NumRecall
Product Design Specification

End Product Description:

NumRecall is a number memorization game where users are challenged to recall a sequence of randomly displayed numbers. The game will flash a series of numbers in a random order, and users must memorize the order and input the sequence correctly. As the game progresses, the length of the number sequence will increase, making it more challenging. Users can utilize two hints to reveal two numbers from the sequence. The game will feature a Google login system to save game scores, and users can also play without logging in, but their scores will not be saved. A leaderboard will display the top 10 high scores of logged-in users.

Methods Used in the Puzzle Solver:

The game logic will involve generating a random sequence of numbers based on the current level. The numbers will be displayed sequentially for a brief period, and the user will be prompted to input the sequence. The user's input will be compared with the generated sequence, and feedback will be provided on the correctness of the guess. If the user guesses correctly, they will advance to the next level with a longer sequence. If the user makes an incorrect guess, they can utilize hints to reveal two numbers from the sequence.

Market Space and Selling Points:

NumRecall targets the market space of casual brain games and memory challenges. Its selling points include:

1. Engaging and addictive gameplay that challenges users' memory and cognitive abilities.
2. Progressive difficulty levels, increasing the length of the number sequence for a more challenging experience.
3. Hint system to assist users when faced with difficulty, adding a layer of strategy.
4. Google login integration for saving and tracking high scores, fostering competition among users.
5. Leaderboard to showcase the top players, motivating users to improve their skills.
6. Suitable for players of all ages and skill levels, offering an entertaining and mentally stimulating experience.

Functional Specifications

Product Features:

Number Sequence Generation: The game will generate a random sequence of numbers based on the current level.

Number Display: The generated sequence will be displayed sequentially for a brief period, challenging the user's memory.
User Input: Users will input their guesses for the number sequence.

Dynamic Scoring: Users will receive feedback on the correctness of their guesses, and scores will be calculated based on their performance.

Hint System: Users can utilize two hints to reveal two numbers from the sequence if they encounter difficulty.

Level Progression: Upon correctly guessing the sequence, users will advance to the next level with a longer number sequence.

Google Login: Users can log in using their Google accounts to save their game scores.

Guest Mode: Users can play without logging in, but their scores will not be saved.
Leaderboard: A leaderboard will display the top 10 high scores of logged-in users, fostering competition.

Deployment

Deploying the Flask Project:

To deploy the Flask project "Numrecall" follow these steps:

1. Set up a Heroku account and install the Heroku CLI.
2. Create a new Heroku app from the Heroku dashboard or using the Heroku CLI.
3. Clone the Github Repository locally.
4. Connect your local Git repository to the Heroku app using the Heroku CLI.
5. Push your code to the Heroku remote repository to trigger deployment.
6. Configure any necessary environment variables (Specified in Readme.md).
7. Access your deployed application via the provided Heroku app URL.

Features for Major Milestones:

M1: Basic game functionality with number sequence generation, display, and user input.
M2: Implementation of the hint system and scoring mechanism.
M3: Integration of Google login and guest mode functionality.
M4: Development of the leaderboard feature and user interface enhancements.
M5: Deployment, optimization, and performance tuning for a smooth user experience.