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SoftDev
PO2: Makers Makin' It, Act I
2025-01-07
Time Spent: 2
TARGET SHIP DATE: 2025-01-17

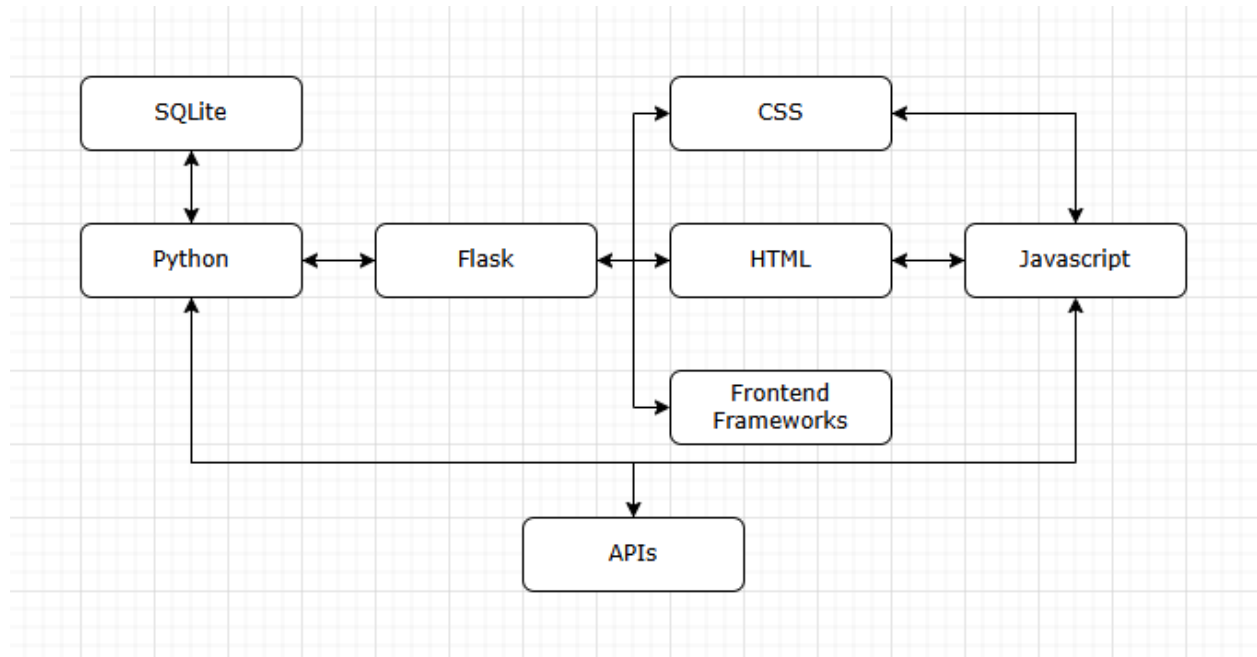
DESIGN DOCUMENT (Version FINAL)

I. Description

This project is a website that contains various activities- typing test, reaction time, word guessing, etc. - to entertain the user and test their cognitive abilities. Users (without having to be logged in) can navigate through a list of said activities on the homepage.

A. Program Components

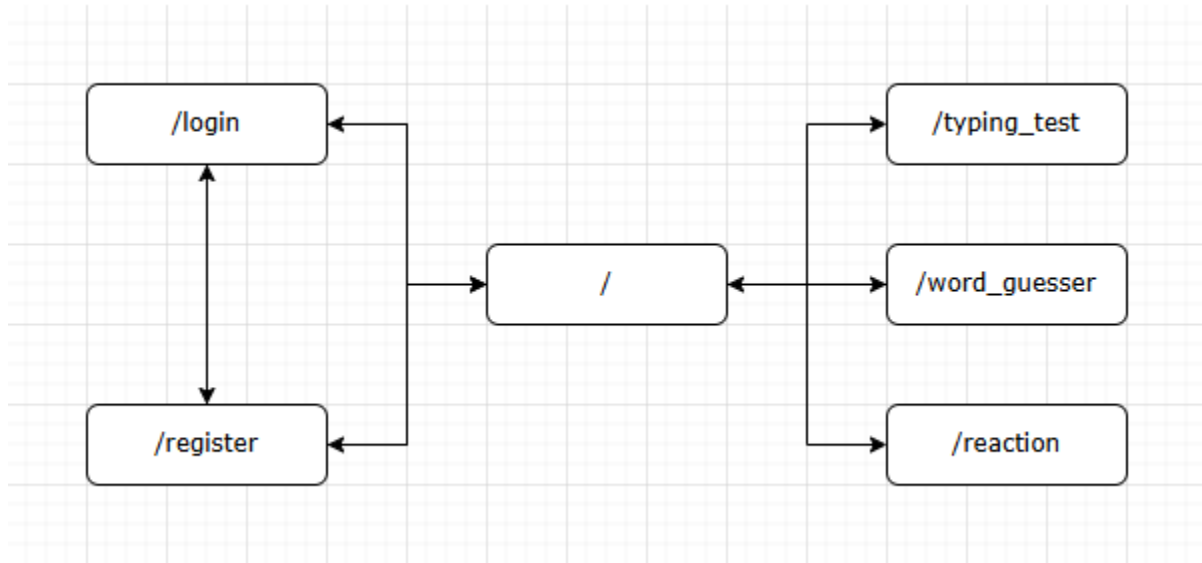
- a. User Accounts:
 - i. Creation of accounts and login/logout functionality
 - ii. Sessions
- b. Routes to different pages of the website using Flask and Python
- c. APIs:
 - i. Ninja API: Generates quotes for the Typing Test API
 - ii. Merriam-Webster API: Pulls words and definitions from the dictionary to be used in the word guessing game.
 - iii. Giphy API: Generates gifs for celebration screens (eg: new high score).
- d. SQLite3 Database: Stores data of the username and password
- e. Jinja Templates:
 - i. User dashboard:
 - 1. Shows the three games
 - a. Typing Test
 - b. Word Match
 - c. Reaction Time
 - 2. Shows login/sign-up
 - ii. Games: Passes API data into web pages
- f. JavaScript Components: Used to make elements of Typing Test and Reaction Time interactable for users



B. Site Map + Descriptions

1. Landing page/home (/): Dashboard - depicts the list of games for the user to pick from, also provides a navigation bar. Also shows all available games:
 - Typing Tester
 - Word Match
 - Reaction Time
2. Login (/login): Allows the user to sign in to an account
3. Registration Page (/register): Allows the user to register for an account and logs the user in upon successful account creation
4. Word Match (/memory_match): The user tries to guess a word based on its definition. The objective is to last as many turns as possible, starting with 3 lives, losing 1 for getting the word wrong, or maintaining the current number of lives if a synonym of the word is guessed.
5. Typing Test (/word_guesser): The user can measure their rough WPM using this game, using a net WPM formula found on the internet. The text box is custom and designed entirely from javascript to limit the keyboard inputs as well as maintain a styling similar to human benchmark's typing game. The WPM will be shown at the top while typing and will be updated in real time as a stopwatch ticks below the text box. The score is shown at the end and has a high score functionality. New quotes are generated every time upon refreshing or pressing the Try Again button.
6. Reaction Time (/reaction): The user can test their reaction time with this game. The initial screen upon loading into the game shows a text prompting you to

click it. When clicked, the text changes and tells you to wait until the text turns green before clicking it. The interval between the changing of the colors is random between 2 to 5 seconds to prevent predictability and inflated scores. Pressing the screen before it turns green results in an error state that causes the screen to turn red, upon which no score is recorded. For both the green and red screens, you click the screen to try again



C. Database Organization

I. User Table

id	username	password
INTEGER PRIMARY KEY AUTOINCREMENT	TEXT UNIQUE NOT NULL	TEXT NOT NULL

D. APIS

Ninja API

- 10000 calls / month
- Randomly generates a quote

Merriam-Webster API

- 1000 calls / day
- Used for words, synonyms, definitions in guessing game.

Giphy API

- 100 calls / hour
- Used for getting random gifs for variety

E. Frontend Framework

Bootstrap

Bootstrap is convenient to use and easy to implement. We seek to optimize our speed of development with Bootstrap for this reason. It is also useful for imitating human benchmark's style.

F. Task Breakdown

Colyi Chen -

- Project Manager
- Frontend Framework
- HTML + CSS + Jinja

Dua Baig -

- Database Engineer
- Backend

Danny Mok -

- Javascript
- Flask Middleware

Jacob Lukose -

- API Handling
- Creating the pages for at least 2 games