DMPM Assignment 2: Part 1

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CODE:

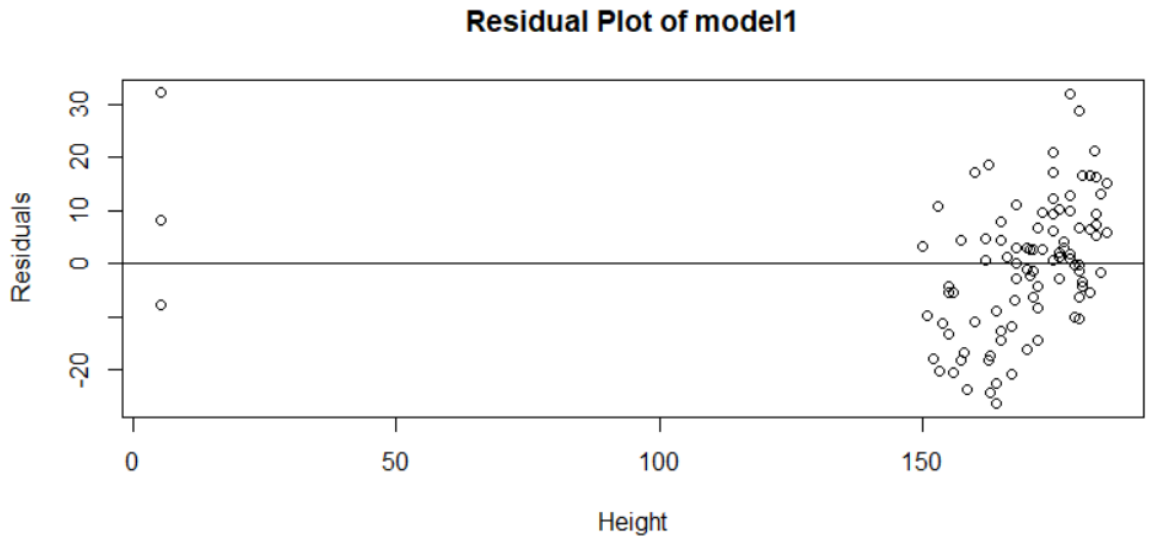
```
data<-read.csv("HT-WT-Age.csv")
head(data)

#First model
model1 <- lm(data$Weight~data$Height)
summary(model1)

residual1<-resid(model1)

#residual plot
plot(data$Height, residual1, ylab="Residuals", xlab="Height",
     main = "Residual Plot of model1")
abline(0, 0)

#scatter plot
plot(data$Height,data$Weight, ylab="Height", xlab="weight",
     main = "Scatterplot between Height and Weight")


#Second model
model2 <- lm(data$Weight~data$Age)
summary(model2)

residual2<-resid(model2)

#residual plot
plot(data$Age, residual2, ylab="Residuals", xlab="Weight",
     main = "Residual Plot of model2")
abline(0, 0)
#scatterplot
plot(data$Age, data$Weight, ylab="Age", xlab="Weight",
     main = "Scatterplot between Age and Weight")
```

Output:

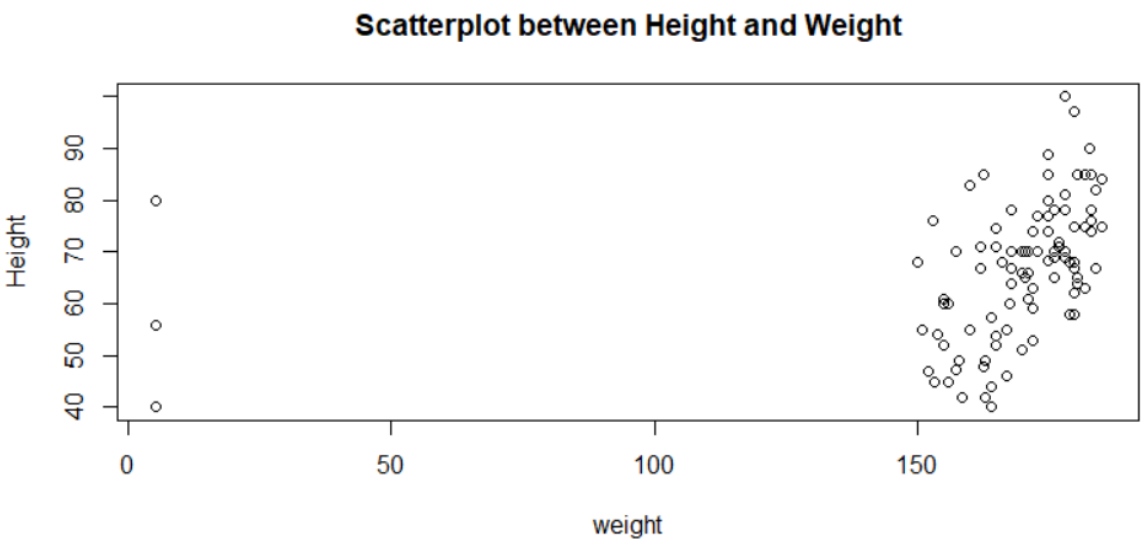
```
> data<-read.csv("HT-WT-Age.csv")
> head(data)
  Height Weight Age
1 176.00   70.0  20
2 185.00   74.8  20
3 180.00   68.0  21
4 180.00   97.0  20
5 182.88   90.0  20
6 178.00   81.0  20
> #First model
> model1 <- lm(data$Weight~data$Height)
> summary(model1)

Call:
lm(formula = data$Weight ~ data$Height)

Residuals:
    Min      1Q  Median      3Q     Max
-26.409  -8.344   0.825   7.369  32.176

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept) 47.22659    7.12077   6.632 2.01e-09 ***
data$Height  0.11696    0.04235   2.762   0.0069 **
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 12.55 on 95 degrees of freedom
Multiple R-squared:  0.07434,   Adjusted R-squared:  0.06459
F-statistic: 7.629 on 1 and 95 DF,  p-value: 0.006895
```

Both the coefficients are of higher significance.

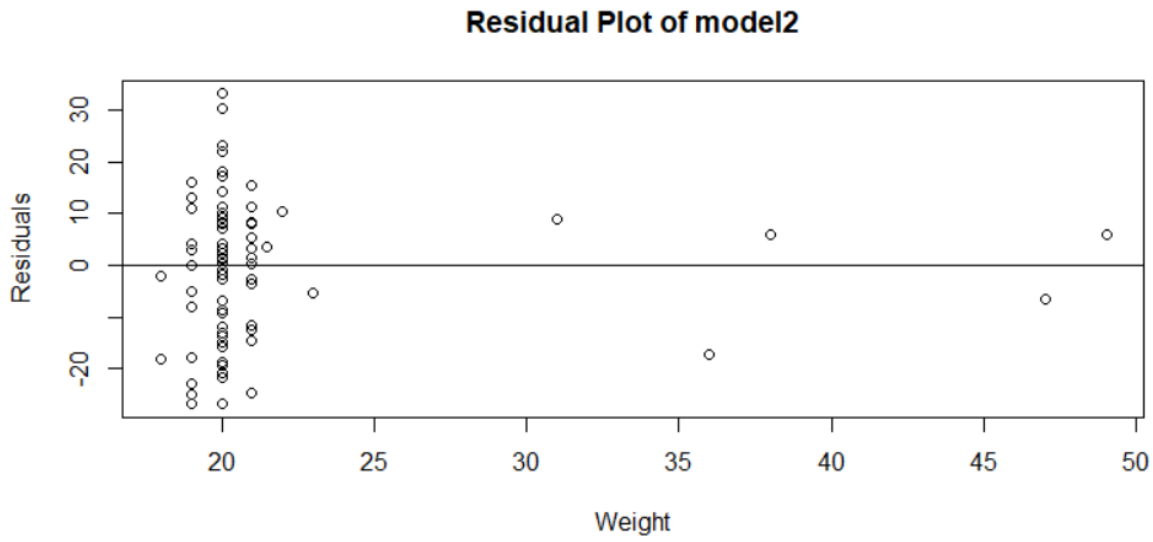
```
> residual1<-resid(model1)
> #residual plot
> plot(data$Height, residual1, ylab="Residuals", xlab="Height")
> abline(0, 0)
```



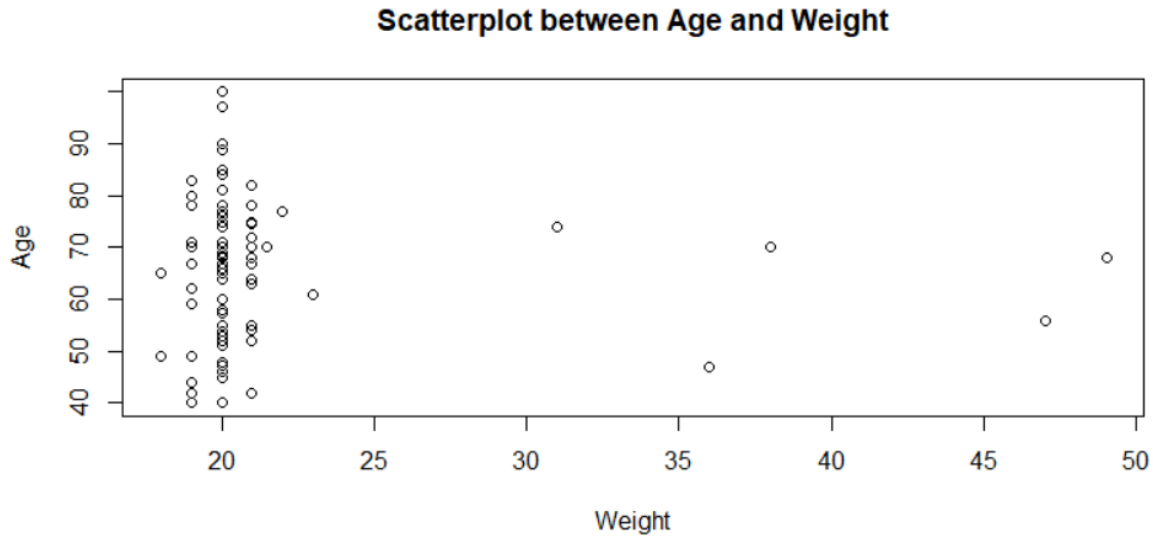
```
> #scatter plot
> plot(data$Height,data$Weight, ylab="Height", xlab="weight")
```




```
> #Second model
> model2 <- lm(data$Weight~data$Age)
> summary(model2)

Call:
lm(formula = data$Weight ~ data$Age)

Residuals:
    Min      1Q  Median      3Q     Max
-26.917  -8.758   1.242   8.401  33.242

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)   69.939      6.004  11.649   <2e-16 ***
data$Age      -0.159      0.277  -0.574    0.567
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 13.02 on 95 degrees of freedom
Multiple R-squared:  0.003456,  Adjusted R-squared:  -0.007034
F-statistic: 0.3294 on 1 and 95 DF,  p-value: 0.5674

> residual2<-resid(model2)
> #residual plot
> plot(data$Age, residual2, ylab="Residuals", xlab="Weight")
> abline(0, 0)
```




```
> #scatterplot
> plot(data$Age, data$Weight, ylab="Age", xlab="Weight")
>
```



END