MCS (511)
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Assignment # 2

Question 1:

Consider the given data set:

x	28	37	40	38	35	33	40	32	34	33
y	23	32	33	34	30	26	29	31	34	38

(a) Find out the regression equation for the given dataset.
(b) Draw the scatter plots of the given dataset and also show the regression line graphically.
(c) Find out the coefficient of correlation for the given dataset.
(d) Calculate the regression equation when x = 2.
(e) Find out the sum of squared total. Also show SST = SSE + SSR.
(f) Prove that $R^2 = \frac{SSR}{SST}$
(g) Prove that low $R^2 =$ high SSE.

Question 2:

(a) The following table gives the distribution of the total population and those who are partially and totally blind among them. Find out if there is any relation between age and blindness.

Age	Number of Persons ('000)	Blind
5	100	55
15	60	40
25	40	40
35	36	40
45	24	36
55	11	22
65	6	18
75	3	15

(b) Draw the scatter plots between age and blindness.
(c) Find out the regression equation based on the dataset given in part (a).
(d) Show the regression line on the same graph created in part (b).
(e) Show SSE and SSR on the graph.
(f) Show complete calculation of SST = SSE + SSR
(g) Cement on the accuracy of the regression model obtained.

Submission date : (Friday 24/09/2021)