# FLEETO

-Android Application

Presenters-

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# MOTIVATION

- One does not know exactly when to leave in order to reach the airport on time.
- Unavailability of various factors ( like fastest route, climate, construction sites, future climate delay and road traffic) clubbed together in one single application.
- If all these factors can be assimilated in a appropriate manner then it can help in estimating the travel time.

# INTRODUCTION

- The main motto of this android application is to aid the user to get to the airport within the scheduled departure time taking into account various factors like:

- Current Climate

- Future Climate

- Roadway Traffic (includes delay due to constructions and incidents)

# Current Apps Vs Our App

- Apps already present in Google Play for the flight statistics: *FlightStats, FlightAware*, etc
- It just tells us about the stats but nothing about how to get there on time depending on many factors.
- For the fastest route, separate apps needs to be used. (like Google Maps)
- To check the climate, again a separate app needs to be used! (like AccuWeather)

# Current Apps Vs Our App

- What if everything is clubbed together and only one application suffices for all your need!!

**FLEETO!!**

- Our app incorporates all of the mentioned services making use of some APIs available over the internet and provides data which is accurate and dynamic.

# DESIGN

- APIs used:

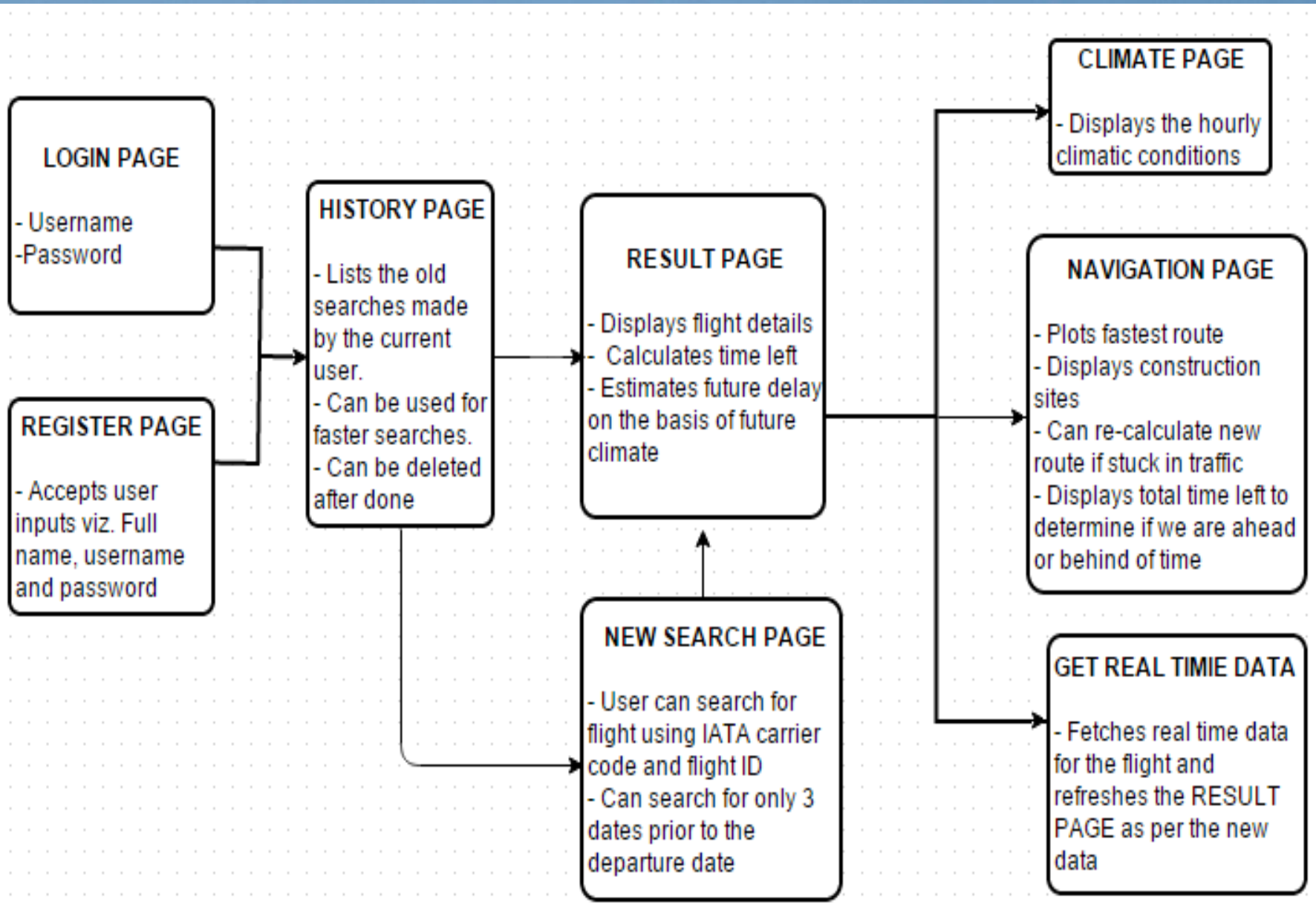
- FlightStats – To get the flight details viz. Airline name, departure date and time, terminal, ***DELAY***.
- Wunderground – To get the hourly climatic conditions for the entire day.
- Google Maps API v2 – For plotting travel route, displaying construction sites and incidents, traffic layer, customized navigation

# DESIGN

- MapQuest Traffic API – To get the list of details about the constructions and incidents happening in the vicinity.
- Google Directions API – To get the fastest route to the airport from the current location.

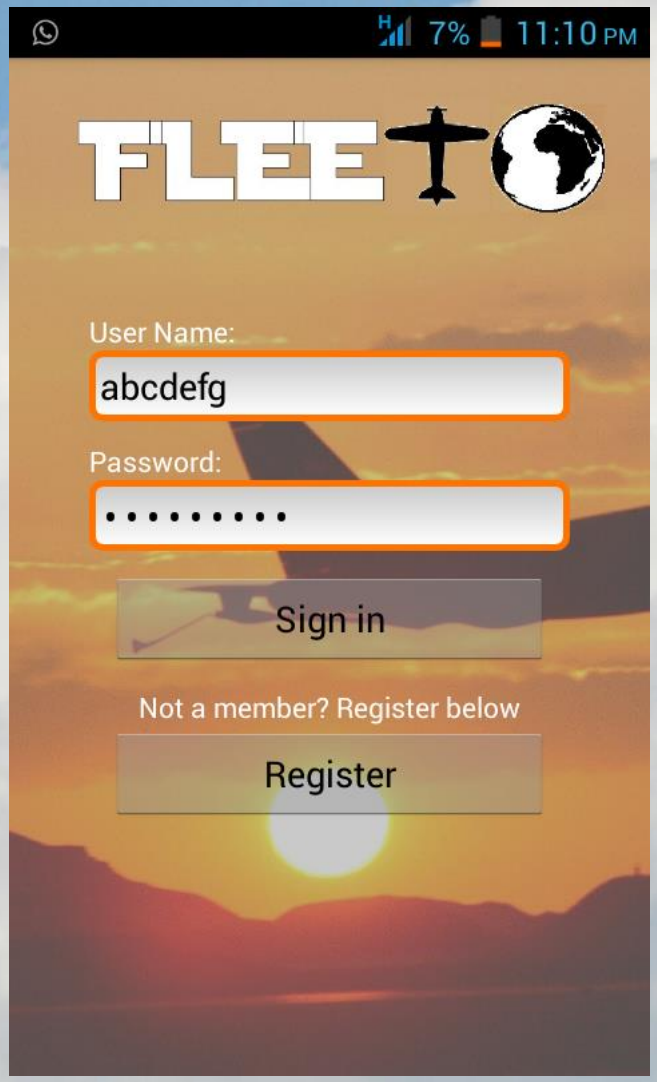
- Cloud Used:

  To maintain the user information and the associated search history, we used AWS EC2 cloud

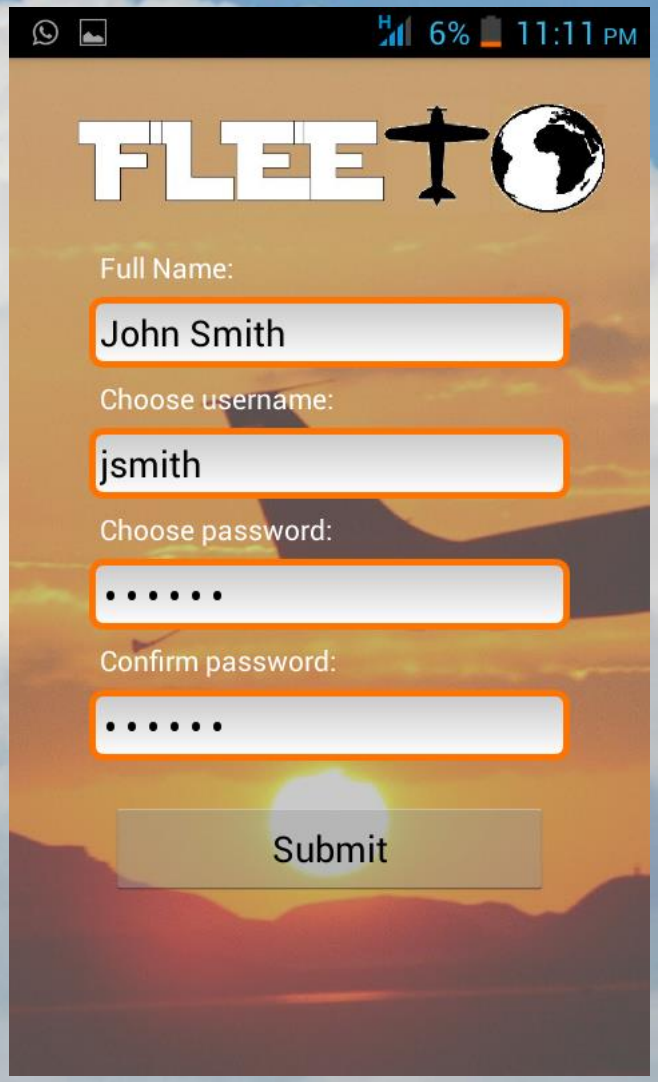



BLOCK DIAGRAM OF THE APPLICATION

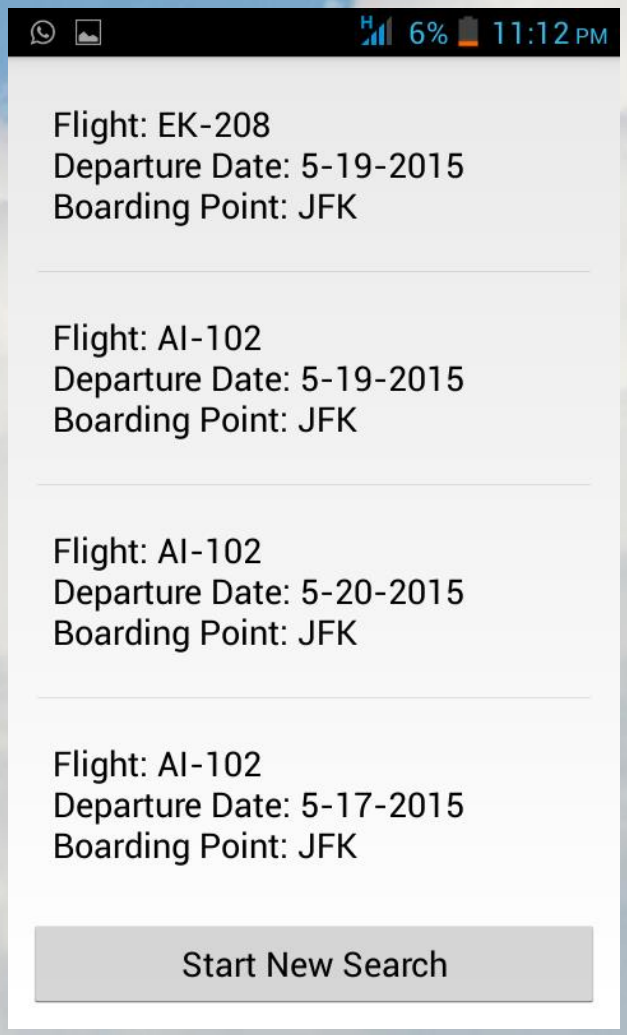
# FLOW OF THE APPLICATION



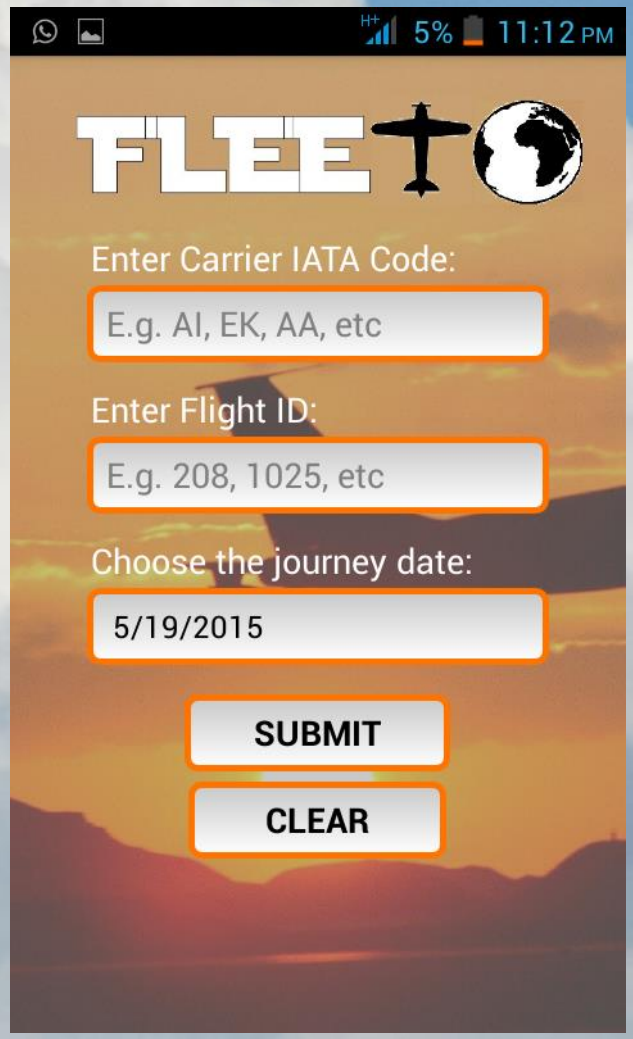

Register Button clicked



# FLOW OF THE APPLICATION




Start New Search Button



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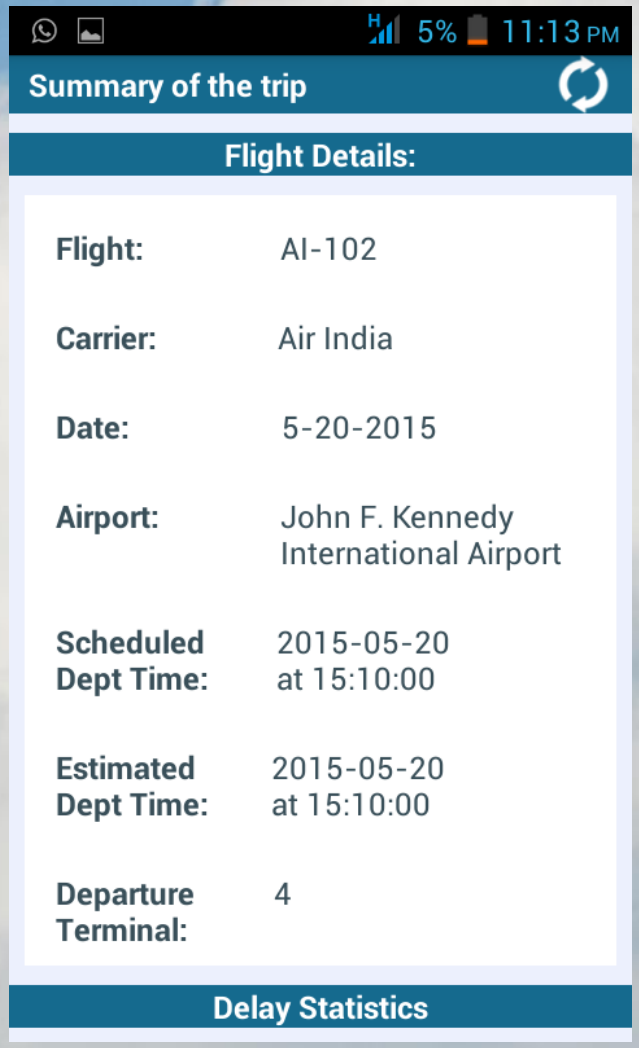


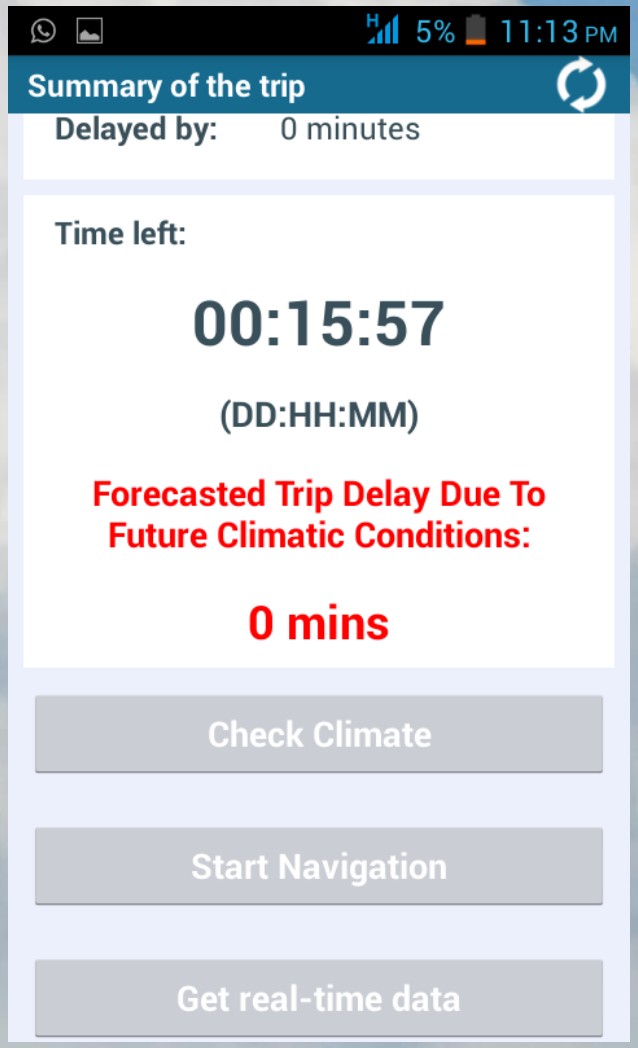

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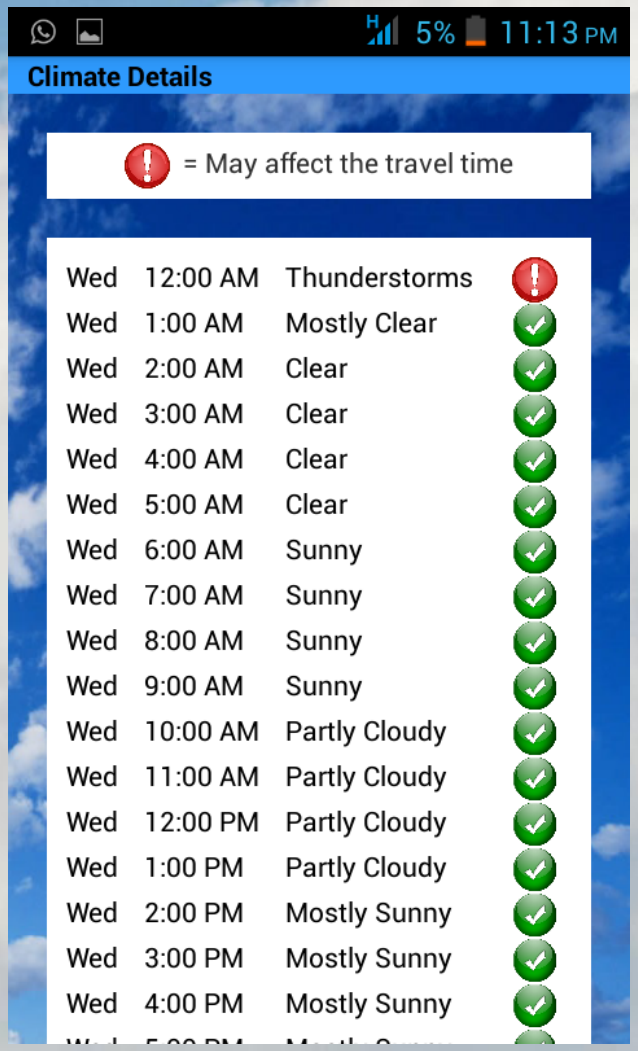
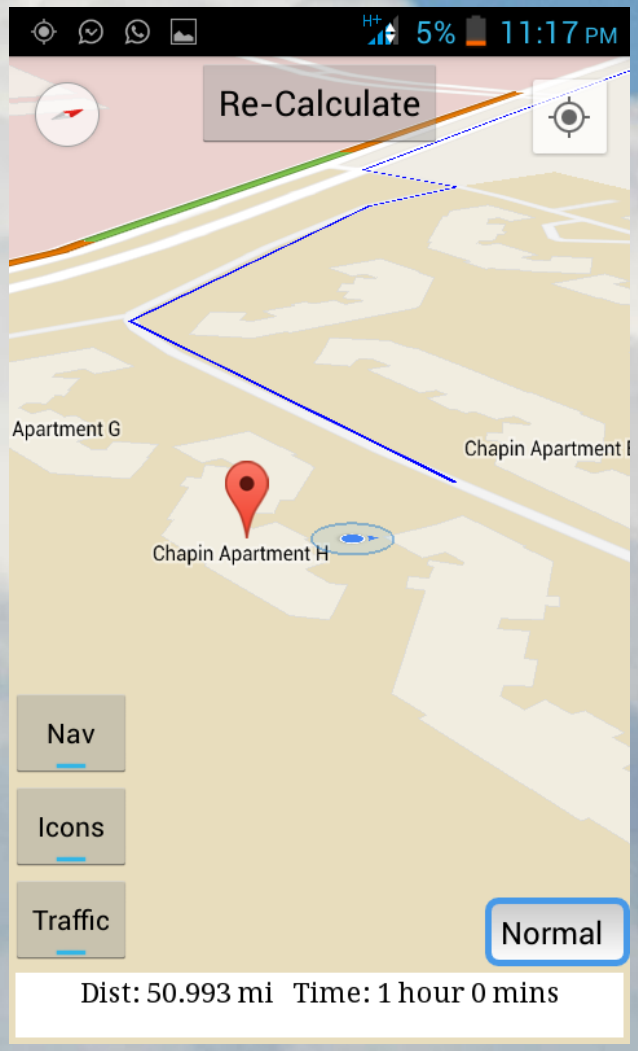


# Future Delay Estimator (FDE)

- Created a module which can predict the future delay at the future location at the corresponding future time.
- The delay is assumed to be equal to the addition of quantitative precipitation factor (QPF) and the snow fall level.
- Needs to be calibrated on trial and error basis.

# DESIGN OF FDE

**Current Location**
**A**

**Current Time**
**X**

# DESIGN OF FDE

**Current Location**
**A**

**Current Time**
**X**

**Future Location**
**B**

**Future time**
**X + (travel time / 2)**

# DESIGN OF FDE

**Current Location**
**A**

**Current Time**
**X**

**Future Location**
**B**

**Future time**
**X + (travel time / 2)**

**Future Location**
**C**

**Future Time**
**X + travel time**

# DESIGN OF FDE

**Current Location**
**A**

**Current Time**
**X**

**Future Location**
**B**

**Future time Y=**
**X + (travel time / 2)**

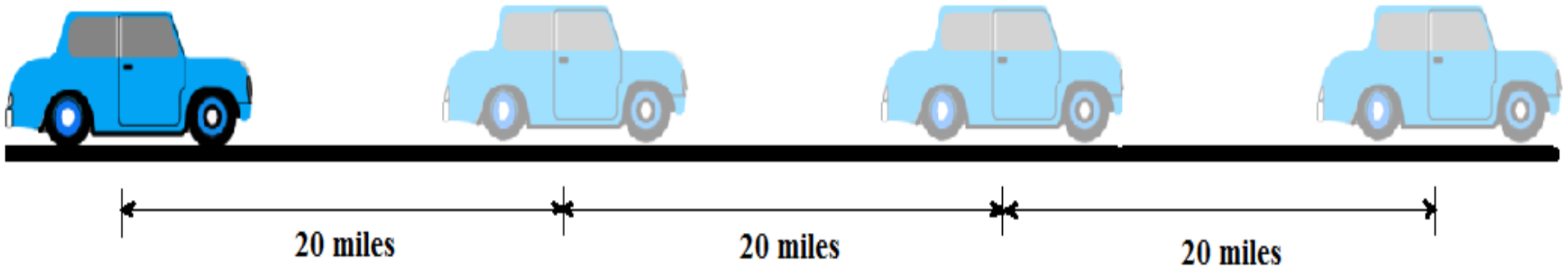
**QPF and/or snow level for Loc B at time Y**

**Future Location**
**C**

**Future Time Z=**
**X + travel time**

**QPF and/or snow level for Loc C at time Z**

# DESIGN OF FDE



# TECHNICAL CHALLENGES

- Configuring Database instance on AWS
- Achieving Network to GPS Hand-Off while in Navigation Activity
- Thread-Safe programming
- Parsing nested XML with same tag names
- Future Delay Estimation on the basis of climatic conditions
- Decoding routing encrypted data

# TAKE AWAY POINTS

- Be careful with the Activity Life Cycle!
- Always carry out internet related work (like calling APIs) on a separate thread.
- Never try to access UI components from a thread. Use “runOnUIThread” instead.
- Design a thread-safe program in order to avoid crashes at later stage.

# FUTURE SCOPE

- To support different modes of transport.
- Voice guided navigation.
- Calibrate the FDE model to predict a more accurate delay time.
- Push notifications.


QUESTIONS?