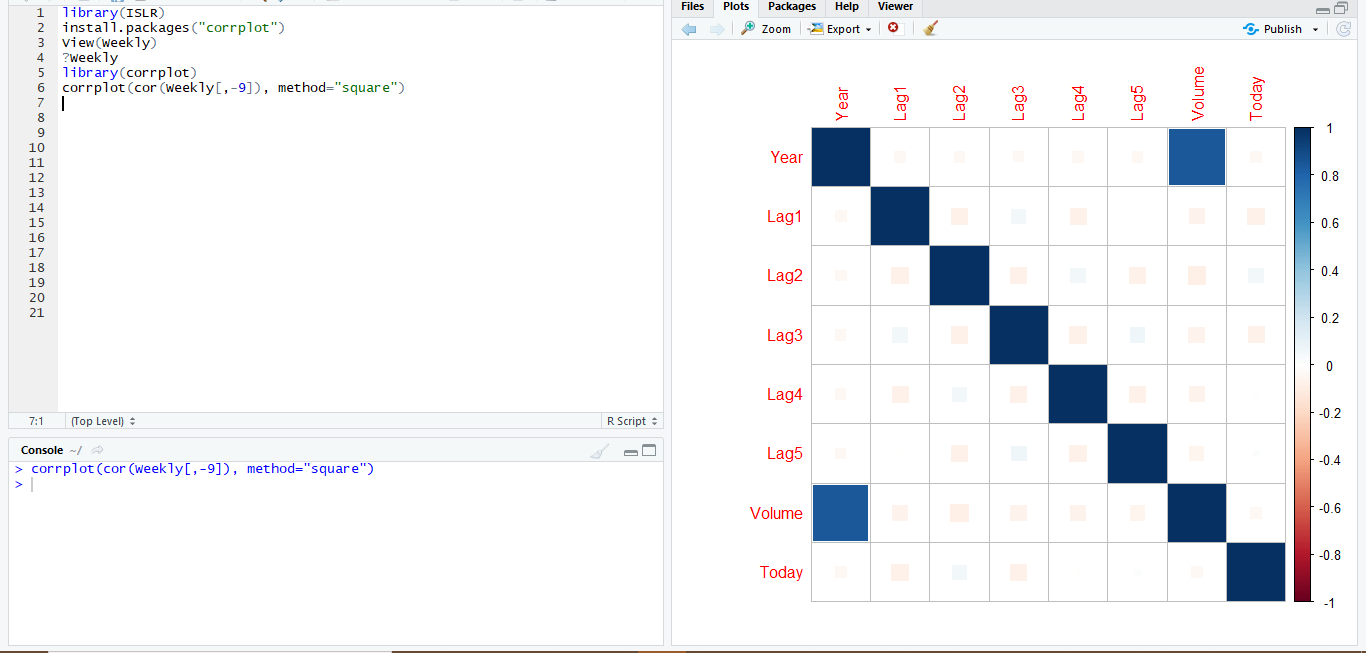
Alexa Summers, Santhoshini Sree Bolisetty, Gireesh Kumar Muppalla

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10.

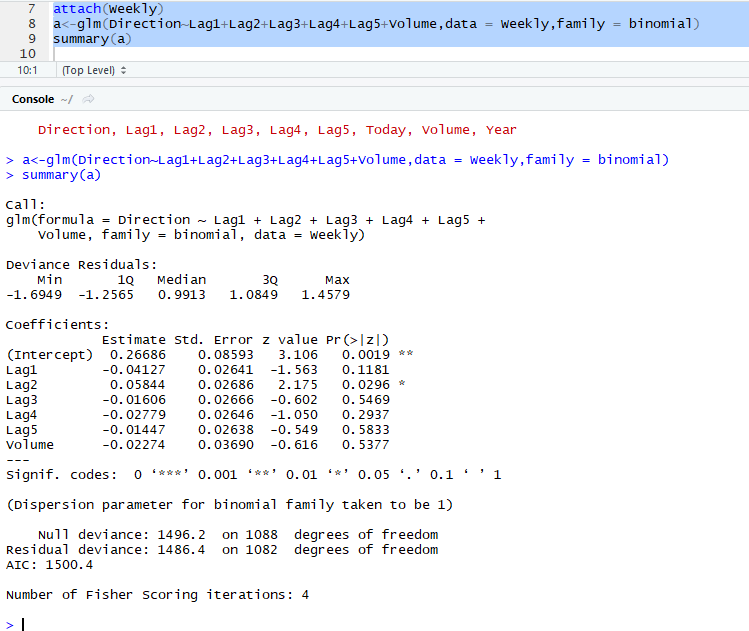
(a)

The plot does not show any linear relationship between predictors



(b)

The only variable which has low p value(<0.05) is lag2. Hence, it is the only predictor to be considered as statistically significant



( c)

Total weekly trend:

(54+557)/(54+48+430+557)=0.5611

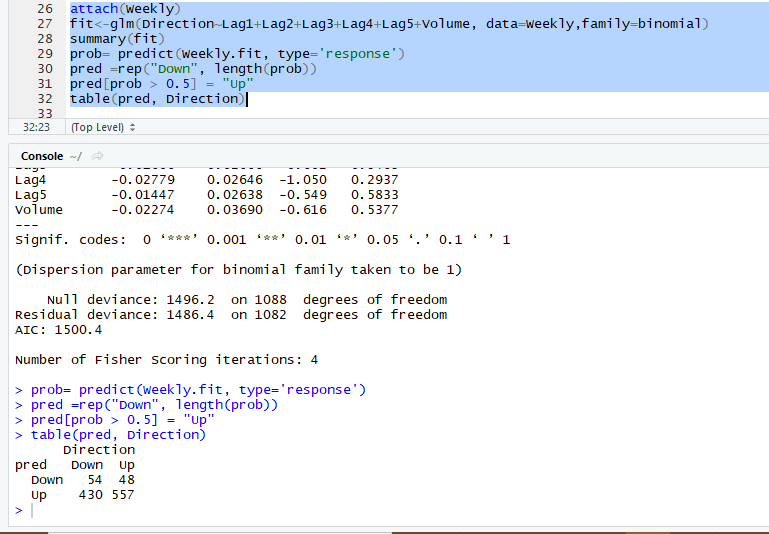
Up weekly trends:

557/(430+557)=0.9207

Down weekly trends:

54/(430+54)=0.1115

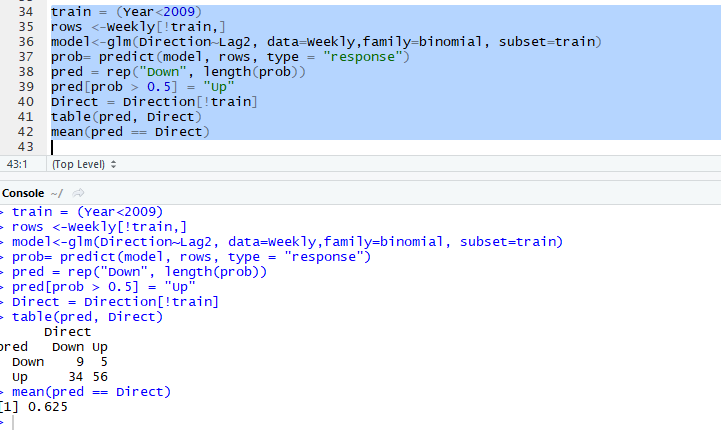
From the above information, we can conclude that the model predicted the up weekly trend 92.07% correctly.



(d)

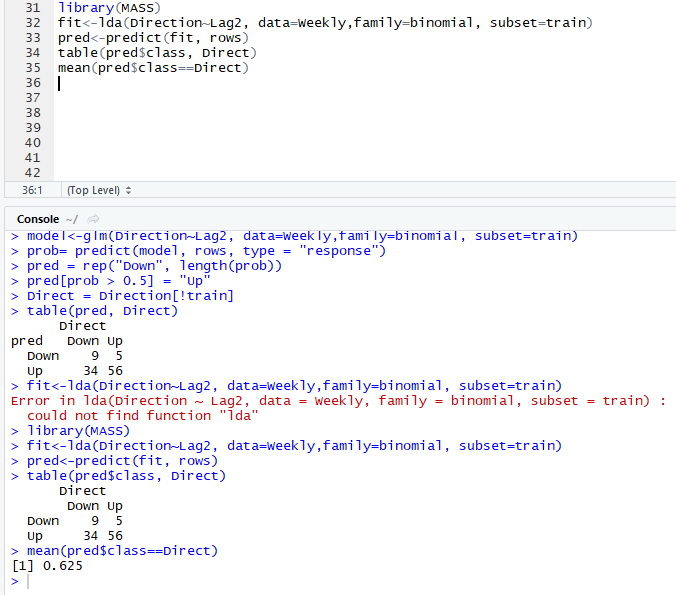
From below, we can say that the model gave 62.5% accuracy rate. While the downward and upward trends gives 91.80% and 20.83% accuracy.

This means that the model is predicting downward trends way more correct than the upward trends



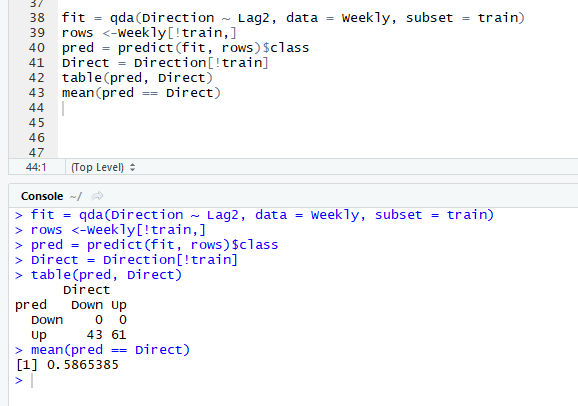
( e)

The logistic and lda are giving the same accuracy rates.

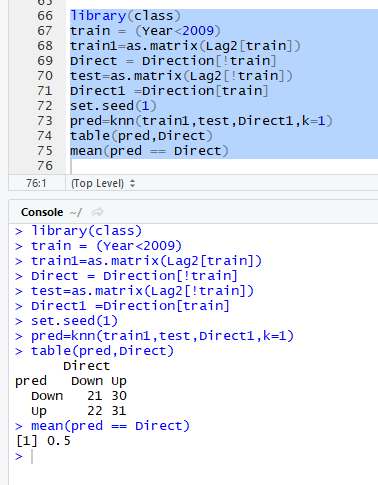


(f)

The qda is giving the lower accuracy compared to logistic and lda models.



(g)

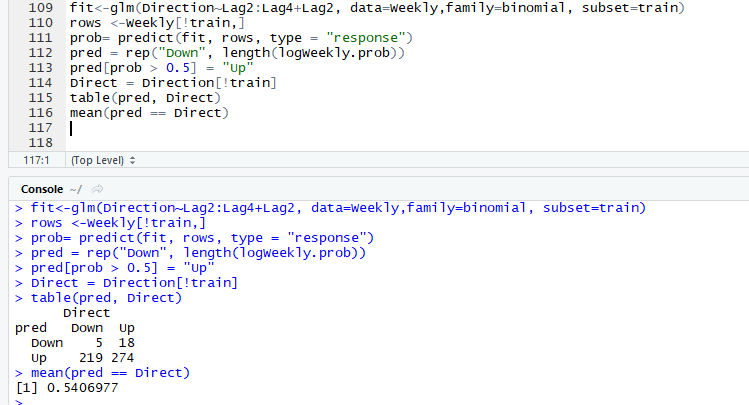
The knn model is giving a 50% accuracy. 

(h)

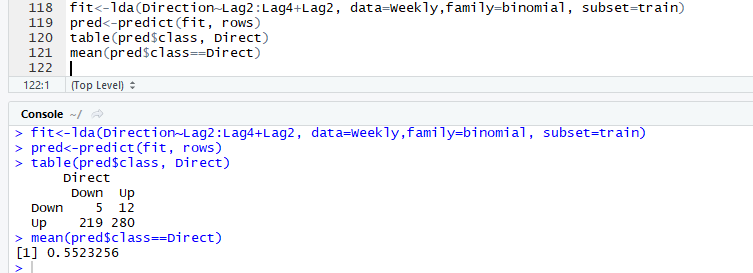
From this we say that the logistic and lda models are giving the better accuracy rates(62.5%)

(i)

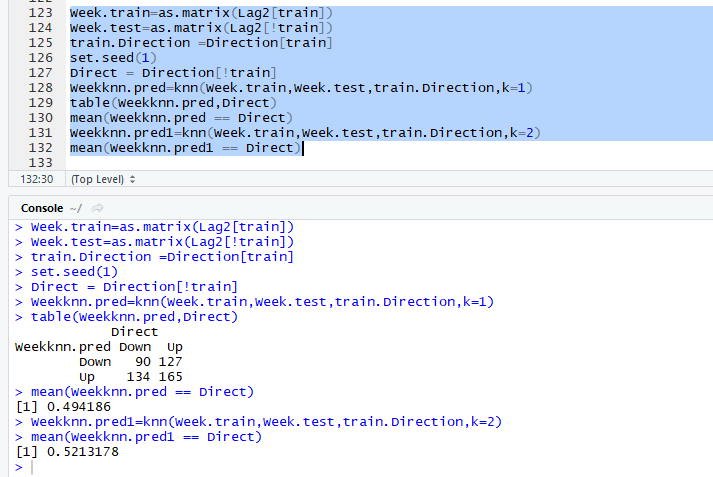
The below shows the logistic model, which is giving a 54.06% accuracy



The lda model is giving 55.2% accuracy



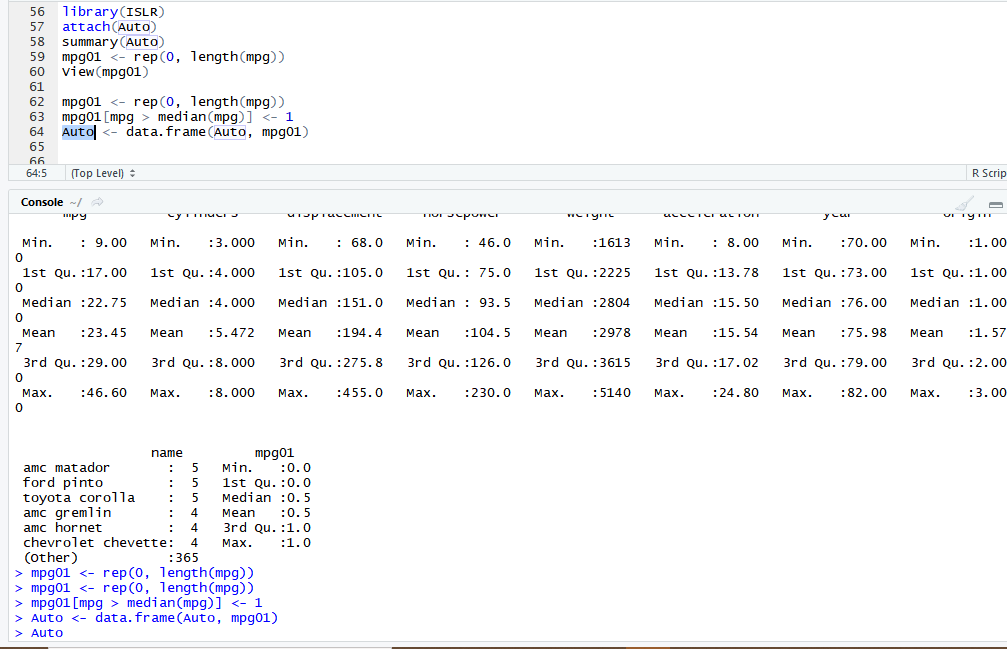
When k=1 and k=2, the knn model is giving accuracy rates 49.4% and 52.1%



From this we can conclude that the lda and logistic models are giving a better accuracy rates for this data.

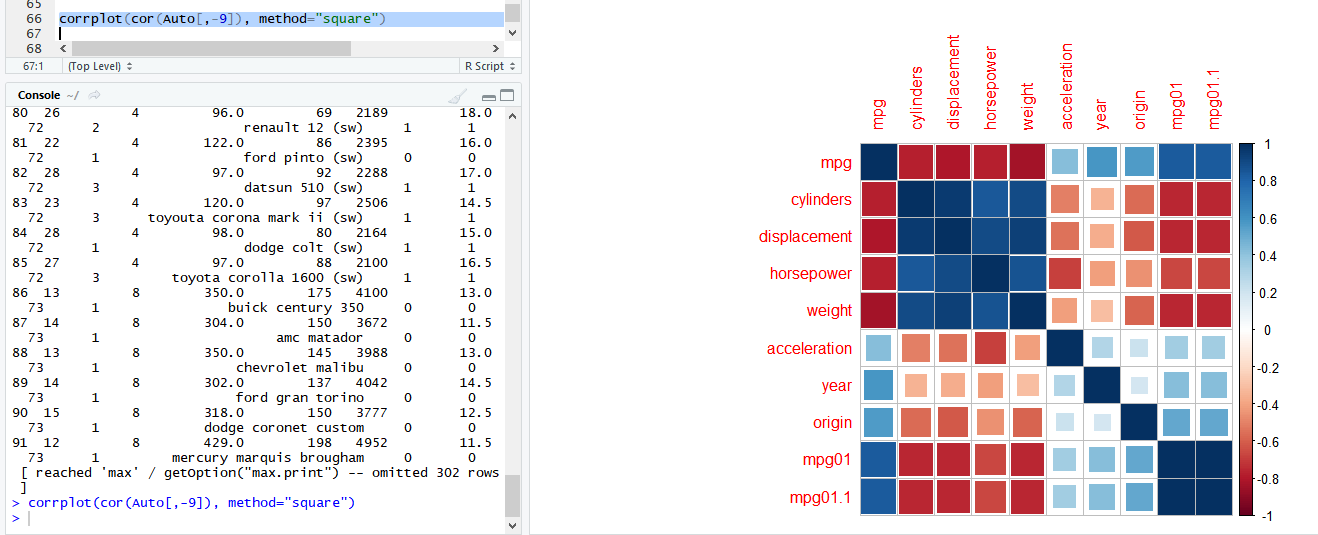
11.

(a)

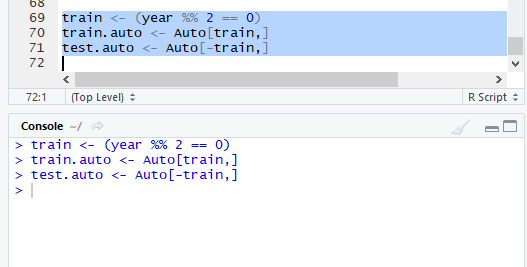


(b)

Cylinder, displacement and weight are correlating strongly with mpg01. horsepower and origin also correlate with mpg01.

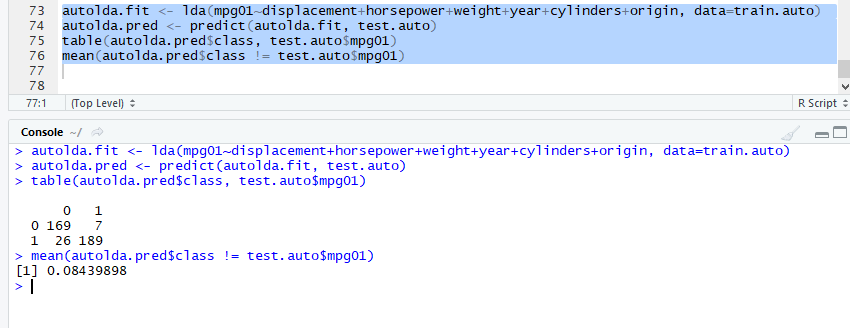


( c)



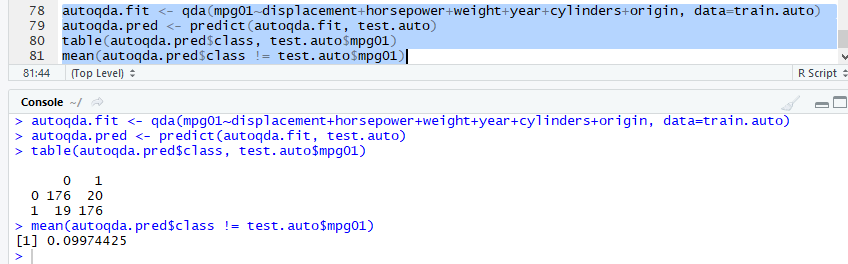
(d)

lda model is giving an error rate of 8.44%



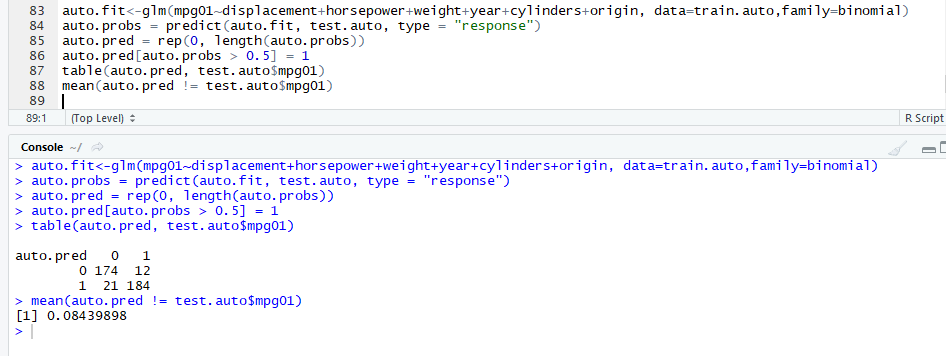
( e)

Qda is giving an error rate of 9.97%



(f)

The logistic regression method is giving an error rate of 8.44%



(g)

K=1 is giving a lower error rate compared to k=2 and k=3. This can concluded as the error rate keeps increasing with an increasing value of k.

