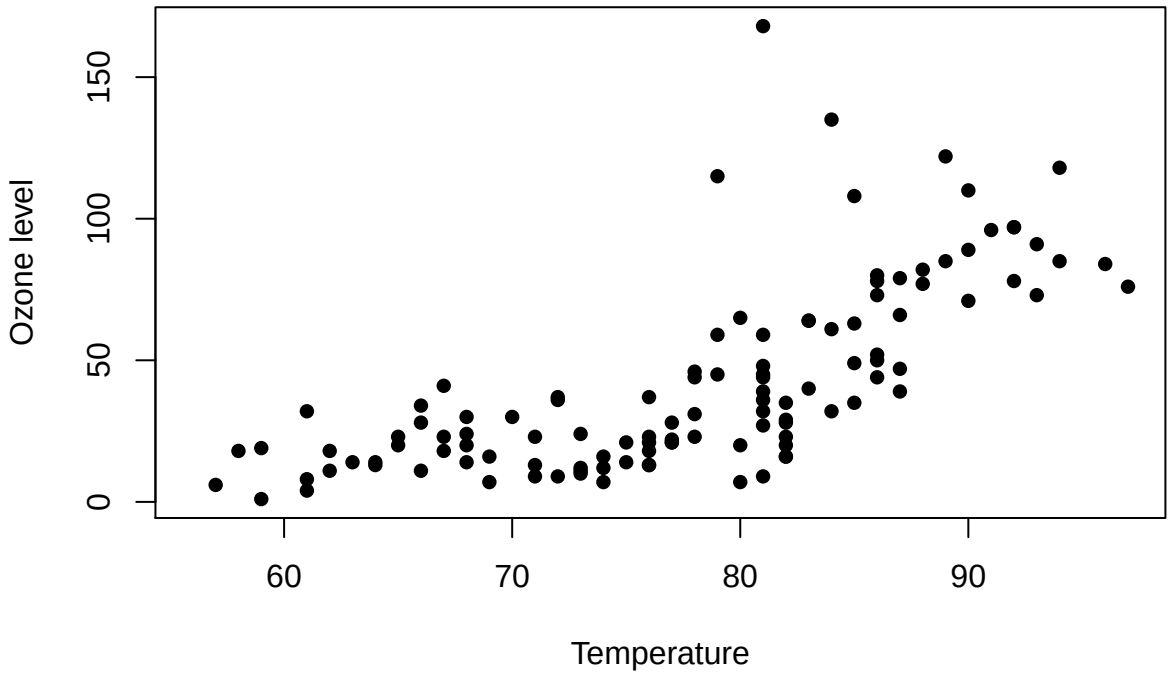
Exercise 6

Your Name

16 Jun 2017

First reading the data and doing an initial scatter plot

```
weather <- read.csv("ozone.csv")
plot(weather$Temp, weather$Ozone,xlab="Temperature",ylab="Ozone level",pch=16)
```



Fitting the model using the R formula syntax

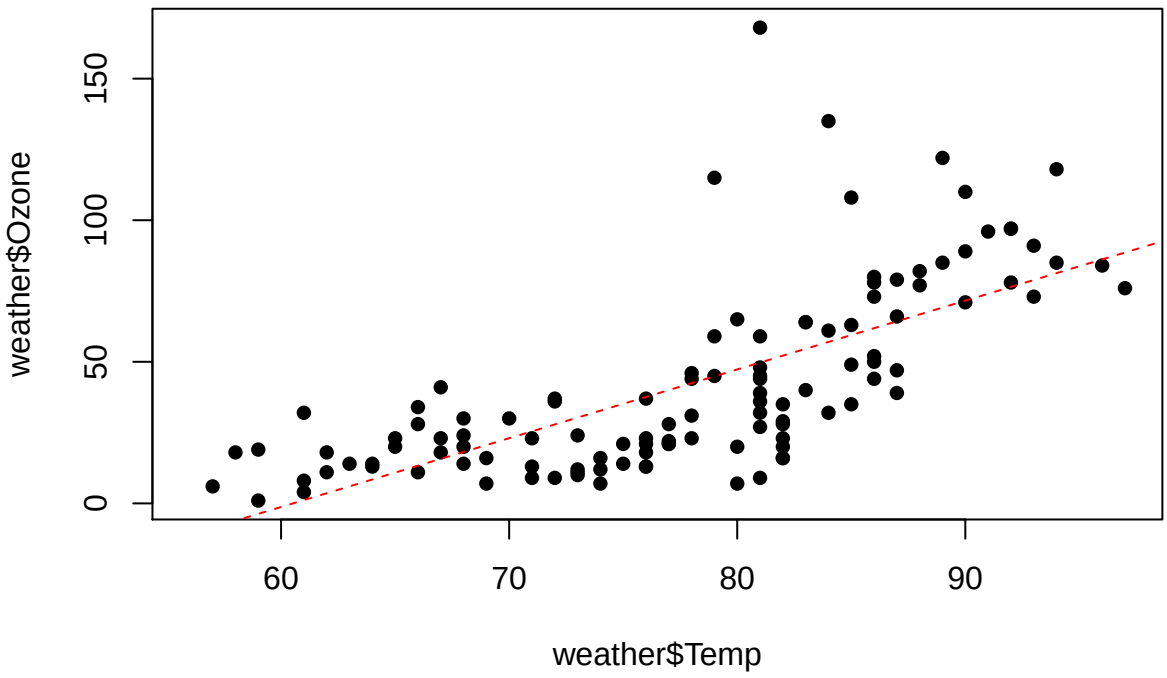
```
mod1 <- lm(weather$Ozone~weather$Temp)
summary(mod1)
```

```
##
## Call:
## lm(formula = weather$Ozone ~ weather$Temp)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -40.729 -17.409  -0.587  11.306 118.271
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  -146.9955    18.2872  -8.038 9.37e-13 ***
## weather$Temp    2.4287     0.2331  10.418  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 23.71 on 114 degrees of freedom
##   (37 observations deleted due to missingness)
```

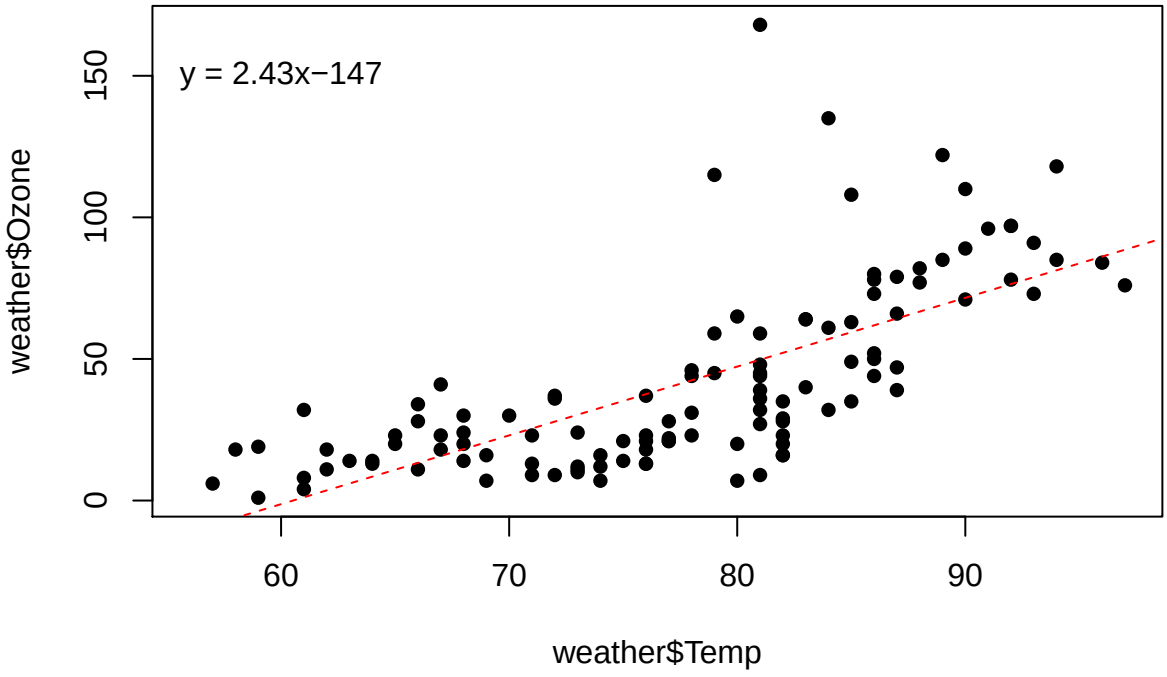
```
## Multiple R-squared:  0.4877, Adjusted R-squared:  0.4832
## F-statistic: 108.5 on 1 and 114 DF,  p-value: < 2.2e-16
```

Showing the best-line fit on the plot

```
plot(weather$Temp, weather$Ozone, pch=16)
abline(mod1, col="red", lty=2)
```




```
plot(weather$Temp, weather$Ozone, pch=16)
abline(mod1, col="red", lty=2)
coeffs = coef(mod1)
text(60,150, paste("y = ", round(coeffs[2],2), "x",round(coeffs[1],2),sep=""))
```

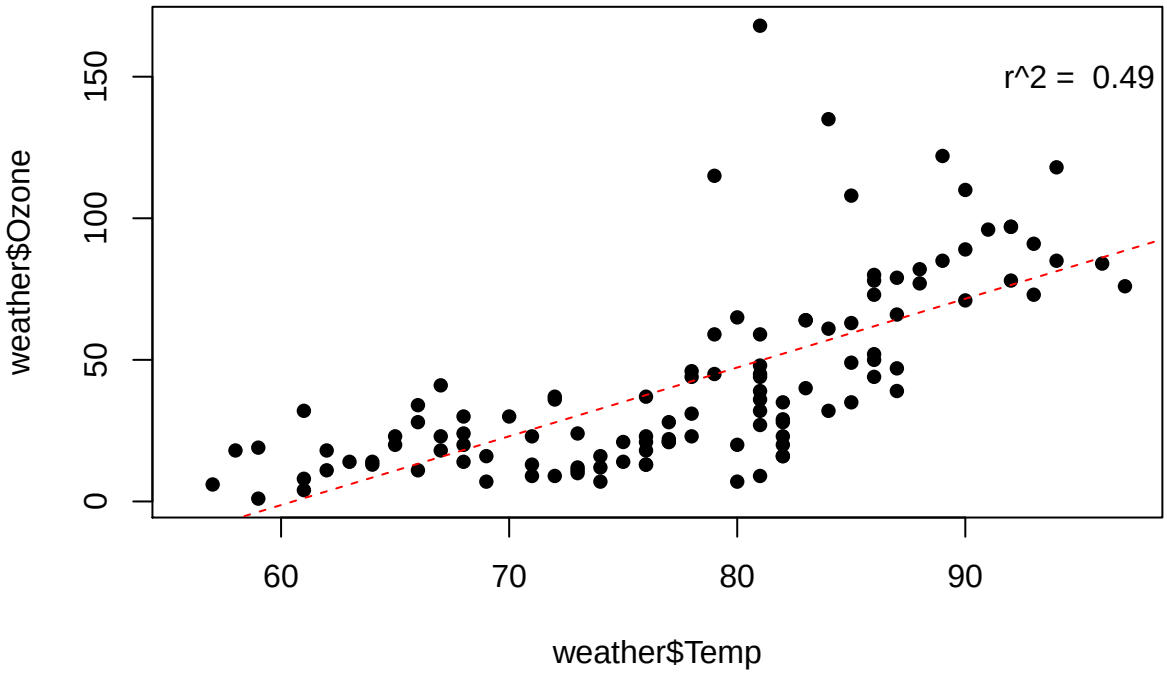


Calculating the correlation using the `cor` function and putting the r-squared value on the graph

```
plot(weather$Temp, weather$Ozone, pch=16)
abline(mod1, col="red", lty=2)
cor = cor(weather$Temp,weather$Ozone,use="c")
cor
```

```
## [1] 0.6983603
```

```
text(95,150, paste("r^2 = ", round(cor^2,2)))
```

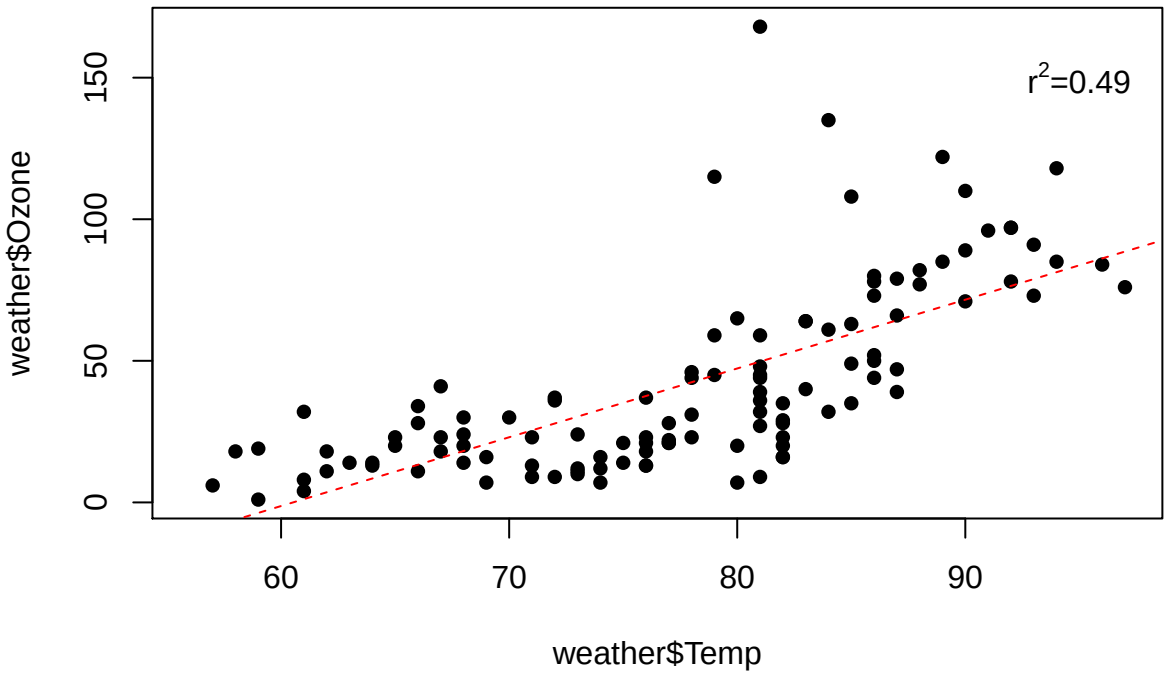


A little magic to make the formatting a bit nicer

```
plot(weather$Temp, weather$Ozone, pch=16)
abline(mod1, col="red", lty=2)
cor = cor(weather$Temp,weather$Ozone,use="c")
cor
```

```
## [1] 0.6983603
```

```
text(95,150, substitute(paste(r^2, "=" ,x),list(x=round(cor^2,2))))
```


weather$Ozone
0
50
100
150
60
70
80
90
weather$Temp
r2=0.49