TripMate

A location based Voice Reminder Journey Planner

Team BugDroid
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Project Goal

- Manage the Number of tasks or to plan the trip with different halts..

- These tasks are of different types, ranging from every day based meetings at work, and non-daily based such as buying groceries, paying bills etc.

- A personal task management software on computers and/or smartphones.

- As smartphones are used by everyone today and can be used to overcome this problem.

- Planning the trips, with different halts and destination and to optimise the route for a new area or location.

Project Gantt Chart

Task	09-Mar	15-Mar	22-Mar	29-Mar	05-Apr	12-Apr	19-Apr	26-Apr	03-May	10-May
UI module development	██ (Saurabh)									Achieved
Location module development	██ (Devang)			Achieved						
Routing optimization and Directions		██ (Mihir)			██ (Devang)		Achieved			
Navigation				██ (Devang)			Achieved			
Connectivity module development	██ (Saurabh)	Achieved								
Geo Fencing		██ (Devang)				██ (Nithin)		Achieved		
Database Storage and Management			██ (Nithin) / ██ (Saurabh)					Achieved		
Google Places API			██ (Nithin)	Acheived						
Voice					██ (Mihir)			Achieved		
Notification	██ (Saurabh)									
UI and Database Integration					██ (Saurabh) / ██ (Nithin)			Achieved		
Direction, Navigation, Location and Optimize path Integration					██ (Mihir) / ██ (Devang)			Achieved		
Geofence and Voice Notification						██ (Mihir) / ██ (Devang)		Achieved		
UI and Database Integration + Direction, Navigation, Location and Optimize path Integration							██ (Nithin)	Achieved		
Testing					██ (Entire team)					
Final Report and Presentations	██ (Entire team)									

**Legend:** Saurabh | Mihir | Devang | Nithin | Entire team

Proposed Project Task
Saurabh

- UI Module and Interfacing.
  - Designing activities
  - Deciding Flow of application
  - Improvising the Layout Performance.

- Rendering UI for Database operations. (Shared With Nithin)
  - Generating dynamic halts in UI for halt storage.
  - Displaying changes for Lists added and removed.

- Notification
  - Popping notification on Geo-Fencing Signal.
  - Actions on Notifications.
  - Providing notification interface and voice module Integrating.

- Connectivity Module
  - Working with permission settings for different API's.
  - Checking and setting connection of application to internet.

Task Completion Before Mid-term

Saurabh
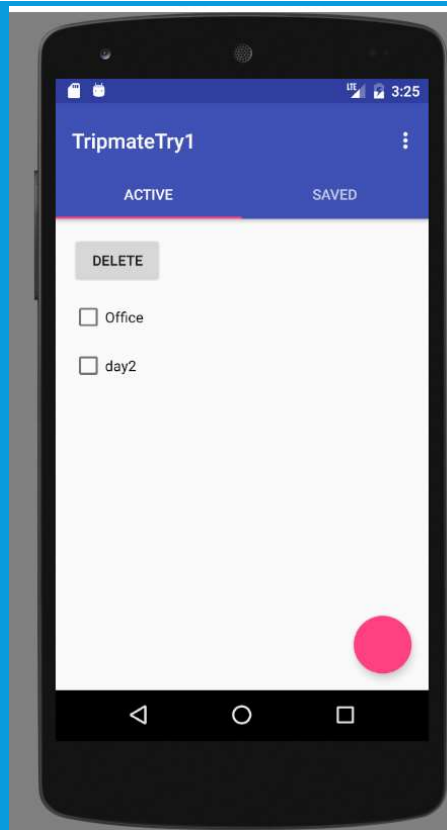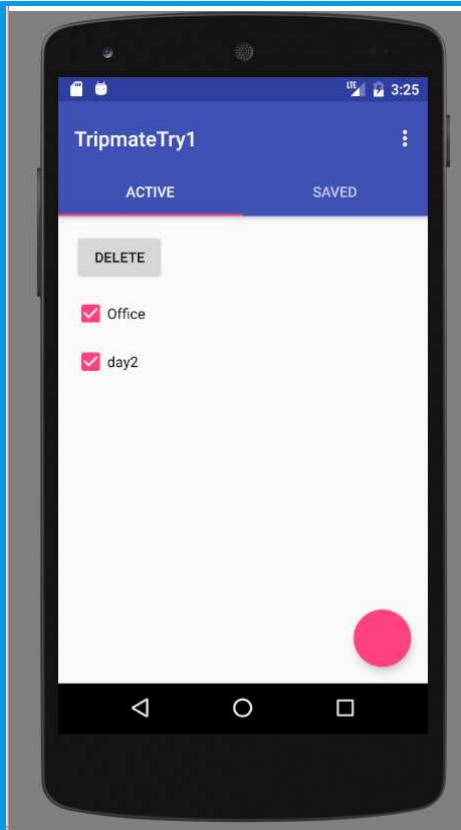
Task Completed
Saurabh

- UI Module and Interfacing

  - Splash Screen Implemented

  - Issues: Displaying for definite time
  - Solved: Displaying only for the Boot time of application
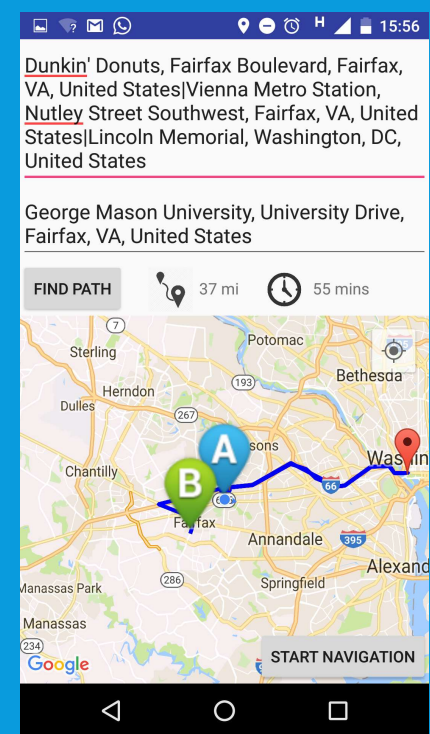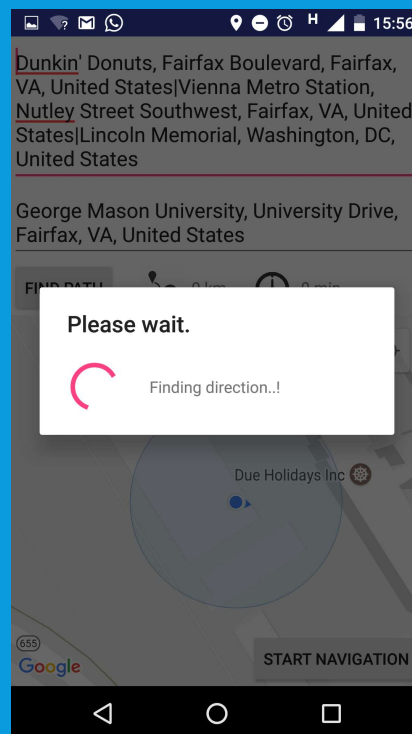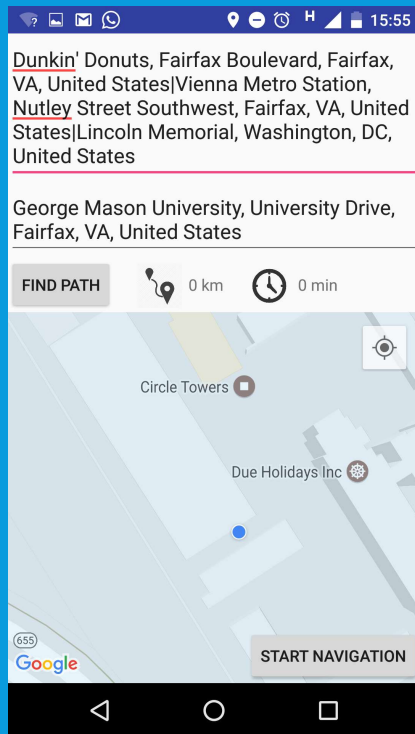
Task Completed

Saurabh

UI Module Implementation.
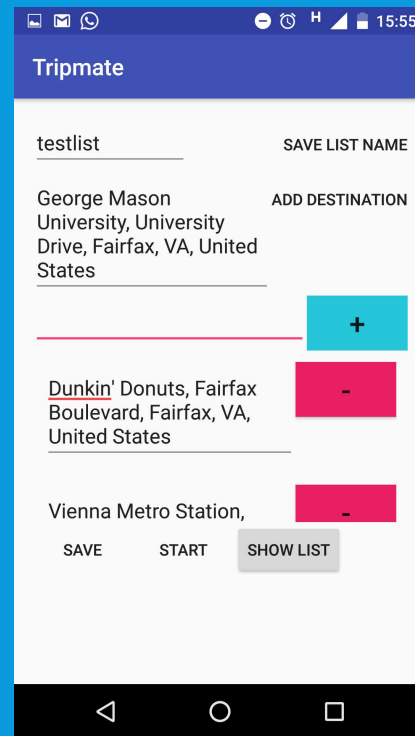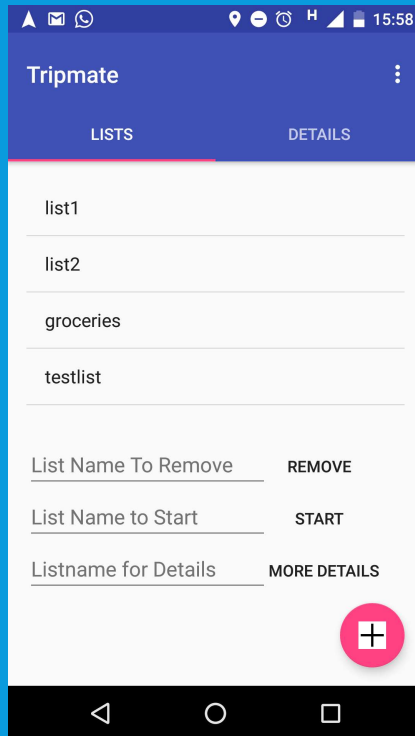
- Issues removing the halts.
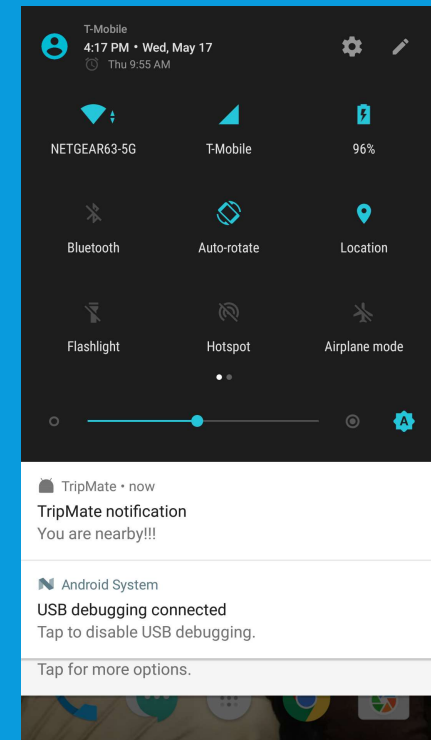- Halts were sequentially added and deleted sequentially.
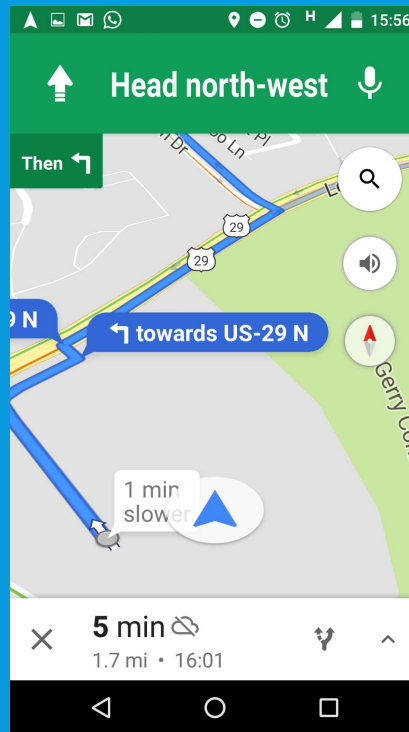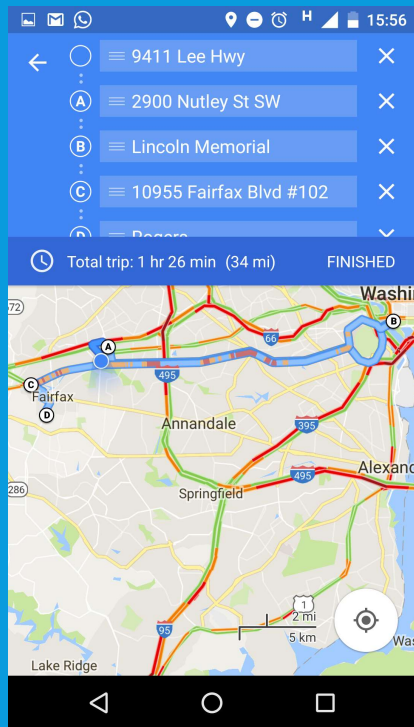
Task Completed

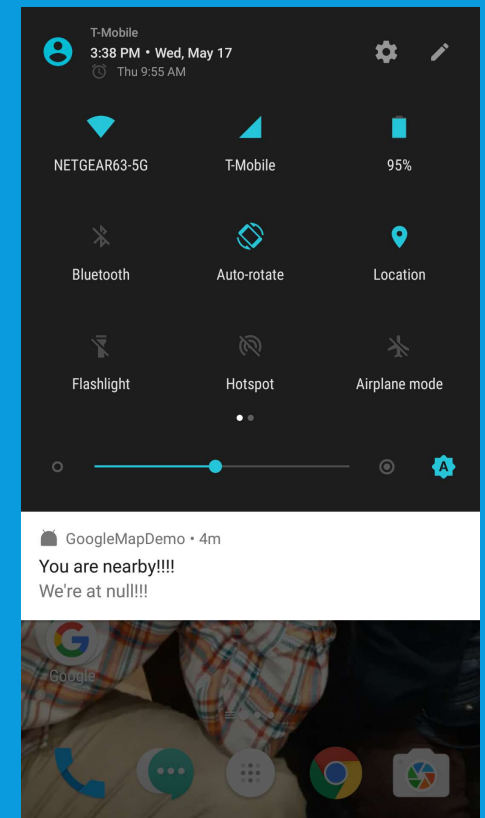## Saurabh

Task Completed

Saurabh

Issues Faced

Saurabh

- Issues faced:
  - Dynamically adding the locations and deleting them. (Solved)
  - Updating active lists Database dynamically. (Solved).
  - Integrating different applications into UI.(Solved)
  - Notification Drawer manager was passing null values.(Solved)
  - Testing and error checks.

Proposed Project Task

Nithin

- Designing and implementing of SQLite Database.
  - Structuring of database application requirements.
  - Designing user specific databases for storing multiple tables

- Rendering UI based on database transaction(Shared with Saurabh)
  - Parsing data to the set UI for easy accessibility.

- Implementation of Google places API for to populate autocomplete textview.
  - Designing custom array adapter "PlaceArrayadapter" for filtering and populating data

- Implementing modules of Geofencing functionality.

Task Completion

Nithin

- Achieved:
  - Google Places API to achieve dynamic listing of the nearby location.
  - This dynamic listing is based on location achieved by using the static location Latitude and Longitude values
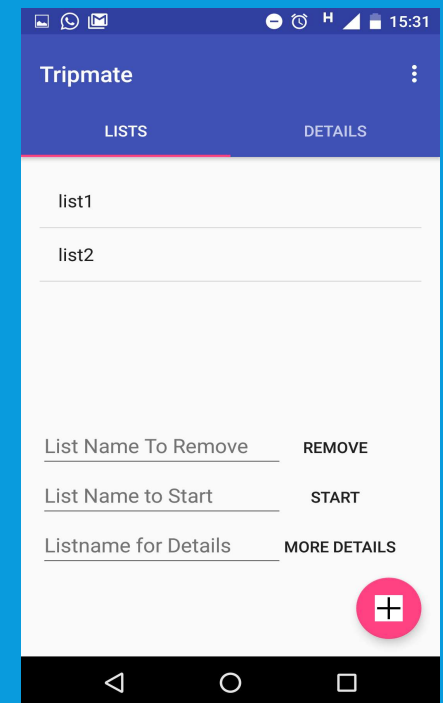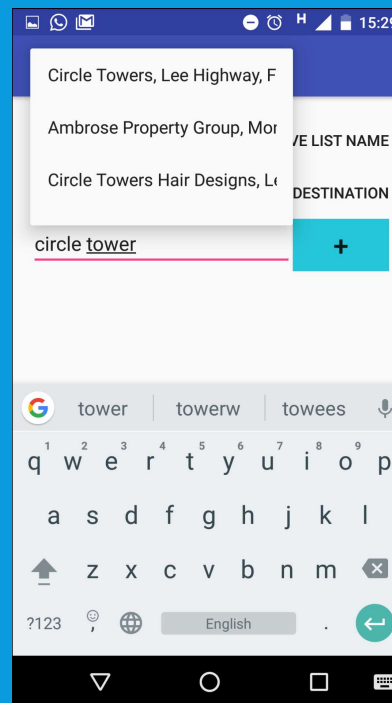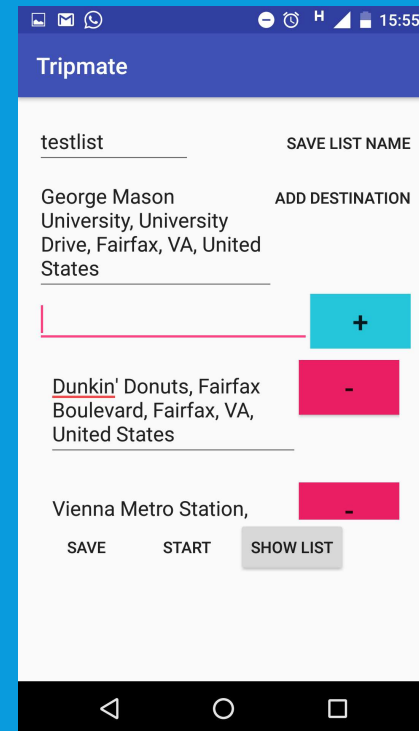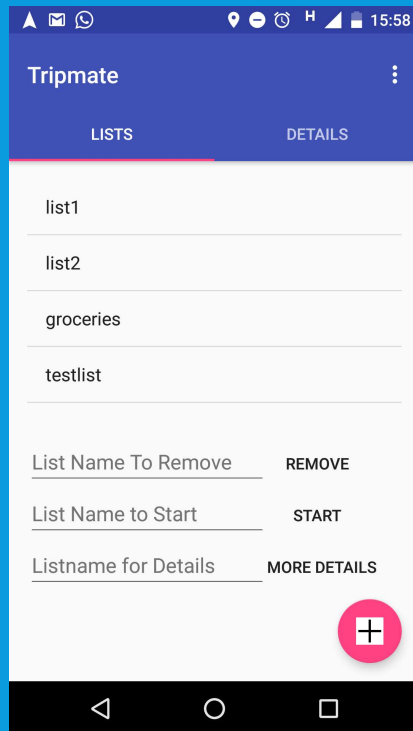
Task Completion

Nithin

- Achieved:

- Implementation of createlist () to dynamically generate multiple table or lists.

- Fetching all the tables using sqlite_master

- Addition and deletion of halts in the tables/lists specific to users

- Fetching and removal of lists based on users requirement on active fragment.

- Handling java related static dependencies on function modules of Geofence

TASK COMPLETION

Task Completion

Nithin

- Achieved:

- Integration of UI and database modules with Mapactivity to render destination and waypoints on Google maps.

- Integration of UI and parsed values of tables

Issues Faced

Nithin

- Issues faced:
  - Difficulty in integrating Google places API Key with the Mainactivity .(Solved)
  - Retrieving data GoogleAPIClient.(Solved)
  - Automatically accumulating data on UI.(Solved)
  - Generating multiple tables/list(Solved)
  - Parsing data from listadd activity to active fragment.(solved)
  . Integrating mainactivity with mapactivity(solved)

Proposed Project Task
Mihir

- Finding directions between Source and Destination

- Navigation between Source and Destination (Shared with Devang)

- Voice Notification

- Integrating Voice with Directions and Locations (Shared with Devang)

- Planned:
  - Retrofit:.
    - No JSON parser required.

- Drawbacks:
  - Limited integration with Google Maps.
  - Gradle crashes if multiple Retrofit dependencies
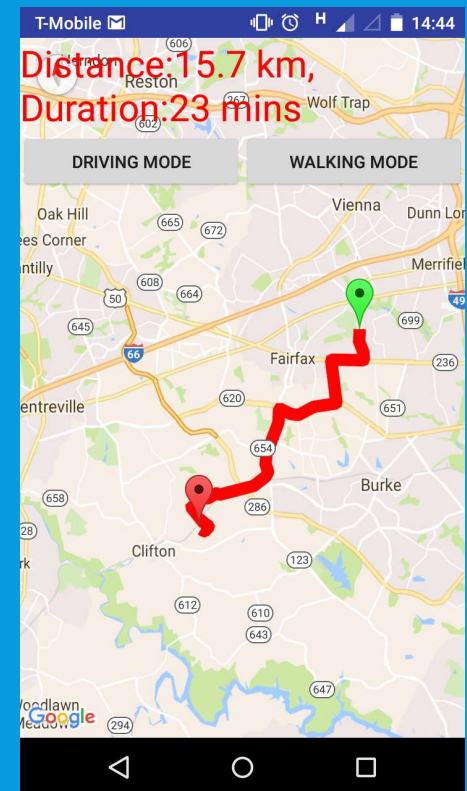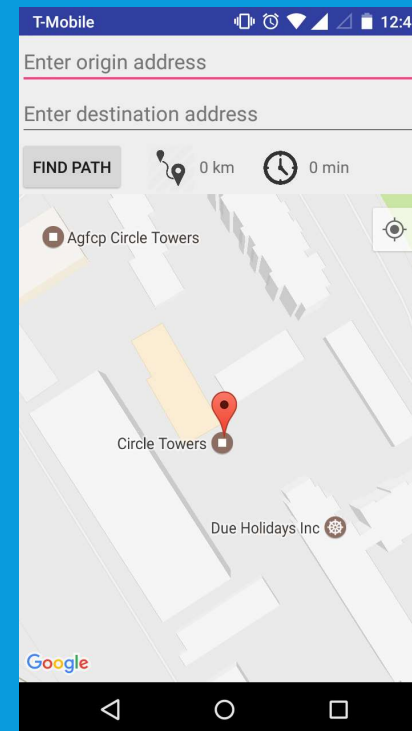
Task Completion

Mihir

- .Google Maps API and Google Maps directions API

- JSON parses implemented to work with directions
  - Get the start location and end location
  - Get route and legs of the route
  - Get distance and duration
  - Get points of Polyline

- A decode function to decode Polylines

- Async Task utilized
  - Handles the Main UI thread in an efficient way
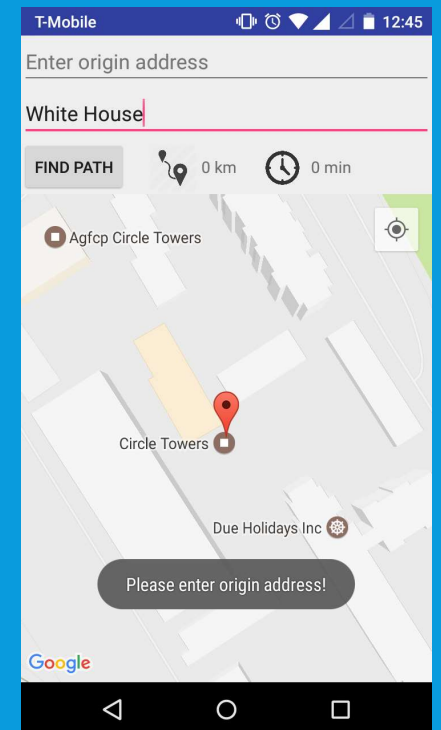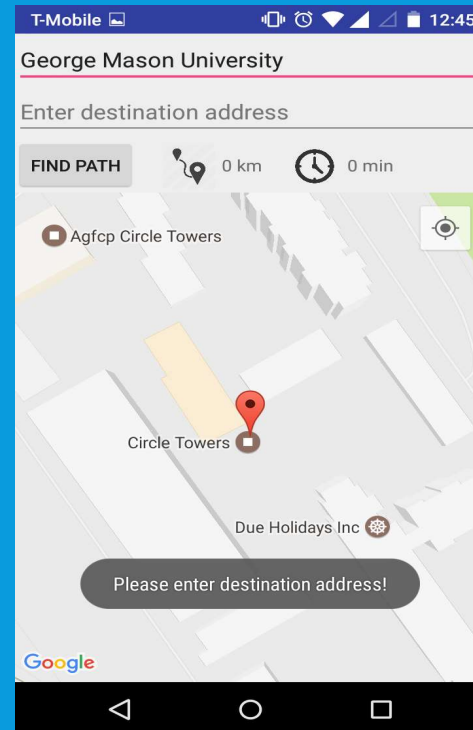 - To avoid creating additional activities

Task Completion
Mihir

- doInBackground()
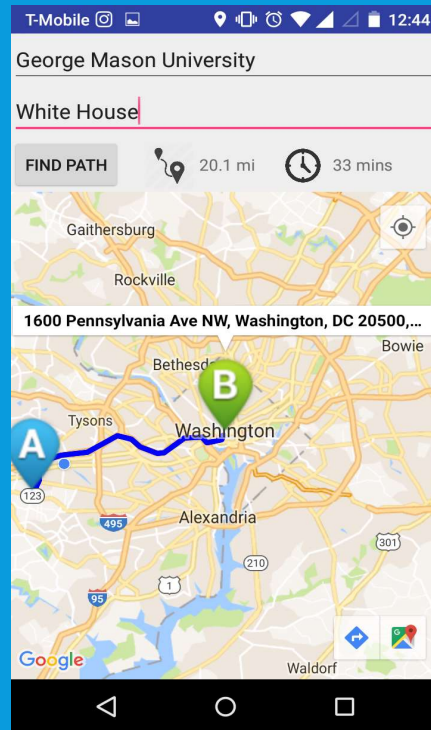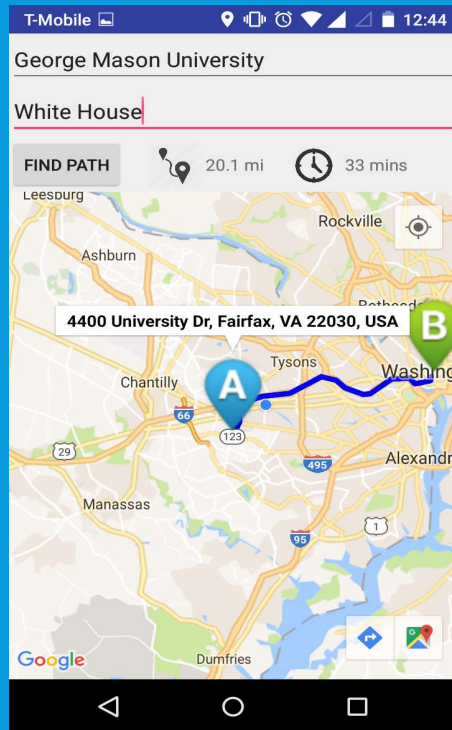 - Create the URL in format
  - https://maps.googleapis.com/maps/api/directions/json?origin=XX&destination=XX&key=&&
  - Download data in background
- onPostExecute()
  - Receives input from doInBackground and invokes JSON parser

Task Completion

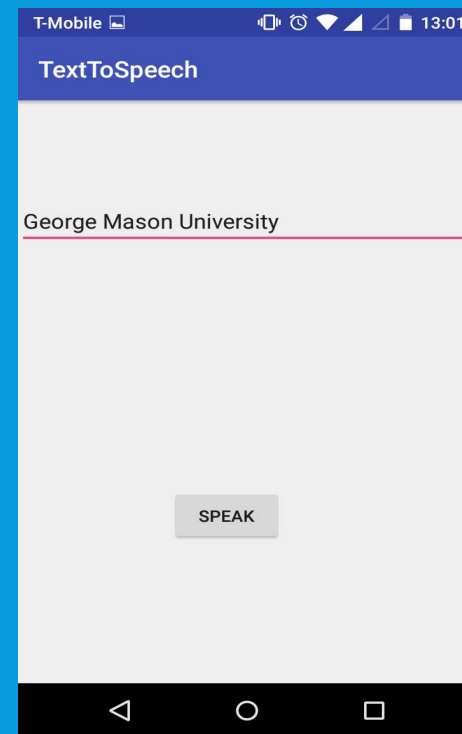### Mihir

Task Completion
Mihir

- Text to Speech
  - TextToSpeech class utilized
  - Multiple Languages available
  - Standard English used

Issues Faced

Mihir

- Implementing JSON parser

- Implementing Navigation

- Integrating Location module with Directions and routing. (Shared with Devang)

- Integrating Voice notification with Maps.

- Integrating Geofencing (Shared with Devang)

Proposed Project Task
Devang

- Obtaining Current Location of the user from GPS locations using Google API.

- Routing among the multiple waypoints (Shared with Mihir)

- Navigation using Google maps API.

- Implementing JSON parses for multiple waypoints by fetching the coordinates.

- Geofencing

Task Completion
Devang

- Current Location:
  - Able to access Current location of the user with the GPS location using LocationServices API of Google Play Services.
  - Integration of Current Location with Navigation and Directions to start from the current location and obtain it for current map display as well.

- Routing optimization:
  - Google Maps API provides various options for the route which can be obtained when those options are passed to Google Maps and the response is received in JSON format.
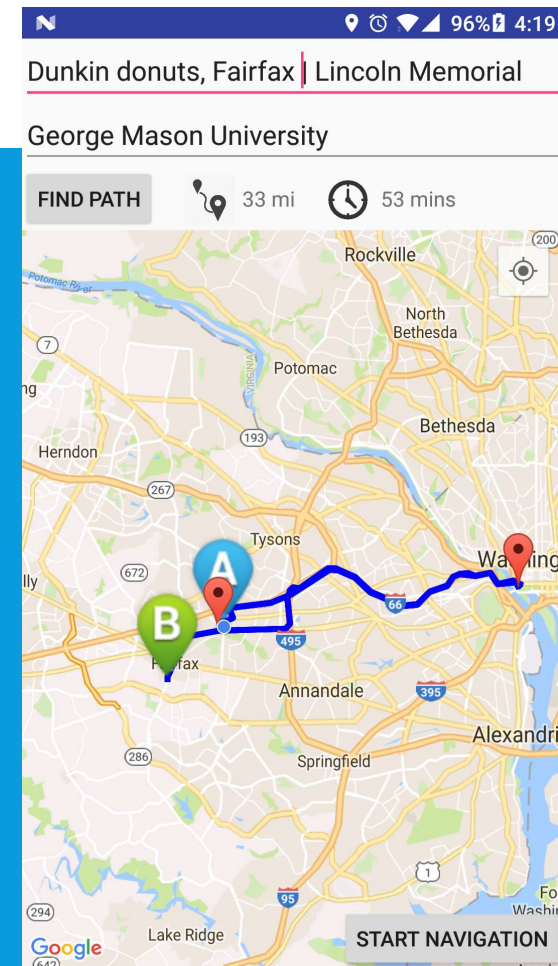
Task Completion

Devang

- Multiple Waypoints:
  - Obtained the waypoint details from the JSON file obtained from Google Maps API along with optimization and plotting tags of the waypoints.
  - After obtaining the values from JSON parsing it over to the Google Maps API by generating an Intent of the Google Maps.

```
{
    "geocoded_waypoints" : [
        {
            "geocoder_status" : "OK",
            "place_id" : "ChIJE_6AowlMtokRJ8rfVZxZwBg",
            "types" : [ "establishment", "point_of_interest" ]
        },
        {
            "geocoder_status" : "OK",
            "place_id" : "ChIJa4-fzkC2t4kRgihmVAVtnRw",
            "types" : [ "establishment", "point_of_interest", "university" ]
        },
        {
            "geocoder_status" : "OK",
            "place_id" : "ChIJh2KQ4HG3t4kRti5cycnRSRA",
            "types" : [ "establishment", "park", "point_of_interest" ]
        },
        {
            "geocoder_status" : "OK",
            "place_id" : "ChIJ37HL3ry3t4kRv3YLbdhpWXE",
            "types" : [ "establishment", "point_of_interest" ]
        }
    ],
    "routes" : [
        {
            "bounds" : {
                "northeast" : {
                    "lat" : 38.9056756,
                    "lng" : -77.0365699
                },
                "southwest" : {
                    "lat" : 38.8684658,
                    "lng" : -77.2713873
                }
            },
            "copyrights" : "Map data ©2017 Google",
            "legs" : [
                {
                    "distance" : {
                        "text" : "13.7 mi",
                        "value" : 21990
                    },
                    "duration" : {
                        "text" : "21 mins"
```
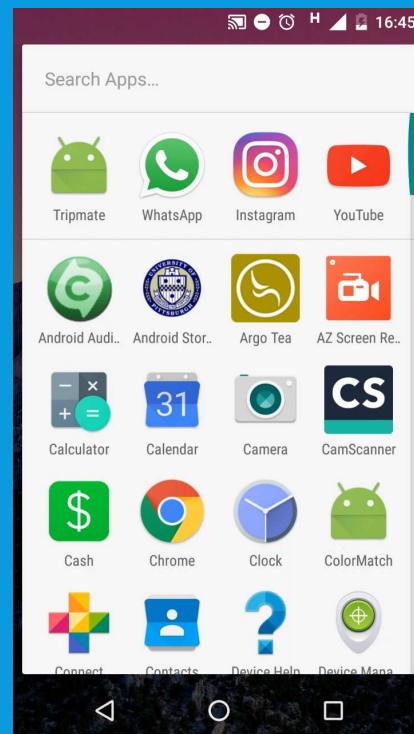
Task Completion

Devang

- Geofence
  - Implemented Shared Preferences to save the Latitude and Longitude on file and these are accessed by the Service to detect if we are in the proximity of Geofence.
  - Implemented IntentService() class by extending it and implemented as service which links to the notification whenever the user is in the radius of the GPS location.

Issues Faced
Devang

- Getting permissions in Android to access location data.

- Fetching different legs of routes from the JSON Script.

- Integrating the Geofencing with Directions.

- Integrating Voice with Geofence.

- Testing Geofence.

DEMO

Thank you

Questions???