Lab Assignment 1, BT307, 2024

If the last digit of your roll number is 0 to 4:

Use data file: data1.csv

a) Create a scatter plot showing Age in the horizontal axes and Systolic Blood Pressure in the vertical axes.

b) Calculate the Pearson's correlation between Age and systolic blood pressure. Also, perform the statistical test for the estimated correlation. Do you observe any association between these two variables in the given data?

If the last digit of your roll number is 5 to 9:

Use data file: data2.csv

a) Create a scatter plot showing the Unemployment Rate (3^{rd} variable) in the horizontal axes and the Rate of Murder (4^{th} variable) in the vertical axes.

b) Calculate the Pearson's correlation between the unemployment rate (3^{rd} variable) and the rate of murder (4^{th} variable). Also, perform the statistical test for the estimated correlation. Do you observe any association between these two variables in the given data?

Submit the following using the Teams Assignment:

a) **Your R script**: Mention your Roll number in the R script. Use the following naming convention for the file: your_roll.R

b) **A report in MS Word**. Use the following naming convention: your_roll.docx. The report should have the following:

1) Your name

2) Your roll number

3) The data file used

4) The scatter plot. The plot must have axes suitably marked. Try to make the plot as professional-looking as possible.

5) Estimated Pearson's correlation

6) The p-value obtained from the statistical test.

7) Your conclusion on the association between the variables based on the correlation and the p-value.