# MOORE'S VISION

**FOR** someone **WHO** wants to easily plan and organize spontaneous trips, or someone **WHO** needs a quick break from everyday life, **Pop-Up Trip** is a mobile app **THAT** provides curated recommendations and personalized itineraries within minutes, based on the user's locations and preferences. **UNLIKE** traditional travel apps, **OUR PRODUCT** simplifies the planning process by offering unique, nearby, and off-the-beaten-path destinations, all in one place.

# APP WALKTHROUGH

| Home | Dashboard | Personal Profile | Settings |

# APP STRUCTURE - 2 ACTIVITIES, 10 FRAGMENTS

**LOGIN ACTIVITY**

**MAIN ACTIVITY**

### Sign In

Enter User Name

Enter Email

Enter Password 👁

Confirm Password 👁

Sign Up

### Sign In

Email Address

Enter Password 👁

Login

Create An Account

Reset Password

### Reset Your Password

Email Address

Submit

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Enter destination 🔍

**Destinations Nearby**

Starbucks
★★★★★
259 Centre Street, Newton

Starbucks
★★★★★
75 Mount Auburn Street, Watertown

Panera Bread
★★★★★
321 Arsenal Street, Watertown

Red Leaf Café
★★★★★
123 Main Street, Watertown

Dunkin'
★★★★★
49 Mount Auburn Street, Watertown

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Enter Starting Point
🔍 Your Location

⊕ Use current location

Destination
📍 655 Commonwealth Ave

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← Itinerary Detail

**Your Location**
↓ 16 minutes, 21 seconds
Step 1: Walk to Arsenal St @ Beacon Pk
Step 2: Bus towards University Park
Step 3: Walk to 525 Western Ave, Brighton, MA 02135, USA

**House of Art and Craft/ Speedway**
↓ 21 minutes, 15 seconds

**Tous les Jours**
↓ 8 minutes, 22 seconds
Step 1: Walk to Brighton Ave @ Harvard Ave
Step 2: Bus towards Kenmore
Step 3: Walk to 910 Commonwealth Ave, Boston, MA 02215, USA

**Barnes & Noble at Boston University**
↓ 7 minutes, 32 seconds
Step 1: Walk to Amory Street
Step 2: Light rail towards Government Center
Step 3: Walk to 655 Commonwealth Ave, Boston, MA 02215, USA

655 Commonwealth Ave

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**Itinerary History**

Itinerary1
FROM [Your Location]
TO [655 Commonwealth Ave]

Itinerary2
FROM [Solders Field Road]
TO [655 Commonwealth Ave]

Itinerary3
FROM [Solders Field Road]
TO [655 Commonwealth Ave]

Itinerary4
FROM [655 Commonwealth Ave]
TO [Red Leaf Café]

Itinerary5
FROM [Your Location]
TO [900 Commonwealth Ave]

Itinerary6
FROM [89 E Dedham St]
TO [900 Commonwealth Ave]

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🏠 **Home**

▦ **Dashboard**

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### Personal Profile

Username: melody

Change Password:  change password

Photo:

Preference:  Preference

### Preference                  Save

Travel Method:            WALKING ▾

Your Preferred Places:

Food:  ♥ Bakery   ♥ Cafe
        ♥ Restaurant

NightLife:  Bar   Night Club

Nature:  Park   Campground

Culture:  Library   Museum
          Art Gallery   Bookstore

ENT:  Aquarium   Movie Theater
       Zoo   Amusement Park

### Settings

Theme            Dark Mode ◉

Language         English ▾

Log Out

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👤 **Personal Profile**

⚙ **Settings**

# LOGIN IMPLEMENTATION

- Using an Login Activity to contains these three fragments
- Enables user to do sign in, sign up and reset password in the same fragment
- Users will get an email when they request to reset their passwords

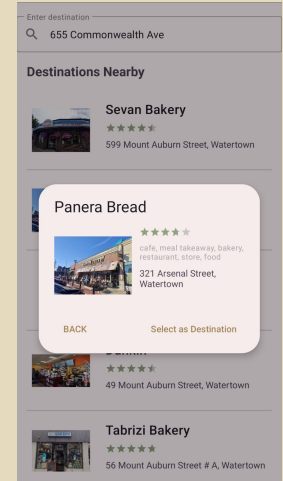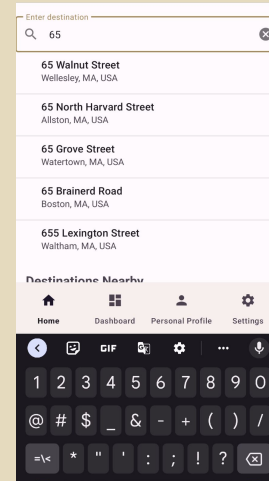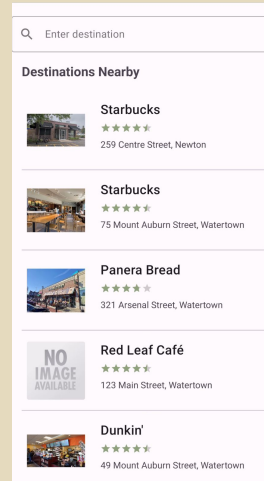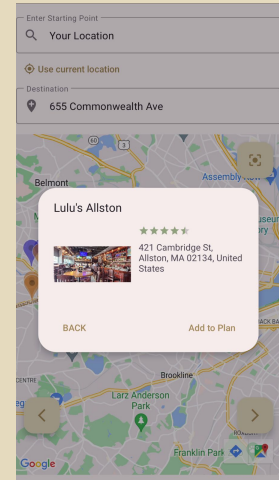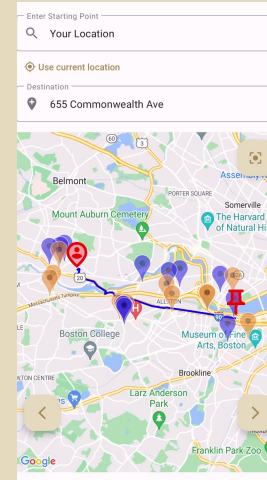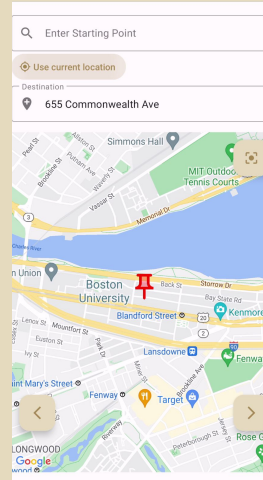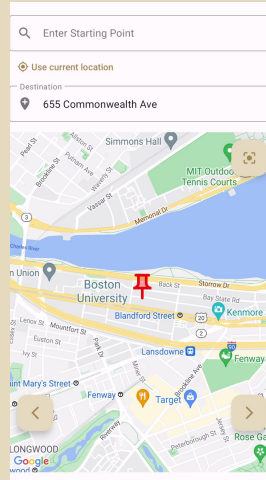# HOME IMPLEMENTATION

- Auto-complete search bar implemented with **Google Place Autocomplete API**
- RecyclerView displaying nearby places
- Nearby places are fetched with **Google Nearbysearch API** based on user preferences
- Radius set to 1500m centered at the current location
- AlertDialog to display place detail
- Once a destination is selected Navigate to **Exploration page** NavArg: destination ID passed using safeargs

# EXPLORATION PAGE IMPLEMENTATION

- Auto-complete search boxes
- Current location button
- MapView
- Place Dialog

# EXPLORATION PAGE IMPLEMENTATION

- Autocomplete Search Box
    - Autocomplete search boxes for start point and destination
- Current location button
    - Gets user's current location using FusedLocationProviderClient from Google Play Services (balanced power and accuracy)
- MapView
    - Get Directions
        - Gets the route between the start point and the destination based on the user's preferred travel mode set in Personal Profile
    - Get Recommended Places
        - For each coordinate on the route that are 2 km apart from each other, get the places of user's interest (from Personal Profile) within 1 km radius (location bias) of that coordinate
    - Place Dialog
        - Allows user to view details regarding the place (name, address, rating and image)
        - Allow users to add and remove places of interest to add to itinerary
        - Send the details to itinerary after they are done
            - **Navigate** to Itinerary page (args: Itinerary ID received from POST response)

# DASHBOARD TAB IMPLEMENTATION

- RecyclerView of itinerary history
- How data fetched:
    - HTTP request to backend application running in an AWS EC2 instance

## Itinerary History

**Itinerary1**
FROM [Your Location]
TO [655 Commonwealth Ave]

**Itinerary2**
FROM [Soldiers Field Road]
TO [655 Commonwealth Ave]

**Itinerary3**
FROM [Soldiers Field Road]
TO [655 Commonwealth Ave]

**Itinerary4**
FROM [655 Commonwealth Ave]
TO [Red Leaf Café]

**Itinerary5**
FROM [Your Location]
TO [900 Commonwealth Ave]

**Itinerary6**
FROM [89 E Dedham St]
TO [900 Commonwealth Ave]

# ITINERARY DETAIL PAGE IMPLEMENTATION

- **Display**: RecyclerView
- **Features**:
  - Shows an optimized route to travel in the shortest time in real time
  - Shows time taken and direction information from one place to its next place
- **Fetching data**: HTTP request to the backend application
- **Optimized route calculation**:
  - Calculate 2D distance matrix, value inside is the time from one place to another
  - Use the matrix with Google MAP TSP Solution to get optimized order to travel
- **Direction**:
  - Google Map Direction API

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Enter Starting Point
🔍 Your Location

◎ Use current location

Destination
📍 655 Commonwealth Ave

---

← **Itinerary Detail**

**Your Location**

↓ 16 minutes, 21 seconds
Step 1: Walk to Arsenal St @ Beacon Pk
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**Tous les Jours**

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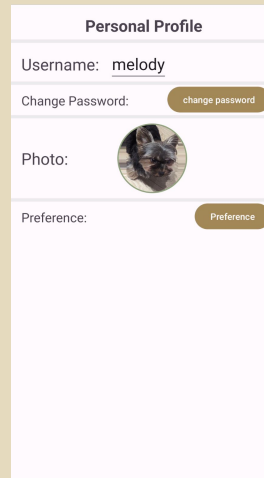Step 3: Walk to 910 Commonwealth Ave, Boston, MA 02215, USA

**Barnes & Noble at Boston University**

↓ 7 minutes, 32 seconds
Step 1: Walk to Amory Street
Step 2: Light rail towards Government Center
Step 3: Walk to 655 Commonwealth Ave, Boston, MA 02215, USA

**655 Commonwealth Ave**

# PERSONAL PROFILE IMPLEMENTATION

- Username displayed(stored in account information database)
- Username change allowed
- Google Material3 chips for place preferences
- Save Prefs & Travel Method in Firebase
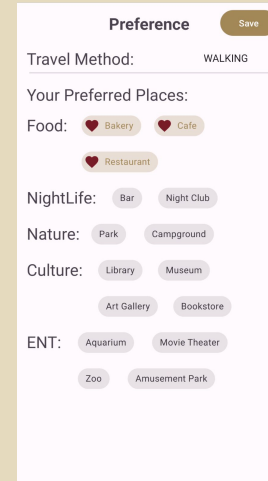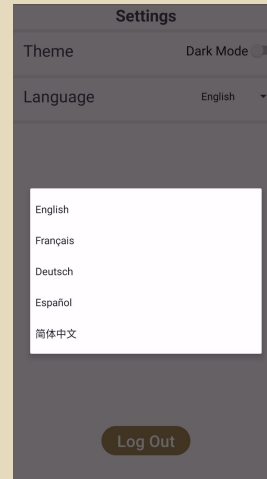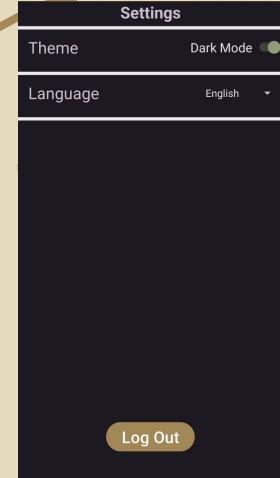- Receive email to change password

# SETTINGS IMPLEMENTATION

- Change language
- Log-out button
- Change theme
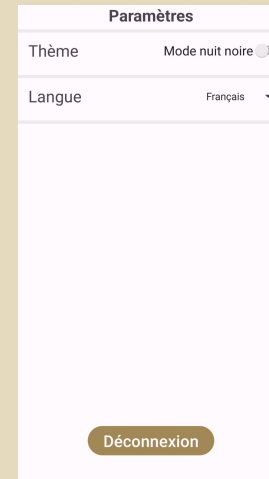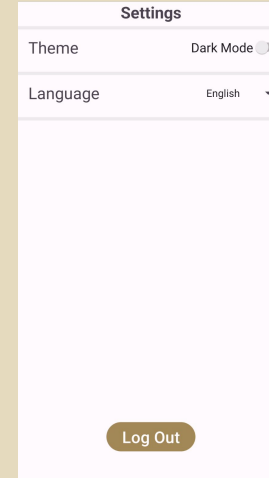
# OVERALL ARCHITECTURE

liyuqu@bu.edu ✉ May 1, 2023 May 2, 2023 9e092FI6BvdjYaUmf877nMzku542
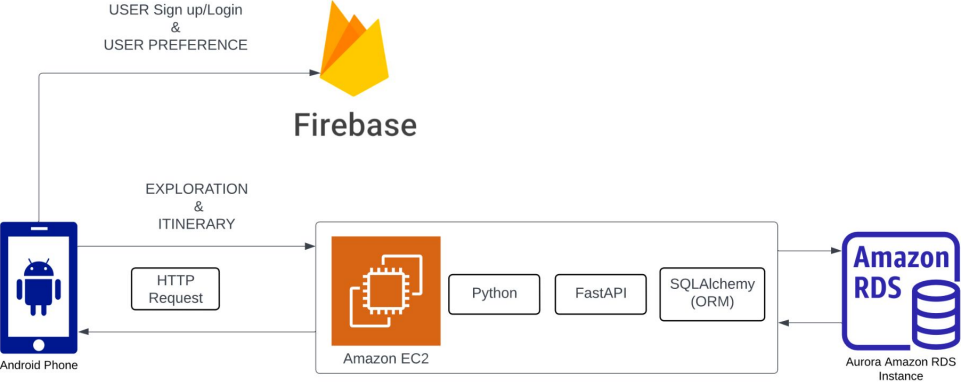


User_Table
 └─ 9e092FI6BvdjYaUmf877nMzku542
     ├─ preferredPlace: bar#night club  ABC ✕
     ├─ travelMethod: WALKING  ABC ✕
     └─ username: "li"

User_email:  sarahtb25@gmail.com

Starting_point:  ['Your Location', '42.3455833', '-71.08878']

Destination:  ['Museum of Fine Arts, Boston', '42.339381', '-71.094048']

Places:  ['Park', '42.3465259', '-71.0822474', 'Flour Bakery + Cafe', '42.3460049', '-71.0845764']

# REQUIREMENTS

## Preference

Travel Method: WALKING

Your Preferred Places:

Food: ♥ Bakery  ♥ Cafe
♥ Restaurant

NightLife: Bar  Night Club

Nature: Park  Campground

Culture: Library  Museum
Art Gallery  Bookstore

ENT: Aquarium  Movie Theater
Zoo  Amusement Park

| AS A... | I WANT TO... | SO THAT I CAN... | |
|---|---|---|---|
| TOURIST/ WORKING ADULT | visit various places that I am interested in on the go | explore as many places as possible | MUST HAVE ☑ |
| STUDENT/ WORKING ADULT | explore hidden gems and various interesting places that I did not know about on my daily route to school/work | get to know the area I am in more and post my explorations on social media | MUST HAVE ☑ |
| PARENT | get suggestions on activities or places I can take my children to during the weekend within our neighborhood | hang out as a family in new places and keep the children occupied | MUST HAVE ☑ |

# REQUIREMENTS

| AS A... | I WANT TO... | SO THAT I CAN... | |
|---------|--------------|------------------|---|
| COUPLE | explore quaint cafes and various places that are suitable for dates | go on dates and enjoy quality time with my significant other | |
| GENERAL USER OF THE APP | be able to control the type of suggestions I receive, e.g. quaint and cozy cafes, fancy restaurants, nature-related places, etc. | get suggestions that I am actually interested in | MUST HAVE |
| FAMILY TRAVELING TO ANOTHER LOCATION | find family-friendly places we can explore beyond what we have planned while sticking to our route | we can enjoy ourselves at even more family-friendly places | |

## Preference    Save

Travel Method:    WALKING

Your Preferred Places:

Food:   ♥ Bakery   ♥ Cafe
       ♥ Restaurant

NightLife:   Bar   Night Club

Nature:   Park   Campground

Culture:   Library   Museum
       Art Gallery   Bookstore

ENT:   Aquarium   Movie Theater
     Zoo   Amusement Park

# REQUIREMENTS

| AS A... | I WANT TO... | SO THAT I CAN... | |
|---------|-------------|------------------|---|
| ACTIVE SOCIAL MEDIA USER | be able to post my journey and the places I have explored on the app | show my followers where I have been and post about my experiences | 👍 NICE |
| PERSON WITH LOTS OF FRIENDS | be able to add friends and chat with my friends within the app | Communicate and plan a trip with my friends/family easily | 👍 NICE |
| USER | Have an app that is easy to use with thoughtful and well-designed UI | Enjoy my time using the app | 👍 NICE |

Preference    Save

Travel Method:    WALKING

Your Preferred Places:

Food:    ♥ Bakery    ♥ Cafe
         ♥ Restaurant

NightLife:    Bar    Night Club

Nature:    Park    Campground

Culture:    Library    Museum
           Art Gallery    Bookstore

ENT:    Aquarium    Movie Theater
        Zoo    Amusement Park

# REFERENCES

- Android Documentation
- Material3 Documentation
- Kotlin Documentation
- Google Cloud (Google Map, Google Places) API Documentation
- Volley Documentation
- StackOverflow.com
- AppsLoveWorld.com
- Lwgmnz.me

# CHATGPT USAGE:

- For Android app:
  - Asked it how to change from a traditional RecyclerView development method to a newer version of development for RecyclerView
- For Backend:
  - Asked it how to use: Google Map Distance Matrix API, Direction API, some python commands, and some operations of using SQLAlchemy

# REPOSITORIES

- [PopUpTrip GitHub](#)

- [Backend GitHub](#)

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☰ **README.md** ✎

## PopUpTrip

PopUpTrip is an Android travel planning app that simplifies the process of organizing trips and discovering nearby attractions. With the help of this app, users can easily create itineraries and explore the area around them.

### Features

- User authentication with sign-in and sign-up functionality.
- User authentication with reset password and profile data migration functionality.
- Customize your experiences based on your preferences under personal profile.
- Travel history and user preferences are stored in a cloud database associated with the user account.
- Discover nearby attractions and points of interest using the integrated Google Maps API.
- Create your travel itineraries with an easy-to-use interface.
- Optimize itineraries' travelling time to allow users to travel the places they want to in the shortest time.
- Get detailed information about places, such as ratings, photos, and descriptions.
- Search for specific locations using the autocomplete search feature.
- Receive real-time updates on nearby attractions as you move around.

### Installation