

**Faculty of Engineering, Architecture and Information Technology**

**DATA7703: Machine Learning**

**Practice: 1**

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**Q1:** for a dataset with n attributes, how many unique scatterplots are in a draftsman’s display?

n squared

Q2:

It can tell from the excel dataset that variable A, B, and C each represent Year, Month of the Year, and Day of the Month, respectively.

Scatter plot of of E and F variables has been made; x-axis represents E whereas y-axis represents F. The shape of the plots assembles the world map, in which each spot stands for a sample that was taken at a specific longitude and latitude. The span(range) of x, which is -180 to 180, and y, which is -72.45 to 86.99, also the assumption.

A: Year

B: Month

C: Day

D: Uniform distribution

E: A pattern of normal distribution

F: A possible negative skewed poisson distribution

G: Shows a decay pattern, which indicates exponential distribution.

H: A positively skewed poission distribution.

%Q3

myDataQ3 = importdata('prac1\_q3.dat');

mean\_myDataQ3 = mean(myDataQ3);

std\_myDataQ3 = std(myDataQ3);

%Q4

myDataQ4 = importdata('prac1\_q4.dat');

col1 = myDataQ4(:,1);

col2 = myDataQ4(:,2);

col3 = myDataQ4(:,3);

col4 = myDataQ4(:,4);

figure;

hold on

plot(col1,col2,'bo')

plot(col3,col4,'rs')

xlabel('Input')

ylabel('Output')

title('Question 4 Input vs Output Plots')

hold off

%Q5

stdQ5 = 4;

miu = 2;

myNumbers = randn(1000,1).\*stdQ5+miu;

figure;

hold on

histogram(myNumbers,30)

xlabel('Random Variable');

ylabel('Frequency');

hold off

%Q6

out([1,2,3,4,5],1)

out([1,2,3,4,5],2)

out([1,2,3,4,5,6],2)

out([1,2,3,4,5,6],3)

out([1,2,3,4,5,5],4)

out([19, 34, 59, 2, 45, 83, 20],5)