 # 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)
```

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