practice 1 wedensday

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library(DevFarn2)

## Loading required package: qcc

## Package 'qcc' version 2.7

## Type 'citation("qcc")' for citing this R package in publications.

library(qcc)  
  
  
  
x1 = c(30,40,28,25,27,40,31,41,24,26,44,28,29,26,34,32,29,25,28,26,31,34,33,33,30)  
x2 = c(75,77,73,75,71,72,74,72,72,73,75,80,75,75,75,75,68,74,71,73,71,74,72,70,72)  
y = c(226,250,180,205,200,215,200,180,180,182,248,260,210,225,205,195,175,220,195,210,195,200,210,220,185)  
  
my\_data\_frame = data.frame(y,x1,x2)  
(my\_data\_frame)

## y x1 x2  
## 1 226 30 75  
## 2 250 40 77  
## 3 180 28 73  
## 4 205 25 75  
## 5 200 27 71  
## 6 215 40 72  
## 7 200 31 74  
## 8 180 41 72  
## 9 180 24 72  
## 10 182 26 73  
## 11 248 44 75  
## 12 260 28 80  
## 13 210 29 75  
## 14 225 26 75  
## 15 205 34 75  
## 16 195 32 75  
## 17 175 29 68  
## 18 220 25 74  
## 19 195 28 71  
## 20 210 26 73  
## 21 195 31 71  
## 22 200 34 74  
## 23 210 33 72  
## 24 220 33 70  
## 25 185 30 72

# build linear regression model on three variables #  
lm\_model2 = lm(y ~ x1 + x2, data = my\_data\_frame)  
summary(lm\_model2)

##   
## Call:  
## lm(formula = y ~ x1 + x2, data = my\_data\_frame)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -29.142 -12.329 3.685 10.756 31.919   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) -283.8123 98.7099 -2.875 0.008791 \*\*   
## x1 1.0739 0.6039 1.778 0.089210 .   
## x2 6.2351 1.3393 4.656 0.000122 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 16.01 on 22 degrees of freedom  
## Multiple R-squared: 0.5435, Adjusted R-squared: 0.502   
## F-statistic: 13.09 on 2 and 22 DF, p-value: 0.0001795

# other method to get R squared #  
summary(lm\_model2)$r.squared

## [1] 0.5434694