

PROJECT REPORT TEMPLATE

1. INDRODUCTION

1.1 Overview

A flight delay is when an airline flight takes off and/or lands later than its scheduled time. The United States Federal Aviation Administration (FAA) .

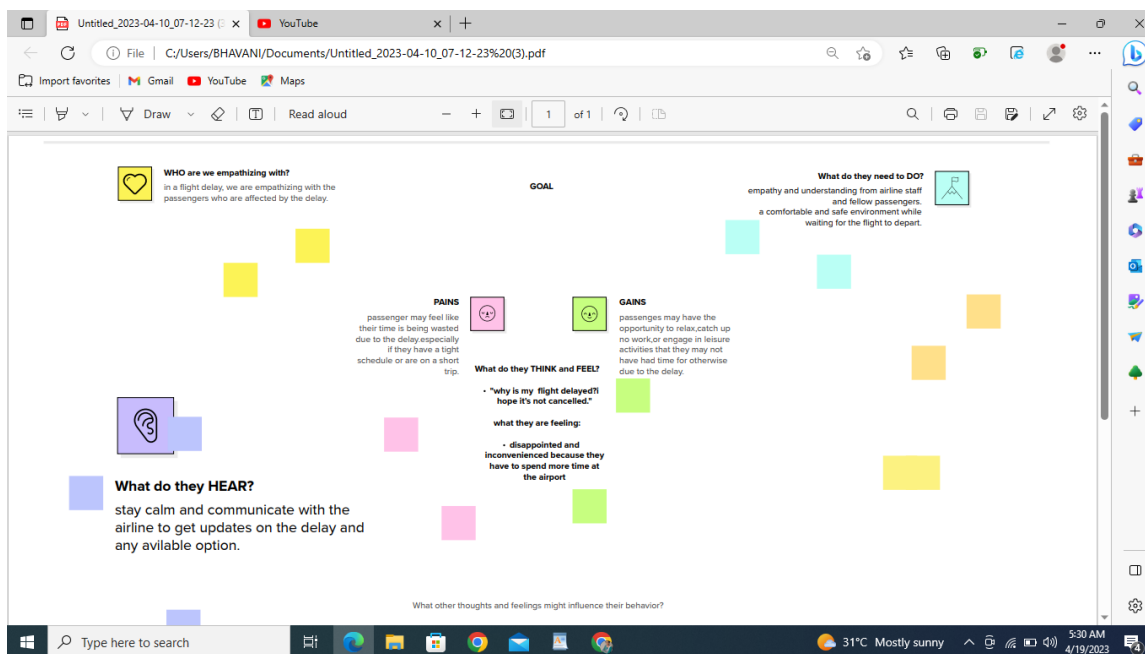
The flight was due to depart from [departure airport] at [scheduled time of departure] and arrive at [arrival airport] at [scheduled time of arrival], but it was delayed at arrival by [length of the delay] hours. Please find attached a copy of my travel documents.

1.2 Purpose

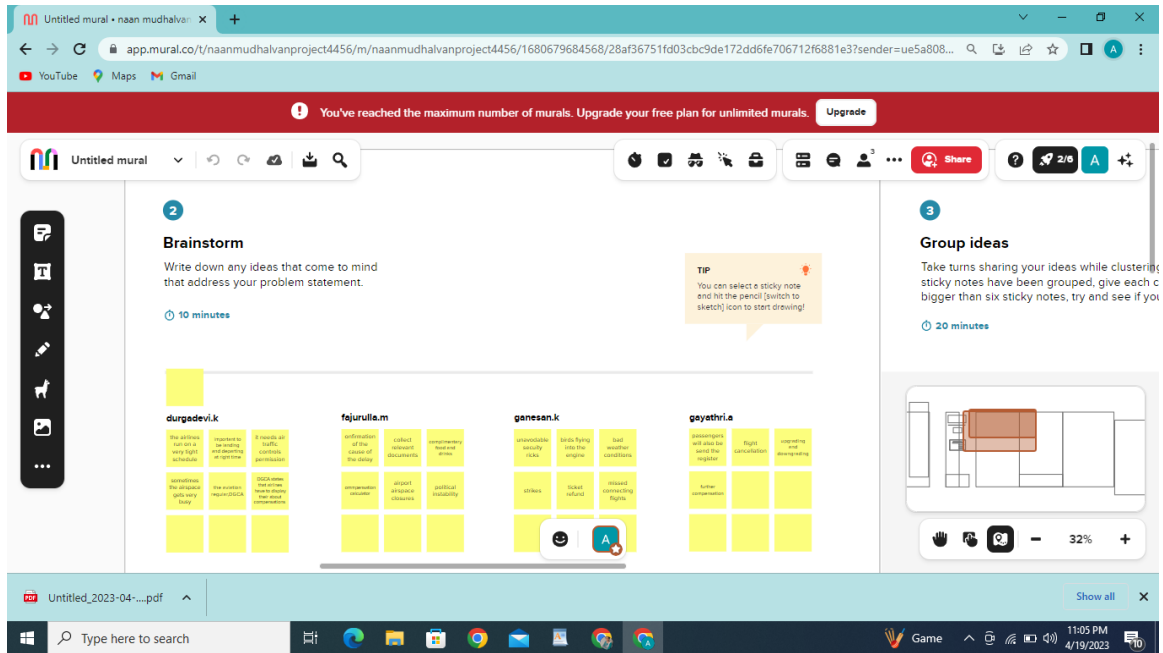
Therefore, predicting flight delays can improve airline operations and passenger satisfaction, which will result in a positive impact on the economy. In this study, the main goal is to compare the performance of machine learning classification algorithms when predicting flight delays.

2. PROBLEM DEFINITION & DESIGN THINKING

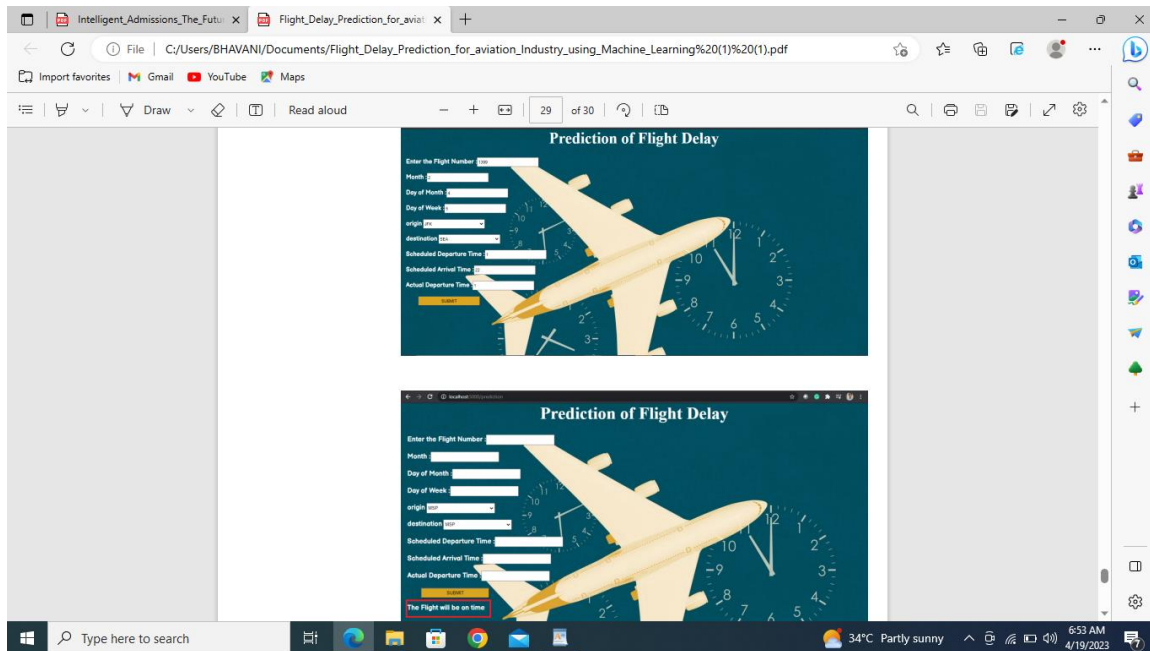
2.1 Empathy map



2.2 Brainstorming



3.RESULT



4. ADVANTAGES & DISADVANTAGES

Advantages:

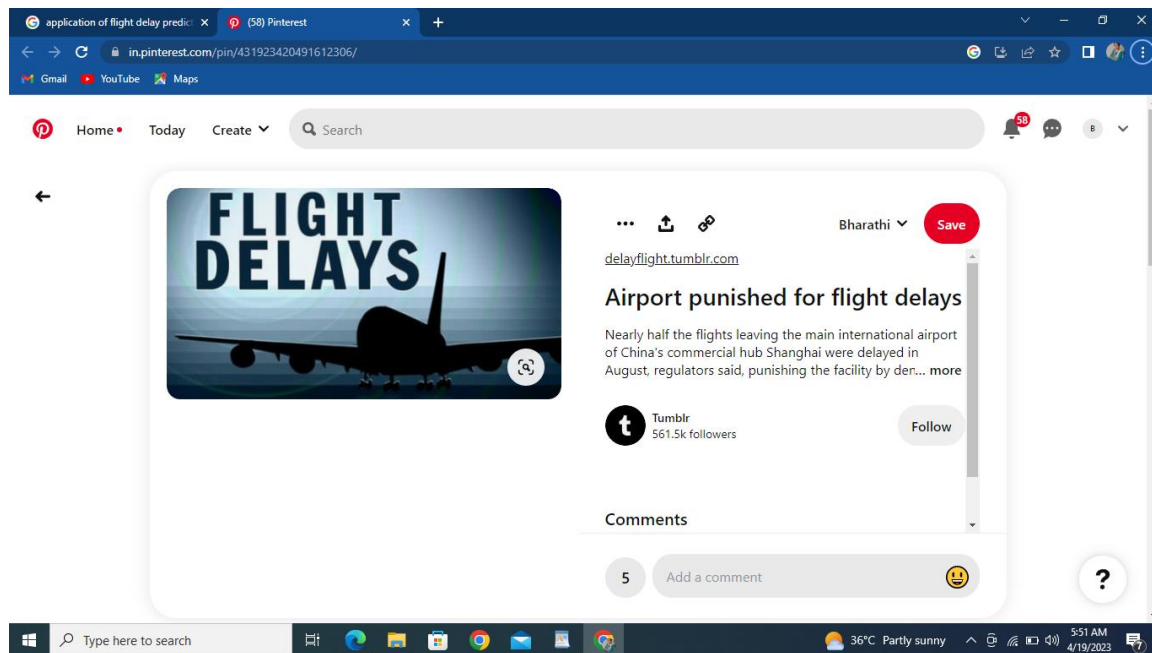
* Therefore, predicting flight delays can improve airline operations and passenger satisfaction, which will result in a positive impact on the economy. In this study, the main goal is to compare the performance of machine learning classification algorithms when predicting flight delays.

* There are no federal laws requiring airlines to provide passengers with money or other compensation when their flights are delayed. Each airline has its own policies about what it will do for delayed passengers. If your flight is experiencing a long delay, ask airline staff if they will pay for meals or a hotel room.

Disadvantages:

* Flight delays not only irritate air passengers and disrupt their schedules but also cause a decrease in efficiency, an increase in capital costs, reallocation of flight crews and aircraft, and additional crew expenses.

5.APPLICATION



6.CONCLUSION

In this project, we use flight data, weather, and demand data to predict flight departure delay. Our result shows that the Random Forest method yields the best performance compared to the SVM model. Somehow the SVM model is very time consuming and does not necessarily produce better results. In the end, our model correctly predicts 91% of the non-delayed flights. However, the delayed flights are only correctly predicted 41% of time. As a result, there can be additional features related to the causes of flight delay that are not yet discovered using our existing data sources.

7. FUTURE OF SCOPE

This project is based on data analysis from year 2008. A large dataset is available from 1987-2008 but handling a bigger dataset requires a great amount of preprocessing and cleaning of the data. Therefore, the future work of this project includes incorporating a larger dataset. There are many different ways to preprocess a larger dataset like

running a Spark cluster over a server or using a cloud-based services like AWS and Azure to process the data. With the new advancement in the field of deep learning, we can use Neural Networks algorithm on the flight and weather data. Neural Network works on the pattern matching methodology.

8.APPENDIX

The purpose of this project is to look at the approaches used to build models for predicting flight delays that occur due to bad weather conditions.