Exp.No: 7

IMPLEMENT LINEAR AND LOGISTIC REGRESSION

AIM:

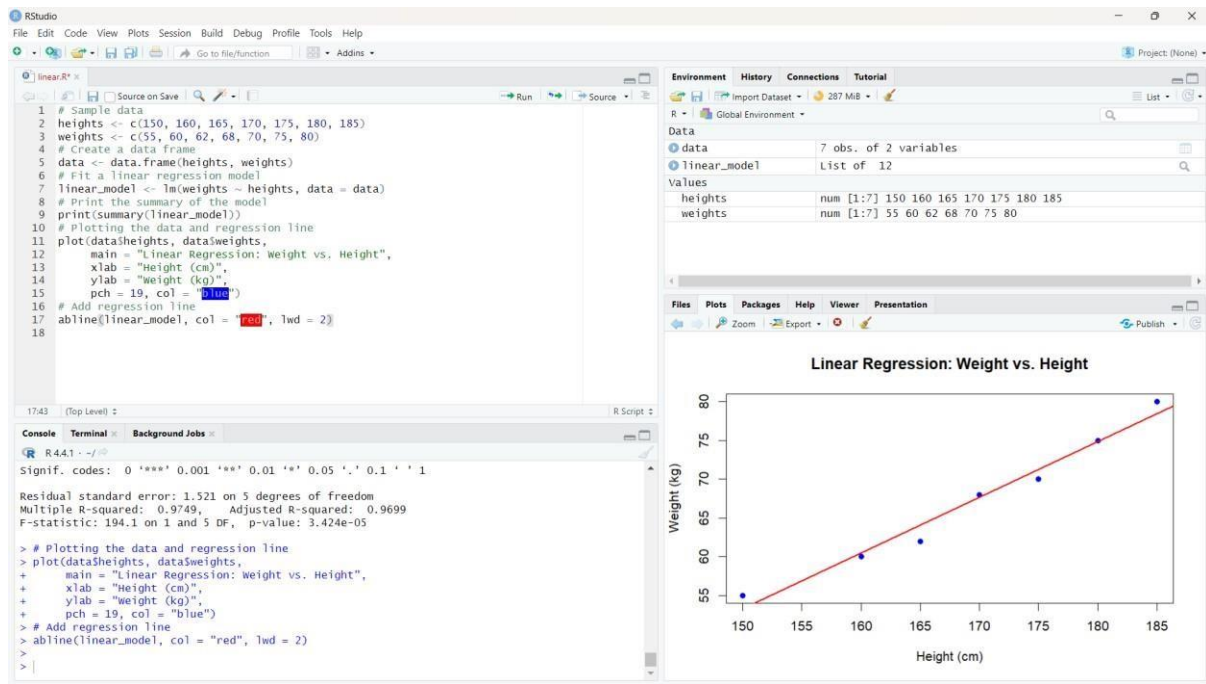To write an R code to implement linear and logistic regression.

PROCEDURE:

1. Create sample data for heights and weights, fit a linear regression model, and plot the data with the regression line.

2. Use the sample data to create a data frame for the regression model.

3. Fit the linear regression model using the `lm()` function and display the summary.

4. Plot the data points and add the regression line using the `plot()` and `abline()` functions.

5. Load the `mtcars` dataset, convert the 'am' variable to a factor, fit a logistic regression model using the `glm()` function, and plot the probabilities.

PROGRAM CODE:

a)Linear regression

Linear Regression heights <- c(150, 160, 165,

170, 175, 180, 185) weights <- c(55, 60, 62, 68, 70,

75, 80) data <- data.frame(heights, weights)

linear_model <- lm(weights ~ heights, data = data)

print(summary(linear_model))

Plotting Linear Regression plot(data$heights,

data$weights,   main = "Linear Regression:

Weight vs. Height",   xlab = "Height (cm)",

ylab = "Weight (kg)",   pch = 19, col = "blue")

abline(linear_model, col = "red", lwd = 2)

OUTPUT:

RESULT:

Thus the R program to implement Linear and Logistic Regression has been executed and verified successfully.