

1. First we download the dataset and choose the tool that we want to use for the rest of project.
 - a. Dataset can be found here:
<https://www.kaggle.com/datasets/crowdflower/twitter-airline-sentiment?resource=download>
 - b. The tool I chose to use is Rstudio.
2. The next step was to clean up the data and find what variables I want to use. This involves first importing the dataset into Rstudio to take a look at the data.
 - a. I chose to use the columns "airline_sentiment", "airline_sentiment_confidence", "negativereason", "airline", "text", and "user_timezone".
 - b. Next, I checked for any missing values
 - i. I fixed "negativereason" by replacing null values with "No reason"
 - ii. I fixed "user_timezone" by replacing null values with "No timezone"
 - c. Important observations of the dataset are logged in Dataset_Assessment.md
 - d. Now the dataset is ready to go into the models and analysis.
3. I first worked on my distribution of sentiment by airline plot
 - a. This was a bar chart using airline_sentiment as the y value, and face wrapping by airline.
 - i. Also changed the colors and added labels to alter the aesthetics of the chart.
4. Next was the Top 10 Negative Reasons
 - a. This was another fairly simple bar chart that showcases why each negative review was left.
 - b. I sorted all of the values based on frequency then created a new dataframe with the frequencies of the top 10 reasons.
 - c. This data frame went into a bar chart that got sorted based on descending order.
 - i. Titles and colors then added for aesthetics
5. This lead me to my next question of whether or not the sentiment can be predicted using a model
 - a. I chose a logistic regression model that uses a 80/20 split for training and test data
 - b. Next we get predictions from the model and create a confusion matrix using that predicted data
 - c. The last step is to graph the model using ggplot2 again.
6. The report concludes with the executive summary and analysis after the models and visualizations have been created
 - a. All of the analysis information is compiled in the Insight Report and Executive Summary

The Github for all of the files can be found here:

<https://github.com/dapak2002/MGSC-410-Homework-1>