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CS 161 Section 01
Professor Tsao
4 February 2024

Week 2: Individual Report

Project Title: Memory Math-o-rama!

URL to the GitHub Repository: https://github.com/4reebah/memory-math

Milestones with Deadlines:

- M1 (2/4 - 2/16): Setting up Github and Flask App Setup
- M2 (2/16 - 3/1): User authentication (Login, Signup and Logout)
- M3 (3/1 - 3/15): UI Design (4x4 Grid, Flippable Tiles, and more)
- M4 (3/15 - 4/10): Game Logic Implementation
- M5 (4/10 - 4/16): Showing Hints and Saving Game Data
- M6 (4/16 - Finals): Testing and UI/UX enhancements

Front-end and Back-end Technologies:

- Front-end: Javascript, CSS, HTML
- Back-end: Flask, Python

Algorithms/AI Schemes Used in the Core Engine:

- Generating Numbers on the Grid: Using a random number generator, an algorithm will generate numbers within a range for each tile in the 4x4 grid.
- Creating the Arithmetic Question: Using the values on the grid, an algorithm will generate an arithmetic question that the user can solve by flipping two tiles. It will track the numbers available on the grid and the tiles flipped on the grid to create a solvable arithmetic question.

Market Space and Selling Points:

- Market Space: The game is targeting young children interested in puzzles, math, and computer science.
- Selling Points:
    - Educational Value: It allows the user to improve arithmetic skills, while also boosting cognitive thinking skills.
    - Incentivises Improvement: It incentives improvement through showing top scores (shortest time and lowest number of mistakes)
    - Interactive and User-friendly: It engages the user with an interactive gameplay and user-friendly environment.