List of Problem Statements

1. Flight Delay Prediction: -

Flight Delay Prediction aims to predict the delay in the aircrafts due to increasing number of travelers in the recent times. An aircraft arrival is considered to be delay if the aircraft is late by over 15 minutes between the scheduled time and the arrival time. Flight Delay Prediction takes into consideration various attributes of the delay which includes scheduled time, source and destination of the flight, arrival time of the flight and departure time of the flight and many more attributes to predict the delay in the flight arrivals. These flight delays help the user massively to select the airlines, to select the source station and other economical aspects of the travelers. At the same time, Flight Delay prediction also helps the airlines to focus on the major reasons of the flight delay and minimize delay time on future occasions. Aviation industry are also benefitted with the help of the Flight Delay Prediction.

2. Whom does the problem affect: -

The problem majorly affects the travelers, airline and the aviation industries. The travelers have to look for alternatives in the case of delay of the expected flight arrivals. The airline agency will lose customer trust which is the most important factor. At the same time, Flights are also used to transport goods, The people as well as the organization who are dependent upon the flight arrival will also be affected due to the flight delay. The aviation industries are also responsible for delivering good products through which the delay of the flights can be reduced.

3. What are the boundaries of the problems?

The amount of the data that is to be processed for the given dataset is extremely huge so as a result high configuration devices are used to process these huge data. As the dataset size is huge, the noise associated with the data is also huge and the preprocessing to be done is also high in this case. The response of the data is purely dependent on the data which is collected from the previous records. The accuracy of the delay prediction will also depend upon the correctness and the accuracy of the previous records. The accuracy of the prediction will also depend upon the number of attributes that is taken into consideration. The prediction will be difficult with increase in number of total possible results.

4. What is the issue?

Any discrepancies in delay prediction will have a major impact on the stakeholders in this case the stakeholders involve travelers, airports and airline agencies. Airports are responsible of scheduling the track availability and security of those planes without causing any severe damages. Airlines are those who will be majorly affected as a result of

the flight delay since they are the ones responsible for their travelers and delivery of goods. Airlines are punished with proper fines as well as penalties from airports on occasion of wrong delay information. Lastly the travelers have to choose the right flight upfront, they can choose a flight which can meet their commitments and at last their trip costs will also increase.

5. When does the issue occurs?

The flight delay prediction mostly depends the initial steps that are being carried out. Firstly, the dataset collection. The data that is collected for the prediction must be accurate and concise in nature. Any discrepancies in the dataset will cost the accuracy of the flight delay prediction directly. The second step is Data preprocessing. The collected data is improper i.e., those data will have outliers, missing values and the number of attributes may also be huge. At times the data can also be unstructured. In order to solve this issue, the data must be cleaned and preprocessed in a proper manner. The next important issues arise with the data consistency, the flight delay data must be consistent. The time format must be same across all the dataset. Similarly, the time zone varies from location to location. These inconsistencies must be solved before training the model with the data. The issue also occurs due to abnormalities. For example, the flight delay can be caused due to bad weather or gets cancelled due to any natural calamities. The model cannot predict the flight delays in these abnormalities.

6. Why these issues must be resolved?

The flight delay prediction may help the aviation industry hugely to protect them from their economical and financial loses. This delay prediction can help the travelers hugely to plan ahead and save their valuable time. The cost associated with the flights can also be majorly decreased when these delays can be predicted correctly. The reputation of the airlines can be majorly dependent on these delay prediction because the delay prediction has a direct hand in determining the customer trust on the airline agency.