



WEATHER WAYS

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Group 8



Purpose

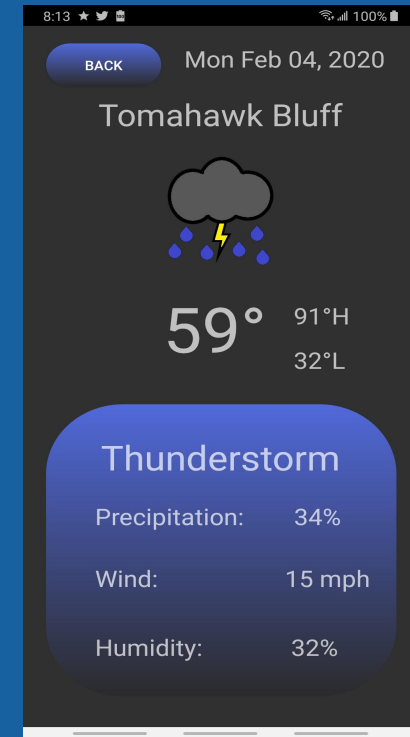
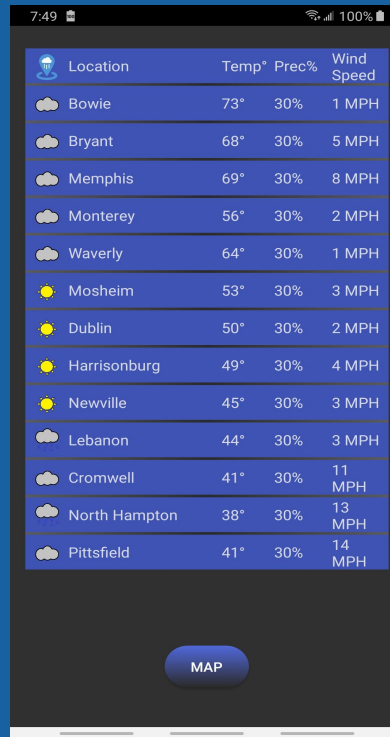
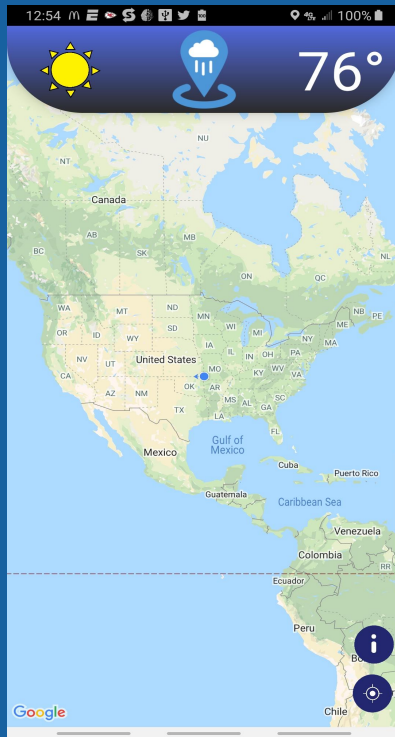
- 50 million US adults take road trips every year.
- 2 million weather-related car crashes occur annually according to the DOT
- Keeping informed of weather where you are and where you are going can be challenging
- Create an app that tracks weather along a route
- Having this information could help people make safer decisions and avoid traffic accidents





Front End: Design Overview

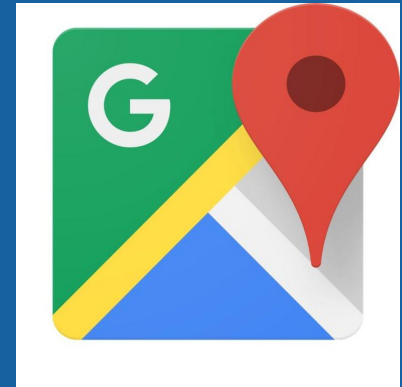
- The client application is divided into three pages
 - Routing/Maps Overview
 - Basic Location List
 - Detailed Location Information





Front End: High Level API

- Maps
 - Basic Google Maps implementation
- Directions
 - Used for creating routes along a map
- Geocoding
 - Converts raw latitude and longitude values into a full address
- Distance Matrix
 - Returns both distance and travel time between two locations
- Volley Networking API
 - Easy Network Requests
 - Helps with synchronizing different server calls





Front End: Server Interfacing

- Marker Data
- Java HTTP API
- JSON Format
- Add, Remove, Update
- Send Location Information
- Retrieve Weather Conditions





Back End: Server Code

- Written in Typescript
- Utilizes Sequelize
 - Allows use to use promise and resolve for communication.
- Has 5 main commands
 - Create
 - Needs UserID, MarkerID, Latitude, Longitude, and arrival time
 - Query
 - Returns whole database
 - QueryAll
 - Just needs a UserID
 - Delete
 - Deletes from the database based on the UserID
 - Update
 - Gets a UserID and MarkerID then updates the client with new information



Back End: Database

- The database will hold all the information about the individual markers along the route
 - User Identification, marker identification, latitude, longitude, location, user's arrival time
- As well as information about the weather data at the markers
 - Temperature and precipitation chance
- The database is kept up to date by marker update requests made by the client.





Back End: OpenWeather

- OpenWeather is the API used to provide weather data
- Live temperature and precipitation chance values are added to a new marker automatically
- Updated weather data is available on request from the client-side





Future Work

- Expand marker object to contain more weather details
- Weather Description
- Better Icon Support
- Weather Alerts
- High and Low Temperatures

