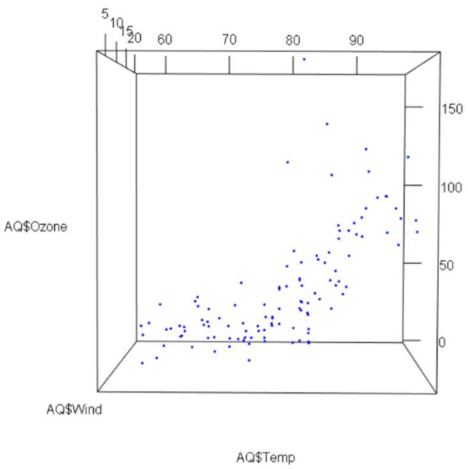
```
#3. Make a 3D plot of Ozone against temperature and wind speed. Rotate it around and
#notice to yourself what relationship the ozone might have jointly with temperature
#and wind. Take a screenshot from any angle you think helps you to see most of this
#relationship. No comments are needed.

library(rgl)
open3d()
plot3d(AQ$Ozone ~ AQ$Temp + AQ$Wind, col="blue")
```




```
#4. Fit the multiple linear regression that corresponds to this 3D plot.
#(a) Report the slopes and t-values. Are they much different from when they were computed in simple linear regressions?
fit2 = lm(Ozone ~ Temp+Wind, data=AQ)
summary(fit2)
#slope: Temp  1.8402 t-value: 3.15e-11, Wind -3.0555, t-values 1.08e-05
#Yes, there are two t-values and slopes for each variable
```

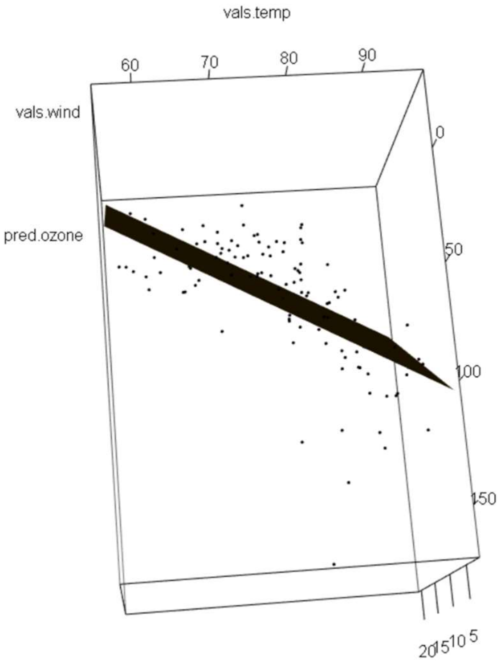
```
#(b) Add the plane surface to the 3D plot. Rotate it around and comment on the quality of the fit.
#Show a screenshot from some angle that helps to support your comment

summary(AQ) #get a range of values for the predictors
vals.wind = seq(from=1.65, to=20.8, by=0.01)
vals.temp = seq(from=55.5, to=97.5, by=0.03)
#print(vals.wind)
#print(vals.temp)

# Create a data frame with all combinations of the predictor values
pred.grid = data.frame(expand.grid(Wind = vals.wind, Temp = vals.temp))


#Get fitted alcohol values for all predictor combinations
#in out grid using the predict() function
pred.ozone = predict(fit2, newdata = pred.grid)

open3d()
persp3d(x = vals.wind, y = vals.temp, z = pred.ozone, col="orange")
points3d(AQ$Ozone ~ AQ$Wind + AQ$Temp)
```



The dataset generally follows the black plane as above.