Team Description:

There are two people on our team: Joseph Tadrous and Yikang Lin (Bailey). Our team name is Pygamers. Joseph is good at time management, dry-running, coding, and organization. Yikang is good at coding, presentations skills, code logic, and communication. We work together because we both have an interest in exploring the use of python in games, a more recreational aspect of python coding.

Project Title:

Pong Game

Project Description:

Pong game is one of the earliest arcade video games. Pong is a two-dimensional sports game that simulates table tennis. The player controls an in-game paddle by moving it vertically across the left or right side of the screen. They compete against another player controlling a second paddle on the opposing side. Players use the paddles to hit a ball back and forth. The goal is for each player to reach eleven points before the opponent; points are earned when one fails to return the ball to the other. We are planning to develop Pong game using ***python*** and ***pygame*** (a Free and Open Source python library for making multimedia applications like games). Some features can be added to the game like displaying the scoreboard and allowing the players to choose how many points they must reach before winning the game.

Why is the project topic suitable for this class?

The pong game project is suitable for this class as we will be implementing most of what we have learned in this class. Many CS105 topics will be used and implemented in this project including and not limited to:

- Problems and solutions
- Preconditions and postconditions

- Correctness of solutions
- Testing for correctness, test suits, and doctest
- Variables, Assignment, Rebinding, Scope of variables,
- Conditionals, if-else, nested if-else, chain of conditionals,
- Loops (while, for): nested loops,
- Functions, arguments, default arguments, a keyword argument

Moreover, we will be expanding our knowledge of python by learning Pygame based on the foundations we have built during CS105 lectures and labs.

Work Timeline

First Week (Nov.21-23):

1. Be familiar with the built-in functions of libraries of pygame and random- 2 hours (all members)
2. Learn about the ideas of class, constructor and their implementations- 2 hours (all members)
3. Start thinking about the logic of pong game, especially Ball Class- 4 hours (all members)

Second Week (Nov.23-30):

1. Implement the Ball Class-6 hours
    a. Writing constructor- 1 hour (Joseph)
    b. Writing function for bounce- 1 hour (Bailey)
    c. Writing function to reset the ball- 2 hours (Joseph)
    d. Writing function to update the position of the ball- 2 hours (Bailey)
2. Implement the Player Class-4 hours
    a. Writing constructor- 2 hours (Bailey)

b. Writing function to update the position of players (paddle)- 2 hours (Joseph)

3. Start thinking about the main code-2 hours

(all members)

Third Week (Nov.1-6):

1. Implement the main code-12 hours

Final Phase (Nov.7-9):

1. Debugging and finalizing-3 hours

(all members)

2. Rehearse for the final presentation-2~3 hours

(all members)

Potential Challenges:

· Relatively long period of time to be familiar with pygame functions and their usage

· Object oriented programming: using functions written in a class