FLIGHT DELAY PREDICTION FOR AVIATION INDUSTRY USING MACHINE LEARNING

OBJECTIVE:

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.

Growth in aviation industries has resulted in air-traffic jamming causing flight delays. Flight delays not only have economic impact but also injurious environmental properties. Air-traffic supervision is becoming increasingly challenging. Airlines delays make immense loss for business field as well as in budget loss for a country, there are so many reasons for impede in flights some of them are, some of them are due to security issues, mechanical problems, due to weather conditions, Airport congestion etc. we are proposing machine learning algorithms like Random Forest,Decision Tree,MLP Classifier, Naive Bayes, KNN,Gradient Boosting Classifier, Voting Classifier, SVM,Logistic Regression,Ridge Regression and Neural Network Techniques. The aim of this research work is to predict Flight Delay, Which is highest economy producing field for many countries and among many transportation this one is fastest and comfort, so to identify and reduce flight delays, can dramatically reduce the flight delays to saves huge amount of turnovers, using machinelearning algorithms.

PURPOSE:

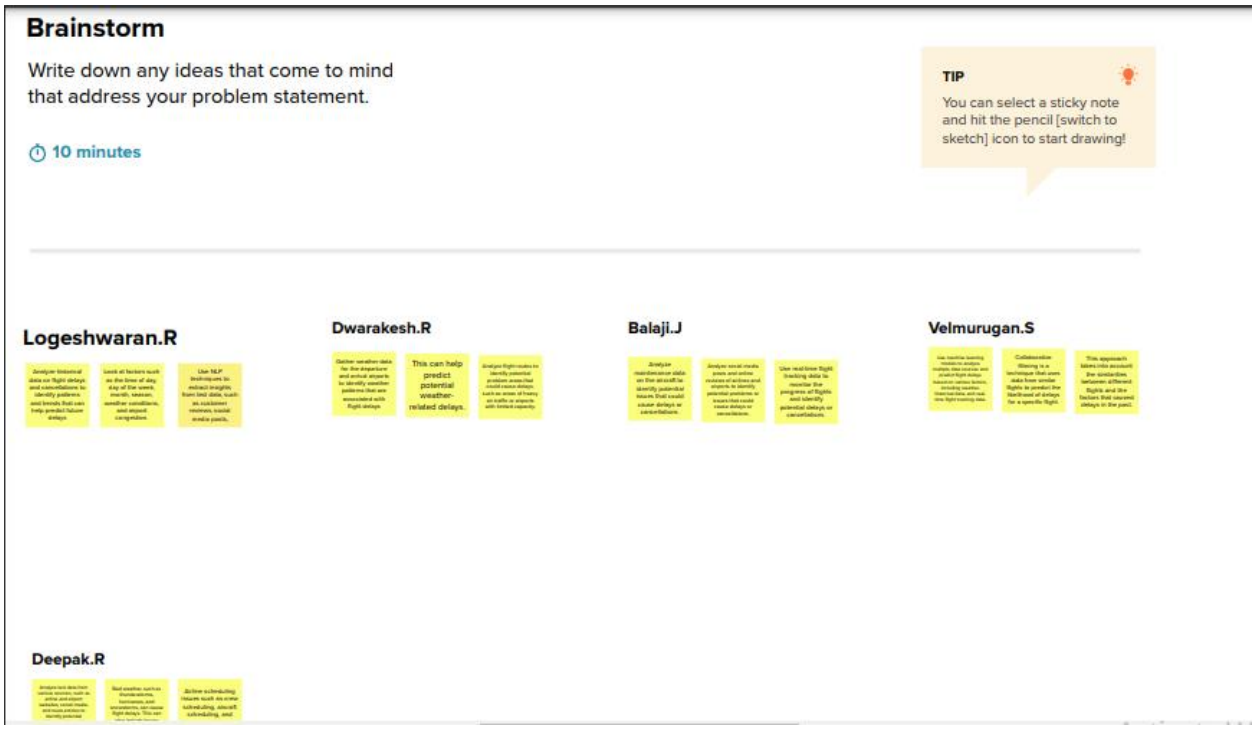
Air transportation system is one of the crucial modes of modern versatility. With increasing congestion in airtraffic and passenger-traffic, it is important to maintain persistence and resilience. Availability of land and resources contribute to the infrastructure of airports. The norms of improving technology and procedure are to maintain safety, efficiency, capacity, etc., Therefore, the National Airspace System

(NAS) focuses on minimizing the environmental effects as a result of improvisation. With the current technology in hand, passengers can visualize their flight path, altitude, heading and other related parameters during their journey. However, air-traffic authorities continuously try to depreciate the delay in departure and arrival of flights. Though their efforts were in phase, the outcome is undesirable as the delays are in terms of hours sometimes causing chaos. Some important parameters that cause delay include weather, maintenance, security, and carrier. Corporate travel and tourism are the two major contributors to flight transportation system which is expected to be doubled by 2030. As a result of this increase, the airtraffic is also expected to increase in the same multiple. To minimize the air-traffic congestion new airports can be constructed. But, the complexity still grows exponentially. Hence, the only possible way of minimizing the

delay is to improvise the existing airports. Considering the limited availability of land resources, the latter is more of a logical solution. Delay basically represents the period by which the aircraft is late or cancelled.

EMPATHY MAP:

BRAIN STORM:


Brainstorm
Write down any ideas that come to mind that address your problem statement.
10 minutes
TIP
You can select a sticky note and hit the pencil [switch to sketch] icon to start drawing!
Logeshwaran.R
Dwarakesh.R
This can help predict potential weather-related delays.
Balaji.J
Velmurugan.S
Deepak.R