

Simple Linear Regression

```
rm(list = ls()) # Free up memory
```

```
gc() # Garbage Collection
```

```
# dataset
```

```
# Model building
```

```
# Prediction -- predict weight for a given height
```

```
# The predictor vector.
```

```
x <- c(151, 174, 138, 186, 128, 136, 179, 163, 152, 131) # Height
```

```
# The response vector.
```

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

```
plot(x, y, col = "blue", main = "X-Y plot for Regression", pch=8,  
      xlab = "Height", ylab = "Weight")
```

```
# Apply the lm() function.
```

```
reg <- lm(y~x)
```

```
# to get summary of the relationship
```

```
print(summary(reg))
```

```
# Plot the chart.
```

```
plot(x,y,col = "blue",main = "Height & Weight Regression",  
      pch = 10,xlab = "Height in Kg",ylab = "Weight in cm")
```

```
abline(reg,col="red")
```

```
# Find weight of a person with height 170.--- PREDICTION
```

```
height <- data.frame(x = 165)
```

```
predicted_weight <- predict(reg, newdata = height)
```

```
print(predicted_weight)
```

```
*****
```