Explorium

Project Proposal: Team Assignment B

Pair #1
Robert Kwiatkowski | rjk2147
Anupama Gupta | ag3900
Ling Zhong | lz2461

Pair #2
Tengyu Zhou | tz2338
Christina Floristean | cf2469

Synopsis

We are building a web application that will create a customized itinerary based on a number of parameters that a user selects. The user will enter the desired destination(s), the number of days visiting, time allocated for visiting tourist attractions, and their estimated budget.

This application will output a list of points of interest to the user in the form of a day to day plan. The places will be displayed in order of easiest travel route while taking into account the hours of operation of each attraction. Once a user creates their itinerary, they can add other users to their trip. The application will also have a messaging feature so users can discuss and further plan their upcoming trip together. As a whole, the application will serve to help the user develop a concrete and efficient plan for their trip, as well as to aid sharing travel information with all members of the party.

Multiple Simultaneous Users Support

Each trip can be associated with multiple visitors(customers). Each visitor in turn can view the trip itinerary and make suggestions about their preference in a group chat on the day-to-day plan page.

User Stories

1. As a customer, I can sign up for the application and sign in with my own username.
2. As a customer, I can use this app to find notable tourist spots in my destination city.
3. As a customer, I can get an itinerary for each city that I plan to visit.
4. As a customer, I can set the price limitation that I am willing to spend for the trip.
5. As a customer, I can set the time limitation that I want to spend in a single city.
6. As a customer, I can adjust the itinerary myself.

7. As a customer with an account, I can discuss the itinerary with other trip group members.
8. As a customer with an account, I can save my trips and itineraries.
9. As a customer with no account, I can download my itinerary.

Example Usages

Types of trips preferred by the customer:
1. Vacation
2. Business trip
3. Cultural enrichment program

Possible Error Cases
1. A user can input a nonexistent location, or one we do not have data on. The application will not process the input and will display the appropriate error message.
2. A user enters a city that corresponds to several destinations. The application will display the possible locations that the user must select from.
3. A user selects incorrect dates (i.e. leaving on September 12 and returning on September 5). The application will not allow the user to select dates on the calendar that do not correspond with each other.
4. A user selects dates with a large stretch of time between them (i.e. a year). The application will have to limit the amount of dates to schedule activities for. It will not allow the user to select calendar dates past a certain cutoff. This will also prevent the user from selecting dates so far in advance that the itinerary could be out of date.
5. The data is not up to date and the trip itinerary is incorrect. This includes changes in hours of operation, address, whether or not an attraction is still open, etc. Aside from limiting how far in advance the user may select dates, it is up to the administrator role to ensure that the current state of information we provide is accurate and that the outside resources we are pulling this information from are up to date.

Static Analysis

We will use *Pylint* which is a python static analysis tool for error detection and bug checking.

Unit Test Tool
We will use *unittest* (Unit Testing Framework in Python) to build and run a collection of test cases for our application.

Build Tool
PyBuilder will be used to construct build life cycles for our Python application.

Package Manager:
We will use pip for managing all python packages.

Technical Specifications

We will use a web application framework - Python Flask for backend, Bootstrap for frontend, and PostgreSQL database. We will implement ElasticSearch+SparkMLlib(might use an open server framework provided by Prediction.IO) to realize our itinerary recommendation system. We will use the Google Maps/Places APIs to gather metadata for the tourist attractions per location.

Stretch Goals:
1. Allow the user to use filters such as 'adventurous', 'historical', 'romantic', etc. to specialize the type of tourist attractions the app recommends to the user. The trip will then be more suited to the user's interests.
2. Implement a recommendation system to add new stops to the itinerary based on the opinions of members of a trip on the fly
3. Ability to share your trip on social media/integration with social media sites
4. Integration with airlines and hotels to allow users to book the entire trip from start to finish and purchase tickets and reserve hotels all from the site
5. Allow the user to adjust details of the schedule if needed.
   a. Allow the user to increase/decrease the time spent at a specific place.
   b. Allow the user to move around the order of locations in the schedule.