**Week 8 Assignment Machine Learning Model Building**

**K Nearest Neighbors**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Iteration#** | **Features Included** | **Primary Results** | **Observations/ Analysis** | **Next Steps** |
| 1 | Total minutes for day, evening and night | The accuracy of only using total minutes was 82.09% | There seems to be that there is a high correlation between the total minutes that the user spent making calls and the churn | Test the accuracy of charge |
| 2 | Total charge for day, evening and night | The accuracy of only using total minutes was 86.57% | The accuracy of using the total charge is higher than only using the total minutes. |  |
| 3 | Total day minutes,  Total day charge,  Total eve minutes,  Total eve charge,  Customer service calls | The accuracy using the highest correlation features was 86.57 % | The accuracy of using the features with the highest correlation is the same as using the features for the total charge for day, eve and night | Combine features from iteration 2 and 3 and see what the accuracy is |
| 4 | Total day minutes,  Total day charge,  Total eve minutes, Total eve charge,  Total night charge,  Total intl charge,  Customer service calls | The accuracy is 87.31 % | Adding total charge for intl and night increased the accuracy | Include all features |
| 5 | All features | The accuracy using the highest correlation features was 87.31 % | From all the iterations tested included all the features resulted in the highest accuracy |  |