

Project Specification

Product Backlog:

1. Search possible routes according to users' input Origin and Destination.

Origin InputField / Destination InputField:

- user can enter a String, then there will be a drop-down list which will list all the possible places related to this String, user can choose one as the Origin/Destination;
- Also, user can choose a specific point in the map as the Origin/Destination;

Search Button:

- After user presses the button, all the possible routes will be shown in the Result Field;
- The inner process:
 - Use Google API to compute all the possible routes and get related bus stop's longitude and latitude;
 - Get the Stop-ID according to the longitude and latitude;
 - Retrieve the real-time bus information from BusTime Development API;
 - Show the results as Text and also represent results on the map;

2. Show the real-time bus information based on users' search history

Every time after a user searching, our app will record related bus routes into users' favorite routes;

After the user choosing an origin place, the user can press the ShowFrequentRoute Button directly without choosing a destination, then all the users' frequent routes' real-time information will be shown in ResultField;

3. Send result to my phone via SMS message

User can press the SendText Button, then the app will send the result to user's phone as SMS messages;

4. Set places as Origin/Destination/FavoritePlaces

Select a point in the map, set the related places as Origin/Destination/FavoritePlaces;

5. Editing Profile Functionality

In our application, we allow logged-in users to edit their profiles. The users can change their username and email address, reset the password and add/change a phone number in order to receive text messages in the future.

We create a side bar to list the categories of profile that the user can change.

- Changing username/email: simply modifies the user model. The length of the input is limited.
- Changing password: requires the old password, and a double entry of the new password. If this cannot be done, the user should click “forget password” to receive an email showing the link in which only new password is needed to make this change.
- Adding/changing phone number: The users can enter a phone number that needs further confirmation. This verification is extremely necessary for preventing fraud, spam and mistakes when entering numbers. We may use the Twilio API to generate random code and send it via SMS. If the code is entered correctly, the database can be updated; otherwise, re-entering phone number or code is required to finish this process.

6. Save favorite places and bus routes for particular users.

Although our app can automatically add customized frequently-used places (stops) and routes for users, we may also want users to add their preferred info manually by themselves.

For this reason, we will design a specific page for users, once they are logged in. The page lists all current favorite places and bus routes in two separate lists. Users, when coming to this page, can delete currently existing items in the two lists, as well as adding new items to them. Especially, when adding new items to the bus route list, the app will check whether this bus route exists; and possibly provide similar existing bus routes in a menu, in the case that the route does not exist. Analogously, when new items are added to the place list, it will provide the user with a menu containing all possible near place to add. This function will enable the users to customize their own travelling plan more conveniently.

First Sprint Backlog:

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We will do the following:

1. Part I: user login and register control. User profile page and info modification page will also be implemented.
2. Part II: Main inquiry page, incorporated with Google Map API and front end effects.
3. Database related: set up our database from data retrieving from Port Authority API, and formalize the models and backend support.
4. Whoever completing the tasks above first can proceed to Part III, to customize user's favorites.