



## Project Backlog - Team 21

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### **Project Statement:**

It can be difficult to plan a large trip using various services to book and keep track of flights, hotels, rental cars. That is why our project will make travel easier through aggregating all travel information into one master itinerary. There are existing services that attempt to create master itineraries but none automatically crawl through emails to create the said itinerary. Using this will allow our app to create a simplified and organized final product.

### **Background Info:**

#### **Targeted Users:**

For people who travel, it is difficult for them to go through several apps or their email just to find all of their itinerary and confirmation emails. Due to this, our target audience includes a wide range of people who want to travel. From tourists to people on business trips, MergeTrip caters to all who frequently travel so they can keep all of their travel documentation in one place and have a centralized itinerary without browsing through their email or other apps.

### **Similar Applications and Limitations:**

There are two main applications that have some overlap with MergeTrip. The two applications have similar functionality, but their implementations differ from each. Triplt is an app that creates master itineraries just like ours, but the user has to manually forward the emails to a Triplt email. Another app is Wanderlog, which is an app that is mainly used for planning trips with friends that allows for Gmail syncing. Wanderlog, however, requires \$50 per year just to get access to the email syncing function, which is something we plan to implement in our basic functionality.

## **Functional Requirements:**

### **User Stories:**

- 1) As a user, I would like to create an account so that I can get the service provided by MergeTrip
- 2) As a user, I would like to be able to choose my username so that other users can find me
- 3) As a user, I would like to set my password so that my account is protected
- 4) As a user, I would like to input my basic required information so that MergeTrip can find my travel information
- 5) As a developer, we would like to save user information in our database so that we are able to provide the service to users
- 6) As a developer, we would like to be able to encrypt and decrypt user information
- 7) As a user, I would like to be able to login to my account so that I can see the service provided
- 8) As a user, I would like to be able to change my username
- 9) As a user, I would like to be able to reset my password so that I can still access my information if I forget my password
- 10) As a user, I would like to connect my gmail to the application so that I don't have to manually input all of my travel information
- 11) As a user, I would like to option to not connect my gmail to the application
- 12) As a user, I would like the option to disconnect my gmail from the application so that I can manually create my itinerary on future trips
- 13) As a user, I would like to be able to manually update my travel events so that the events added by MergeTrip are more accurate
- 14) As a user, I would like to manually input all of my travel events so that I can still get the services provided if I don't connect my gmail
- 15) As a user, I would like to be able to manually delete travel events so that events I don't plan on attending are not on my itinerary
- 16) As a user, I would like to be able to edit my travel details so that I can correct any mistakes/make changes to my travel plans

- 17) As a user, I would like to have a user friendly UI so that I can easily find what I am looking for
- 18) As a user, I would like to be able to see all of my trip details on a timeline/calendar so that I get the service provided
- 19) As a user, I would like to search for other users
- 20) As a user, I would like to create a group so that I can plan travel itineraries with people I am traveling with
- 21) As a group creator, I would like to invite other users to my group
- 22) As a user, I would like to accept an invitation to a group from a different user
- 23) As a group member, I would like to be able to invite other users to the group
- 24) As a user, I would like to be able to leave a group
- 25) As a user, I would like to be able to switch from one group to another
- 26) As a user, I would like to be able to view the itinerary of another member in my group
- 27) As a group creator, I would like to be able to remove members of my group
- 28) As a group member, I would like to invite other members of the group to an event
- 29) As a group member, I would like to accept event invitations from other members of my group
- 30) As a developer, we would like to store user roles within their groups in our database
- 31) As a group member, I would like to view multiple group members' itineraries at once so that I can easily see when multiple people are busy/not busy
- 32) As a developer, we would like to dissolve a group once there are no users in it
- 33) As a developer, we would like to be able to give the user a high quality printable version of the calendar so the user can print out their itinerary
- 34) As a developer, we would like to connect to users' gmail using their login so that we can search for emails
- 35) As a developer, we would like to be able to read user emails and determine if they are travel based
- 36) As a developer, we would like to be able to parse appropriate emails into our backend data

- 37) As a developer, we would like our AI to read travel details from the users' travel emails so that the users' travel details are obtained automatically.
- 38) As a developer, we would like to have our AI parse understand when there are travel updates to existing plans rather than new plans
- 39) As a developer, we would like to construct an accurate itinerary from the information parsed by the AI
- 40) As a user, I would like to be able to log out
- 41) As a user, I would like to be able to delete my account
- 42) As a user, I would like to have a profile image so my group can recognize me
- 43) As a user, I need to be able to download my itineraries to view offline
- 44) As a user, I need to be able to access the app when offline
- 45) As a user, I want to be able to pin the app to my home screen
- 46) (if time allows) As a user, I want to be able to export the events into my Google Calendar as reminders
- 47) (if time allows) As a user, I want to see a visual representation of different locations in my trip (Hotels, Airports, pickup locations) to make it easy to understand where to go.

## **Non-Functional Requirements:**

### **Architecture:**

For the front end, our goal is to create a responsive web app in ReactJs that will use Firebase to authenticate and authorize the user. The front end will request read permissions from the user's gmail account and will store the access/refresh token for the user's Gmail account and store it in Firebase's NoSql Database (Firestore). The extraction of emails will be done by the Flask backend that will communicate with the Gmail API to get access to the emails. The parsing of the emails will be done by an NLP model that lives on the Flask server. The backend will also store the master itineraries for each user on Firestore.

### **Security:**

Security will be very important for MergeTrip users as all their private travel data and identification will be stored on the app. Because of this, we will want to store all itineraries in a protected storage. We also want to store user authentication credentials securely. We want users to validate their data in sign up and sign in

forms. Through the entire process, we want to ensure the site is not vulnerable against XSS (Cross site scripting) and CSRF (Cross site request forgery).

**Usability:**

In order for our site to be successful we must have an easy to use User Interface that also appeals to the general population that may not be as tech savvy. We want our UI to provide a seamless experience that presents an itinerary quickly but also allows power users to dig deep. It will be important to strike a balance between power user features and keeping the site simple.

**Performance:**

For performance standards we want to be able to parse the user's emails consistently and quickly. The Gmail api's limit is 25 email threads get requests per user per second (250 unit quotes per user per second). We also want to be able to export a well designed clean trip schedule to the users as quickly as possible. Our Firebase and Flask servers can handle up to 1000 concurrent requests, but if necessary we can pay to increase the number of requests we can have.