obtain the total cost
5. Multiply the V.A.T value with the total cost of each item to obtain V.A.T column
    a. Observe what happens when you drag the cells after you fill in the formula for the first item
    b. The first item gets filled correctly but the other items show zero as shown below:



	A	B	C	D	E	F	G
1	Stationery Order For The Month Of March						2%
2	Description	Quantity	Cost Per Item	Total Cost	V.A.T	Cost+V.A.T	
3	Note Pad	202	2.85	575.70	11.514	587.21	
4	Highlighter Pen	280	2.95	826.00	0	826.00	
5	Ball Point Pen Blue (pkt)	520	2.50	1300.00	0	1300.00	
6	Ball Point Pen Red (pkt)	340	2.50	850.00	0	850.00	
7	Ball Point Pen Green (pkt)	250	2.50	625.00	0	625.00	
8	Exercise Book 1B	35	4.95	173.25	0	173.25	
9	Cello-tape	75	2.95	221.25	0	221.25	
10	Manila Folders	100	2.95	295.00	0	295.00	
11	A4 Refill Pad	90	5.95	535.50	0	535.50	
12	Writing Pad	86	3.95	339.70	0	339.70	
13	Pencil Sharpeners	110	0.95	104.50	0	104.50	
14	Crayons (pkt)	80	3.85	308.00	0	308.00	
15	Pencils	603	0.50	301.50	0	301.50	
16	Colour Pencils (pkt)	50	2.95	147.50	0	147.50	
17	Felt Pens (pkt)	40	3.95	158.00	0	158.00	
18	Staples (pkt)	75	3.50	262.50	0	262.50	
19	Stapler	30	9.95	298.50	0	298.50	
20	Hole Punch	25	14.95	373.75	0	373.75	
21	Ring Binder	45	10.95	492.75	0	492.75	

    c. This is because the formula changes relatively for the subsequent cells as D4*G2,D5*G3 etc.. Where as the value is present only in one cell G1. To prevent this automatic changing of cell values (also called relative referencing which excel does

by default), anchor the cell G1 as G$1. The $ infront of a row or column prevents automatic updation of the row/column value when dragged. Here G is stationary by default but rows change as 1,2,3,.. etc so we anchor the row as G$1. and then drag the formula which updates the cells properly as shown below:



	A	B	C	D	E	F
1	**Stationery Order For The Month Of March**					
2	Description	Quantity	Cost Per Item	Total Cost	V.A.T	Cost+V.A.T
3	Note Pad	202	2.85	575.70	11.514	587.21
4	Highlighter Pen	280	2.95	826.00	16.52	842.52
5	Ball Point Pen Blue (pkt)	520	2.50	1300.00	26	1326.00
6	Ball Point Pen Red (pkt)	340	2.50	850.00	17	867.00
7	Ball Point Pen Green (pkt)	250	2.50	625.00	12.5	637.50
8	Exercise Book 1B	35	4.95	173.25	3.465	176.72
9	Cello-tape	75	2.95	221.25	4.425	225.68
10	Manila Folders	100	2.95	295.00	5.9	300.90
11	A4 Refill Pad	90	5.95	535.50	10.71	546.21
12	Writing Pad	86	3.95	339.70	6.794	346.49
13	Pencil Sharpeners	110	0.95	104.50	2.09	106.59
14	Crayons (pkt)	80	3.85	308.00	6.16	314.16
15	Pencils	603	0.50	301.50	6.03	307.53
16	Colour Pencils (pkt)	50	2.95	147.50	2.95	150.45
17	Felt Pens (pkt)	40	3.95	158.00	3.16	161.16
18	Staples (pkt)	75	3.50	262.50	5.25	267.75
19	Stapler	30	9.95	298.50	5.97	304.47
20	Hole Punch	25	14.95	373.75	7.475	381.23
21	Ring Binder	45	10.95	492.75	9.855	502.61
22						
23	Total Cost					8352.17

6. Calculate Cost + VAT
7. Display the total cost

Take home Exercises

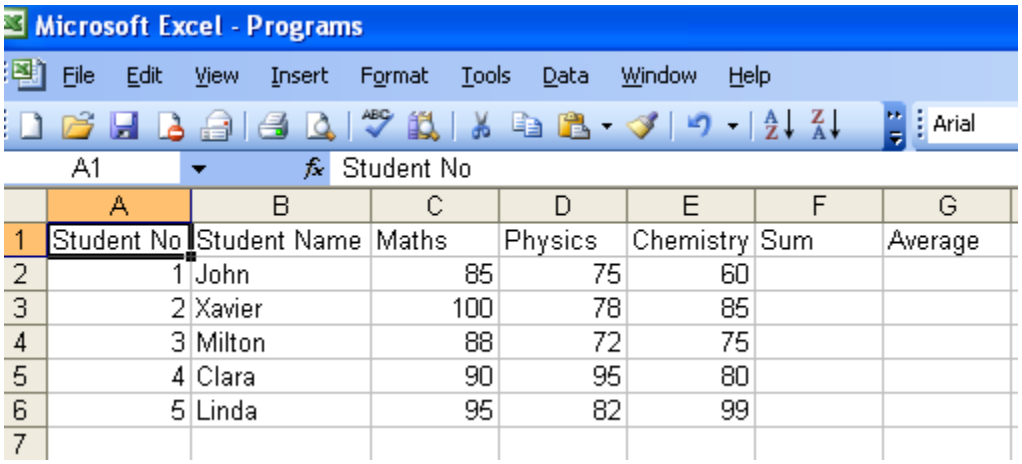
1. Create an excel sheet to print the multiplication tables from 1 to 5 with each table ending at its10th multiplication limit (i.e., 1x10=10.. 5 X10=50).
2. You are given the order details of a company in the below table.

Order Details							
Order ID	Product	Unit Price	Quantity	Discount	Revenu	Tax(2 % for each order)	Net income
10259	Sir Rodney's Scones	8	10	0%	?	?	?
10259	Gravad lax	20.8	1	0%	?	?	?
10260	Jack's New England Clam Chowder	7.7	16	25%	?	?	?
10260	Ravioli Angelo	15.6	50	0%	?	?	?
10260	Tarte au sucre	39.4	15	25%	?	?	?
				Total:	?		?

   a. Calculate the revenue and tax on the revenue for each product
   b. Calculate the net come of each product
   c. Calculate the total revenue of all products
   d. Calculate the total net income of all products

Simple statistical functions

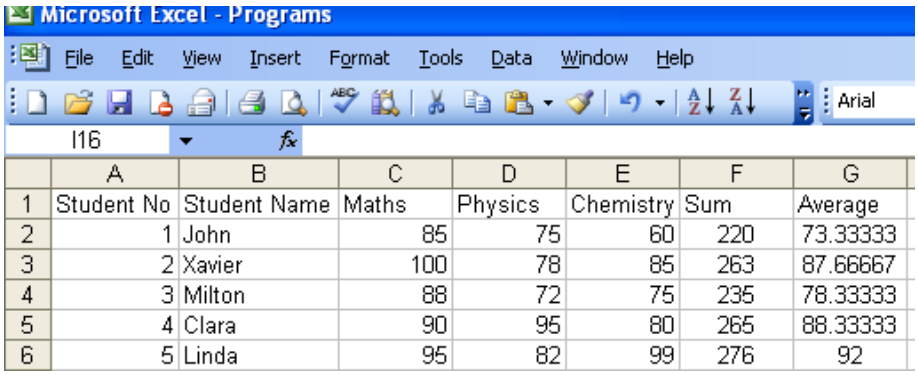
Problem 4: Let us consider the problem of finding the total and average of 3 subject marks for five students in a class in the board exam. The data is entered into the spread sheet as shown below:



	A	B	C	D	E	F	G
1	Student No	Student Name	Maths	Physics	Chemistry	Sum	Average
2	1	John	85	75	60		
3	2	Xavier	100	78	85		
4	3	Milton	88	72	75		
5	4	Clara	90	95	80		
6	5	Linda	95	82	99		
7							

Steps:

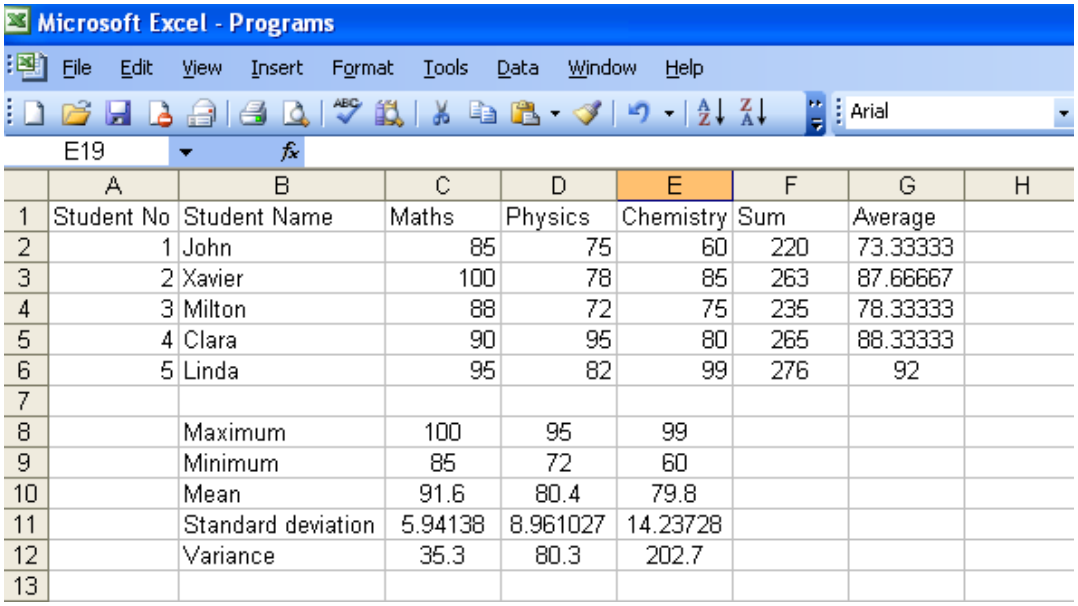
1. To calculate sum, type =sum(in the cell F2 and click and drag the cells C2, D2 and E2 i.e., =sum(C2:E2) where : denotes the range to add maths physics and chemistry marks of student no1.
2. For calculating sum for other students, click and drag the sum value of F2 till F6
3. Similarly calculate average as =average(C2,D2,E2) or =average(C2:E2). The first case is used if the cells are not continuous whereas the second case is used when the cells are continos.
4. The result of the above problem is given below:



	A	B	C	D	E	F	G
1	Student No	Student Name	Maths	Physics	Chemistry	Sum	Average
2	1	John	85	75	60	220	73.33333
3	2	Xavier	100	78	85	263	87.66667
4	3	Milton	88	72	75	235	78.33333
5	4	Clara	90	95	80	265	88.33333
6	5	Linda	95	82	99	276	92

Problem 5:

Calculate the Maximum mark, minimum mark, mean, median, standard deviation and variance for each subject.



	A	B	C	D	E	F	G	H
1	Student No	Student Name	Maths	Physics	Chemistry	Sum	Average	
2	1	John	85	75	60	220	73.33333	
3	2	Xavier	100	78	85	263	87.66667	
4	3	Milton	88	72	75	235	78.33333	
5	4	Clara	90	95	80	265	88.33333	
6	5	Linda	95	82	99	276	92	
7								
8		Maximum	100	95	99			
9		Minimum	85	72	60			
10		Mean	91.6	80.4	79.8			
11		Standard deviation	5.94138	8.961027	14.23728			
12		Variance	35.3	80.3	202.7			
13								

Steps:

1. Type the labels Maximum, Minimum etc in the required columns as shown above
2. Type in the required formulae or choose the formulae by going to the menu Insert→Function and pick from the category as required and fill in each value for the first subject (Maths)
3. For physics and chemistry just click and drag the formula cells of maths horizontally to calculate each formula (Max,min etc)

Logical operations

Problem 6:

Consider the design of a light switch system that can turn the same light on or off in three different places. One switch (A) is installed in the hall on the first floor. Another switch (B) is located on the upstairs landing and the third switch (C) is located on the ground floor as shown in the figure.

Each of the switches has 2 states (on and off). When an odd number of switches are on, the bulb remains off and in all other cases, the bulb glows. Design a truth table and find the various states of the bulb for various combinations of the 3 switches.

Solution:

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E2 =OR(AND(B2,C2,NOT(D2)),AND(B2,N

	A	B	C	D	E
1	Combination No	Switch A	Switch B	Switch C	State
2	1	1	1	1	0
3	2	1	1	0	1
4	3	1	0	1	1
5	4	1	0	0	0
6	5	0	1	1	1
7	6	0	1	0	0
8	7	0	0	1	0
9	8	0	0	0	1

Steps:

1. Write the various combinations of the three switches in three columns
2. Write the truth values for the conditions where the switch is on as 1 and others as 0
3. Consider the conditions where the switch is on and combine the three switch states using the logical operators AND,OR and NOT.
   For e.g, for combination 2 in the above figure when switch A and B are on and switch C is off we get the formula as B2 (for switch A),C2 (for Switch B) and not D2(for switch c) which is written as the excel formula AND(B2,C2, NOT(D2)).
4. Likewise the formula is formed for all the conditions where the switch is on and all such on state formulae are combined using OR operator as follows:

   =OR(AND(B2,C2,NOT(D2)),AND(B2,NOT(C2),D2),AND(NOT(B2),C2,D2),AND(NOT(B2),NOT(C2),NOT(D2)))*1

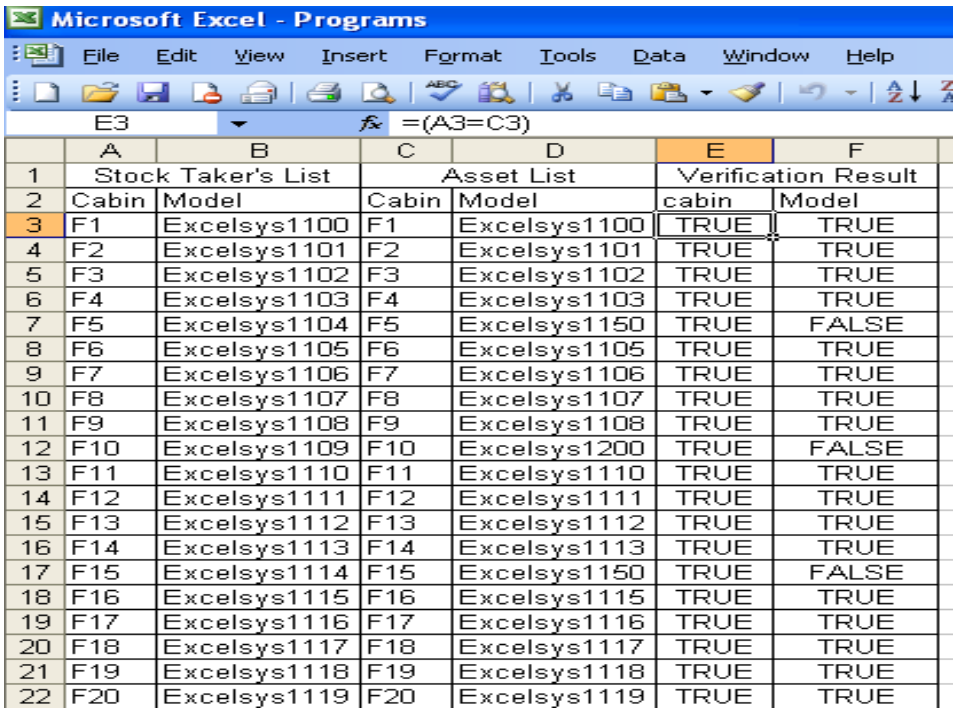
5. This final formula can be dragged throughout the state column to fill in the other states.
6. The formula gives TRUE or FALSE results which can be converted into Boolean values by multiplying by 1

Problem 7:

Excel University provides Computers to its faculty members and the assets team performs a periodical stock taking to check if the same machine is still used by the faculty or it has been replaced by some other machine for some reason by the systems team. A machine could be changed if it is upgraded or it is repaired or if it is replaced by some other. A copy of the list resides in the assets office and it is checked with the list noted by the stock taker and those machines which do not match with the old list need to be updated with the new details. Prepare a data sheet containing cabin numbers (numbered F1,F2,…. F20) machine models (Excelsys1100,…) and verify with another

set similar data obtained by the stock taking operation and indicate the matching and non-matching entries in the sheet which needs updation.

Solution:



	A	B	C	D	E	F
1	Stock Taker's List		Asset List		Verification Result	
2	Cabin	Model	Cabin	Model	cabin	Model
3	F1	Excelsys1100	F1	Excelsys1100	TRUE	TRUE
4	F2	Excelsys1101	F2	Excelsys1101	TRUE	TRUE
5	F3	Excelsys1102	F3	Excelsys1102	TRUE	TRUE
6	F4	Excelsys1103	F4	Excelsys1103	TRUE	TRUE
7	F5	Excelsys1104	F5	Excelsys1150	TRUE	FALSE
8	F6	Excelsys1105	F6	Excelsys1105	TRUE	TRUE
9	F7	Excelsys1106	F7	Excelsys1106	TRUE	TRUE
10	F8	Excelsys1107	F8	Excelsys1107	TRUE	TRUE
11	F9	Excelsys1108	F9	Excelsys1108	TRUE	TRUE
12	F10	Excelsys1109	F10	Excelsys1200	TRUE	FALSE
13	F11	Excelsys1110	F11	Excelsys1110	TRUE	TRUE
14	F12	Excelsys1111	F12	Excelsys1111	TRUE	TRUE
15	F13	Excelsys1112	F13	Excelsys1112	TRUE	TRUE
16	F14	Excelsys1113	F14	Excelsys1113	TRUE	TRUE
17	F15	Excelsys1114	F15	Excelsys1150	TRUE	FALSE
18	F16	Excelsys1115	F16	Excelsys1115	TRUE	TRUE
19	F17	Excelsys1116	F17	Excelsys1116	TRUE	TRUE
20	F18	Excelsys1117	F18	Excelsys1117	TRUE	TRUE
21	F19	Excelsys1118	F19	Excelsys1118	TRUE	TRUE
22	F20	Excelsys1119	F20	Excelsys1119	TRUE	TRUE

Steps:

1. Create the two columns as indicated in the question with appropriate headings
2. Apply the equality operator in the respective columns to verify for cabin and models (E.g., =(A3=C3) verifies whether the contents of cell A3 and C3 are the same
3. Drag the formula to fill the results for all the cabins and models.

Take home Exercises

1. As a part of his mathematics homework, John is required to create a nature of roots indicator for quadratic equations which will take in the three values a, b and c of some 20 quadratic equations and indicate the nature of the roots as follows:
   - If a and b are zero then x1 and x2 don't exist
   - If a is zero, Only x1 exits and there is no x2
   - If $b^2 - 4ac$ is negative then imaginary roots exist without real roots
   - In all other cases there are two roots x1 and x2

   Help john in creating this solver by creating a sample data sheet with 20 a,b and c values and the following heads

a	b	c	discriminant	x1 and x2 don't exist	x2 doesn't exists	Imaginary roots exist?	Two roots exist?

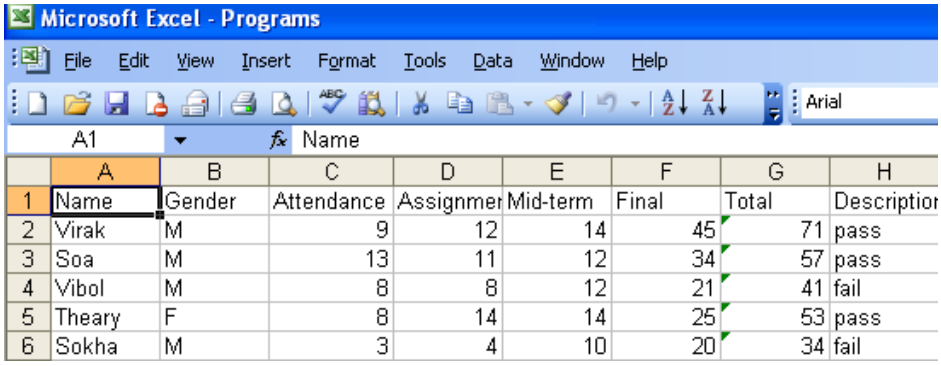
   And indicate under each heading the existence of a particular type of nature of roots using Boolean values.

2. Three sensors are attached to a printing device, with three alarms attached to the sensors. The first sensor, "A," detects if the device needs ink. The second sensor, "B," detects if the device needs repair. The third sensor, "C," detects if the device should jam. If the device jams or needs repair, alarm 1 sounds. If the device jams or is short on ink, alarm 2 sounds. If two or more problems occur at once, alarm 3 sounds. Design a truth table involving 3 sensors and 3 alarms and find out the various combinations of sensor outputs that result in the ringing of the 3 alarms.

Decision making using IF, SUMIF,COUNTIF etc.,

Problem 8:

In this problem you are given the name, gender, attendance, assignment, midterm and final grades of five students. Find the total of the assessment marks. Students who pass need to have a total score greater than or equal to 50. Display the word "Pass" or "Fail" under a column called Description



	A	B	C	D	E	F	G	H
1	Name	Gender	Attendance	Assignmer	Mid-term	Final	Total	Descriptior
2	Virak	M	9	12	14	45	71	pass
3	Soa	M	13	11	12	34	57	pass
4	Vibol	M	8	8	12	21	41	fail
5	Theary	F	8	14	14	25	53	pass
6	Sokha	M	3	4	10	20	34	fail

Steps:

1. Create a column called description
2. In the first student's description cell type the IF function using the total cell's no to check pass or fail
3. For e.g., in the above fig, in Virak's description cell, type =if(G2>50,"pass","fail")
4. Drag the results to all the remaining cells which need computation

Problem 9:

Extend the above pass/fail computation problem to include attendance also. A student passes if he has an attendance greater than 8 else he fails even if he has a total greater than 50

Solution:

Modify the formula in the previous problem as
=IF(AND(C12>8,G12>=50),"pass","fail")

Name	Gender	Attendance	Assignmer	Mid-term	Final	Total	Descriptior	A
Virak	M	9	12	14	45	71	pass	
Soa	M	13	11	12	34	57	pass	
Vibol	M	8	8	12	21	41	fail	
Theary	F	8	14	14	25	53	fail	
Sokha	M	10	4	10	20	34	fail	

Problem 10:

In the previous problem, without considering attendance as criteria for passing, calculate the grades of the students as per the grade rule table given below:

Marks Range	**Grade**
Score>=90	A
90>Total Score>=80	B
80>Total Score>=70	C
70>Total Score>=60	D
60>Total Score>=50	E
Total Score < 50	F

If all the grades (A to F) are not displayed in your grade column add some student entries that have marks falling in the appropriate grades and verify your formula.

Solution:

Name	Gender	Attendance	Assignmer	Mid-term	Final	Total	Descriptior	Grade
Virak	M	9	12	14	45	71	pass	C
Soa	M	13	11	12	34	57	pass	E
Vibol	M	8	8	12	21	41	fail	F
Theary	F	8	14	14	25	53	pass	E
Sokha	M	3	4	10	20	34	fail	F
Added1	M	10	15	15	50	80	pass	B
Added2	F	12	20	20	50	90	pass	A
Added3	F	13	15	15	35	65	pass	D

Steps:

1. Add a column called grade
2. This problem needs to be solved using if function within if function as follows:

For example if Virak's total cell is G22 then the function is formulated as =IF(G22>=90,"A",IF(AND(G22>=80,G22<90),"B",IF(AND(G22>=70, G22<80),"C",IF(AND(G22>=60,G22<70),"D",IF(AND(G22>=50,G22< 60),"E","F")))))

3. The above function is written as an outer IF function which has one grade in its true part if the condition is satisfied and the next grade rule is written in the false part of the previous grade rule and the writing continues for all the grades.

Problem 11:

You are given a file containing the name and age of people. You have to count the number of people in each category as minor(<18), major(18-25), middle aged(26-40), above middle age (40-60) and senior citizen (61-100) using a single function for each scenario and print the count pertaining to the conditions.

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	A	B	C	D	E	F	G
1	**Name**	**Age**	**Middle age**	**Senior Citizen**			
2	John	25	FALSE	FALSE			
3	Will	17	FALSE	FALSE			
4	Kins	45	FALSE	FALSE			
5	mark	18	FALSE	FALSE			
6	Mac	85	FALSE	TRUE		Category	Counts
7	Uno	100	FALSE	TRUE		minor	3
8	Fiene	23	FALSE	FALSE		major	5
9	Jane	54	FALSE	FALSE		middle aged	2
10	Nero	42	FALSE	FALSE		above middle age	7
11	ander	34	TRUE	FALSE		Senior Citizen	3
12	Dana	15	FALSE	FALSE		Total	20
13	Mike	55	FALSE	FALSE			
14	Tina	23	FALSE	FALSE			
15	Kate	32	TRUE	FALSE			
16	george	55	FALSE	FALSE			
17	watson	22	FALSE	FALSE			
18	Clara	66	FALSE	TRUE			
19	Kile	16	FALSE	FALSE			
20	venna	51	FALSE	FALSE			
21	Kyle	54	FALSE	FALSE			

Steps:

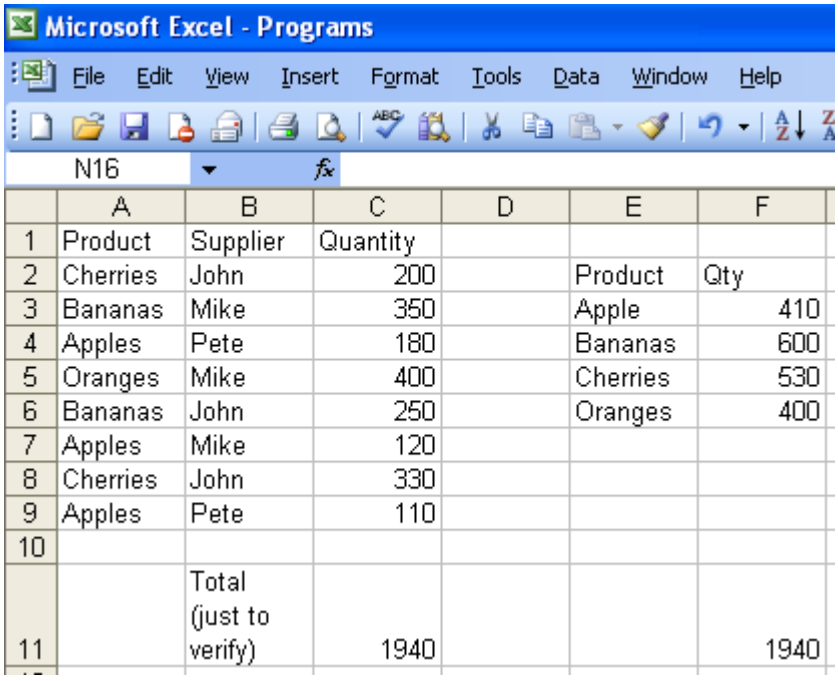
1. There are multiple formulae for solving this problem
2. The most easiest one is to use countif for single criterion and countifs for multiple criterion if you have Microsoft excel 2007 or later

3. For counting minor here we use the formula =COUNTIF(B2:B21,"<18") since it contains only one condition
4. For counting major we can use =COUNTIFS(B2:B21,">=18", B2:B21,"<=25")
5. If countifs is not available we can use countif to calculate the result as =COUNTIF(B2:B21,">=18") - COUNTIF(B2:B21,">25")
6. We can also achieve the same result in two steps as using a logical operator to find the people lying in a particular range and finding the countif of people who fall in true type
7. For example, middle age category is calculated as =AND(B2>=26,B2<=40) in column c followed by =COUNTIF(C2:C21,"true") in cell g9

Problem 12:

Consider a table containing the consignments of different fruits from different suppliers as shown in the figure below. You have the fruit names in column A, supplier's names in column B, and quantity in column C. Find out how many quantities of each fruit is received.

Solution:



	A	B	C	D	E	F
1	Product	Supplier	Quantity			
2	Cherries	John	200		Product	Qty
3	Bananas	Mike	350		Apple	410
4	Apples	Pete	180		Bananas	600
5	Oranges	Mike	400		Cherries	530
6	Bananas	John	250		Oranges	400
7	Apples	Mike	120			
8	Cherries	John	330			
9	Apples	Pete	110			
10						
11		Total (just to verify)	1940			1940

Steps:

1. To find the number of apples the formula is =SUMIF(A2:A9,"apples",C2:C9)
2. A2:A9 stands for range that is the type that we want
3. In the range A2:A9 we are searching for “apples”
4. Based on the search range and criteria “apples”, we need to sum the column Quantity (C2:C9)
5. **A word of caution while dragging the formula for other fruits:**
    a. When you drag the formula for other fruits aiming to just change the name of the fruit be cautious to use absolute referencing as the table reference will change as you drag (due to the default relative referencing of excel)
    b. Instead use the formula as =SUMIF(A$2:A$9,"apples",C$2:C$9) which would prevent the automatic updation of rows
6. **To apply sum if on multiple criteria, for example to find the number of apples supplied by pete, use SUMIFS** which is available Microsoft excel 2007 or later as follows:

    =SUMIFS(C2:C9, A2:A9, "apples", B2:B9, "Pete")

Note: SUMIFS has the format:
SUMIFS(sum_range, criteria_range1, criteria1,[criteria_range2, criteria2],...)

Take home Exercises

1. The next page shows the order details of products with unit price, quantity and discount. Calculate and display the following information using appropriate excel functions:

1. Find the cheapest product
2. Find the costliest product
3. Calculate the total quantity of the product with Order ID=10260
4. Count the products with Order ID=10255
5. Count the products with Order ID=10255 and their quantities are greater than 30 and less than 70
6. Count the products with their names beginning with “ch”Count the products with their unit prices > 40 and their quantities >30
7. Calculate the average of unit prices of products with Order ID =10255

Order Details				
Order ID	**Product**	**Unit Price**	**Quantity**	**Discount**
10248	Queso Cabrales	14	12	0
10248	Singaporean Hokkien Fried Mee	9.8	10	0
10248	Mozzarella di Giovanni	34.8	5	0
10249	Tofu	18.6	9	0
10249	Manjimup Dried Apples	42.4	40	0
10250	Jack's New England Clam Chowder	7.7	10	0
10250	Manjimup Dried Apples	42.4	35	0.15
10250	Louisiana Fiery Hot Pepper Sauce	16.8	15	0.15
10251	Gustaf's Knäckebröd	16.8	6	0.05
10251	Ravioli Angelo	15.6	15	0.05
10251	Louisiana Fiery Hot Pepper Sauce	16.8	20	0
10252	Sir Rodney's Marmalade	64.8	40	0.05
10252	Geitost	2	25	0.05
10252	Camembert Pierrot	27.2	40	0
10253	Gorgonzola Telino	10	20	0
10253	Chartreuse verte	14.4	42	0
10253	Maxilaku	16	40	0
10254	Guaraná Fantástica	3.6	15	0.15
10254	Pâté chinois	19.2	21	0.15
10254	Longlife Tofu	8	21	0
10255	Chang	15.2	20	0
10255	Pavlova	13.9	35	0
10255	Inlagd Sill	15.2	25	0
10255	Raclette Courdavault	44	30	0
10256	Perth Pasties	26.2	15	0
10256	Original Frankfurter grüne Soße	10.4	12	0

10257	Schoggi Schokolade	35.1	25	0
10257	Chartreuse verte	14.4	6	0
10257	Original Frankfurter grüne Soße	10.4	15	0
10258	Chang	15.2	50	0.2
10258	Chef Anton's Gumbo Mix	17	65	0.2
10258	Mascarpone Fabioli	25.6	6	0.2
10259	Sir Rodney's Scones	8	10	0
10259	Gravad lax	20.8	1	0
10260	Jack's New England Clam Chowder	7.7	16	0.25
10260	Ravioli Angelo	15.6	50	0
10260	Tarte au sucre	39.4	15	0.25
10260	Outback Lager	12	21	0.25
10261	Sir Rodney's Scones	8	20	0
10261	Steeleye Stout	14.4	20	0
10262	Chef Anton's Gumbo Mix	17	12	0.2

2. Construct the below table in excel and write appropriate functions/formulae for the questions given below:

Name	**English**	**Computer**	**Math**	**Pass 3 subjects**	**Pass at least 1 subject**	**Pass 2 subjects**
Virak	56	78	45			
Soa	45	78	78			
Vibol	67	78	10			

a. In the column under Pass 3 subjects, write a formula to diplay TRUE or FALSE. The result is TRUE if the student pass all the 3 subjects

b. In the column under Pass at least 1 subject, write a formula to display TRUE or FALSE. The result is TRUE if the student passed at least 1 subject.

c. In the column under Pass 2 subjects, write a formula to display TRUE or FALSE. The result is TRUE if the student passes 2 subjects.

3. Using the following data set in excel solve the below questions :

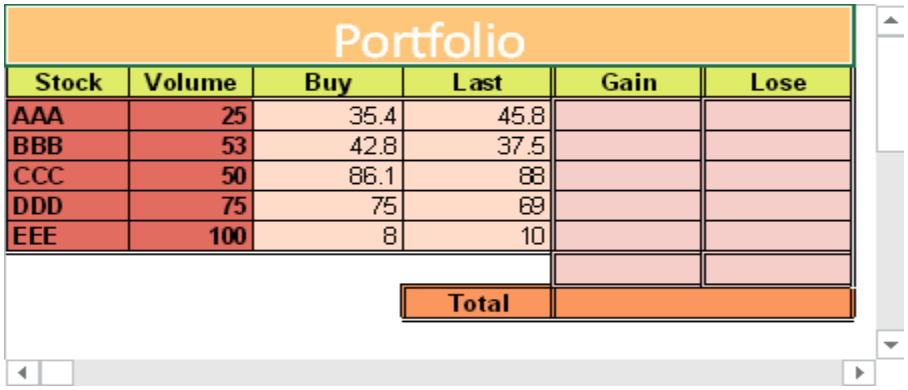
70	56	53	43	45	45	53
34	56	78	54	67	86	56

a. Write a formula to calculate the average of the data set
b. Write a formula to calculate the variance of the data set
c. Write a formula to calculate the standard deviation of the data set

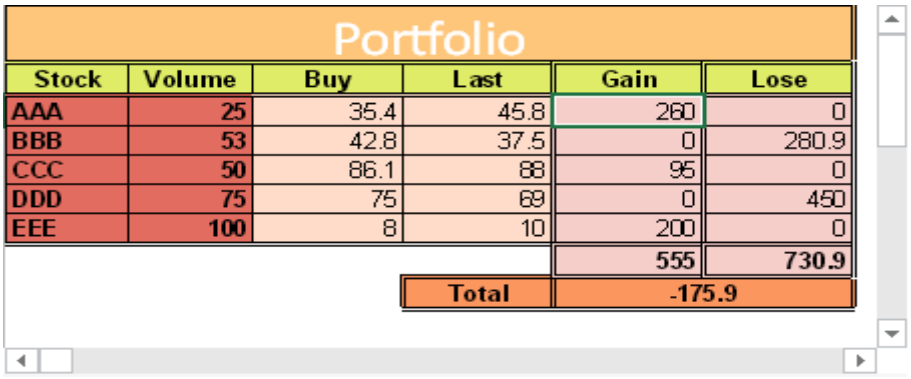
4. You manage inventory and orders of a company. You can not honor orders if you do not have the full amount requested. So you create an IF function that will check that you have the quantity in your stock. If your stock is lower, you can not deliver the amount you have. For the second part of the exercise, you initiate an order with your suppliers if you could not fulfill the entire order. You can write the formula in different ways for an equivalent result. A sample work sheet is given for your reference

Order				
Item	Qty order	Qty in stock	Qty delivered	Qty to delivered
Smartphone	50	45	Formula here	
Ipad	37	51		
USB Stick 4Go	12	15		
USB Stick 8Go	75	47		
USB Stick 16Go	8	10		

5. You have a stock portfolio. In column C you have the purchase price and column D the last price. Write the result in column E if you win money or in column F if you are losing. The result should also take into account the number of shares you own.Then you make the sum of columns E and F and then in cell E9, you make the difference in cell E8 and F8 to see if you gain or loss. A sample completed work book is given below for reference. Recreate the same work book by applying appropriate formulae for each unknown that is to be found.



Portfolio					
Stock	Volume	Buy	Last	Gain	Lose
AAA	25	35.4	45.8		
BBB	53	42.8	37.5		
CCC	50	86.1	88		
DDD	75	75	89		
EEE	100	8	10		
			Total		

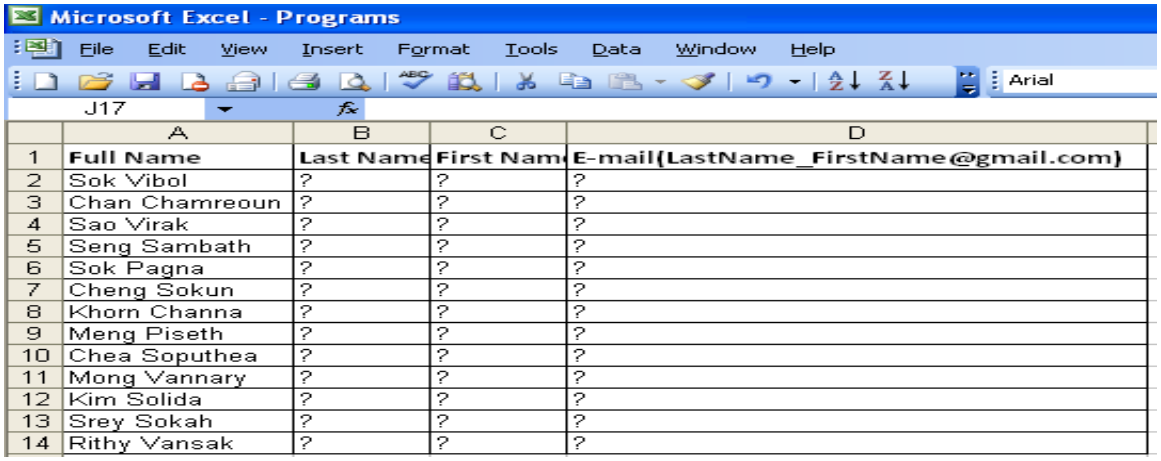


Portfolio					
Stock	Volume	Buy	Last	Gain	Lose
AAA	25	35.4	45.8	260	0
BBB	53	42.8	37.5	0	280.9
CCC	50	86.1	88	95	0
DDD	75	75	89	0	450
EEE	100	8	10	200	0
				555	730.9
			Total	-175.9	

Text Functions

Problem 13:

Given the below worksheet Write appropriate text functions in excel to calculate first name, last name and email id.



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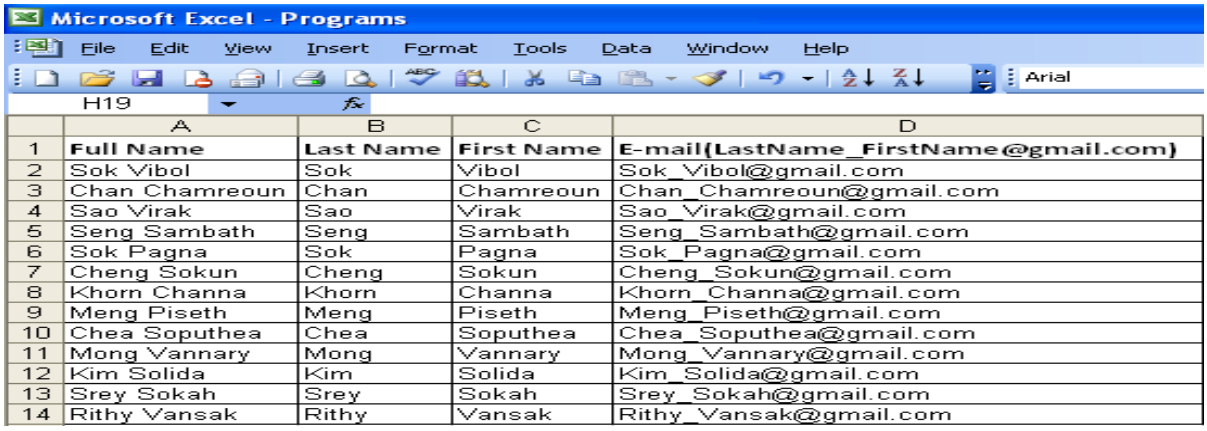
	A	B	C	D
1	Full Name	Last Name	First Nam	E-mail(LastName_FirstName@gmail.com)
2	Sok Vibol	?	?	?
3	Chan Chamreoun	?	?	?
4	Sao Virak	?	?	?
5	Seng Sambath	?	?	?
6	Sok Pagna	?	?	?
7	Cheng Sokun	?	?	?
8	Khorn Channa	?	?	?
9	Meng Piseth	?	?	?
10	Chea Soputhea	?	?	?
11	Mong Vannary	?	?	?
12	Kim Solida	?	?	?
13	Srey Sokah	?	?	?
14	Rithy Vansak	?	?	?

Solution:



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	A	B	C	D
1	Full Name	Last Name	First Name	E-mail(LastName_FirstName@gmail.com)
2	Sok Vibol	Sok	Vibol	Sok_Vibol@gmail.com
3	Chan Chamreoun	Chan	Chamreoun	Chan_Chamreoun@gmail.com
4	Sao Virak	Sao	Virak	Sao_Virak@gmail.com
5	Seng Sambath	Seng	Sambath	Seng_Sambath@gmail.com
6	Sok Pagna	Sok	Pagna	Sok_Pagna@gmail.com
7	Cheng Sokun	Cheng	Sokun	Cheng_Sokun@gmail.com
8	Khorn Channa	Khorn	Channa	Khorn_Channa@gmail.com
9	Meng Piseth	Meng	Piseth	Meng_Piseth@gmail.com
10	Chea Soputhea	Chea	Soputhea	Chea_Soputhea@gmail.com
11	Mong Vannary	Mong	Vannary	Mong_Vannary@gmail.com
12	Kim Solida	Kim	Solida	Kim_Solida@gmail.com
13	Srey Sokah	Srey	Sokah	Srey_Sokah@gmail.com
14	Rithy Vansak	Rithy	Vansak	Rithy_Vansak@gmail.com

Steps:

1. The formula for calculating last name is =LEFT(A2,FIND(" ",A2)-1)
2. The formula for calculating first name is =RIGHT(A2,LEN(A2)-FIND(" ",A2))
3. The formula for calculating email is =CONCATENATE(B2,"_",C2,"@gmail.com")

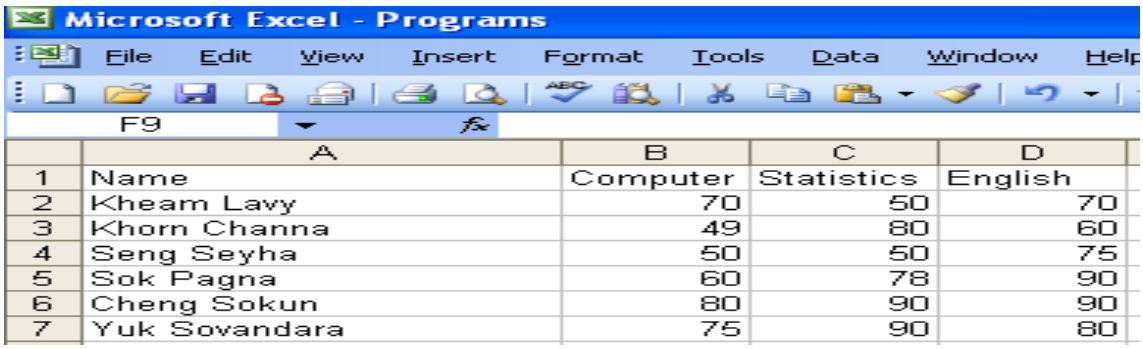
Look Up Functions

Problem 14:

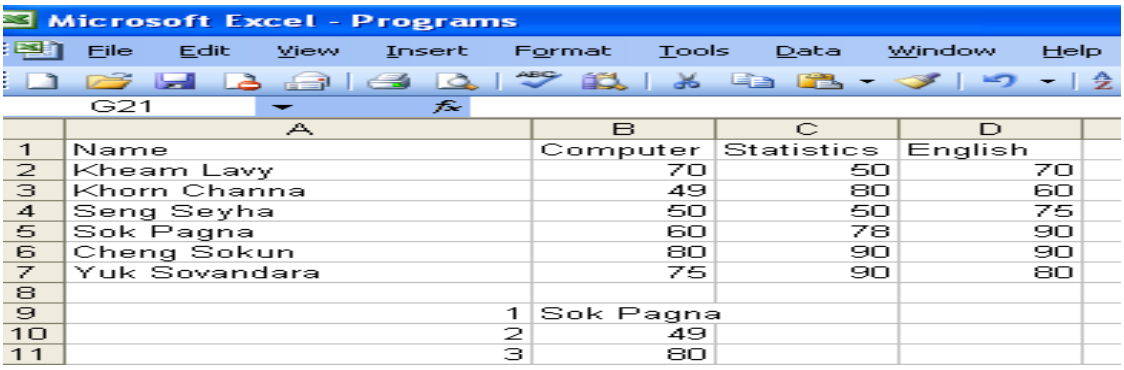
Given the table below,

1. Use hlookup function to display student's name Sok Pagan
2. Use vlookup function to find the computer score of the students named Khorn Channa and Cheng Sokun

Given the table:



	A	B	C	D
1	Name	Computer	Statistics	English
2	Kheam Lavy	70	50	70
3	Khorn Channa	49	80	60
4	Seng Seyha	50	50	75
5	Sok Pagna	60	78	90
6	Cheng Sokun	80	90	90
7	Yuk Sovandara	75	90	80



	A	B	C	D
1	Name	Computer	Statistics	English
2	Kheam Lavy	70	50	70
3	Khorn Channa	49	80	60
4	Seng Seyha	50	50	75
5	Sok Pagna	60	78	90
6	Cheng Sokun	80	90	90
7	Yuk Sovandara	75	90	80
8				
9	1	Sok Pagna		
10	2	49		
11	3	80		

Steps:

1. Hlookup is applied using the formula
   =HLOOKUP("Name",A1:A7,5,FALSE)
2. Vlookup can be performed using the formula
   =VLOOKUP("Khorn Channa",A1:D7,2,FALSE)
   =VLOOKUP("Cheng Sokun",A1:D7,2,FALSE)

Problem 15:

From the student table given below, fetch Steve's mark in English.

	A	B	C	D	E	F	G	H	I
1	Student Name	Andy	Dough	Steve	Glen	Mark	Symon	Tim	Jack
2	Marks in Science	64	75	82	65	65	42	56	78
3	Marks in Maths	87	52	68	32	72	60	61	49
4	Marks in English	79	40	61	46	66	71	56	89
5									

Solution:

In any one of the empty cells apply HLOOKUP("Steve",A1:I4,4,FALSE) which returns 61. Here Steve is the lookup value,A!:I4 is the range/table of search, 4th row which is the English marks must be returned and Range look up is false as we require an exact match. Hence the output will be:

C7 =HLOOKUP("Steve",A1:I4,4,FALSE)

	A	B	C	D	E	F	G	H	I
1	Student Name	Andy	Dough	Steve	Glen	Mark	Symon	Tim	Jack
2	Marks in Science	64	75	82	65	65	42	56	78
3	Marks in Maths	87	52	68	32	72	60	61	49
4	Marks in English	79	40	61	46	66	71	56	89
5									
6			Fetch Steve's Marks in English						
7			61						
8									

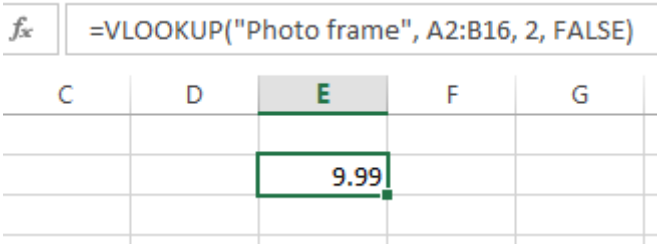
Problem 16:

Given the table below, use VLOOKUP to find the price of a photo frame

	A	B	C	D	E	F
1	Item	Price				
2	Spice rack	$19.99				
3	Stationery	$5.49				
4	Gift basket	$25.99				
5	Cutting board	$24.99				
6	Landscape painting	$35.99				
7	Greeting card	$4.99				
8	T-shirt	$15.49				
9	Scarf	$29.99				
10	Coffee mug	$8.99				
11	Tea set	$16.99				
12	Serving bowl	$12.99				
13	Wrapping paper	$3.99				
14	Photo frame	$9.99				
15	Handmade soap	$4.49				
16	Gourmet hot cocoa	$5.99				

Steps:

1. In a cell say E2, type in the formula =VLOOKUP("Photo frame", A2:B16, 2, FALSE)
2. When you press Enter, it should give you the answer, which is 9.99.



Problem 17:

In the above exercise, Let us say you have a third column that has the category for each item as shown in the below figure. This time, instead of finding the price we'll find the category.

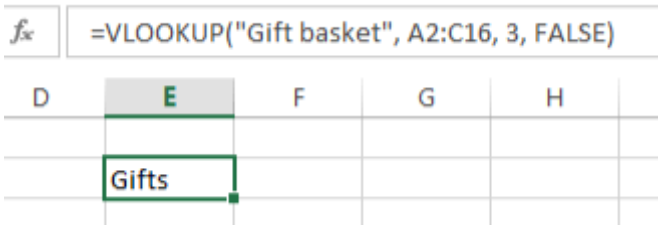
	A	B	C
1	Item	Price	Category
2	Spice rack	$19.99	Kitchen
3	Stationery	$5.49	Writing
4	Gift basket	$25.99	Gifts
5	Cutting board	$24.99	Kitchen
6	Landscape painting	$35.99	Art
7	Greeting card	$4.99	Gifts
8	T-shirt	$15.49	Clothing
9	Scarf	$29.99	Clothing
10	Coffee mug	$8.99	Kitchen
11	Tea set	$16.99	Kitchen
12	Serving bowl	$12.99	Kitchen
13	Wrapping paper	$3.99	Gifts
14	Photo frame	$9.99	Gifts
15	Handmade soap	$4.49	Gifts
16	Gourmet hot cocoa	$5.99	Food

Steps:

1. To find the category, we'll need to change the second and third arguments in our formula.
2. First, we'll change the range to A2:C16 so it includes the third column.
3. Next, we'll change the column index number to 3 because our categories are in the third column:

   =VLOOKUP("Gift basket", A2:C16, 3, FALSE)

4. When you press Enter, you'll see that the Gift basket is in the Gifts category.



Problem 18:

You are given two tables Element Table and Element Table 2 . Fetch the melting points of the elements from the second table and fill in the first table.

	A	B	C	D	E	F	G
1	ELEMENT TABLE					ELEMENT TABLE 2	
2	Atomic Mass	Density	Name	Melting Pt.		ELEMENT	MELTING Pt.
3	1.0079	0.09	Hydrogen			Helium	-272
4	4.0026	0.18	Helium			Hydrogen	-259
5	6.941	0.53	Lithium			Neon	-249
6	9.0122	1.85	Beryllium			Fluorine	-220
7	10.811	2.34	Boron			Oxygen	-218
8	12.0107	2.26	Carbon			Nitrogen	-210
9	14.0067	1.25	Nitrogen			Sodium	98
10	15.9994	1.43	Oxygen			Lithium	180
11	18.9984	1.7	Fluorine			Magnesium	639
12	20.1797	0.9	Neon			Beryllium	1278
13	22.9897	0.97	Sodium			Boron	2300
14	24.305	1.74	Magnesium			Carbon	3500

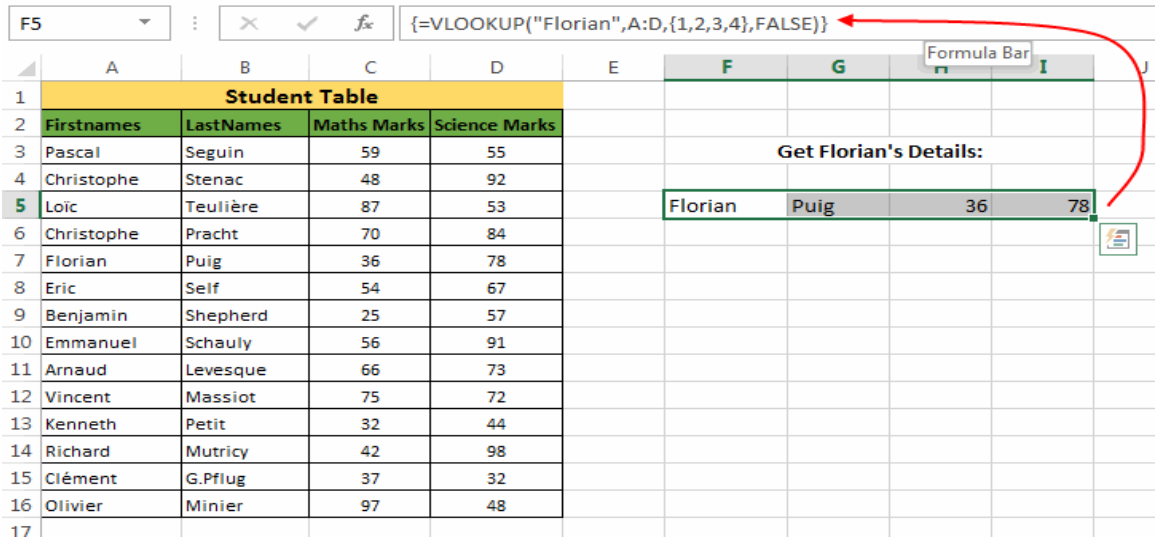
Steps:

1. First element in the first table is in C3
2. We write the VLOOKUP formula for the first element in the first table in D3
3. The table from which we should fetch the values is F3:G14, we need absolute referencing so it is $F$3:$G$14
4. We need the second column values form table 2; so the index is 2
5. The formula at D3 in table 1 is

   =VLOOKUP(C3,$F$3:$G$14,2,FALSE)

6. Drag to get the melting points for other elements

Problem 19:
Fetch Florian's first name, last name, Maths and Science mark from the table. This requires us to fetch values for Florian from multiple columns ---- Florian's record.



	A	B	C	D
1	Student Table			
2	Firstnames	LastNames	Maths Marks	Science Marks
3	Pascal	Seguin	59	55
4	Christophe	Stenac	48	92
5	Loïc	Teulière	87	53
6	Christophe	Pracht	70	84
7	Florian	Puig	36	78
8	Eric	Self	54	67
9	Benjamin	Shepherd	25	57
10	Emmanuel	Schauly	56	91
11	Arnaud	Levesque	66	73
12	Vincent	Massiot	75	72
13	Kenneth	Petit	32	44
14	Richard	Mutricy	42	98
15	Clément	G.Pflug	37	32
16	Olivier	Minier	97	48
17				

	F	G	H	I
	Get Florian's Details:			
	Florian	Puig	36	78

Steps: To fetch a record(values from multiple columns)

1. Table is referred using A:D ; this refers to the entire table (Note: we need not mention the row labels)
2. Values are to be fetched for Florian from columns 1,2,3,and 4; this is specified within parenthesis as a comma separated list as {1,2,3,4}
3. The formula is :

   =VLOOKUP("Florian",A:D,{1,2,3,4},FALSE)

   ----- Select 4 cells in a row

   ------Enter Formula

   --------Press Shift+CTL and Enter

Problem 20:
Find the revenue amount for Country Brazil for the Year 2014 in the Revenue by Country and Year table.

Revenue amount for "Brazil" in "2014"

Revenue by Country and Year

Country	2012	2013	2014	2015
USA	$ 813.45	$ 3,137.59	$ 2,473.27	$ 366.03
Canada	$ 4,174.60	$ 127.06	$ 2,678.82	$ 3,015.36
Mexico	$ 3,809.02	$ 2,383.00	$ 1,024.57	$ 765.24
China	$ 1,291.55	$ 1,803.72	$ 691.65	$ 2,251.67
Brazil	$ 1,588.89	$ 2,686.04	$ 855.78	$ 3,128.29
Russia	$ 1,501.84	$ 4,367.75	$ 1,320.42	$ 3,553.69

Steps:

1. The strategy is to fetch the index for Year 2014 using HLOOKUP and use that index in VLOOKUP for Brazil and get its revenue.

2. Modify the table to insert a row below the first row and enter the column indices. It is shown in green in the modified table given below.

Revenue by Country and Year

Country	2012	2013	2014	2015
Column #	2	3	4	5
USA	$ 813.45	$ 3,137.59	$ 2,473.27	$ 366.03
Canada	$ 4,174.60	$ 127.06	$ 2,678.82	$ 3,015.36
Mexico	$ 3,809.02	$ 2,383.00	$ 1,024.57	$ 765.24
China	$ 1,291.55	$ 1,803.72	$ 691.65	$ 2,251.67
Brazil	$ 1,588.89	$ 2,686.04	$ 855.78	$ 3,128.29
Russia	$ 1,501.84	$ 4,367.75	$ 1,320.42	$ 3,553.69

2. First let us find the column index of 2014 using HLOOKUP. Assume 2014 is stored in D5.

Country	2012	2013	2014	2015
Column #	2	3	4	5

Moving horizontally across the top of the table array selected (green border table----- C13:G14), stop at the lookup value ("**2014**") and return the value in the corresponding second row.

HLOOKUP (D5 , C13:G14 , 2 , FALSE)

3. In this case, the formula resolves to **4**. Therefore, **4** will be used as your column reference for your VLOOKUP.

4. Next the VLOOKUP. Assume Brazil is stored in C5. The table values are in C13:G14.

Country	2012	2013	2014	2015
Column #	2	3	4	5
USA	$ 813.45	$ 3,137.59	$ 2,473.27	$ 366.03
Canada	$ 4,174.60	$ 127.06	$ 2,678.82	$ 3,015.36
Mexico	$ 3,809.02	$ 2,383.00	$ 1,024.57	$ 765.24
China	$ 1,291.55	$ 1,803.72	$ 691.65	$ 2,251.67
Brazil	$ [illegible]	$ [illegible]	$ 855.78	$ 3,128.29
Russia	$ 1,501.84	$ 4,367.75	$ 1,320.42	$ 3,553.69

Moving vertically down the left side of the table array selected (red border table--- C13:G14), stop at the lookup value ("**Brazil**") and return the value in the corresponding the column returned by HLOOKUP (the formula is written in step 2.) The result of HLOOKUP is 4.

VLOOKUP (C5 , C13:G14, ----------, FALSE)

---------- is to be filled with the formula in Step 2.

5. the complete formula is:

= VLOOKUP (C5 , C13:G14,HLOOKUP (D5 , C13:G14 , 2 , FALSE), FALSE)

Take home Exercises

1. In the above table, find the following:
   a. The price of the coffee mug
   b. The category of the landscape painting
   c. The price of the serving bowl
   d. The category of the scarf

2. Consider the following table:

	A	B	C
5	Product ID	Available Stock	Price
6	2345	500	15
7	5457	234	28
8	9823	155	13
9	1233	122	12
10	2344	166	24

   a. Write an excel function to come up with the price of a product when the product id is typed into a given cell
   b. Write an excel function to come up with the available stock of a product when the product id is typed into a given cell

3. Given the two tables below, apply a HLOOKUP formula and populate the History marks in the first table such that you get the second table as the result

	A	B	C	D	E	F	G	H	I
1	Student Name	Andy	Dough	Steve	Glen	Mark	Symon	Tim	Jack
2	Marks in Science	64	75	82	65	65	42	56	78
3	Marks in Maths	87	52	68	32	72	60	61	49
4	Marks in English	79	40	61	46	66	71	56	89

	L	M	N	O	P	Q	R	S	T
1	Student Name	Andy	Dough	Steve	Glen	Mark	Symon	Tim	Jack
2	Marks in History	64	75	59	98	30	37	84	35

4. Given the below Element table, find the Atomic Mass of Boron using look up.

	A	B	C	D	E	F	G	H	I	J	K
1	Element	Hydrogen	Helium	Lithium	Beryllium	Boron	Carbon	Nitrogen	Oxygen	Fluorine	Neon
2	Atomic No.	1	2	3	4	5	6	7	8	9	10
3	Atomic Mass	1.01	4.00	6.94	9.01	10.81	12.01	14.01	16.00	19.00	20.18
4	Melting Point	-259	-272	180	1278	2300	3500	-210	-218	-220	-249

5. Consider the table below:

	A	B	C	D	E	F
1	OrderID	CustomerID	EmployeeID	OrderDate	RequiredDate	Shipped ⇐
2	10330	LILAS	3	11/16/1994	12/14/1994	11/28/
3	10331	BONAP	9	11/16/1994	12/28/1994	11/21/
4	10332	MEREP	3	11/17/1994	12/29/1994	11/21/
5	10333	WARTH	5	11/18/1994	12/16/1994	11/25/
6	10334	VICTE	8	11/21/1994	12/19/1994	11/28/
7	10335	HUNGO	7	11/22/1994	12/20/1994	11/24/
8	10336	PRINI	7	11/23/1994	12/21/1994	11/25/
9	10337	FRANK	4	11/24/1994	12/22/1994	11/29/
10	10338	OLDWO	4	11/25/1994	12/23/1994	11/29/1994
11	10339	MEREP	2	11/28/1994	12/26/1994	12/5/1994
12	10340	BONAP	1	11/29/1994	12/27/1994	12/9/1994
13	10341	SIMOB	7	11/29/1994	12/27/1994	12/6/1994

a. Display the name of customer who purchased products with OrderID=10332
b. Display the name of employee who processed this order
c. Display the date of this order
d. Display the OrderID in 10th row of the table
e. Display the customer name and required date of this order

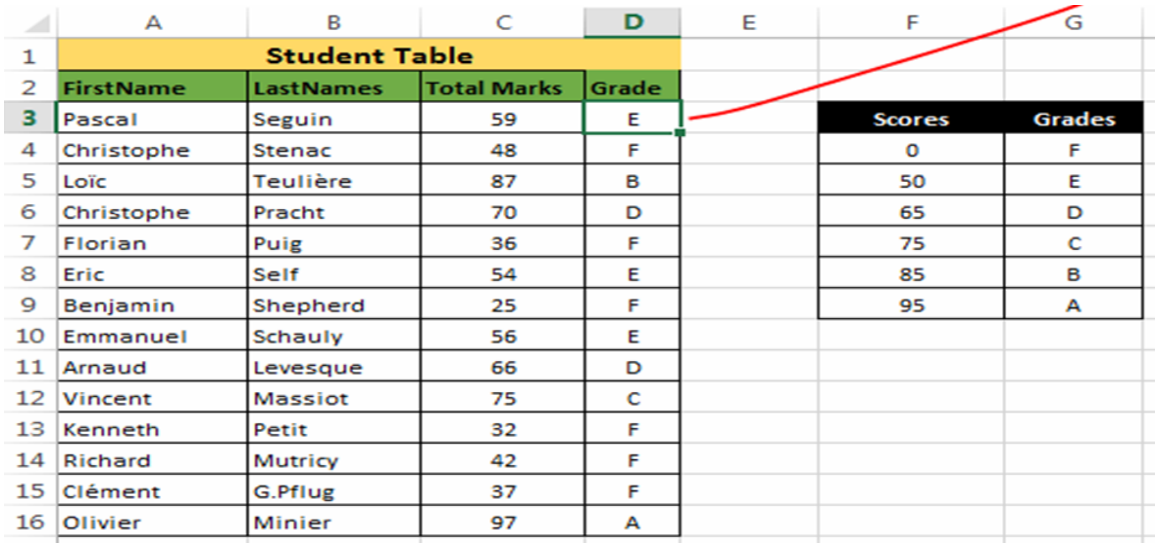
5. Given the wild card characters and their description:

Wildcard	Description
'?'	Denotes any single character.
'*'	Denotes any number of characters

Find the score of the student whose first name starts with 'A'.

	A	B	C
1	Student Table		
2	FirstName	LastNames	Total Marks
3	Pascal	Seguin	59
4	Christophe	Stenac	48
5	Loïc	Teulière	28
6	Christophe	Pracht	70
7	Florian	Puig	36
8	Eric	Self	54
9	Benjamin	Shepherd	25
10	Emmanuel	Schauly	56
11	Arnaud	Levesque	66
12	Vincent	Massiot	75
13	Kenneth	Petit	32
14	Richard	Mutricy	42
15	Clément	G.Pflug	37
16	Olivier	Minier	97

6. A table with student scores is given. A grade table is given; it has grades for scores. You have to assign a grade to each student based on their scores.



	A	B	C	D	E	F	G
1	Student Table						
2	FirstName	LastNames	Total Marks	Grade			
3	Pascal	Seguin	59	E		Scores	Grades
4	Christophe	Stenac	48	F		0	F
5	Loïc	Teulière	87	B		50	E
6	Christophe	Pracht	70	D		65	D
7	Florian	Puig	36	F		75	C
8	Eric	Self	54	E		85	B
9	Benjamin	Shepherd	25	F		95	A
10	Emmanuel	Schauly	56	E			
11	Arnaud	Levesque	66	D			
12	Vincent	Massiot	75	C			
13	Kenneth	Petit	32	F			
14	Richard	Mutricy	42	F			
15	Clément	G.Pflug	37	F			
16	Olivier	Minier	97	A			

Visualization using Charts

Problem 21:

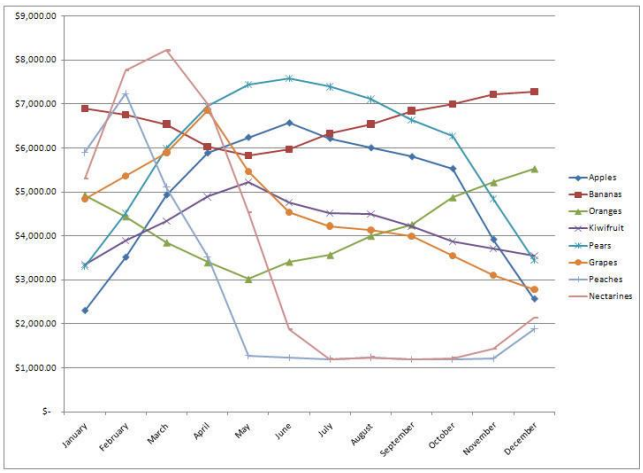
Given the data below for fruit sales, Create a line chart .

Microsoft Excel - Fruit Sales - Last Year

File Edit View Insert Format Tools Data Window Help

A1 Fruit Sales - Last Year

	A	B	C	D	E	F	G	H	I	J
1	Fruit Sales - Last Year									
2	Month	Apples	Bananas	Oranges	Kiwifruit	Pears	Grapes	Peaches	Nectarines	Total
3	January	$ 2,298.00	$ 6,899.21	$ 4,923.88	$ 3,349.12	$ 3,310.00	$ 4,847.23	$ 5,902.44	$ 5,310.00	$ 36,839.88
4	February	$ 3,512.56	$ 6,755.33	$ 4,444.99	$ 3,899.87	$ 4,524.65	$ 5,361.58	$ 7,234.12	$ 7,772.71	$ 43,505.81
5	March	$ 4,929.67	$ 6,541.00	$ 3,851.00	$ 4,336.00	$ 5,992.76	$ 5,899.24	$ 5,110.00	$ 8,219.00	$ 44,878.67
6	April	$ 5,883.00	$ 6,032.79	$ 3,399.88	$ 4,892.01	$ 6,961.44	$ 6,853.01	$ 3,521.87	$ 6,989.33	$ 44,533.33
7	May	$ 6,237.77	$ 5,822.72	$ 3,020.03	$ 5,217.97	$ 7,447.00	$ 5,471.34	$ 1,276.34	$ 4,535.52	$ 39,028.69
8	June	$ 6,566.78	$ 5,968.00	$ 3,411.89	$ 4,764.10	$ 7,583.87	$ 4,534.22	$ 1,227.30	$ 1,873.38	$ 35,929.54
9	July	$ 6,213.88	$ 6,333.33	$ 3,567.09	$ 4,523.22	$ 7,393.00	$ 4,222.83	$ 1,199.99	$ 1,198.00	$ 34,651.34
10	August	$ 6,001.00	$ 6,544.11	$ 3,999.91	$ 4,501.00	$ 7,110.10	$ 4,137.00	$ 1,242.09	$ 1,241.63	$ 34,776.84
11	September	$ 5,799.69	$ 6,845.45	$ 4,255.88	$ 4,219.91	$ 6,637.96	$ 3,998.00	$ 1,189.73	$ 1,187.57	$ 34,134.19
12	October	$ 5,527.00	$ 7,000.01	$ 4,873.00	$ 3,877.49	$ 6,275.00	$ 3,556.36	$ 1,195.42	$ 1,222.21	$ 33,526.49
13	November	$ 3,914.55	$ 7,216.27	$ 5,214.95	$ 3,712.12	$ 4,841.71	$ 3,111.44	$ 1,213.14	$ 1,432.43	$ 30,656.61
14	December	$ 2,564.99	$ 7,283.00	$ 5,521.17	$ 3,555.56	$ 3,456.11	$ 2,789.74	$ 1,887.49	$ 2,137.78	$ 29,195.84
15										
16	Totals	$ 59,448.89	$ 79,241.22	$ 50,483.67	$ 50,848.37	$ 71,533.60	$ 54,781.99	$ 32,199.93	$ 43,119.56	$ 441,657.23

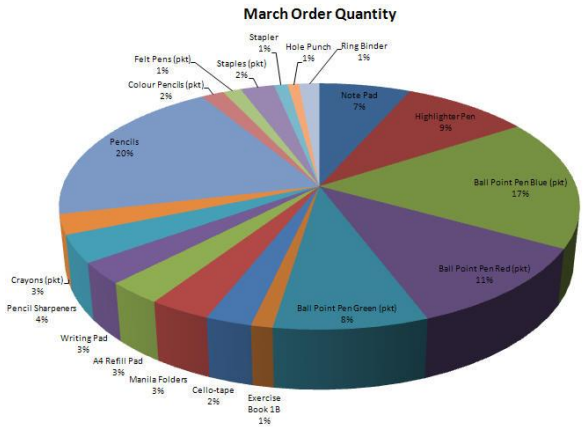


Hints:

1. Goto Insert Chart and choose line chart
2. Select the data from A2 to I14
3. Give next→next and finish to display the chart

Problem 22:

Use the Stationary Order for the Month of March spreadsheet in Problem 3 to create the Pie Chart.

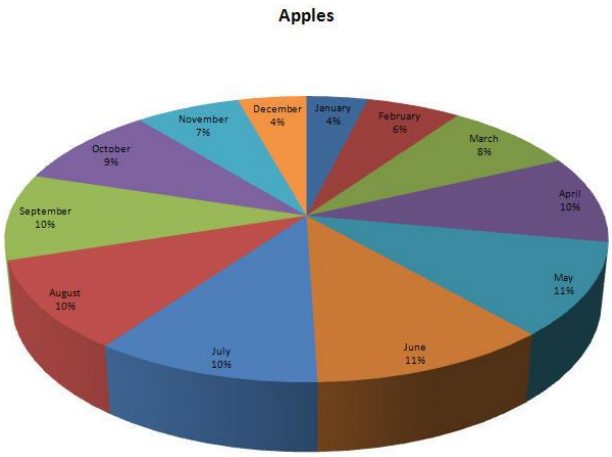


Hints:

1. Goto Insert Chart and choose pie chart and choose a sub chart type with 3D visual effect
2. Select the data from A3 to B21
3. Give next→next and finish to display the chart

Take Home Exercises

1. Use the Fruit Sales spreadsheet Given in the previous problem to create the Pie Chart below.



Create similar Pie Charts for the other Fruits, months, total, annual total in this Spreadsheet. Hint: use the CTRL key to highlight or select the cells or columns you need to create these charts.

2. Given the spread sheet for a fizzy drink survey, create the pie chartfro forst and second preferences.

Microsoft Excel - Fizzy Drink Survey

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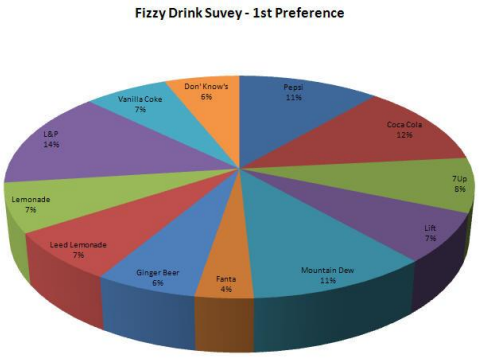
Arial

I11

	A	B	C	D	E
	Fizzy Drink Survey				
	Drink	1st Preference	1st Preference %	2nd Preference	2nd Preference %
	Pepsi	342	11%	403	13%
	Coca Cola	359	12%	367	12%
	7Up	238	8%	290	10%
	Lift	215	7%	190	6%
	Mountain Dew	321	11%	311	10%
	Fanta	103	3%	80	3%
	Ginger Beer	180	6%	380	13%
	Leed Lemonade	217	7%	120	4%
	Lemonade	215	7%	105	4%
	L&P	425	14%	414	14%
	Vanilla Coke	203	7%	67	2%
	Don' Know's	182	6%	273	9%
	Total People Surveyed	3000	100%	3000	100%



Page Referencing

Problem 23:

Consider the following scenario: the employee hourly rates of pay are stored in one spreadsheet, and a list of hours worked during the last month, are stored in a second spreadsheet as shown in the figures below:

Hourly Pay:

	A	B
1	**Employee Name**	**Hourly Rate**
2	Atkins, James	$35.50
3	Benn, Carol	$25.00
4	Benson, Paul	$32.00
5	Cooper, David	$28.50
6	Daley, Ann	$41.00
7	Dawson, Helen	$32.00
8	⋮	⋮

Sales Team Hours Worked:

	A	B	C	D
1	**Employee Name**	**Hours Worked**	**Hourly Rate**	**Payment Due**
2	Benson, Paul	37.5		
3	Cooper, David	40		
4	Dawson, Helen	39		
5	Evans, Robin	25		
6	Gee, Louise	38		
7	Jones, Michael	20		
8	⋮	⋮		

Complete the "Sales Team Hours" spreadsheet, so that it shows the pay owed to each sales team member, by looking up each persons rate of pay from the "Hourly Pay" spreadsheet.

Solution:

The following figure shows the Vlookup function, in cells C2-C3 of the "Sales Team Hours" spreadsheet, used to look up the hourly pay rates for each of the sales team members. While writing the vlookup function's second value namely 'HourlyPay'!A:B, Select the sheet in which the hourly pay is present and select that table and press enter and excel would fill the formula in the Sales team hours sheet

	A	B	C	D	E
1	**Employee Name**	**Hours Worked**	**Hourly Rate**	**Payment Due**	
2	Benson, Paul	37.5	=VLOOKUP(A2, 'Hourly Pay'!A:B, 2, FALSE)		
3	Cooper, David	40	=VLOOKUP(A3, 'Hourly Pay'!A:B, 2, FALSE)		
4	Dawson, Helen	39	=VLOOKUP(A4, 'Hourly Pay'!A:B, 2, FALSE)		
5	⋮	⋮	⋮		

The results of these Vlookup functions are shown in the spreadsheet below. As expected, each team member's hourly rate of pay has been inserted into the corresponding cell in column C.

	A	B	C	D
1	**Employee Name**	**Hours Worked**	**Hourly Rate**	**Payment Due**
2	Benson, Paul	37.5	$32.00	
3	Cooper, David	40	$28.50	
4	Dawson, Helen	39	$32.00	
5	⋮	⋮	⋮	

Following the above step calculate the payment due as a multiplication of hours worked and hourly rate.

Take Home Exercise

Create an excel sheet called order which contains product ID and quantity sold. Create another work sheet called inventory which contains productID and Unit price. Fill the two sheets with appropriate data and then in the order sheet fetch the price of the items ordered and create a total bill including taxes and display the bill for the customer.