

Department of Statistics
Savitribai Phule Pune University
ST 205: Regression Analysis Practicals
Practical - II: Multiple Linear Regression

1. Refer to the ‘Systolic Blood Pressure’ data.
 - (a) Obtain the matrix plot of the data and comment on it.
 - (b) Fit a linear regression model to ‘Systolic Blood Pressure’ taking ‘Age’ and ‘Weight’ as predictors. What is your conclusion about the fitted model? Justify your answer.
 - (c) Find the least square estimators of the regression coefficients. Also find 90% and 95% confidence intervals for the regression coefficients.
 - (d) Compute the estimate of σ^2 .
 - (e) Examine the significance of the regression coefficients through appropriate test at 0.05% level of significance.
 - (f) Carry out the residual analysis and report your findings.
 - (g) Test following hypotheses at 0.05% level of significance:
(a) $H_0 : \beta_1 = 0$ (b) $H_0 : \beta_1 + \beta_2 = 0$ (c) $H_0 : \beta_0 = 0; \beta_1 + \beta_2 = 1$
2. Refer to the data set ‘NationalFootballLeague’. Analyze the data by considering ‘x2’, ‘x7’ and ‘x8’ as the predictors. Write your conclusions.
3. Refer to the data set ‘ClockSellingPrice’. Analyze the data by considering ‘Price’ as the response and ‘Age’ and ‘Bidders’ as the regressors. Write your conclusions.