Airport Management

Group 6 - Linh, Keith, Tony, Ria, Ethan, Mark

Domain Knowledge/System Introduction

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Airports can often be confusing, difficult to navigate, and difficult to leave. This website/app is designed to assist airport goers, staff, and other airport resources with managing various aspects of airport flowability, so that users can get into/out of their flights, out of the airport as quick as possible, or even make their time in airports a little more bearable.

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FUNCTIONAL REQUIREMENTS

NOTIFY USERS OF NEARBY TAXI AVAILABILITY

Users should be able to call taxis and know when they've arrived.

ALLOW THE USER TO EXPORT PLANE SCHEDULE DATA TO OTHER APPLICATIONS

Users should be able to export their departure and arrival times, while accounting for estimated flight time, to other schedule management apps such as Google calendar.
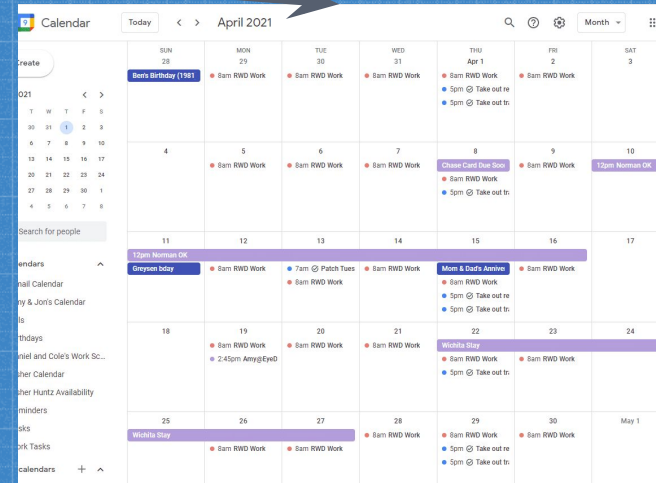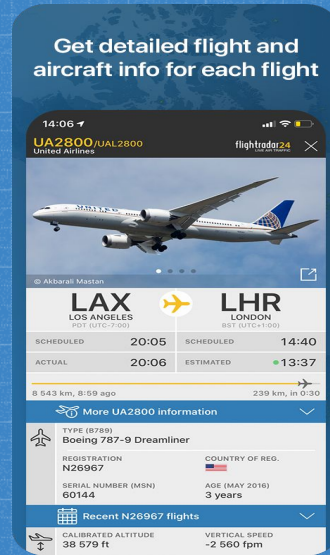
ALLOW USERS TO CONNECT THEIR BANKING APP AND VIEW REWARDS/DEALS

Many banks offer Cash Back rewards/deals for airlines, restaurants, or stores - some of which are often conveniently placed in airports. This feature would allow for users to know what deals are available to them to suggest which places they could visit.
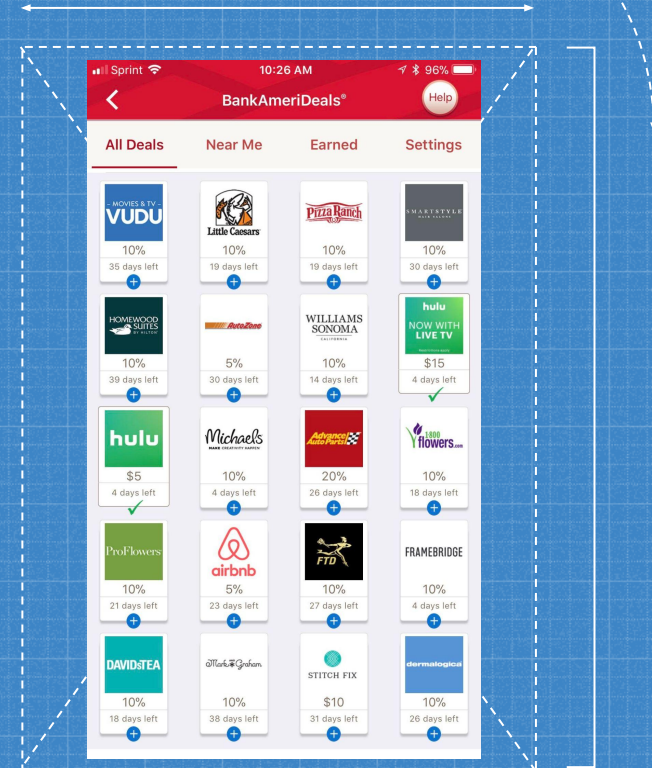
ALLOW USERS TO INTERACT WITH AIRPORT MANAGEMENT WITHOUT HAVING TO APPROACH HELP DESK

If problems emerge with a flight, there is bound to be a large backlog of airport goers trying to refund/trade-in tickets, ultimately creating airport foot traffic. This function will users to interact with the UI and directly get help from a virtual help desk.

AIRPLANE LANDING SYSTEM NOTIFICATION

Whenever a plane lands, the air traffic controller will update the the plane database to set that plane as landing.


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AUTHENTICATE PASSENGERS WHEN THEY ENTER THE AIRPLANE

As the airplane tickets are being scanned, the system should log all the passengers who got on the plane. Then when the ticket attendants want to see who is not on the plane it should be easily displayed.

ALERT USERS OF THEIR PLANE'S PROGRESS

The system should inform the user of all delays, cancellations, and the estimated arrival times.
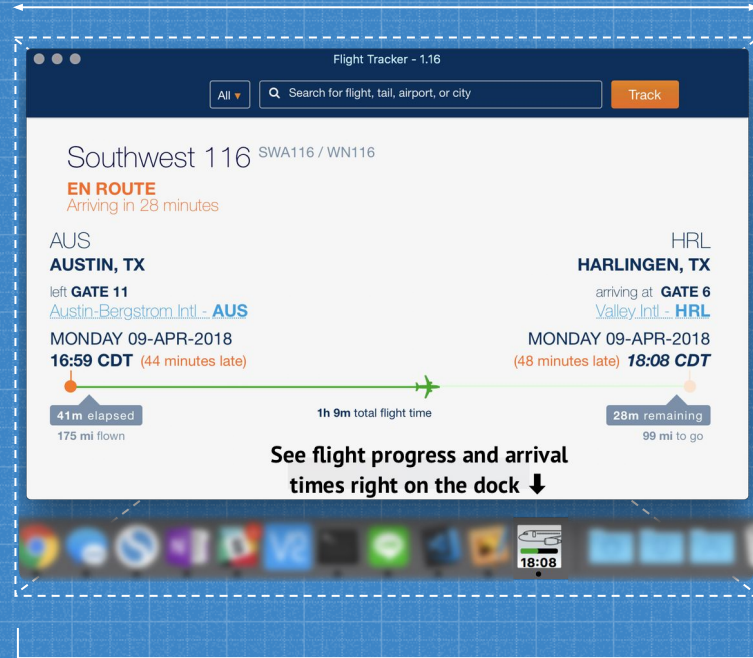
MANAGE HOTEL RESERVATIONS FOR PASSENGERS OF CANCELLED FLIGHTS

Using Google's Hotel API, it should display hotels with accurate pricing information and distance from the airport. If the user wishes to choose a hotel in a slightly different area then the system should update its results based on the users parameters.
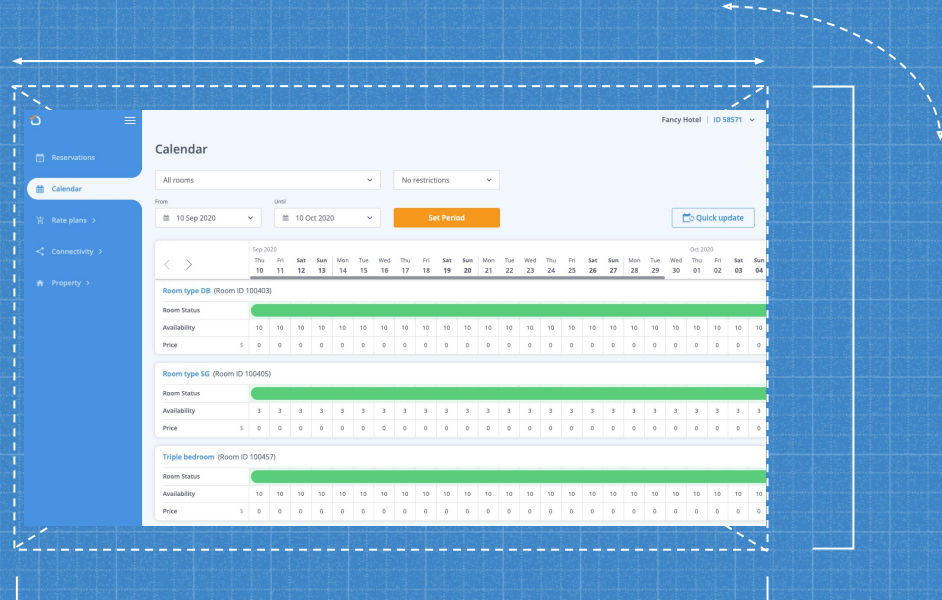
THE USER NEEDS TO ALLOW ACCESS TO LOCATION DATA

The system needs to get access to the user's current location data so the system can be able to retrieve information/data from the API or other databases at the user's current location.
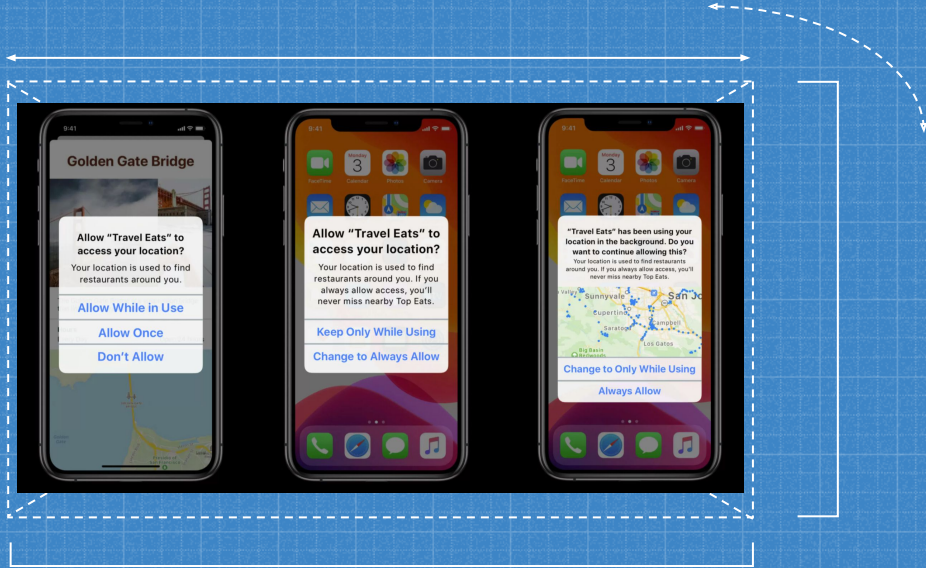
THE SYSTEM READS THE DATA FROM API TO PROVIDE
SUGGESTIONS FOR NEAREST HOTELS/INNS

The system will
retrieve the data
from Google API to
be able to provide
the list of
nearest/finest
places to live
around the user's
current location.

THE USER NEEDS TO ENTER THE PASSWORD FOR SECURITY PURPOSES

The system is designed for each individual user and it requires many personal interactions and information from them. Therefore, the password to login is necessary for security purposes.

PASSWORD IS NEEDED TO ACCESS TO THE USERS' DATABASE/ INFORMATION

All the users' information/data will be stored in a database and the developers need to enter password to login for security purposes.
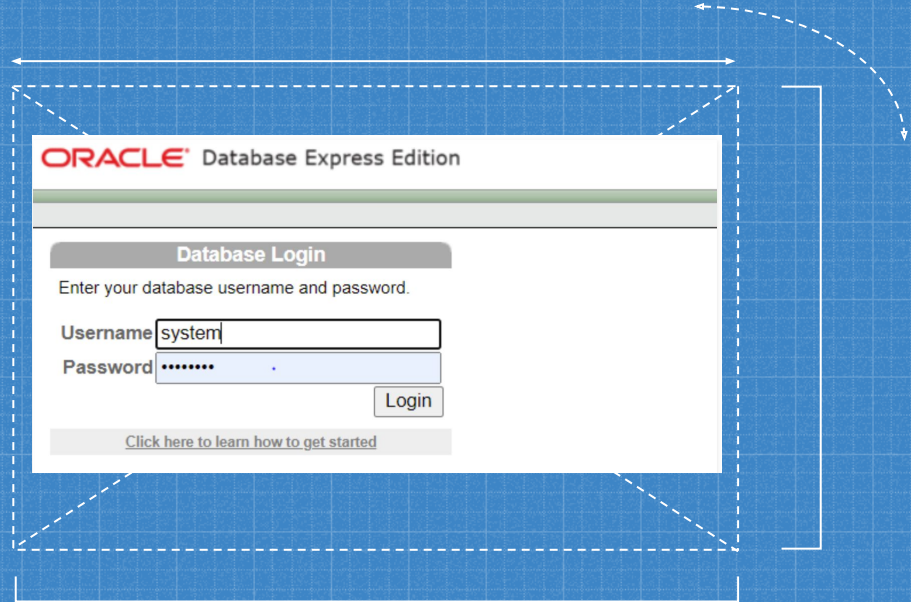
MONITOR FOOT TRAFFIC FLOW THROUGH THE AIRPORT RESTAURANT ENTRANCE(S)

Allows users to view the most densely populated areas of food courts in an airport by a call to the Google Maps API, and then reroutes them to one of a similar cuisine in a different area of the airport.

CALCULATE RESTAURANT REVENUE THROUGH ONLINE AND AT-THE-COUNTER ORDERING SYSTEM

System aids in calculating the bill of each customer (similar to Square), where users are either ordering online or in-person, and thus calculating the total revenue of the restaurant.
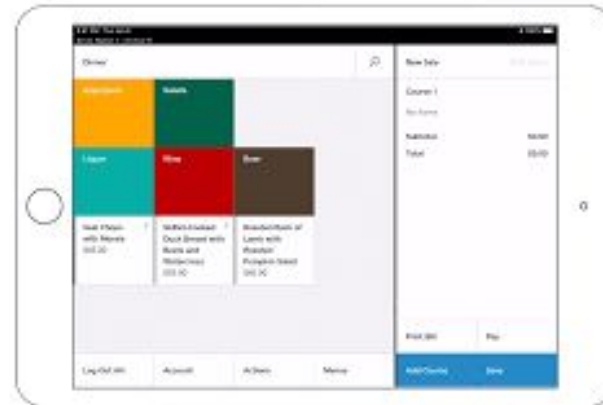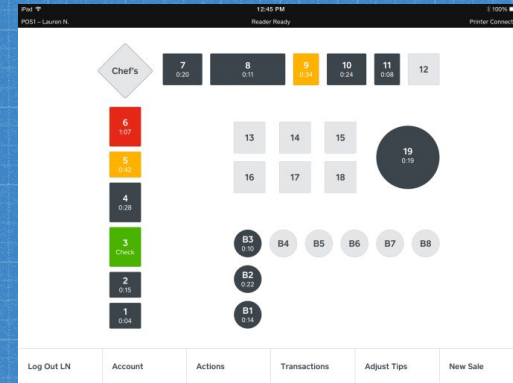
HELPS CERTIFY A PERSON'S PASSPORT & BOARDING PASS AUTHENTICITY

Calls the My TSA API and certifies the identity of the person in order to continue boarding.

NOTIFIES USERS OF INCLEMENT WEATHER

The system notifies users of any impending inclement weather near the airport that would delay their travels.

CAMERA ACCESS

App has permission to take pictures, in order to translate text into specified language.

ACCESSES TEXT DATABASE
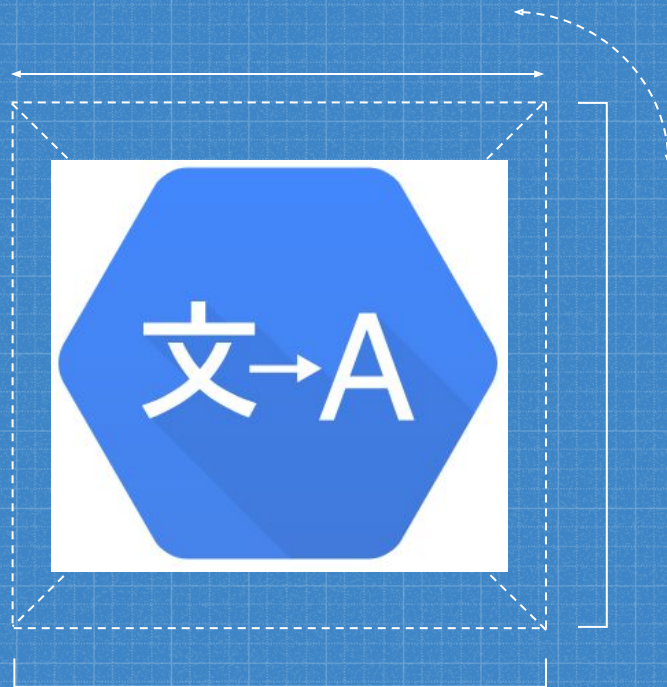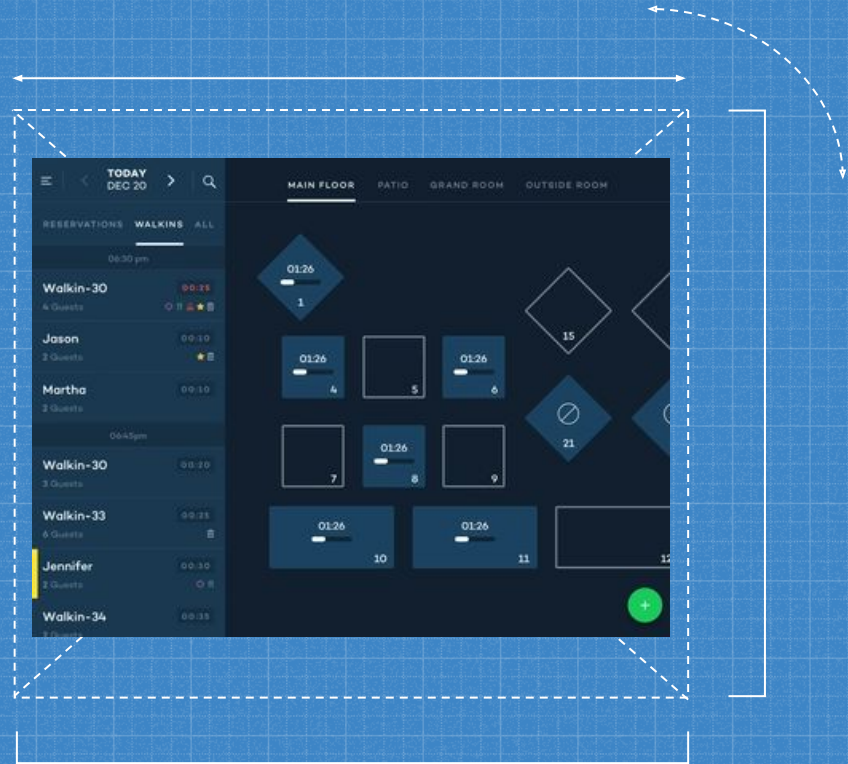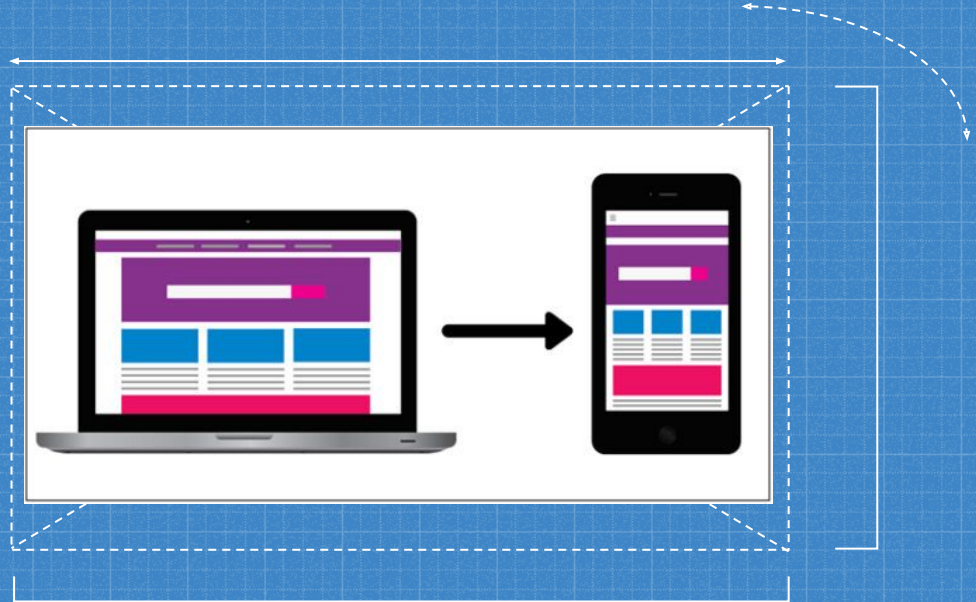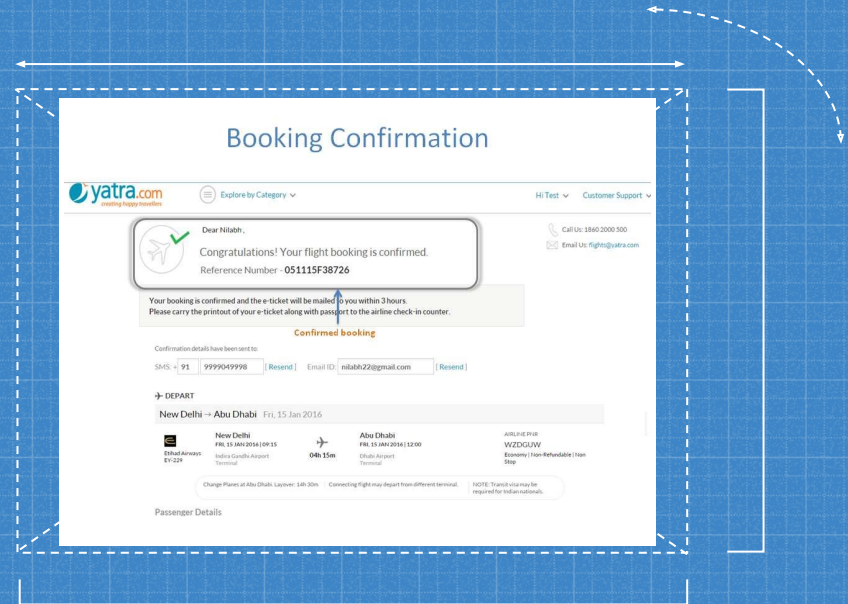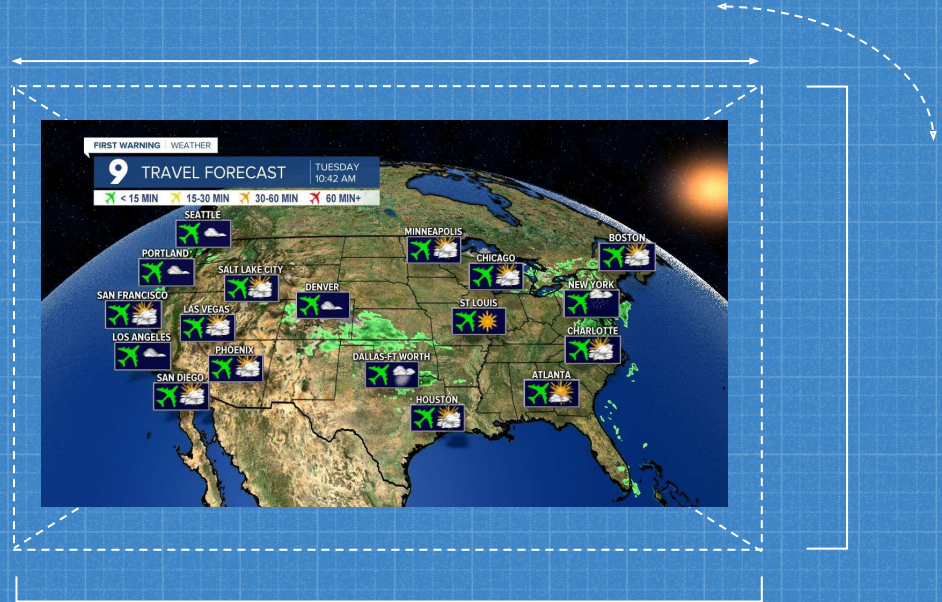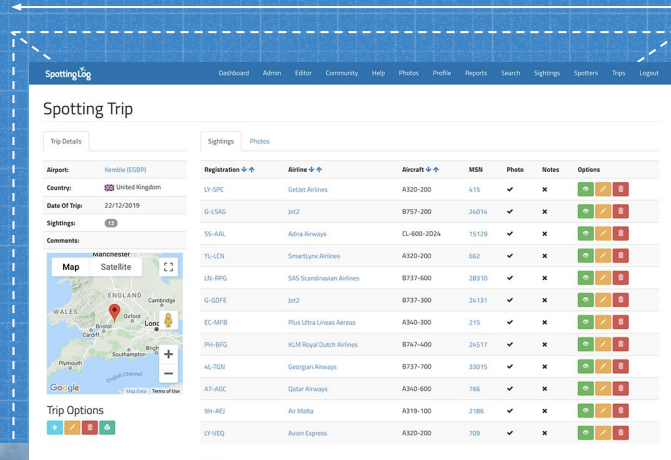
Neural networks access text database in order to translate sentences to required language.```````````
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# NOTIFIES USER OF RESTAURANT AVAILABILITY

User can view the number of tables available for seating. If tables are full, a queue of how long to get a table is available.

# VIEWABLE FROM WEBSITE AND APP

User can view information from app or website, whichever is most convenient for them at the time. The app contains less functionality to reduce UI business.



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## ONLINE TICKET

Users should be able to book tickets on the airport website. Once the ticket is booked, the user should receive a confirmation email.

## PLANE SCHEDULING

Users in the airport should be able to see a live schedule of incoming flights at certain times.

# WEATHER FORECASTING

Users should be notified about inclement weather whenever possible. Management should be able to cancel flights depending on the severity of the weather on any day.

## MAINTENANCE

Everything in the airport requires a certain degree of maintenance. Users should be able to manage the budget for funds such as repairs, energy, fuel, etc.

# 2

# NON-FUNCTIONAL REQUIREMENTS

# UI IMPLEMENTATION, FOLLOW THE THEME OF THE APP

The UI of the app
show follow the
theme and apply the
color theory for
good visualization.

# THE SYSTEM SHOULD BE CAPABLE OF DISPLAYING LARGE AMOUNTS OF INFORMATION TO A LARGE AMOUNT OF USERS

If the airport system is implemented at a large airport, it should be able to load information on hundreds of planes to thousands of users within a 5 second waiting period.

# USERS HAVE OPTION TO TURN ON/OFF NOTIFICATIONS

In the settings of the application, users have the option to turn their notifications on or off, per their preference.



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# ALLOW FOR USERS TO PROVIDE FEEDBACK ON THE APP

There should be a means for allowing users to directly contact customer service if there are any problems with the app.

# ACCESSIBILITY FOR THOSE WITH DISABILITIES

Website can be easily accessed with those with colorblindness, blindness, and other disabilities.

## WI-FI SECURITY

Users should be able to use public Wi-Fi without much fear of being hacked by unethical users.

Wi-Fi