```
itvoyagers.in itvoyagers.in itpacericae.in itvoyagers.in itvoyagers.in

Perform the Linear regression on the given data warehouse data.

Input Data
itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in
Below is the sample data representing the observations –

# Values of height
itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in

# Values of weight.
itvo63_8175679747957265.7276249agers.in itvoyagers.in itvoyagers.in

Im() Function:

This function creates the relationship model between the predictor and the itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in Syntax:
```

The basic syntax for Im() function in linear regression is -

Im(formula,data)
tvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in
Following is the description of the parameters used :-

- formula is a symbol presenting the relation between x and y.
- data is the vector on which the formula will be applied.

itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in

A. Create Relationship Model & get the Coefficients

# Values of height

x <- c(151, 174, 138, 186, 128, 136, 179, 163, 152, 131) itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in

# Values of width

y <- c(63, 81, 56, 91, 47, 57, 76, 72, 62, 48)

itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in

# Apply the lm() function.

relation <-  $lm(y\sim x)$ 

itvovagers.in itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in

```
Call:
|m(formula = y ~ x)

Coefficients:
(Intercept) x
-38.4551 0.6746 | itvoyagers.in itvoyagers.in itvoyagers.in
```

## B. Get the Summary of the Relationship

itvo#**Walues.**of heightyagers.in itvoyagers.in itvoyagers.in itvoyagers.in x <- c(151, 174, 138, 186, 128, 136, 179, 163, 152, 131)

# Values of width itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in y <- c(63, 81, 56, 91, 47, 57, 76, 72, 62, 48)

# Apply the Im() function.

itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in

print(summary(relation))

## **OUTPUT:**

```
Call:
itvo lm(formula = y ~ x)
                                                               's.in itvoyagers.in
     Residuals:
       Min 1Q Median
                             3Q
     -6.3002 -1.6629 0.0412 1.8944 3.9775
                                                               rs.in itvoyagers.in
Coefficients:
               Estimate Std. Error t value Pr(>|t|)
     (Intercept) -38.45509 8.04901 -4.778 0.00139 **
                0.67461 0.05191 12.997 1.16e-06 ***
     Signif. codes: 0 \***' 0.001 \**' 0.01 \*' 0.05 \.' 0.1 \' 1
Residual standard error: 3.253 on 8 degrees of freedom
                                                               s.in itvovagers.in
     Multiple R-squared: 0.9548, Adjusted R-squared: 0.9491
```

itvopredict(). Functionyagers.in itvoyagers.in itvoyagers.in itvoyagers.in Syntax

The basic syntax for predict() in linear regression is –

F-statistic: 168.9 on 1 and 8 DF, p-value: 1.164e-06

predict(object, newdata)

itvo following is the description of the parameters used yagers. in itvoyagers. in

- object is the formula which is already created using the Im() function.
- newdata is the vector containing the new value for predictor variable.

- C. Predict the weight of new persons
- # The predictor vector.
- itvoxage(15in 174,9138,6186, 128,1136,4179,166), 152,9161,3ers.in itvoyagers.in
  - # The response vector.
- itvoyage(63;184;t56;94g47;57n76v72y6ge48) in itvoyagers.in itvoyagers.in
  - # Apply the Im() function.
- relation <- Im(y~x) itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in
  - # Find weight of a person with height 170.
  - a < -data.frame(x = 170)
- itvoresult : ipredict(relation in itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in print(result)
- itvovagers.in itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in
- itvoyagers in itvoyagers in itvoyagers in itvoyagers in itvoyagers in itvoyagers in itvoyagers.in
  - # Create the predictor and response variable.
  - x <- c(151, 174, 138, 186, 128, 136, 179, 163, 152, 131)
- itvoy≥gc(63,181,756,191,247,57),76,72,762,248) in itvoyagers.in itvoyagers.in relation <- Im(y~x)
- itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in

itvo#agrefherchart@jeagnamen itvoyagers.in itvoyagers.in itvoyagers.in png(file = "linearregression.png")

# Plot the chart.
itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in plot(y,x,col = "blue",main = "Height & Weight Regression",
abline(lm(x~y)),cex = 1.3,pch = 16,xlab = "Weight in Kg",ylab = "Height in cm")

itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in # Save the file.

dev.off()

itvo null device oyagers.in itvoyagers.in itvoyagers.in itvoyagers.in

## # Plot the chart.

itvovagers in itvovagers in itvovagers in itvovagers in itvovagers in plot(y,x,col = "blue",main = "Height & Weight Regression", abline(lm(x~y)),cex = 1.3,pch = 16,xlab = "Weight in Kg",ylab = "Height in cm")

itvoougeut:in itvoyagers.in itvoyagers.in itvoyagers.in itvoyagers.in

