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SoftDev
P04: Makers Makin' It, Act II -- The Seequel
2025-3-31
Time Spent: 3 hrs
TARGET SHIP DATE: 2025-4-29

DESIGN DOCUMENT (VERSION 1)

Project Description

We will visualize data on both monthly presidential approval ratings and consumer price indices in the United States to look for an enduring correlation between the two. Users will have access to a detailed, overlapping timeline of presidential approval ratings and consumer price indices, as well as brief explanations of how the data can be interpreted. Users will also be able to indicate their preferences for specific presidents or time ranges, which will determine the information they see on their home and graphs pages. We hope that this will inform users about the effects that the economy has on presidential approval ratings. We think this is especially important for devos who are newly or soon-to-be eighteen years old so that they can be cognizant about the factors influencing their voting behavior. Our site would also have a discussion board, where users can post their opinions about the data and interact with other users.

Datasets

1. Presidential Approval Ratings: This dataset contains monthly approval/disapproval ratings of US presidents between the years 1941 (FDR's third term)) and 2017 (Trump's first term).
2. Consumer Price Index: This dataset contains the average consumer price index in the US for every month between 1914 and 2013. Data is sourced from the U.S. Department Of Labor Bureau of Labor Statistics.

Program Components

Front-end Components

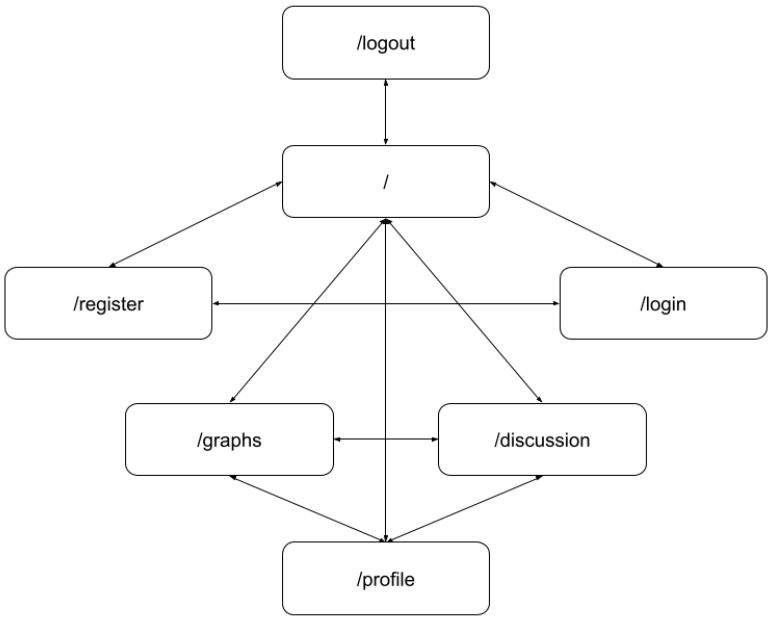
1. Flask Routes
    a. /
        i. Allows user to register, login, or logout
        ii. Displays information about datasets while logged in
        iii. Renders home.html template
    b. /register
        i. Registers user
        ii. Must have a unique username
        iii. Redirects to / -> renders home.html

    c. /login
        i. Cannot log in if the account is already in an active session
        ii. Redirects to / -> renders home.html
    d. /logout
        i. Logs out session
        ii. Redirects to / -> renders home.html
    e. /profile
        i. Users can change their preferences, such as the presidents/time periods they wish to see.
        ii. Renders profile.html template
    f. /graphs
        i. Features an overlapping timeline (line graph) of presidential approval ratings and the consumer price index
        ii. Features a scatter plot with consumer price index on the x-axis and presidential approval ratings on the y-axis
        iii. Explains the significance of the data
        iv. Renders graphs.html template
    g. /discussion
        i. Contains options for users to make written posts.
        ii. Users can like and comment on posts made by other users.
        iii. Renders discussion.html template
2. Tailwind CSS - Frontend Framework
    a. Tailwind provides user customization for accessibility, a clean user interface, and easy in-line styling that allows for different styling amongst the same HTML tags.
    b. Features:
        i. Responsive design, animations, sidebars/navigation bars, and resizing based on screen size
3. Apex Charts - JS
    a. Timelines, graphs, and other data visualization options will be used to allow the user to view presidential and inflation data based on time period.

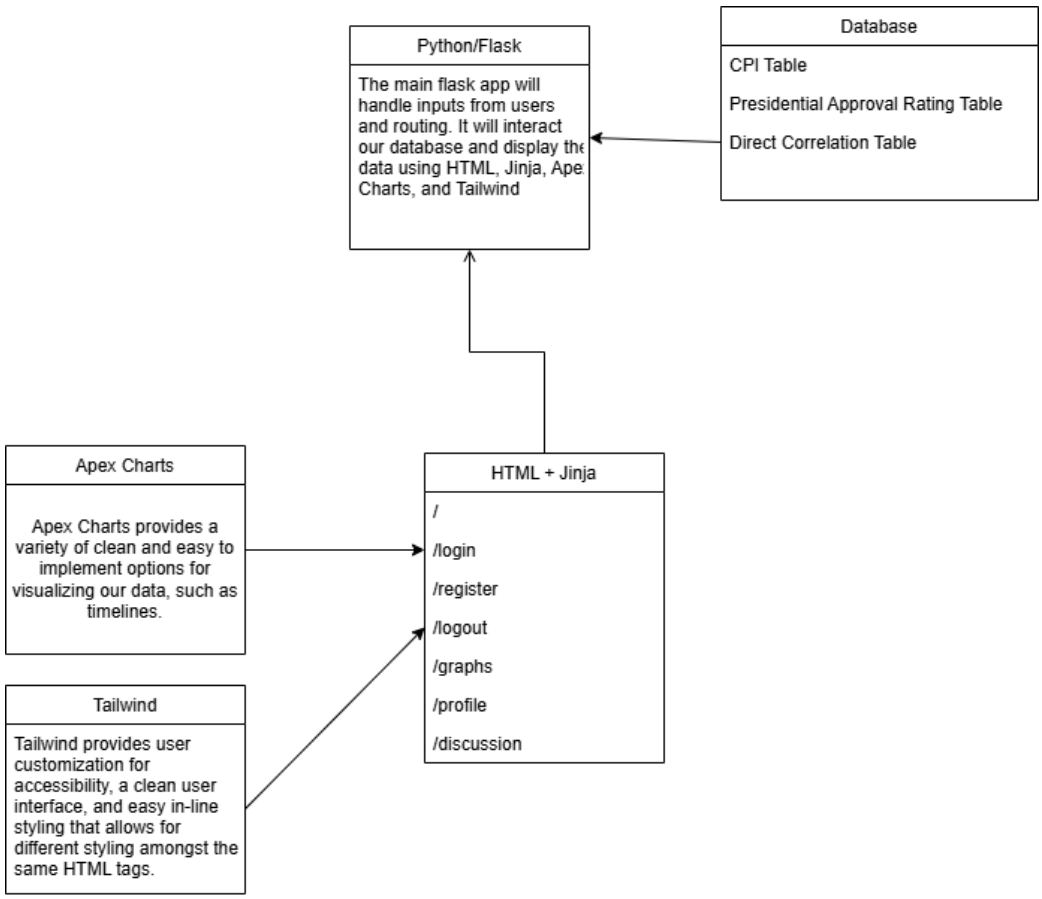
Back-end Components

1. Flask/Python
    a. Allows the user to traverse different web pages
    b. All data will be stored through python into a relevant database
    c.
2. SQLite Databases - Stores information from datasets
    a. Consumer Price Index (CPI)
    b. President Approval Rating Table
    c. Direct Correlation Table

Site Map



Component Map



Database Organization

Users Table

Username	Password
E.g., peglegpete	*E.g., Chambers123!*
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Consumer Price Index (CPI) Table

Date (string)	CPI (float)	Change in CPI from previous month (float)
E.g., 1913-05-01	*E.g., 9.7*	*E.g., -1.02*
~	~	~

President Approval Rating Table

President (string)	Date (string)	Number of positive ratings (float)	Number of negative ratings (float)	Days since inauguration (int)
E.g., Trump	*E.g., 2017-03-01*	*E.g., 43*	*E.g., 41*	*E.g., 40*
~	~	~	~	~

Direct Correlation Table

Date (string)	President (string)	CPI (float)	Change in CPI from previous month (float)	Percentage of ratings that are positive (float)
E.g., 2015-09-01	*E.g., Obama*	*E.g., 8.2*	*E.g., +2.00*	*E.g., 47*
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APIs

We will not be using any APIs.

Data Visualization Libraries

1. Apex: https://apexcharts.com/javascript-chart-demos/
    - Apex Charts provides a variety of clean and easy to implement options for visualizing our data, such as timelines.
    - We want to challenge ourselves but not challenge ourselves TOO much.

Task Breakdown

- **Chloe Wong (PM)** - Flask App
    - Linking pages and other backend stuff through Flask
- **Brian Liu** - Frontend
    - Implementing data visualization using Apex
    - Making website look nice with Tailwind and CSS
- **Kishi Wijaya** - Database
    - Implement login and user preferences
    - Handling processing of datasets and databases
- **Raymond Lin** - Flask App/Database
    - Connect database to frontend through Flask