Team 24
Flight Delay Prediction via Machine Learning

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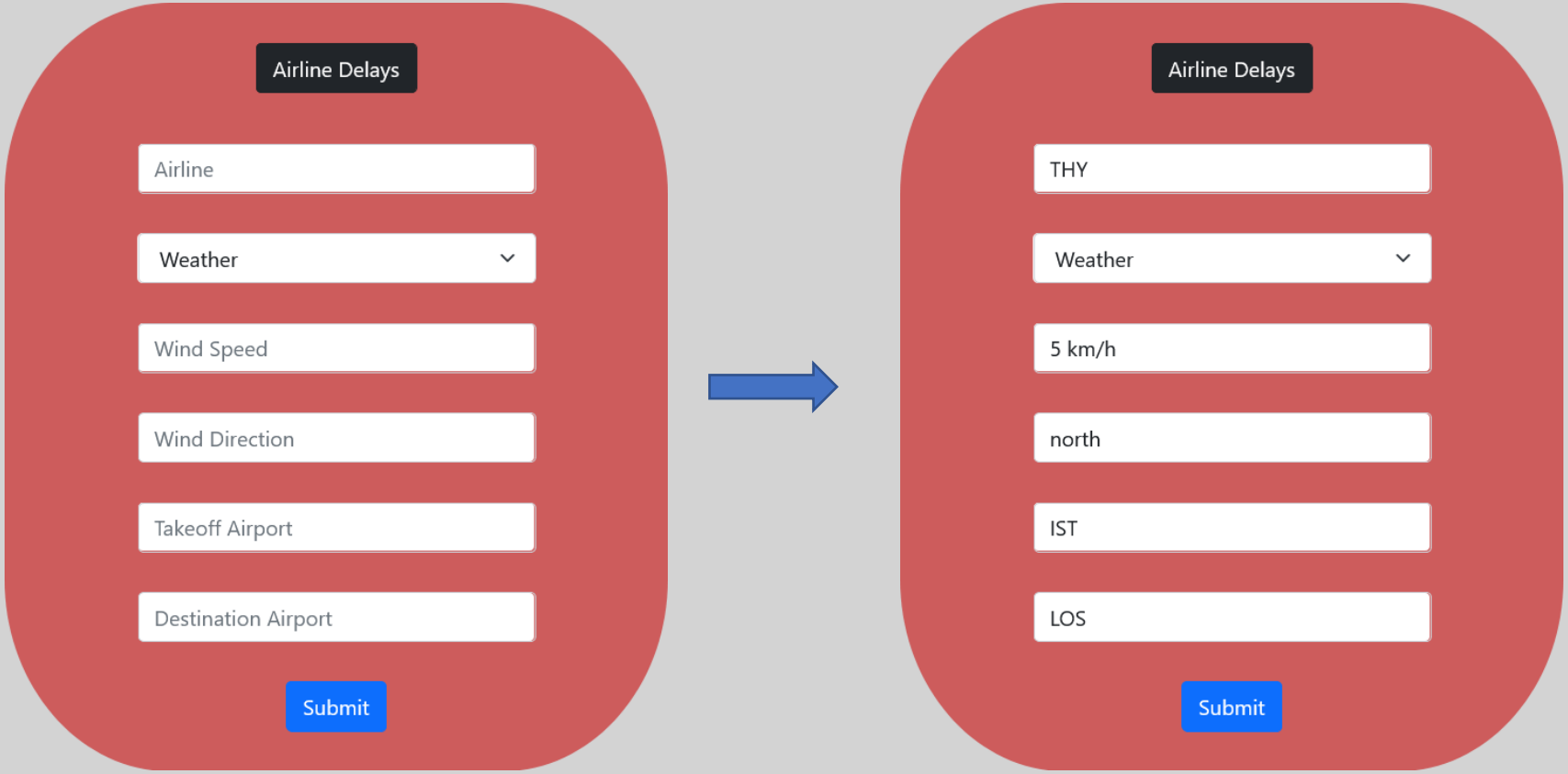
Our Project

Our project is meant to develop a program to predict delays cancellations and diversion in flight via implementing a machine learning algorithm to make accurate predictions based on the data we have.

Our end goals

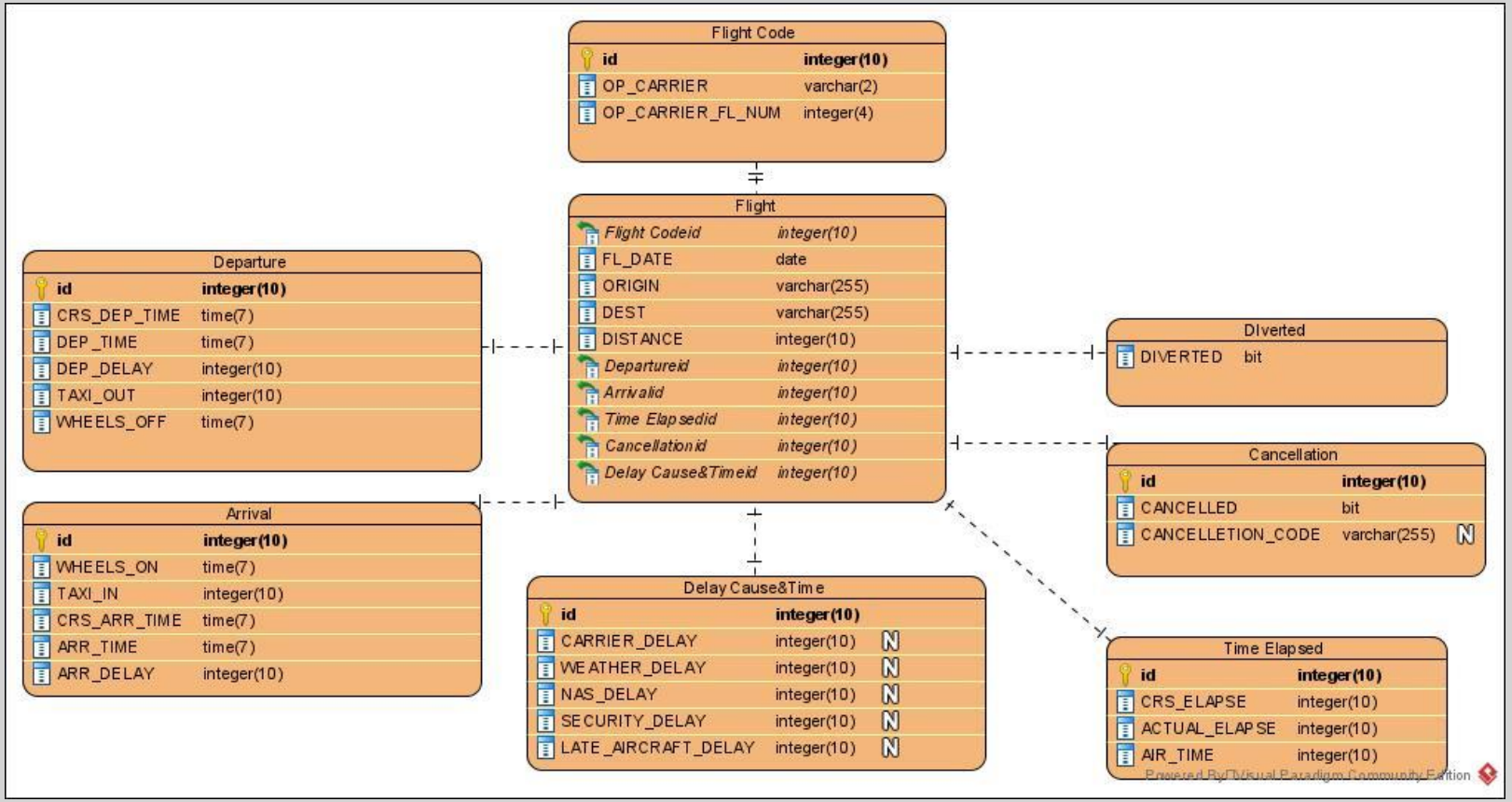
The main purpose of the program will be to predict delays and cancellations. If possible, we aim to develop an API that can be implemented into any project in the future. (figs. 1.1, 1.2)


Airline Delays
Airline
Weather
Wind Speed
Wind Direction
Takeoff Airport
Destination Airport
Submit
Airline Delays
THY
Weather
5 km/h
north
IST
LOS
Submit

(figure 1.1)


Flight Info
Airline Company: THY
Takeoff: IST
Destination: LOS
Weather: Clear
Estimated Delay: 15-30 min

(figure 1.2)

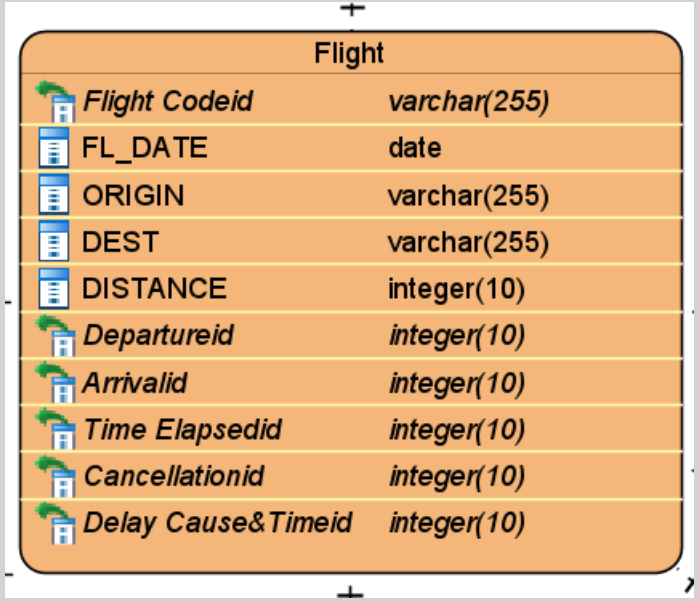


(figure 2)

As we have been instructed we have designed and created a database for our project(figure 2). Our database has 8 tables each with their respective data types and relationship.

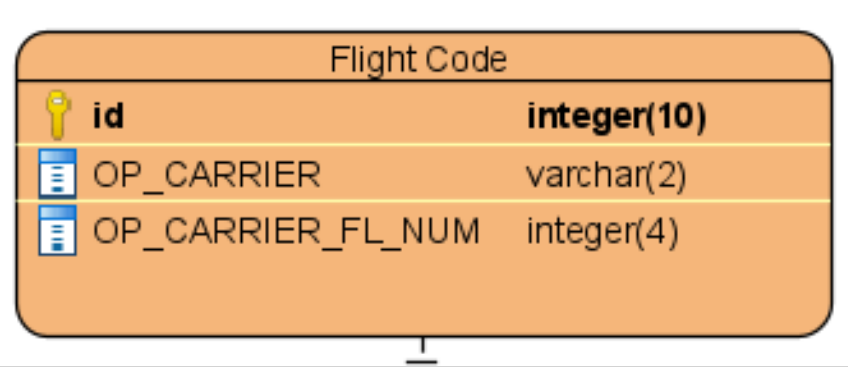
Vpp and Db link > https://drive.google.com/file/d/1ZxF1XK3Tx2zzGwKHwbBVCdmlh8_FU-LX/view?usp=sharing

Our main table in out database that is connected to all other tables is the Flight table (fig 3.1). It contains data on our destination, flight date, distance, origin.



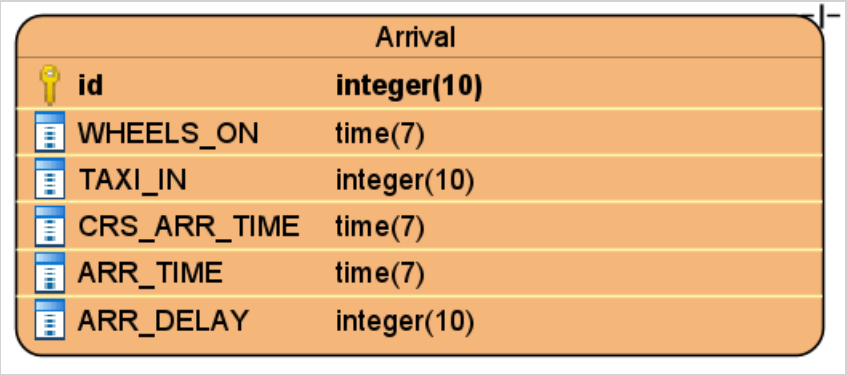
(fig 3.1)

Our second table is Flight Code(fig 3.2).It contains the code of our flight, And since every flight code is Unique we gave it the id data to separate the codes.

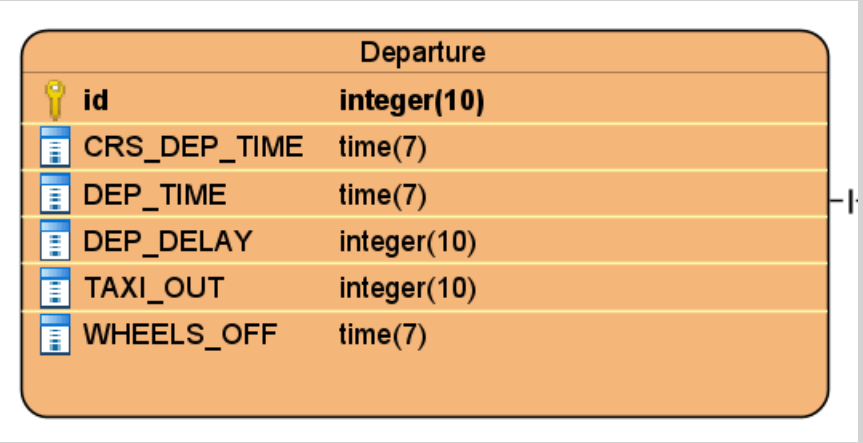


(fig 3.2)

Our next tables are the Departure (fig 3.3) and Arrival (fig 3.4) tables. We keep our info about the departures and arrivals on these tables. Each one has their respective IDs to access data about individual departures and arrivals.

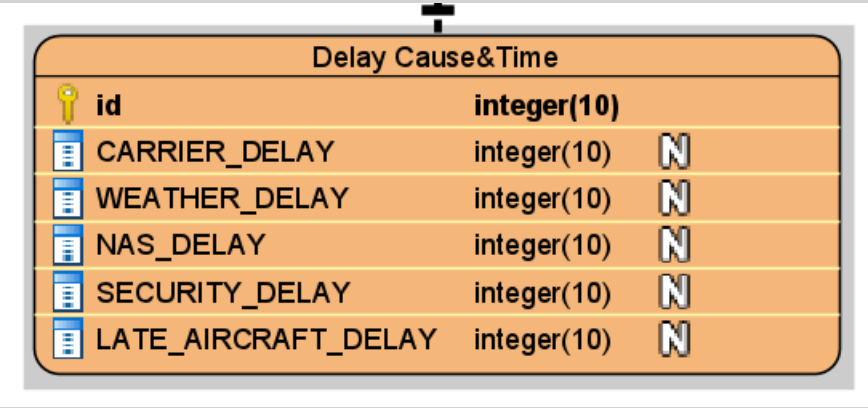


(fig 3.3)



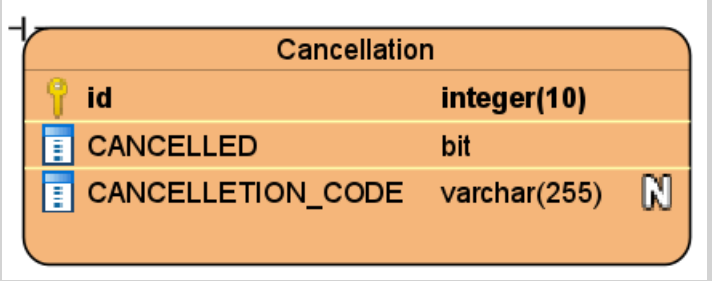
(fig 3.4)

Our next table will be the Delay Cause&Time (fig 3.5) . We keep info about whether there has been a delay because of a unique issue like security, carrier caused delay etc. or not.

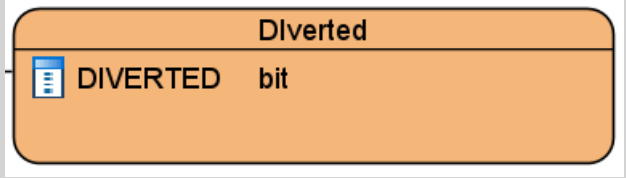


(fig 3.5)

Following that, we have our Diverted (fig3.6) and Cancellation (fig 3.7) tables. We keep the info of whether the flight has been cancelled, and if cancelled the cancellation code and if the flight has been diverted or not.

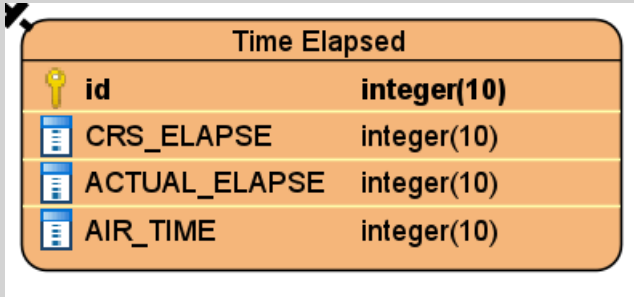


(fig 3.6)



(fig 3.7)

Our last table is Time elapsed (fig 3.8) table. It keeps the info of the elapsed time and air time of the carrier.



(fig 3.8)