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SoftDev
P04: Makers Makin' It, Act II -- The Sequel
2025-03-27
Time Spent: 2
TARGET SHIP DATE: 2025-05-02

DESIGN DOCUMENT (Version 1.0)

I. Description

This project aims to tell a story with data of Trump's twitter insults compiled over 6 years from 2015 to 2021. The data comes with target and insult types that make categorization of the data into easily customizable tags for the user to help visualize the data. We aim to provide several different kinds of interactive graphs to best showcase this data. Users will only be able to customize the data they see if they have an account. The homepage will be a complete compiled list of insults similar to NYT's implementation of the same data. The subpages will be the different types of data visualization available and the user preferences. If necessary, there can be a precompiled page of notable interest points in the data.

A. Program Components

a. User Accounts:
    i. Login, Registration, Logout and User Preferences
b. Python Flask Middleware
c. Python Backend
    i. For handling data tags
        1. Insult Target
        2. Insult Type
d. SQLite3 Database:
    i. Stores User login info
    ii. Stores User preferences
e. Jinja Templates:
    i. Landing Page
        1. All of the data is shown on the landing page
        2. All data is separated by either target or insult type
            a. Target/insult type is listed in alphabetical order
            b. Users can switch between target or insult type categorization
    ii. Data Visualization Page
        1. Offers different types of dynamic visualization using Chart.js

a. Pie chart - analyzes the amount different types of tweets compromise within the entire dataset or user chosen group of sub datasets
b. Radar chart - similar to the Pie chart
c. Line chart (Timeline)
d. Bar chart - similar to the line chart

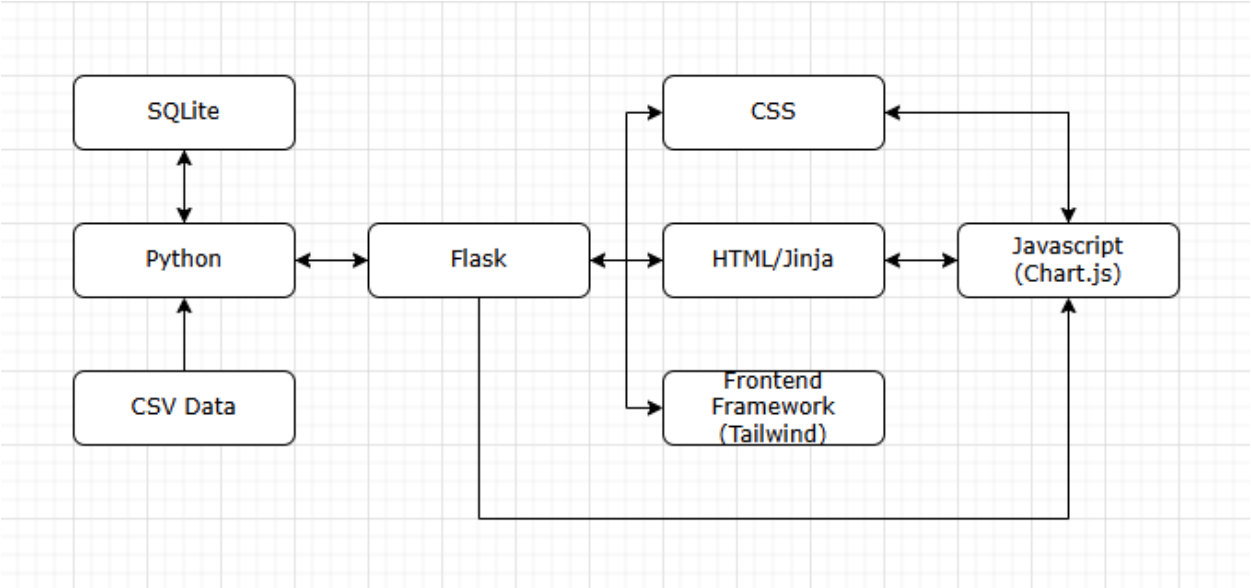
2. Will utilize Chart.js animation

iii. User Preference Page
1. Allows the user to customize their target and insult type tags
2. Saves user preferences in database

iv. (Interesting Data Page)
1. Shows interesting points of data handpicked by the development team

f. JavaScript Visualization:
i. Utilizes Chart.js
1. Dynamic customization of user preferences
2. Dynamic customization of the graph properties on the page

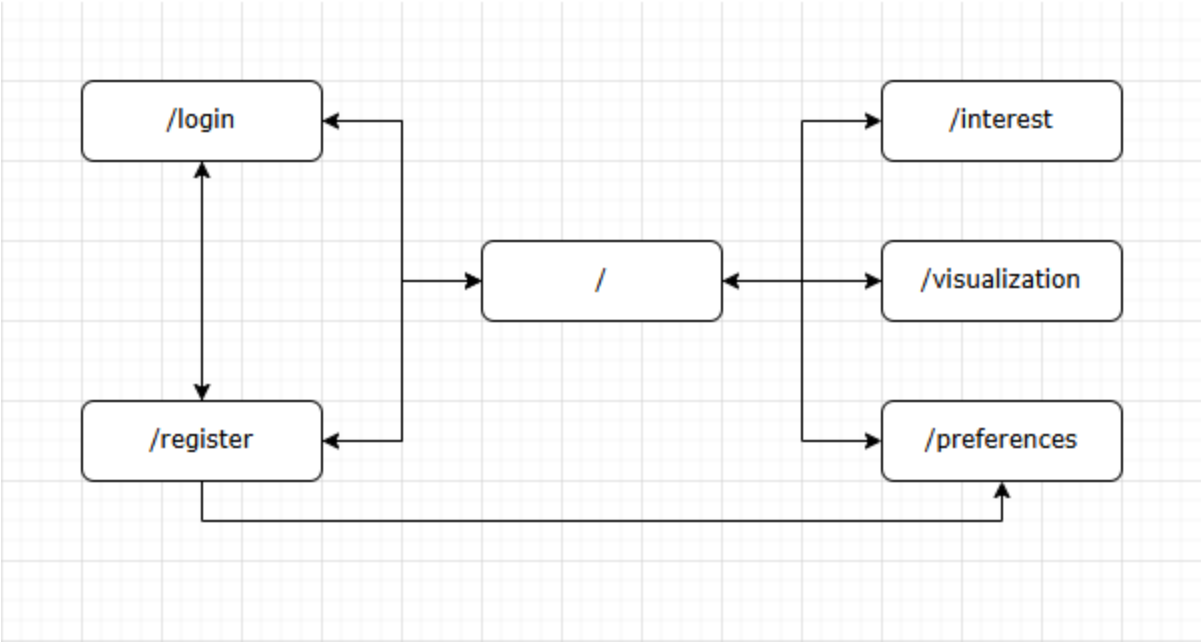
g. Data Set CSV:
i. Trump twitter insults
1. Categorized into target and insult types
2. Lists date of tweet
3. Lists content of tweet



B. Site Map + Descriptions

1. Landing page/home (/):
a. Redirects to user login/logout/registration

    b. Shows data visualization subpage
    c. Shows user preference subpage
    d. (Shows interesting data subpage)
    e. Presents an organized list of the entire dataset, categorized by insult type or insult target
        i. Users can choose between the two types of categorization
2. Login (/login):
    a. User login functionality
3. Registration Page (/register):
    a. User registration functionality
    b. Upon account creation, prompt if the user would like to change their preferences
4. Data visualization page (/visualization)
    a. Offers a dropdown of different dynamic Chart.js graph visualization
        i. Pie chart
            1. Users can pick between insult type or target
        ii. Radar chart
            1. Users can pick between insult type or target
        iii. Line chart (timeline)
            1. Shows volume of tweets, separated by a customizable unit of time
        iv. Bar chart
            1. Timeline option
            2. Tag visualization option
                a. Users can pick between insult type or target
5. User preference page (/preferences)
    a. Users can choose their preferred target/insult type tags for data visualization display
    b. Reflects in the data visualization page
    c. (Reflects in the interesting data page)
    d. (Reflects in the landing page if option is turned on)
6. (Interesting data page) (/interest)
    a. Displays interesting data cherry picked by the development team
        i. Most insulted target
        ii. Least insulted target
        iii. Most frequent insult type
        iv. Least frequent insult type
        v. More to come (if implemented)
    b. Option to analyze entire data or just user preferences



C. Database Organization

- User Table

id	username	password	target_pref	insult_type
INTEGER PRIMARY KEY AUTOINCREMENT	TEXT UNIQUE NOT NULL	TEXT NOT NULL	BOOLEAN NOT NULL FOREIGN KEY (target_pref) REFERENCES Target(selected)	BOOLEAN NOT NULL FOREIGN KEY (target_pref) REFERENCES Insult(selected)

- Target Table

target_id	content	selected
INTEGER PRIMARY KEY AUTOINCREMENT	TEXT UNIQUE NOT NULL	BOOLEAN NOT NULL

- Insult Table

insult_id	content	selected
INTEGER PRIMARY KEY AUTOINCREMENT	TEXT UNIQUE NOT NULL	BOOLEAN NOT NULL

D. Frontend Framework

Tailwind

At the behest of DKL, we decided upon Tailwind for its conciseness and simplicity. His demonstration with one of his stunning prior projects awed us to follow in his lead.

E. Task Breakdown

Danny Mok:

- Project Manager
- Javascript Lead
- Javascript Visualization

Colyi Chen:

- Frontend Framework
- HTML + CSS + Tailwind

Kevin Lin:

- Flask Middleware
- Backend

Tawab Berri:

- Database Engineer
- Backend