DayTripper

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Project Goal

Develop a software product that builds a custom one-day itinerary of popular sites/attractions in a city

- Includes a route-optimized list of attractions based on the user's schedule, preferences and mode of transportation as well as attractions' locations throughout the city

Primary Data Sources:

~~GooglePlaces API~~, Foursquare API, GoogleMaps API, Geopy API

First user interaction

User Preferences/Getting the Data

Collect user input (city, categories, time constraints, etc.)

- Check if we have city, else, get it from Geopy
- Check if we have places for given city/category, else, query FourSquare
    1. Get list of places for a given category (for each city, about 100~300 places)
    2. (Multi)process those places
    3. Get place information and store in DB
- Get photo and description for top 10 places
- Display top 10 results to user

Second user interaction

User Ranking/Optimization Algorithm

For top 10 places, collect user input (ranking)

- Run routing algorithm
- Display itinerary results
  - Suggested times
  - Ordering
  - Google Map

Project Demo

1. City already in DB
2. City not in DB
3. “I don’t know” city
4. Revealed preferences for places
5. Multiprocessing vs. single processing

Management Tools

- Categories populator
- Data refreshing

What we've learned

- ORMs are great!
- Multiprocessing helps reducing time (even with single core!)
  - Care needed when making parallel transactions with DB
  - Debugging difficult
- API limits are huge bottleneck if deploying App to real life
- TSP approximations are not very good