Let's Go Hike!

DATA 515 Project

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Background

Let's Go Hike!

Let's Go Hike!

A tool that allows users explore new hiking trails by providing:

- A comprehensive search of trails based on location, difficulty, length, elevation gain and features

- A detailed description of trails including weather conditions and posted images

Let's Go Hike! …may have some similarities to AllTrails a web app with a detailed trail map database and search functionality.

Let's Go Hike! Iterates on AllTrails functionality, in future implementations, the app will have the ability to compare trail elevation profiles and features

Data sources used

AllTrails open-source data

- Obtained from publicly hosted Github repository of web scraped data in csv format
- Attributes Included: trail popularity, length, elevation gain, rating, activities, features…

Limitations/Challenges

- Only had trailhead location, could not visualize trail map

Google Map Images & Weather API

- Python-weather for real time weather updates
- Google search API used for trial images
- Gemini API for generating description and trek plan.

Limitations/Challenges

- Displaying weather icons based on keywords returned by weather API
- Ensuring the google API returns images of the same hike being referenced in trail data

Use Cases

Use case 1: Find a hike that aligns with preferences closest to you

Enter Search Params

Get list of relevant hikes

Enter a location (city, zip, etc.):

Select distance away (miles):

50

Select difficulty:

Trail length range (miles):

0.00   8.00

0.00   20.00

Elevation gain range (ft):

0   1500

0   14050

Search   Reset

Dripping Springs via Dripping Springs and Hermit Trail

Location: Grand Canyon, Arizona

Length: 6.3 miles

Difficulty: Difficult

Rating: 4.5 (26 reviews)

Distance Away: 67.3 miles

Select

Use Cases

Use case 2: Plan your Trek ! Find out more weather, map , trek plan & more.

Get list of relevant hikes → Get hike description for selected hike → Get customized trek plan for selected trek

Dripping Springs via Dripping Springs and Hermit Trail
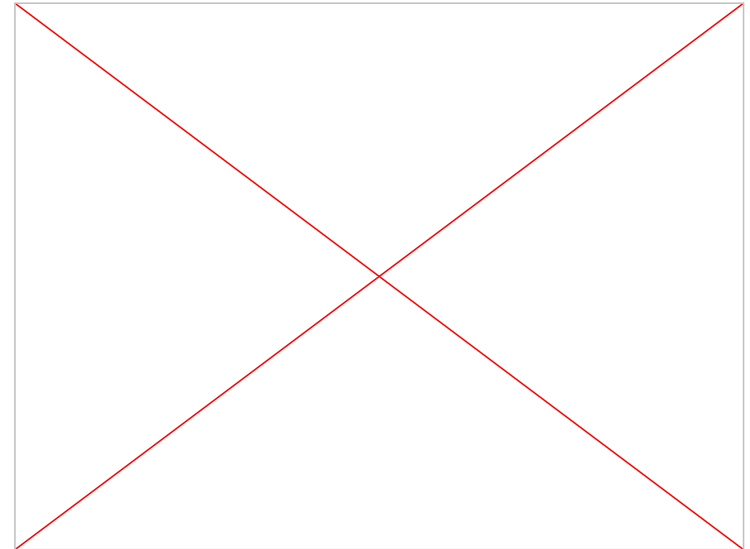
Location: Grand Canyon, Arizona
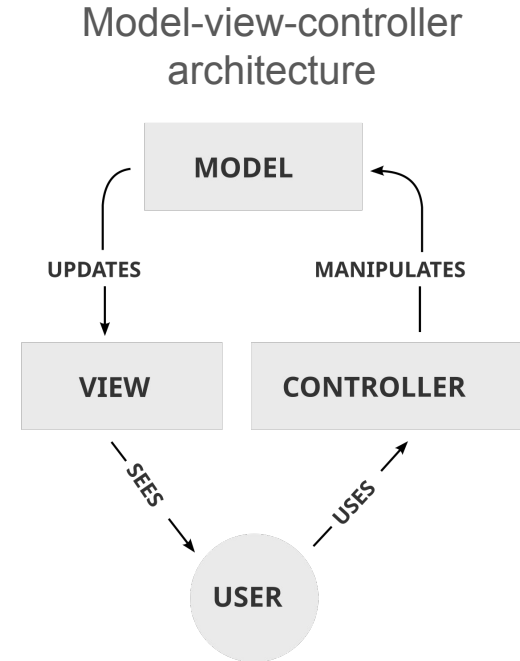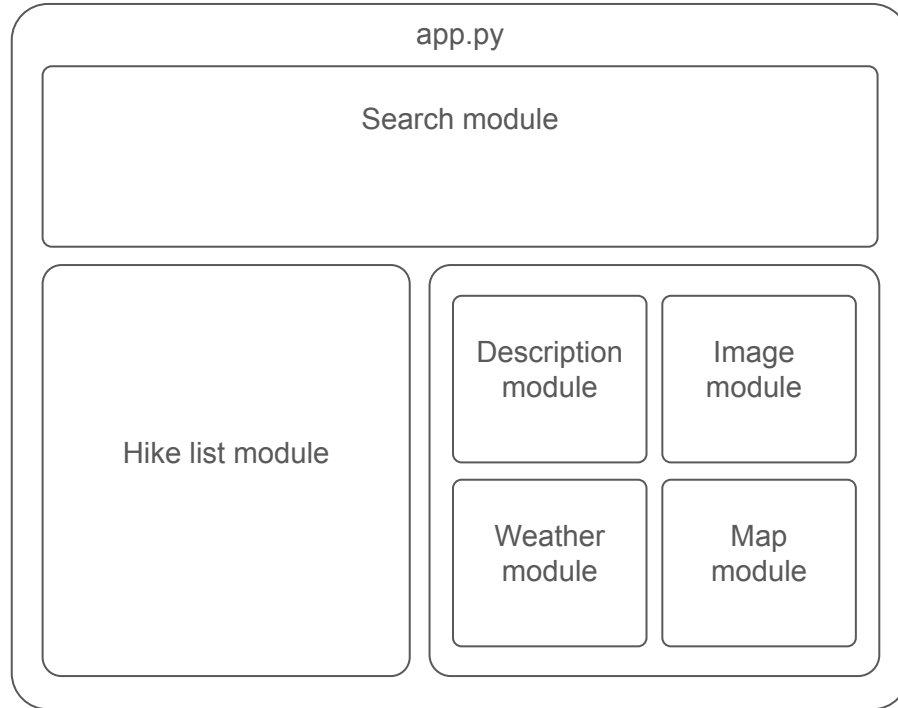
Length: 6.3 miles

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Select

→

Software Design and Architecture

app.py

Search module

Hike list module

Description module

Image module

Weather module

Map module

Model-view-controller architecture

MODEL

UPDATES

MANIPULATES

VIEW

CONTROLLER

SEES

USES

USER

Demo

Lessons learned and Future Scope

- Design specification for effective project planning & implementation
- Github branch management for easy collaboration
- Modular code makes collaboration more feasible

Challenges

- Setting reasonable scope for project
- Streamlit limitations (easy to implement, hard to customize)

Future Work

- Add maps of the trails
- Comparison of trails with elevation profile comparisons