STATS 191: Homework Assignment 1

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18 September, 2019

Learning goals

Solution 1

Explain your solution: Model $Y = \theta X + \epsilon$

```
data(cars)
d = cars
fit_lm  = lm(speed ~ dist, data = cars)
summary(fit_lm)
```

```
##
## Call:
## lm(formula = speed ~ dist, data = cars)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -7.5293 -2.1550  0.3615  2.4377  6.4179
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  8.28391    0.87438   9.474 1.44e-12 ***
## dist         0.16557    0.01749   9.464 1.49e-12 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 3.156 on 48 degrees of freedom
## Multiple R-squared:  0.6511, Adjusted R-squared:  0.6438
## F-statistic: 89.57 on 1 and 48 DF,  p-value: 1.49e-12
```

Solution 2

Use the variables that we defined in the **header.tex** file.

$\boldsymbol{Y} = \mathbf{X}\boldsymbol{\beta} + \boldsymbol{\epsilon}$

Solution 3

Cite our textbook (Chatterjee and Hadi 2015)

Solution 4

Highlight in color Note: we need to define these commands in header.tex.

References

Chatterjee, Samprit, and Ali S Hadi. 2015. *Regression Analysis by Example*. John Wiley & Sons.