#3 Bikeshare & Auto Loss Analysis - Shahin Shakeri

I use R notebooks in RStudio cloud and the data is stored in the clound on my google drive. I submitted this notebook in original format which can be simply be opened in R desktop and run.

1- Bikeshare with days added

1.a) Rentals ~ Weekends

```r
library('lattice')
Bikeshare <- read.csv(url("https://drive.google.com/uc?export=download&id=1QwGCiIbESsE1RVjhKu9nivgvfyYF
Bikeshare$Weekend=Bikeshare$Weekday==5 |Bikeshare$Weekday==6
```

```r
model <- lm(Rentals~Temperature+ Humidity +Windspeed+Weekend ,data=Bikeshare)
summary(model)
```

```
##
## Call:
## lm(formula = Rentals ~ Temperature + Humidity + Windspeed + Weekend,
##     data = Bikeshare)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -4710.2 -1080.9   -91.9  1053.0  3525.3
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    4009.2      341.0  11.759  < 2e-16 ***
## Temperature    6633.5      292.8  22.652  < 2e-16 ***
## Humidity      -3071.6      384.0  -7.998 4.99e-15 ***
## Windspeed     -4799.9      708.2  -6.777 2.53e-11 ***
## WeekendTRUE     182.0      116.7   1.560    0.119
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1424 on 726 degrees of freedom
## Multiple R-squared:  0.4627, Adjusted R-squared:  0.4597
## F-statistic: 156.3 on 4 and 726 DF,  p-value: < 2.2e-16
```

1.b) Registered ~ Weekends

```r
model <- lm(Registered~Temperature+ Humidity +Windspeed+Weekend ,data=Bikeshare)
summary(model)
```

```
##
## Call:
## lm(formula = Registered ~ Temperature + Humidity + Windspeed +
##     Weekend, data = Bikeshare)
##
```

```
## Residuals:
##     Min      1Q  Median      3Q     Max
## -3812.7  -995.0  -157.2   964.0  3110.5
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   3581.6      301.6  11.874  < 2e-16 ***
## Temperature   4569.1      259.1  17.636  < 2e-16 ***
## Humidity     -2274.6      339.8  -6.695 4.32e-11 ***
## Windspeed    -3702.7      626.6  -5.910 5.28e-09 ***
## WeekendTRUE   -193.4      103.3  -1.873   0.0614 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1260 on 726 degrees of freedom
## Multiple R-squared:  0.3517, Adjusted R-squared:  0.3481
## F-statistic: 98.47 on 4 and 726 DF,  p-value: < 2.2e-16
```

1.c) Casual ~ Weekends

```
model <- lm(Casual~Temperature+ Humidity +Windspeed+Weekend ,data=Bikeshare)
summary(model)
```

```
##
## Call:
## lm(formula = Casual ~ Temperature + Humidity + Windspeed + Weekend,
##     data = Bikeshare)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -1383.7  -314.8  -107.3   127.5  2222.6
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    427.6      128.5   3.327 0.000922 ***
## Temperature   2064.4      110.4  18.702  < 2e-16 ***
## Humidity      -797.0      144.8  -5.505 5.11e-08 ***
## Windspeed    -1097.2      267.0  -4.110 4.41e-05 ***
## WeekendTRUE    375.5       44.0   8.534  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 536.7 on 726 degrees of freedom
## Multiple R-squared:  0.3923, Adjusted R-squared:  0.389
## F-statistic: 117.2 on 4 and 726 DF,  p-value: < 2.2e-16
```

d) Weekends impacts casual rentals $p < .05$ but not significant for rental and registered ($p > .05$)