



AEROROUTE MASTER

An Intelligent Optimal Route planner
and Risk Assessment Tool

PRESENTED BY

Objectives

What we want to achieve through this

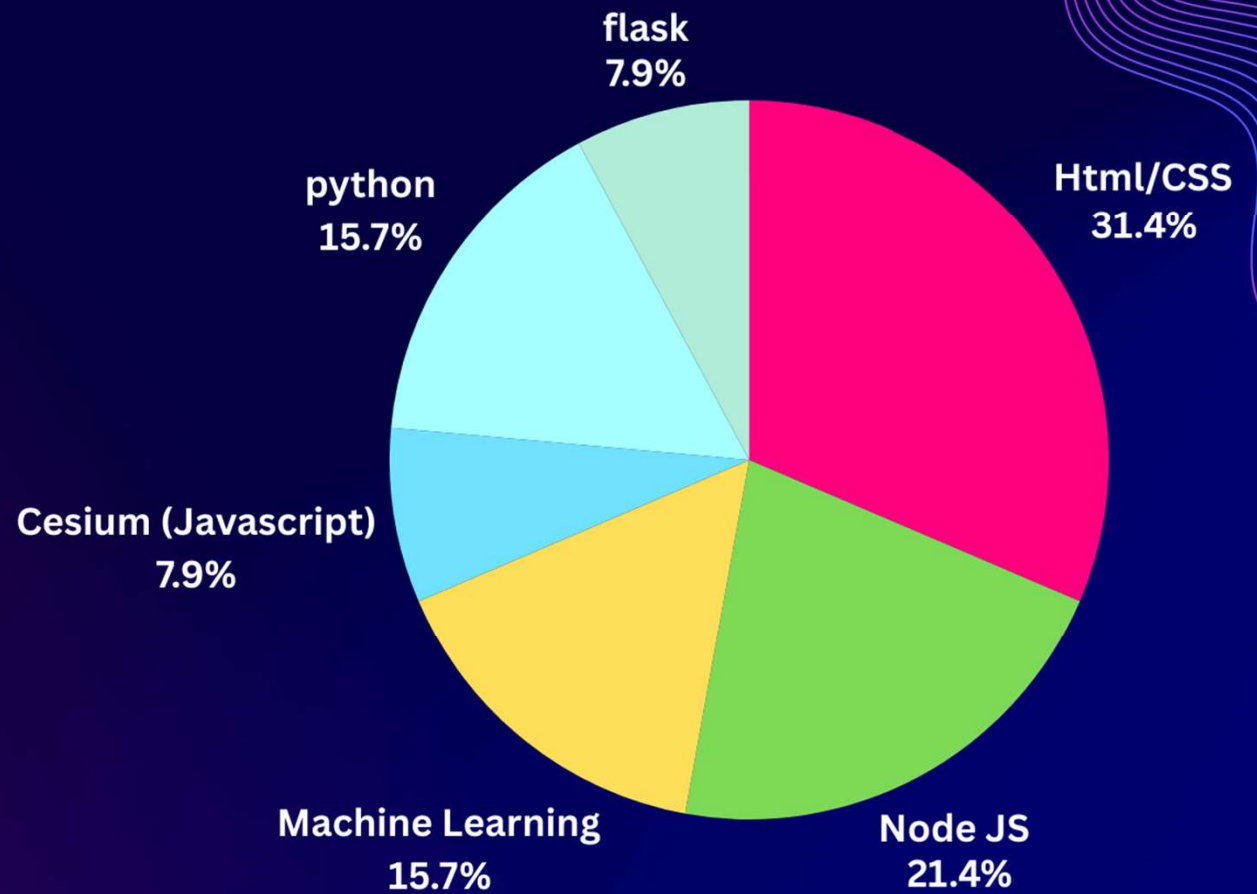
OPTIMAL ROUTE PLANNING

FLIGHT NAVIGATION

RISK MITIGATION

Technologies


Various Technologies We have used




Proposed Design Layout


Page 1: User Friendly Interface



 AIRBUS






Flight Route


 Departure

 Arrival

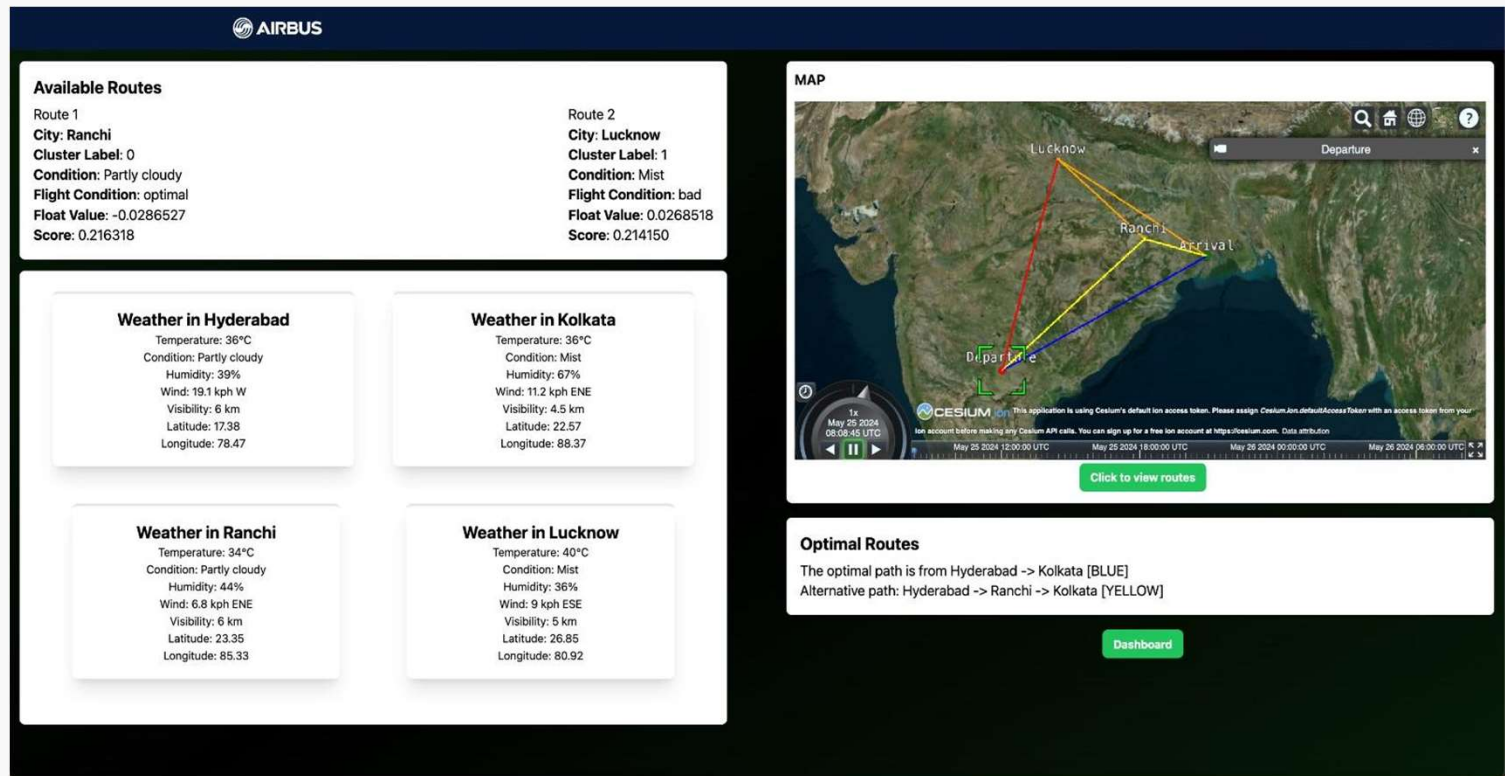
Search

Available Flight Routes

Flight No: LKM752 Indian Airlines	Mumbai		Bangalore	Status ON TIME
Flight No: QWE347 Indian Airlines	Hyderabad		Kolkata	Status ON TIME
Flight No: EXT246 Indian Airlines	New Delhi		Mumbai	Status ON TIME
Flight No: POK370 Indian Airlines	Bangalore		Hyderabad	Status ON TIME
Flight No: EVR350 Indian Airlines	Kolkata		New Delhi	Status ON TIME



Proposed Design Layout



Page 2:
Dashboard
(Prototype View)



Prototype Solutions

Solution # 1 : Searching Optimal Flight Path

**Solution # 2 : Live Flight Navigational Route
with Alternate Routes**

Solution # 3 : Risk Mitigation



Solution Explanation

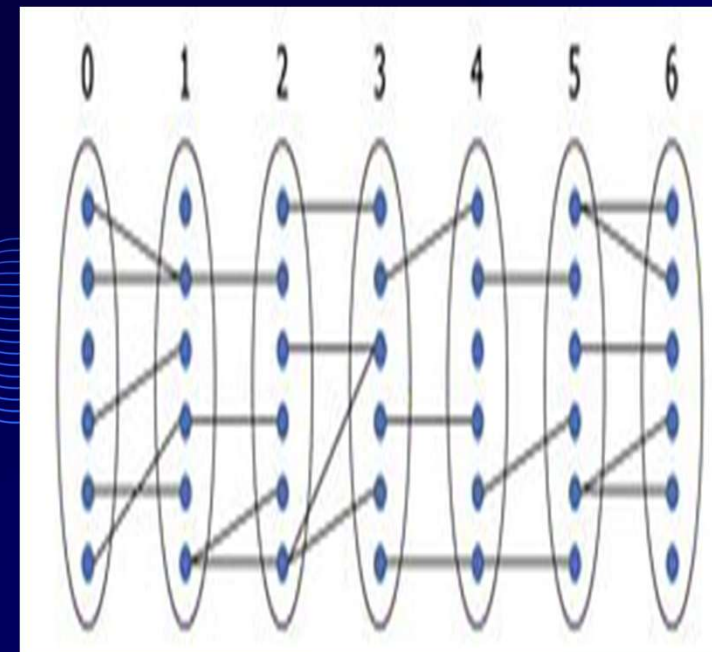
Layer-Wise Dijkstra's Algorithm:

In our solution we simulated a small simulation of the dijkstra 'Algorithm. So instead of taking some random points on the map such using rectangular grid , we targeted the cities between the source and arrival cities.

We have generated the scores using a ML model which gives us a score and according to which we compare the pathways and take the one with most score as optimal.

We have taken certain cities into consideration and defined some alternate cities to take as alternative in case of off weather in the direct path.

Layer-Wise Dijkstra's Algorithm



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Solution Explanation

For any 2 cities, we have associated some alternate cities that lies near their direct pathways.

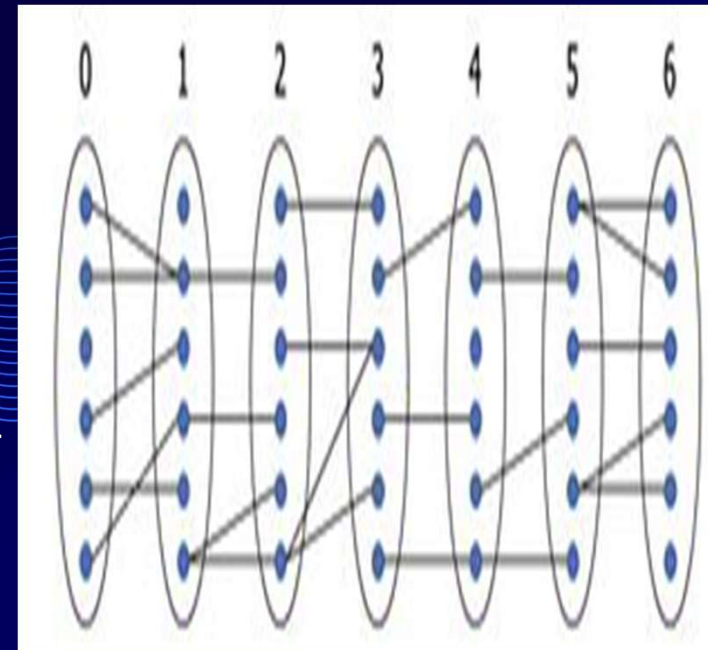
1. Now we tends to find out weather using weather api for all the cities and feed it to our model where we gets a score in return for each individual cities.
2. Starting from departure city we look in cities of layers 0 and choose the city with best score and move towards it . Then we choose highest score in layer 1 and move there and so on.
3. The above calculation are done before flight is initiated in order to get pre-defined path. Like this we will reach the destination city.

→Architectural Inspiration is taken from neural networks and softmax functioning layerwise



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Layer-Wise Dijkstra's Algorithm



LIVE
DEMO
OF
PROTOTYPE



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THANK YOU

