Road Combat

Project Proposal

Project Description

I intend to make a game that is based on the classic Street Fighter and Mortal Kombat games. This will include basic animations, an AI to fight against, and controller support.

Competitive Analysis

I'm basing my game around the original Street Fighter and Mortal Kombat games. Some of the things that I wish to include are controller support with an Xbox controller, pvp, and a single player mode. Each mode should be playable with 1 of 4 characters (a light and a strong for both male and female fighters)

Structural Plan

I plan to have a modal app with 5 modes. The first mode a user will encounter will be a start screen, where I hope to have AI fighting against each other in the background, similar to an arcade start screen. The next mode will be a character select screen. After the character select there will be a battle mode where the actual fighting will take place. From the battle mode, a player will be able to hit a designated "Help" button and open up a help menu that tells them about the controls for their character. Finally there will be a play again screen where a player can decide to rematch, change character, or quit out of the app.

There should be 4 files. The main file will actually run the game, and I will have separate files for the fighter class, the xbox input module, and the queue class that I made to help with combos.

Algorithmic Plan

I plan to use Klee's Algorithm to determine if an attack lands. If it does, it will damage the other fighter and decrease their health bar.
In order to have semismooth animations, I'm emulating a finite state machine to implement both combos and frame by frame animations.
I'm going to add an AI, and hopefully emulate a CNN in the final implementation of my code. This AI will take how the player interacts with certain conditions and learn to counter the player as the player progresses through fighters in the single player.

TP2 Update

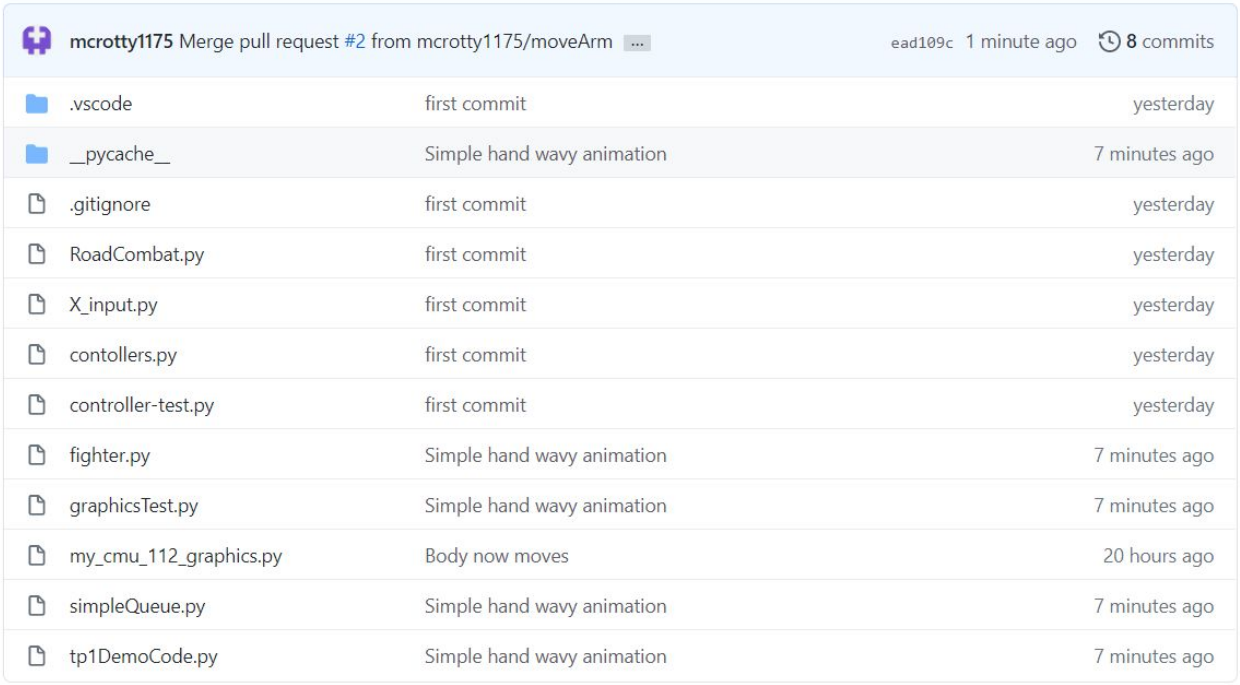
Klee's ALgorithm didn't end up being quite what I was looking for. AI is hard (right now it thinks the optimal strategy is to just spam punch) and requires a lot of improvement. Not enough time was dedicated to finding optimal constants. Starting screen was pushed back. Animations still need to be smoothed out a bit. I may use numpy to improve upon my AI once MVP has been confirmed.

Timeline Plan

11/30: Have a character that moves around the screen and a basic animation using the FSM
12/3: Have working combos and all animations
12/4: Have the damage working.
12/5: All screens working and have an AI
12/6: Improve upon AI
12/8: Record and edit video
12/9: submit TP

Version Control Plan

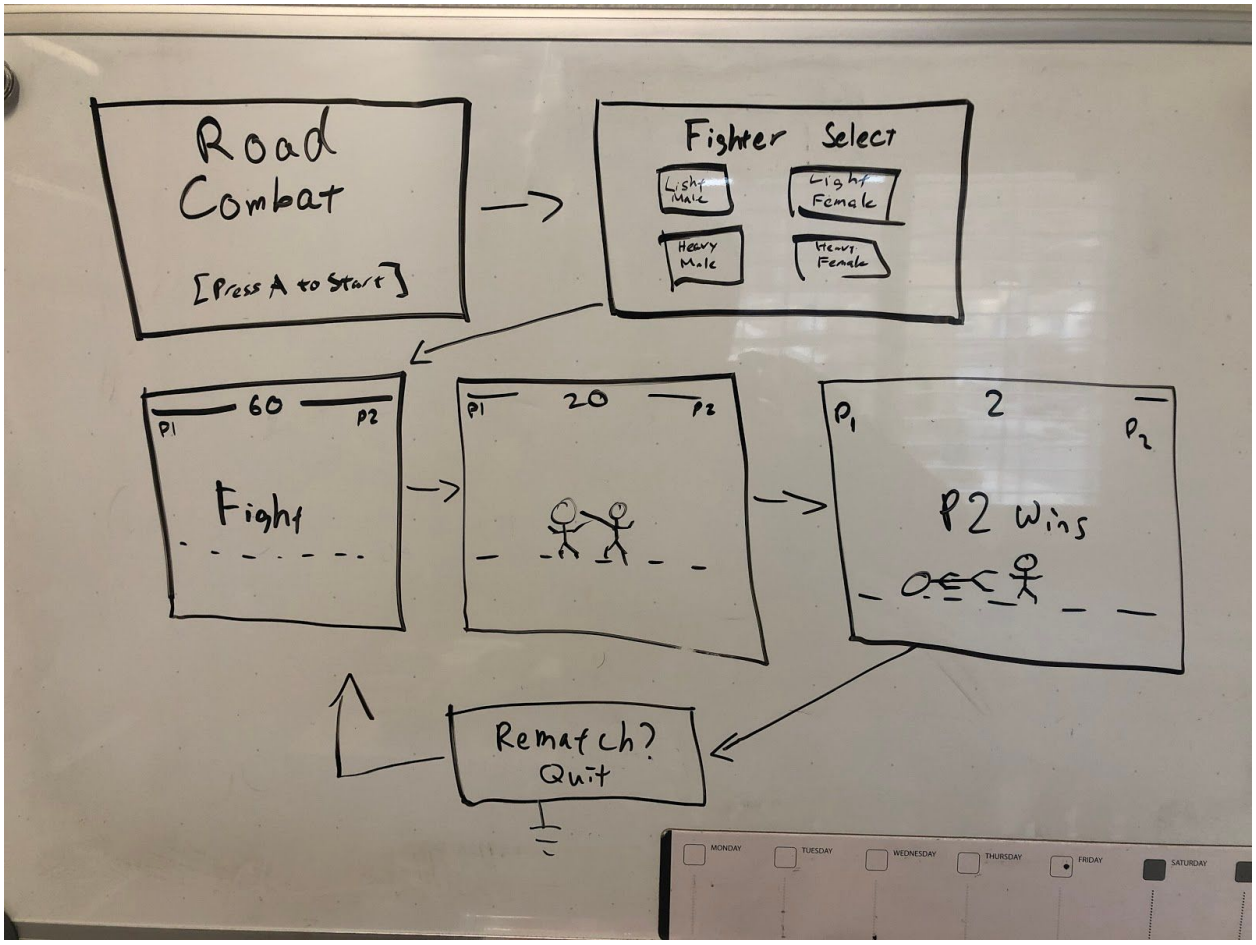
I'm using GitHub to store my code in the cloud.



Module List

X_input (modified program used for Xbox controller support)

Storyboard


Road
Combat
[Press A to Start]
Fighter Select
Light Male
Light Female
Heavy Male
Heavy Female
P1 60 P2
Fight
P1 20 P2
P1 2 P2
P2 Wins
Rematch?
Quit
MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY