Truong Wiley HW/Lab 02

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R Markdown

HOMEWORK 2:

```
#######################
# T-Stat / Hypothesis
#######################
seB1 <- sqrt(MSres/Sxx)
seBo <- sqrt(MSres*(1/n + (mean(xi))^2/Sxx))
tstat1 = (B1-0/seB1)
tstat1
```

```
## [1] 0.0329736
```

```
tstat0= (Bo-0)/seBo

#two-sided P-value Approach
pval01 <- 2*pt(-abs(tstat1), df=n-2)
pval01
```

```
## [1] 0.9740585
```

```
#Since the p-value here is small it can be concluded that there is a
signigicant linear relationship
```

```r
#### ANOVA
SSr = sum((yHat - mean(yi))^2)
MSr = SSr/1
SSt = SSr+SSres
F0 = MSr/MSres
F0
```

```
## [1] 11.4658
```

```r
pf(F0, df1 =1, df2 = n-2, lower.tail=FALSE)
```

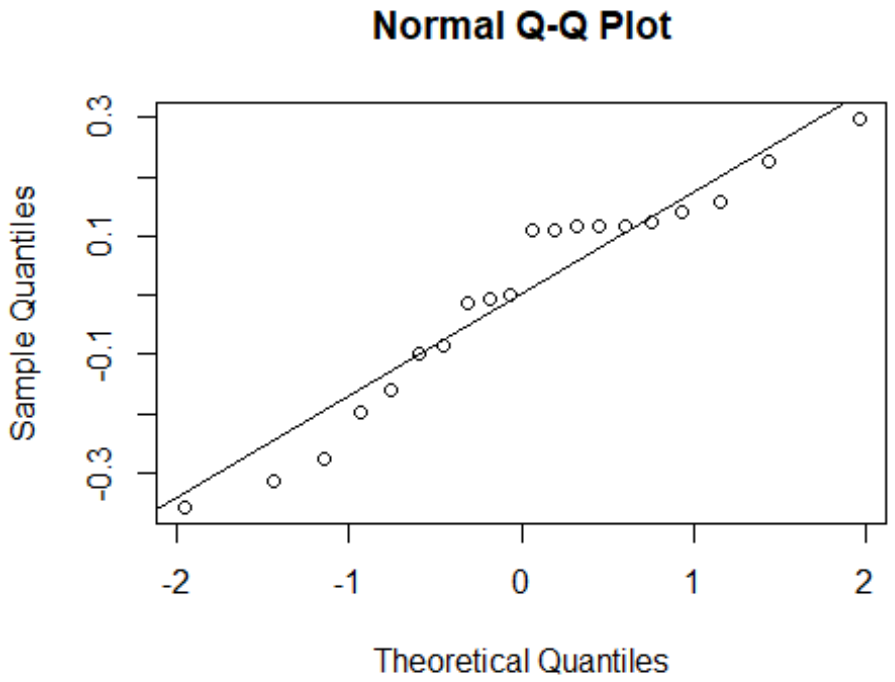
```
## [1] 0.003291122
```

```r
anova(lm(yi~xi,purity))
```

```
## Analysis of Variance Table
##
## Response: yi
##           Df  Sum Sq Mean Sq F value   Pr(>F)
## xi         1 0.41441 0.41441  11.466 0.003291 **
## Residuals 18 0.65057 0.03614
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```r
## Looking at the ANOVA table we are able to confirm again that our p-value is significantly small and our F value is a significantly big number that validates that the regression is significant
```

Produce Plots and Interpret



Since the qqnorm plot is almost linear we can interpret this as normal residuals