BCSL-044

note- That assignment not same 2016-17.But will be help you solved it.

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1. The weight of 50 boxes containing Apples is measured in Kilograms, is given below. Perform the tasks given in (i) to (iv) using a spreadsheet package: (12 Marks)

9.5	8.9	10.0	10.1	8.8	9.2	9.7	9.7	9.5	10.2
8.8	8.5	11.0	9.1	10.8	9.9	8.8	9.5	9.9	9.2
10.2	9.7	11.2	9.8	9.6	9.7	10.7	8.0	9.8	10.7
10.5	9.9	10.7	10.9	9.8	9.3	9.9	8.9	10.5	10.7
9.9	10.6	9.6	10.4	8.5	10.2	8.9	9.9	8.9	9.4

(i) Find the minimum and maximum weight using spreadsheet formula.

(ii) Divide the weight in 5 classes with suitable class interval and create the frequency distribution for these classes using Array formula.

(iii) Find the percentage of boxes whose weight is above 10 kgs.

(iv) Represent the frequency distribution with the help of a relevant graph.

ANS 1.

(i) &(ii)

N13

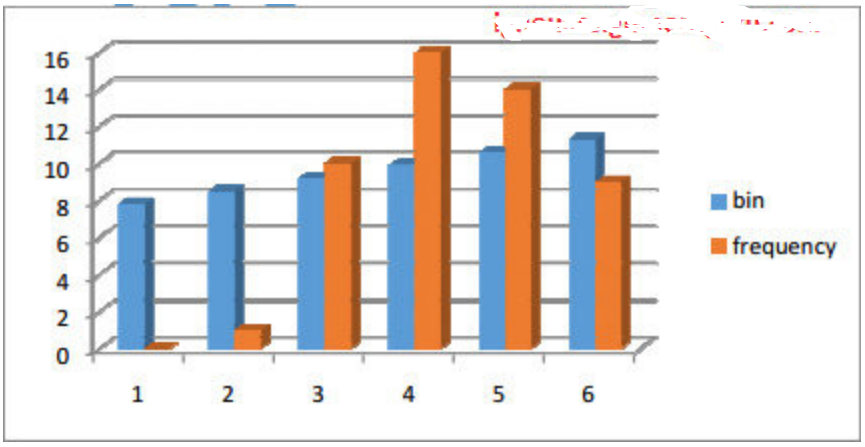
	A	B	C	D	E	F	G	H	I	J	K
1											
2		9.5	8.9	10	10.1	8.8	9.2	9.7	9.7	9.5	10.2
3		8.8	8.5	11	9.1	10.8	9.9	8.8	9.5	9.9	9.2
4		10.2	9.7	11.2	9.8	9.6	9.7	10.7	8	9.8	10.7
5		10.5	9.9	10.7	10.9	9.8	9.3	9.9	8.9	10.5	10.7
6		9.9	10.6	9.6	10.4	8.5	10.2	8.9	9.9	8.9	9.4
7											
8											
9											
10		(i)	minimum	8 →		formula	=MIN(B2:K6)				
11			maximum	11.2 →							
12						formula	=MAX(B2:K6)				
13											
12											
13											

14		(ii)	Class interval	frequency	cumulative frequency		bin	frequency
15			7.8-8.5	1	1		7.8	0
16			8.5-9.2	10	11		8.5	1
17			9.2-9.9	16	27		9.2	10
18			9.9-10.6	14	41		9.9	16
19			10.6-11.3	9	50		10.6	14
20							11.3	9

(iii)

No. of Boxes above 10 Kg weight 16

Percentage above of 10 = 32%



2. Perform the following tasks using a spreadsheet (you must either enter necessary formula that are required to calculate the value or you may use spreadsheet function for the same):
(12 Marks)

(i) Given a population of 750000 and a sample size of 200 with a standard deviation of 20, calculate the standard error.

(ii) A company manufactures car tyres. The tyres should have a mean diameter of 900mm. A sample of 50 tyres were taken out of 5000 such tyres. The sample diameter of these tyres was 911 mm with a standard deviation of 10 mm. Can the company say with 95% confidence that the tyres should be accepted. Make suitable assumption and justify your answer.

ANS 2.

The Solution will be upload soon, please keep visiting our site www.ignousite.blogspot.com

3. A gas agency has 4 different filling stations who refills the gas in the cylinders. Four samples of each of these agents were tested. The findings are given in the following table:
(20 Marks)

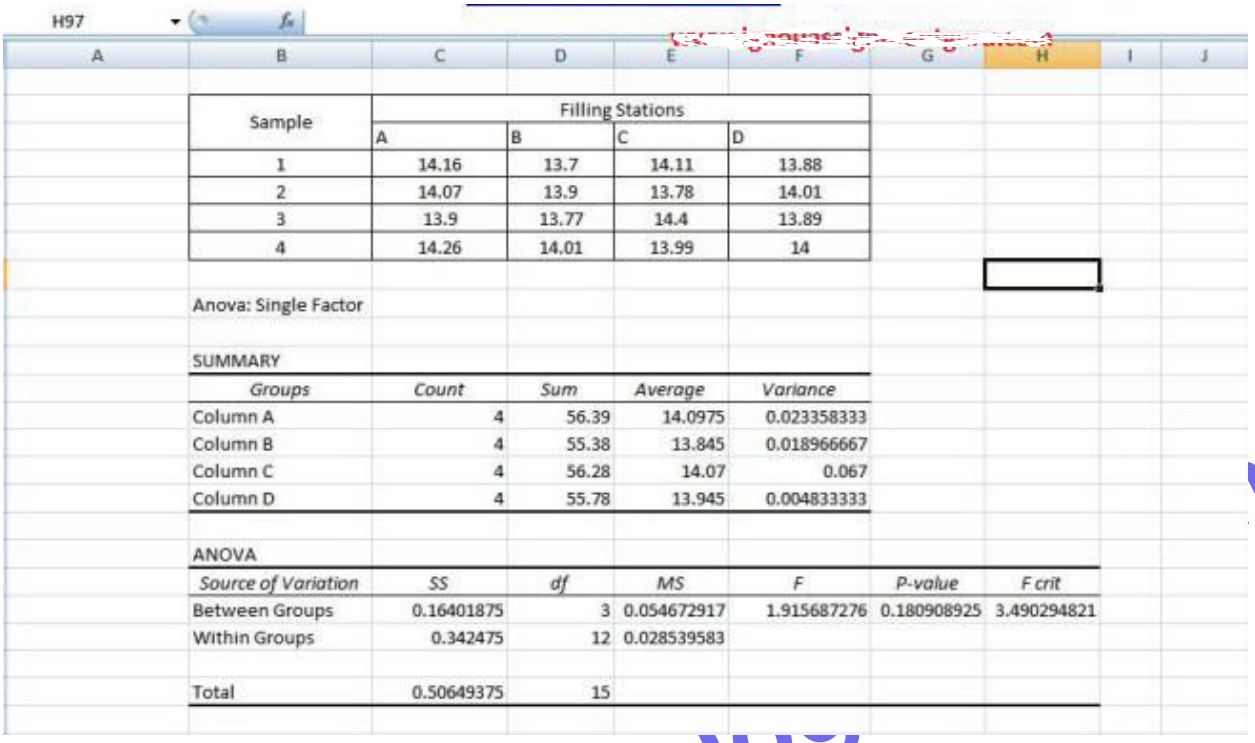
Data on Gas weights in Kgs Sample Filling Stations

Sample	Filling Stations			
	A	B	C	D
1	14.16	13.70	14.11	13.88
2	14.07	13.90	13.78	14.01
3	13.90	13.77	14.40	13.89
4	14.26	14.01	13.99	14.00

Perform an ANOVA using any software to test (at 5% level) whether all the four filling stations are working properly. Make suitable assumptions, if any.

ANS.

The ANOVA of the given table is made by using ms-excel. We set the single factor ANOVA for the table, and result is below :



Sample	Filling Stations			
	A	B	C	D
1	14.16	13.7	14.11	13.88
2	14.07	13.9	13.78	14.01
3	13.9	13.77	14.4	13.89
4	14.26	14.01	13.99	14

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column A	4	56.39	14.0975	0.023358333
Column B	4	55.38	13.845	0.018966667
Column C	4	56.28	14.07	0.067
Column D	4	55.78	13.945	0.004833333

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.16401875	3	0.054672917	1.915687276	0.180908925	3.490294821
Within Groups	0.342475	12	0.028539583			
Total	0.50649375	15				

4. The daily sales of bread loafs of company is given in the following table. Use spreadsheet software to find the moving averages for the length of 7.

Day	Sale (Number of loafs)
1	4500
2	5001
3	2449
4	5300
5	4990
6	4445
7	1007
8	6066
9	3055
10	4931
11	4444
12	3330
13	4450
14	3055
15	3499

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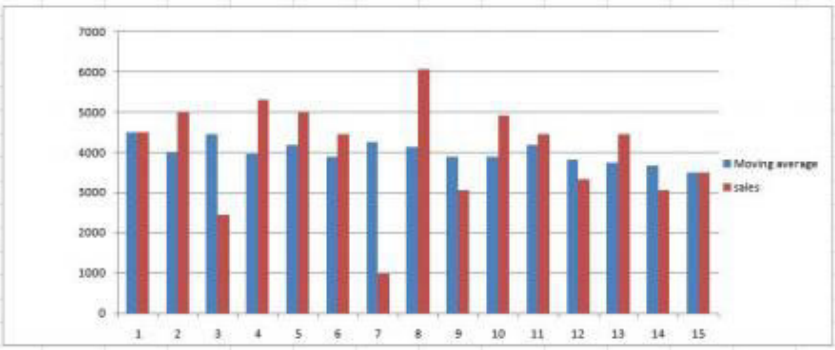
day	sale (number of Loafs)	moving average (length of 7)
1	4500	4500
2	5001	3983.333333
3	2449	4448
4	5300	3956
5	4990	4179.714286
6	4445	3901.714286
7	1007	4256.285714
8	6066	4134
9	3055	3896.857143
10	4931	3897.571429
11	4444	4190.142857
12	3330	3823.428571
13	4450	3755.6
14	3055	3668
15	3499	3499



5. A company manufactures bottles of 750 ml. Five observations of bottles are taken on each day. These observations were taken 5 times during a working day. Calculate the control limits for mean and range, and plot the control charts using any statistical software. Make suitable assumptions, if any.

Sample No.	The capacity of bottles in ml
1	740, 720, 760, 749, 725
2	710, 760, 750, 770, 760
3	760, 750, 710, 770, 760
4	730, 770, 730, 730, 750
5	780, 750, 720, 790, 745

(Please take the suitable values of d2 , d3, d4 , A2 and other variables.)

ANS.

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6. A company manufactures automobiles which are in very high demand. Fit a trend using any statistical software to manufacturing data for this company. Make suitable assumptions.

Month	Mar	Arp	May	June	Jul	Aug	Sept
Production (Number)	7890	6700	5500	4000	5000	5550	7000

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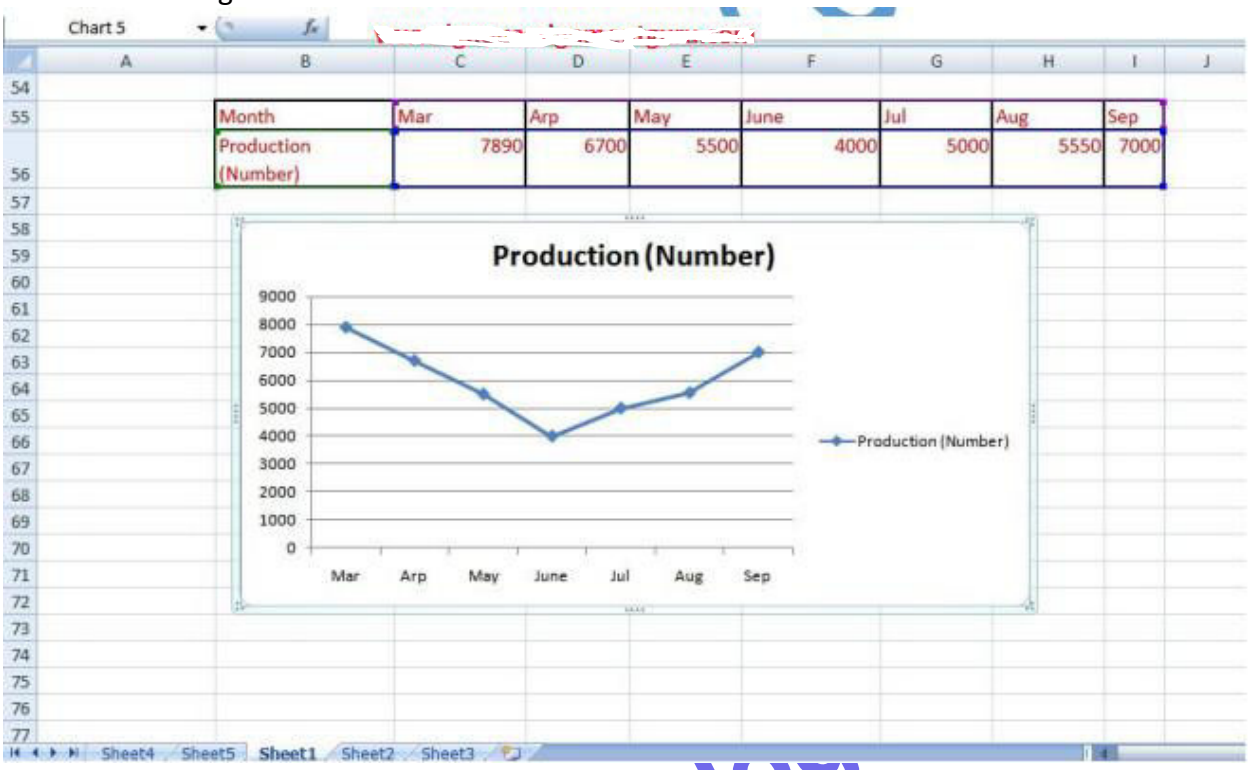
The trend of the given list is :



The excel trends shows the statics of the given data. Which is frequently change in every month, so we can display it using the excel spreadsheet and line chart tool.