**Model Performance:**

As we have already seen, the delayed aircraft landing schedule is impacting the business as well as the time of the customers flying in it as well as the next flight schedules. As explained earlier, this is an Evolutionary model built on the nonlinear dataset which varies as per the flight schedules are delayed. The Evolutionary model most of the times gives a optimized and good solution out of the combination of many others, but it fails to give the best solution since there are many other with the same criteria but still goes with the uncertainty of implying effectively.

Hence, this model of optimizing the landing times of the flight based on two constraint criteria. One is availability of runway and the other is reduction of the flight landing delay time. This will have two benefits in Business perspective and other is by increasing customer happiness index by providing with a punctual service.

In Business aspect, the cost for which the oil burns while the flight takes to fly instead landing on in time will greatly reduce the cost spent on burning the oil or gas for long time. And this will also make the flights more fuel efficient. With respect to the customer happiness, if there are delays customers from both sides the ones landing and ones have their schedule next to fly see delays and reschedules at times that lead to customer dissatisfaction. Instead, if we have on time schedule of flight landing most of the problems will be solved. Following is the graph which describes the best way to interpret the improved performance of the model with the flight landing times. The difference between the two graph lines those represent the actual time taken by a flight to land versus the improved schedule for the landing of the flight. It is observed that there is 17% increase in the performance for the flights schedules that has drastically improved over the Delay per day as per the records in minutes. The following performance of the model is measured over the time period of month of August and the Delay with new algorithm is then calculated with optimal evolutionary model evaluation.

Chart, line chart

Description automatically generated

Hence it is clearly seen that there has been a great improvement in delays and reduce the delays of flights landing by at the most 17%.

 If we further evaluate per day performance of the model based on the time delays to land the flight in the following graph, it is seen that model shows improved and exceptional performances on certain days like 19-20th of the month , 23-24, 26 and 30 for month of August. This shows the percentage improvement of the time delays with algorithm for each day has been significant.

Chart, line chart

Description automatically generated

**Business Impact for solving the problem statement –**

Solving this problem statement has been observed and understood to be great importance since solving the scheduling time delays will help to improve two business problems.

Here with our model we could :

1. Save time for customers without having any more delays
2. Improve business costs by reducing the flying time and having efficient use of the runway systems
3. Schedule better with extra time at hand

The major two business problems solved here were-

* We could efficiently manage the customer time and the business delays with flight landing and scheduling. Hence, getting a better customer satisfaction and positive feedbacks.
* Effectively apply the model to improve the performance on the runway for airplane. Since it is difficult to schedule the availability of runway and prioritizing based on the flight schedule departure or arrival it is important to note that efficient allocation time of the runway for specific flight will greatly reduce the delays and hence improve with the time delays.

Similar problem statement can be applied to various other businesses like Public Transportation systems, Parking systems, to reduce the clogging of the paths and efficiently manage the utilization of the paths to depart and arrive at any location.