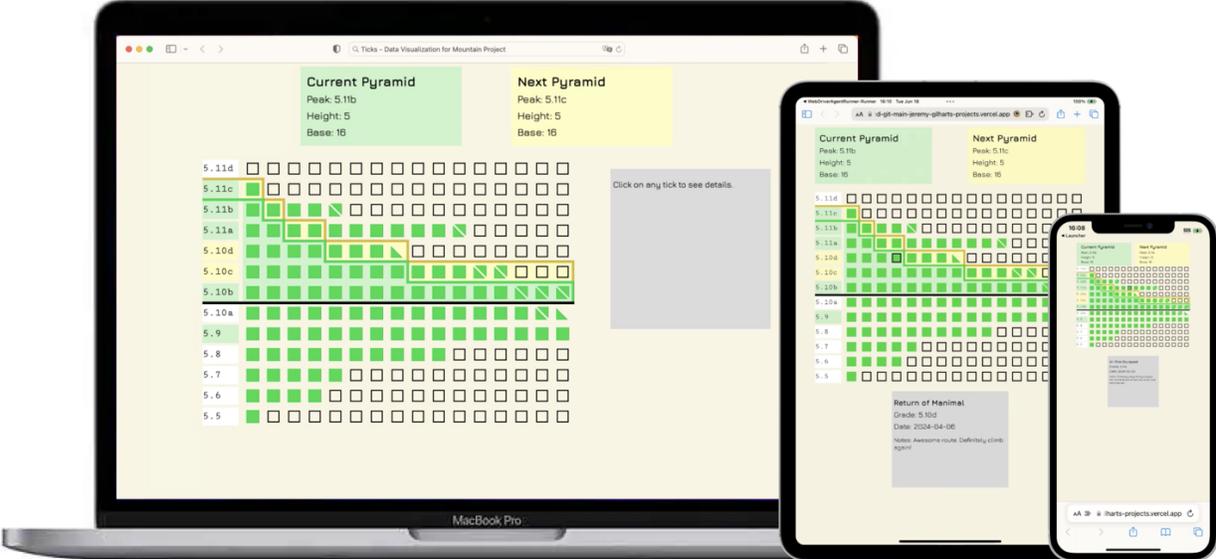


Project Report



Climbing Ticks – User Data Visualization for Mountain Project Software Engineering Project

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I Project Description

1 Project Overview

A data visualization tool that integrates seamlessly with Mountain Project to reimagine one's logged climbs in the context of training pyramids.

2 Purpose and Context

This software provides a way to visualize Mountain Project ticks in the context of climbing progression, specifically through send pyramids.

A climbing pyramid is a common way of organizing outdoor climbing progress. Many outdoor climbers spend entire seasons projecting a route one grade harder than they've ever climbed before. The pyramid approach encourages climbers to gather experience one to three grades below their hardest redpoint to improve themselves and become a better climber overall (Drolet, 2020) (Bechtel, n.d.).

While Mountain Project clearly displays logged climbs (ticks) in the context of climbing destinations, it does not show this data with the context of climbing progression. The website 8a.nu is well known for its pyramid, but this website is better developed for European crags.

While this user problem may not be detrimental, it provides previous users a platform to easily analyze their Mountain Project data. There is no reason to re-log their climbs. Instead, the exported data can be automatically analyzed, to immediately visualize climbs and suggest grades in order to build the next pyramid.

3 Description of the Project

This website takes the url link to the user's MountainProject.com profile page as an input. The backend site downloads ticks directly from mountain project and displays the data visually inside of a completed and an in-progress pyramid. The data is displayed on the website.

This software depicts the user's data to visualize ascents and progress within a healthy climbing pyramid.

II Software Architecture

4 Backend

4a Overview

The backend serves two main tasks. First, the program obtains the users mountain project data by downloading the relevant 'ticks.csv' file from the user's MountainProject profile. Second, the program analyzes/processes the data to have data that can be passed to the frontend to most easily display the information on the otherside.

As input, the backend takes one parameter 'url', which is the website url to the user's MountainProject.com profile.

As outputs, the program returns a json file. The json file has a key for “grid_rows” which is an array of objects representing how a row of the grid should be displayed including arrays for half_ticks and full_ticks, as well as info about the current_pyramid and next_pyramid threshold within this row.

Additionally, the file contains a list of all of the ticks, two objects representing the current_pyramid and next_pyramid data, and an error key with value set to null.

In the case that the user input an invalid url, only the error is returned. Thus, on the backend, the error is checked first before trying to process the other data.

4b Technologies

The backend is written in Python and hosted as an AWS lambda function.

4c File Directory

lambda_function.py

scraper.py

tick.py

ticks.csv

grid_row.py

user.py

5 Frontend Architecture

5a Overview

The frontend prompts the user for the url address of their Mountain Project profile. The frontend sends this information to the backend, awaits a response, and then displays a grid-like structure of the user’s rock climbing ticks as a histogram, indicating the user’s largest pyramid so far and overlaying the next achievable pyramid. Additionally, the user can click on any cell to see more details about the climb represented by each cell.

While every send is a send, not every climb fits neatly into a single grade. To deal with this, full grades and half grades were used.

5b Technologies

The frontend is written in jsx using the NextJS framework for React.

5c Files

Globals.css

Grid_Row.js

Layout.tsx

Page.js

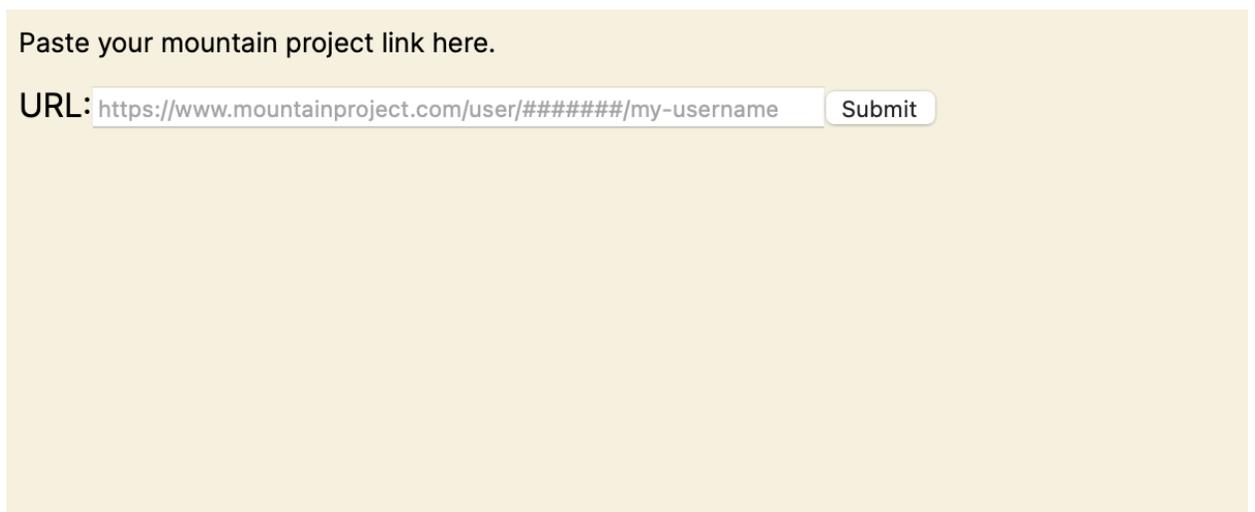
Page.module.css

Server.js

ticksPage.js

5d User Interface

The user interface serves an important role of taking user input (url to user's profile) and displaying the data easily and elegantly to the user.



Paste your mountain project link here.

URL:

Figure 1 – URL input screen

Current Pyramid

Peak: 5.11b

Height: 5

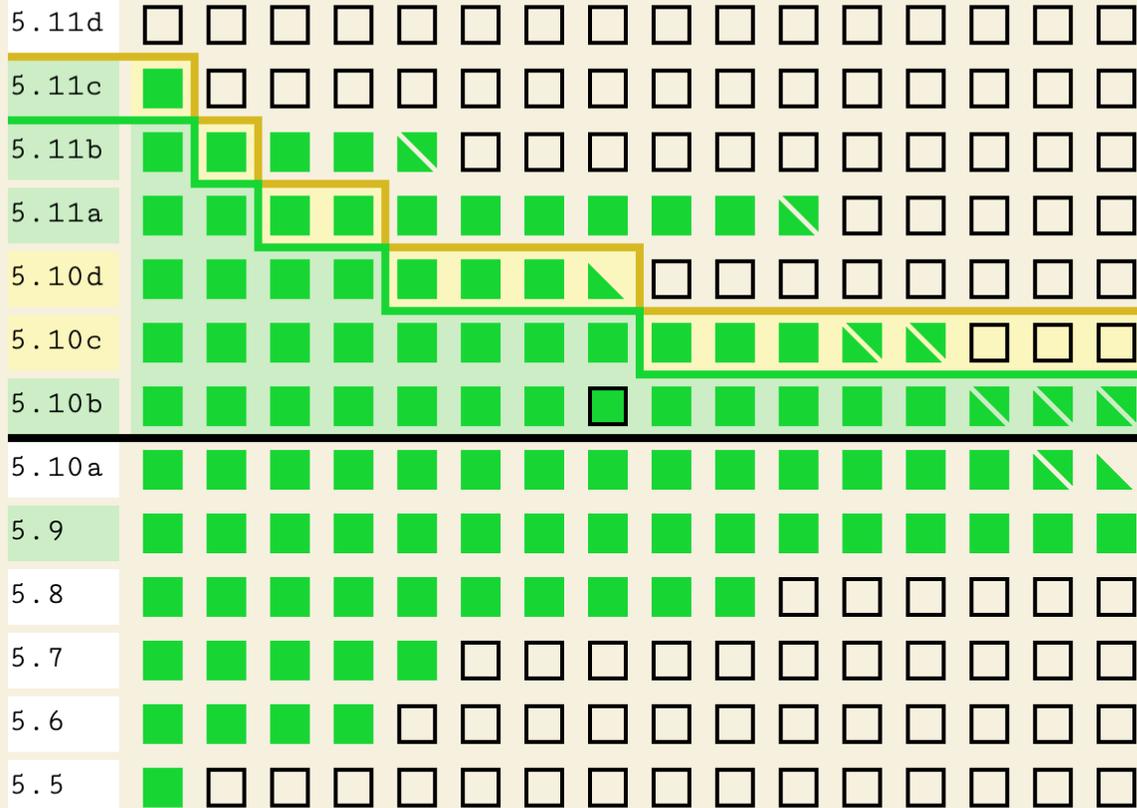
Base: 16

Next Pyramid

Peak: 5.11c

Height: 5

Base: 16



CTB

Grade: 5.10b

Date: 2023-11-11

Notes: Top was hard, but just grab high

Figure 2 – Display screen

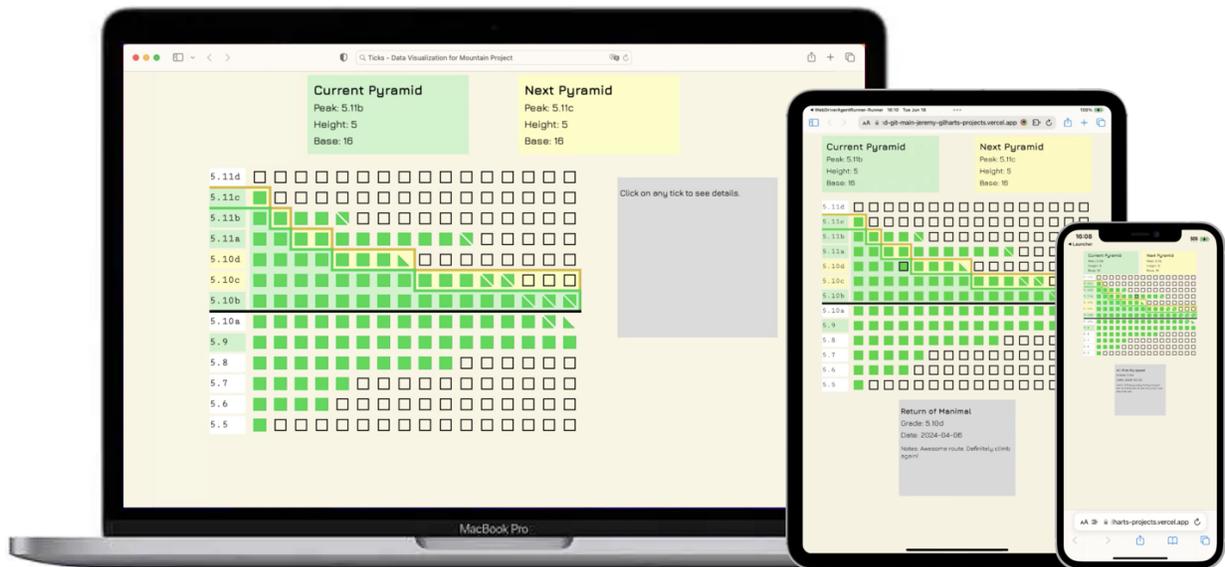


Figure 3 – Website on various devices

III Conclusion

6 Conclusion

This project successfully operates as a tool, solving a problem that I personally have. While it currently operates on my data, it could be configured to allow any climber who has logged ticks on Mountain Project to download and visualize their personal progression in the scope of climbing pyramids.

7 Future changes

Add text here.

IV References / Bibliography

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