Code Gushers: Jeff Chen, Ryan Lee, Jian Hong Li, Ziying Jian
Software Development
P05
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Match 3 Game


**Program Description**
Players will be able to play a game of ~~Candy Crush~~ Code Gush…? on this site. There are two
different game modes the user can select from. and there may end up being a user database
implemented to hold player's scores.


**Game Modes**
Every game mode will have the same base mechanic: match a line of 3 or more same candies to
clear them, and matches of more than 3 will spawn powered up candy that, when used, produce a
special effect.
The two different modes will be E*ndless* mode and *Clear* mode.
*Endless* mode will feature the player using coins to make moves, and earn coins and points by
clearing blocks. New blocks will fill in as the player clears them.
The *Clear* mode will feature the player trying to use the minimum number of moves to clear the
field. New blocks will not spawn.


**Program Components**
- **Python**
    - **Db.py:** contains the login information of each user
    - **Flask:** serves our game to the web server
- **SQLite3**
    - **High Score Database**: Stores scores
- **Javascript**
    - **Candy.js:** controls the behavior of the candy
        - Regular candy does nothing on clear.
        - Special candies
            (Balance to be determined later)
            - Clear adjacent 8 blocks
            - Clear vertical / horizontal line depending on orientation of match
            - Clear all blocks of the same color
            - Randomly clear select number of blocks
    - **Candy object:** contains the attributes of each candy
    - **Grid object:** stores candies in a grid, adds new candy when old candy is
      destroyed

- **Swipe (Movement) functions:** Allows players to input moves
- **Clearing function:** Checks for any matches in grid, and clears them if necessary
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## Component Interactions/Component Map
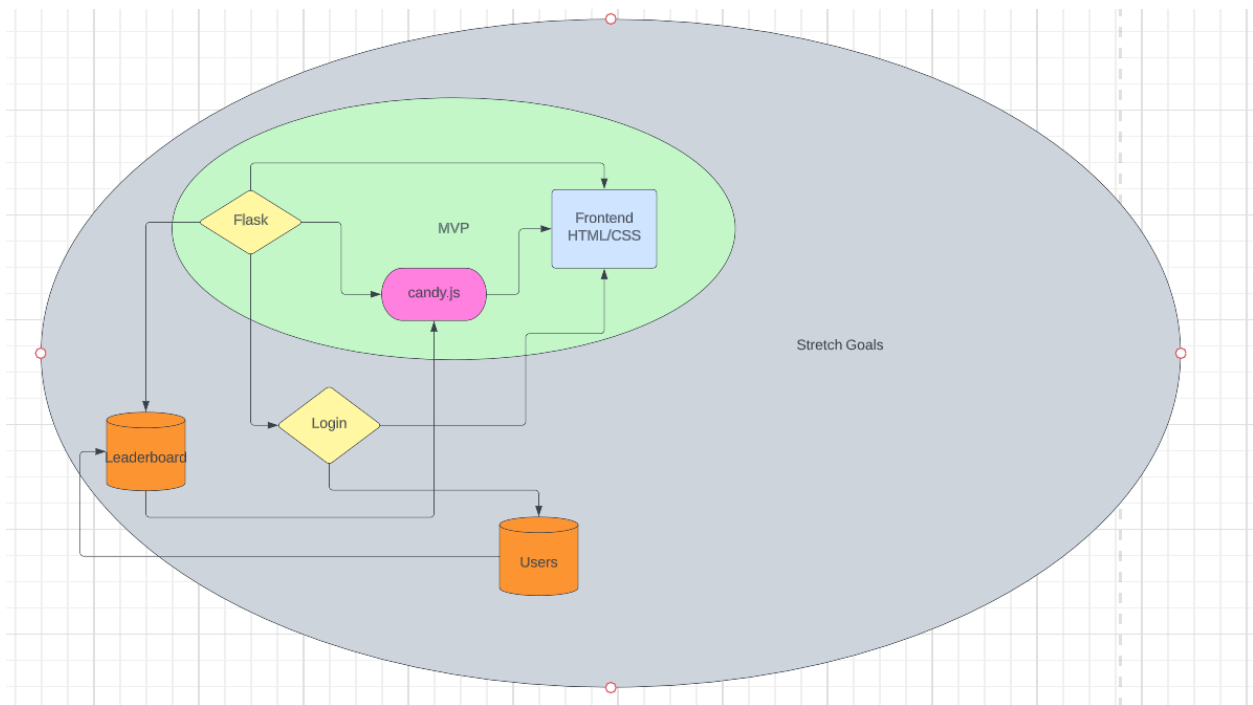


## Site Map
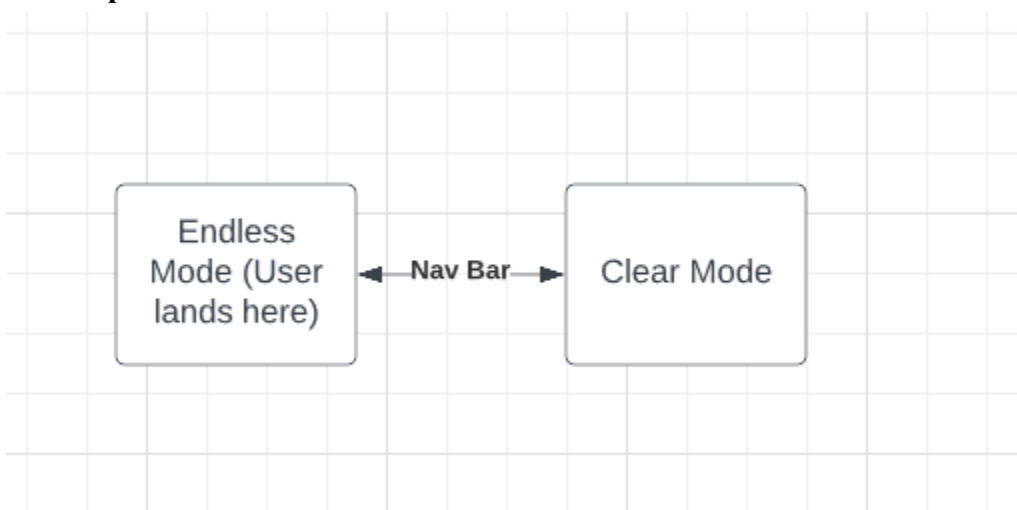
**Task Breakdown (Strikethrough as we complete)**

**MVP:**
- Create grid object to store candies
- Create grid graphic
- Create candy objects
    - Store different attributes
    - Super candies (for match of >4)
- Create candy graphics
    - Different designs based on attributes
- Create logic to to perform different operations on the grid object
- Framework for game
    - Score counter
    - Coin counter (for coin gamemode)
    - Store which game is chosen

**Stretch Goals:**
- Animations
- Database to store high scores
- Login to store high scores
- Pause to save gamestate through cookies

**Jobs:**
Ryan: Frontend HTML
Everyone else: JS + Flask

**IDEAS:**
- Infinite Match 3 (each move takes a coin, run out of coins and you lose)
- Special tiles
    - Reward tiles for getting to the bottom (more coins?)
- 1st game mode is coin based
- Other game mode- clear all tiles
- Login stuff(stretch)