Chariot (Github) (template)

Team: The Cavalry

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Objective:

Generate a detailed itinerary given the user's location, preference, and amount of time available. This itinerary will lead the user on a path to see relevant events, landmarks, and other establishments of interest within the given parameters.

Background:

Travel is one of the luxuries of life, and tourists often find it difficult to make the most of their time in a city or region without help from someone that knows the region well. For this reason, those traveling abroad often consult a concierge or tour guide, using precious time and money that could be better spent getting a feel for the city or region that they're in. With an application that a user can run on the go, the need for a concierge or a Travel Guide is eliminated, and users are able to save time, and money.

Outline:

- Flask: Backend framework
- Python request: HTTPS handling (rather than urllib)
- Bootstrap: Frontend framework
- Sqlite3: Database
- JQuery: Javascript framework for frontend dynamicism
- APIS:
    - We can do what Brian Moses' group did and have the user enter API keys when logged in.
    - MapQuest: For getting directions, time to destination, possible location of interest

Detailed Plan:

- Bootstrap used to create a responsive front-end
- Database, keeps track of user and their current location (for now)
- Requests for current address upon user creation
- Checkbox/ Text Input for user parameters
- NYC Events API
    - Parse the (limited) user input and print out nearby events
- Multiple Text Inputs that return all relevant events
- Incorporate events into the Google Maps API (Maps, Routes, Places)
    - Plot out where events are
    - Calculate travel time (walking/ driving for now)

    - Draw path from different events
- Generate timetable from event1, to travel time, to event2
- Display timetable along the path
- Implement itinerary constraints
- Restructure API calls to account for constraints, generate new timetable

Timeline:

2019-12-21 to 2019-12-28
- Drafting foundational Design Documentation, writing boilerplate code.
- Having frequent calls using Discord to coordinate and streamline work.

2019-12-29 to 2020-01-05
- Designing UI / UX of the service using Bootstrap 5, jQuery, JavaScript. Model UI/UX: http://zbib.org
- Implementing APIs and base features, without implementing any of our own algorithm
- APIs include:
    - Map Quest

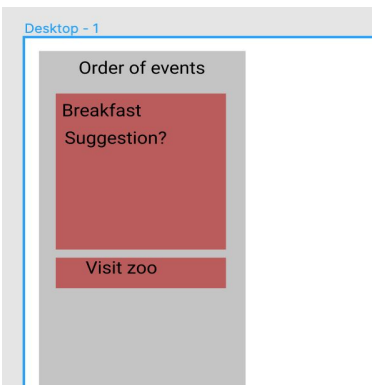
2019-01-06 to 2019-01-13
- Construct the Itinerary generator algorithm using a combination of proximity, user preference, and time available.
- All front-end and back-end work should ideally be in place at this point, so we can focus on having many calls / a lot of face time at the dojo, and write this algorithm. Pseudocode coming soon.

How to use the program:

1. Login
2. Preliminary information
    a. City
    b. Time to leave and finish by
    c. Tags (what you want to focus on sports/eating/watching movies)

3. Give a list of possible options for each event and user must choose

List of events: [
Breakfast,
Watch movie,
Visit a zoo,
Lunch,
Go home
]

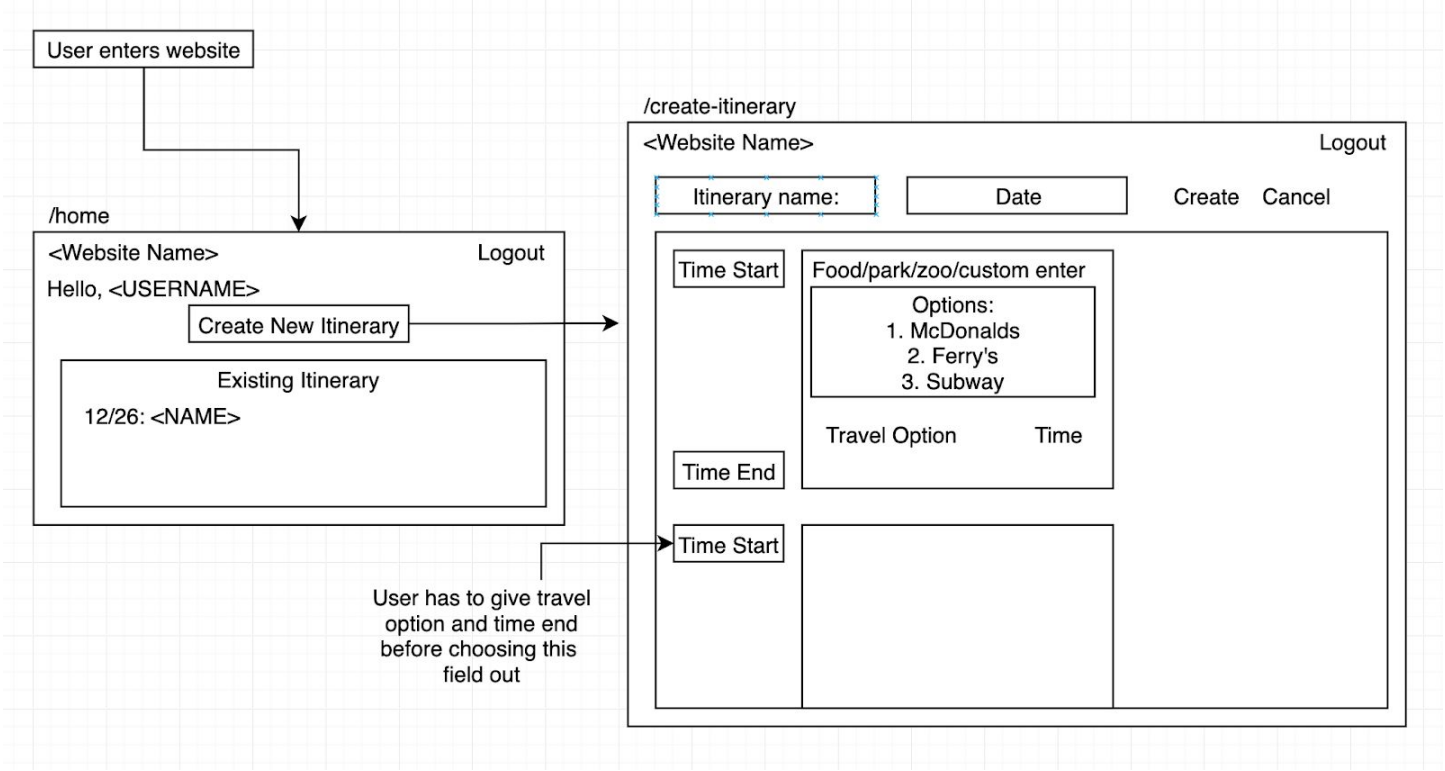


List of tags:
[
Lunch,
Movie,
Visit zoo,
…
]

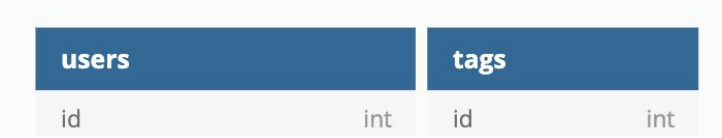
Features:

- Itinerary Generator
  - Function: Generator given tags, time available **MOST DIFFICULT**
  - Function: Route planner given multiple locations, given current location
  - Function: Generate Itinerary given an order of things that you want to do (eat, then see a museum, then see a movie, etc.), and a zipcode.
- User System
  - ** EXTRA FEATURE ** Keep track of places that the user has already been to (User can enter events that they've been to in a "Track Activities" function). ** EXTRA FEATURE **

Sitemap



Database Design



APIKeys:
Key: name of the API
Value: API key for the given API

Location, tags:
Cache the possible locations for the given tags

Component Map