CLASS 2 (19/06) Assignments #######

1. X = {10,13,18,22,27,32,38,40,45,51,56,57,88,90,92,94,99}. Bins = 5. Find the Bin size and plot the Histogram.

CLASS 3 (25/06) Assignments #######

1. X = {24,25, 26,27,28,90,100,1000,1200,1400,1400,1400}. Find the Mean , median , Mode.

2. Age = {23,24,28,27,NAN,31,58,, NAN} and Salary = {40,000,41,000,72,000,NAN,18,000, 24,000, 10,0000, 50,000} - Find the mean , median.

3. X= {23,21,20,`19,24, 27,28}. Find the variance and Standard deviation.

4. X = {2, 2,3,4,5,5,5,6,7,8,8,8,8,8,9,9,10,11,11,12}.

What is the percentile ranking of 10.

What is the percentile ranking of 11.

What is the 25 percentile value.

What is the 55 percentile value.

What is the 40 percentile value.

5. X = {-8,1, 2,4,5,6, 8,15,20, 120}. Find the 5 number summary and plot the Box plot.

CLASS 4 (26/06) Assignments #######

1. X = {1, 2,2,2,3,3,4,5,5,6,6,6,6,7,8,8,9}. Find the 25th and 75th percentile.

2. X = {1,2,3,4,5}. Find the Variance and Standard Deviation.

3. X = {2,3,4,5,8}. Convert it to Y with {mean=0, SD=1} using Z score. Plot the graph

4. Consider a Left skewed and right skewed graphs. What is the relation between mean, median , mode in these distributions.

5. Go through the Wikipedia for all these concepts.

6. Upload all assignments to GitHub link.

CLASS 5 (02/07) Assignments #######

1. X = {1,2,3,4,5,6,7}. What percentage of score fall above 4.25

2. In India the average IQ is 100 with a standard deviation of 15. What is the percentage of population expected to have IQ lower than 85.

3. Tell the size of sharks in the entire world.

4. What is the probability of rolling a "5" and then a "3" with a normal six sided dice.

5. Packet of biscuits. 5(A) and 6(O). Find the probability P(A and O).

6. X (1,2,3) and Y (3, 4, 6). Find the covariance. Cov(X,Y).

CLASS 6 (03/07) Assignments #######

1. In the Quant test of CAT exam, the population of Standard Deviation is known to be 100. A sample of 25 test takers has a mean of 520. Construct a 95% Confidence Interval above the mean.

2. Solve the above question for 80% Confidence Interval.

3. In the Quant test of CAT exam, a sample of 25 tests taken a mean of 520 with a sample Standard Deviation of 80. Construct 95% CA above the mean.

4. Colleges in Town A has 85% placement rate. A new college was recently opened and it was found out that a sample of 150 students had the placement rate of 88% with a standard deviation of 4%. Does this college has a different placement rate with Confidence Interval= 95%.

CLASS 7 (09/07) Assignments #######

1. A factory has a machine that fills 80 ml of baby medicines in a bottle. Am employee believes an average amount of baby medicine that is filled is not 80ml. Using 40 samples he measures the average amount of medicine dispersed is around 78ml with a standard deviation of 2.5.

a) State the NULL and Alternate hypothesis.

b) At 95% Confidence Interval is there enough evidence to support whether machine is working properly or not?

2. In a population the average IQ is 100 with SD of 15. A team of scientists wants to test a new medicine to see if it has a -ve or +ve effect pr no effect at all. Sample of 30 participants who had taken the medicine have a mean of 140.

a) State the NULL and Alternate hypothesis.

b) At 95% Confidence Interval did medicine affect intelligence?

3. A complaint was registered that the boys in a Govt school were underfed. Average weight of the boy of age 10 is 32 kg with SD =9 kg. From the Govt school the average weight was found to be 29.5 kg.

a) State the NULL and Alternate hypothesis.

b) At 95% Confidence Interval check whether its true or not?

4. A factory manufacturer comes with a warranty of 5 years on the engine and transmission. An engineer believes that the engine or transmission will malfunction in less than 5 years. He tests a sample of 40 cars and finds the average time to be 4.8 years with an SD of 0.50.

a) State the NULL and Alternate hypothesis.

b) At 2% Significance level is there enough evidence to support the idea that the warranty should be reversed?

5. The average weight of all residents in XYZ town is 168 pounds. A nutritionist believes that the true means is different. She measured the weight of 36 individuals and found the mean to be 169.5 pounds with an SD=3.9.

a) State the NULL and Alternate hypothesis.

b) At 95% Confidence Interval state is there enough evidence to discard the NULL hypothesis?

c) Check with P Value.

6. A company manufacturers bike batteries with an average life span of 2 years or more. An engineer believes these values to be less using 10 samples he measures the average life span to be 1.8 years with a SD = 0.15.

a) State the NULL and Alternate hypothesis.

b) At 99% Confidence Interval state is there enough evidence to discard the NULL hypothesis?

7. A tech company believes that the percentage of residents in town owning cell phone is 70%. A marketing manager believes that this value to be different. He conducts a survey of 200 individuals and found that 130 recorded tests to owning a cell phone.

a) State the NULL and Alternate hypothesis.

b) At 95% Confidence Interval state is there enough evidence to discard the NULL hypothesis?

8. A car company believes that the percentage of residents in city ABC that owns a vehicle is 60%. A sales manager disagrees with him and conducts a hypothesis testing for 250 residents and found that only 170 responded yes to owning a vehicle.

a) State the NULL and Alternate hypothesis.

b) At 10% Significance level state is there enough evidence to support the idea that vehicle ownership in city ABC is 60% or less?

CLASS 8 (10/07) Assignments #######

1. In the 2000 US consensus , the ages of individuals in a small town were found to be following

<18 - 20%

18-35 - 30%

>35 - 50%

In the 2010 US consensus , the ages of n=500 individuals were found to be following

<18 - 121

18-35 - 288

>35 - 91

Using SV = 0.05 , would you conclude that the population distribution of ages has changed in the last 10 years?

2. 500 elementary school boys and girls were asked what is their favourite colour - blue, green or pink. Results are shown below.

Boys- Blue - 100

Boys- Green - 150

Boys- Pink - 20

Girls- Blue - 20

Girls- Green - 30

Girls- Pink - 180

Using Significance value = 0.05 would you conclude that there is a relationship between gender and favourite colour?