Assignment

Q-1

Consider available dataset: mtcars

establish the relationship between "mpg" as a response variable with "disp","hp" and "wt" as predictor variables.

Create Equation for Regression Model

Y = a+Xdisp.x1+Xhp.x2+Xwt.x3

Apply Equation for predicting New Values for a car with disp = 221, hp = 102 and wt = 2.91 the predicte mileage.

Q-2

Consider following vectors for multiple linear regression model:

year <-
c(2017,2017,2017,2017,2017,2017,2017,2017,2017,2017,2017,2016,2016,2016,2016,2016,2016,2016,2016,2016,2016,2016,2016,2016)

month <- c(12,11,10,9,8,7,6,5,4,3,2,1,12,11,10,9,8,7,6,5,4,3,2,1)

interest_rate <-
c(2.75,2.5,2.5,2.5,2.5,2.5,2.5,2.25,2.25,2.25,2,2,2,1.75,1.75,1.75,1.75,1.75,1.75,1.75,1.75,1.75,1.75,1.75)

unemployment_rate <-
c(5.3,5.3,5.3,5.3,5.4,5.6,5.5,5.5,5.5,5.6,5.7,5.9,6,5.9,5.8,6.1,6.2,6.1,6.1,6.1,5.9,6.2,6.2,6.1)

index_price <-
c(1464,1394,1357,1293,1256,1254,1234,1195,1159,1167,1130,1075,1047,965,943,958,971,949,884,866,876,822,704,719)

establish the relationship between "index_price" as a response variable with "interest_rate" and "unemployment_rate" as predictor variables.

Create Relationship Model & get the Coefficients

Create Equation for Regression Model

Apply Equation for predicting New Values for interest_rate = 2.4 and unemployment_rate = 5.4 the predicte inxed_price

Q. 3.

Calculate Pearson correlation coefficient for given data:
v1 = c(1, 2, 3, 4, 5, 6, 7) v2 = c(1, 3, 6, 2, 7, 4, 5)

Plot relationship and perform analysis on type.

Q.4.

Use avaliable dataset in R: mtcars

Calaculate Correlation coefficient for mgp and wt. Plot relationship and perfrom analysis on type.

Q5. Calculate five number summary or five point summary of given vector

rebounds=c(30, 28, 24, 24, 28, 30, 31, 35,28)

Calculate mean, median and mode for same data. Also use trim and na.rm parameter for mean.

Q.6

Generate a vector from the given data. Calculate the following:
X = (27,23,45,49,78,67,56,54,35,39,69,87,88,93,NA)

1. Calculate median for the given data.
2. Calculate mode of the vector.
3. Calculate the mean of the data by skipping the minimum and maximum value of a vector.
4. Sort the data and find the minimum and maximum values of a given a vector.
5. Find minimum and maximum value using inbuilt functions.
6. Calculate mean of the entire vector. (Ignore NA values)
7. Calculate quantile Q1 and Q3.
8. Find the summary of the vector by applying appropriate function.
9. Find the sum of the elements of vector.
10. Sort the elements of the vector in descending order.