Project Part 1

Drashti Patel (7964120)

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```
fifa <- read.csv("FIFA.csv")
```

Here's a description of my data set. # This is a dataset of performance statistics for elite FIFA players during the 2024 season, including metrics such as ratings(overall), potential,age, and Hits.

Here's the URL where I found my dataset. # https://www.kaggle.com/datasets/aayushmishra1512/fifa-2021-complete-player-data

My response variable is Overall.

My two explanatory variables are Hits and Potential.

```
fifa1 <- lm(Overall ~ Hits, data = fifa)
summary(fifa1)
```

```
##
## Call:
## lm(formula = Overall ~ Hits, data = fifa)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -2.76074 -0.98147  0.01853  0.97198  2.80200
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 87.313066   0.288573 302.569  < 2e-16 ***
## Hits         0.018828   0.003075   6.123 1.63e-07 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.293 on 48 degrees of freedom
## Multiple R-squared:  0.4385, Adjusted R-squared:  0.4268
## F-statistic: 37.49 on 1 and 48 DF,  p-value: 1.629e-07
```

```
# R^2 = 0.4385, Adj_r^2 = 0.4268

fifa2 <- lm(Overall ~ Potential, data = fifa)
summary(fifa2)
```

```
##
## Call:
```

```
## lm(formula = Overall ~ Potential, data = fifa)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -3.3181 -0.6130  0.2788  0.6221  2.3386
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept) 29.93265    7.20616   4.154 0.000134 ***
## Potential    0.65669    0.08053   8.154 1.29e-10 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.117 on 48 degrees of freedom
## Multiple R-squared:  0.5808, Adjusted R-squared:  0.572
## F-statistic: 66.49 on 1 and 48 DF,  p-value: 1.288e-10
```

```
# R^2 = 0.5808, Adj_r^2 = 0.572
```

For $Y \sim X1$, $r^2 = 0.4385$ and $R^2_{adj} = 0.4268$ For $Y \sim X2$ $r^2 = 0.5808$ and $R^2_{adj} = 0.572$

```
fifa_combined <- lm(Overall ~ Potential+ Hits, data = fifa)
summary(fifa_combined)
```

```
##
## Call:
## lm(formula = Overall ~ Potential + Hits, data = fifa)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -3.6311 -0.4591  0.1151  0.7563  1.6093
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 43.723110   8.975289   4.871 1.30e-05 ***
## Potential    0.496000   0.102092   4.858 1.36e-05 ***
## Hits         0.008054   0.003369   2.391   0.0209 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.066 on 47 degrees of freedom
## Multiple R-squared:  0.6262, Adjusted R-squared:  0.6103
## F-statistic: 39.37 on 2 and 47 DF,  p-value: 9.048e-11
```

```
# Adjusted R^2 = 0.6103
```

For $Y \sim X1 + X2$ $R^2_{adj} = 0.6103$