# Part 1: Game Design

My idea for a 2D game is a 5v5 soccer game. There will be one attacker, two midfielders, and two defenders, and a goalie. The movement of the footballers will be similar to that of foosball where the defenders and goalie will move in parallel and then the midfielders and attackers will move in parallel together. The ball will fall to the closest footballer. Once you have the ball, the player cannot move any of their footballers. The player will then aim with the mouse and shoot in a direction. Initially there is no thought of using any power ups but two power up options I can look into are a "Boost" and a "Giant" powerup. "Boost" will make the ball go faster towards the goal, almost guaranteeing a goal. The "Giant" powerup will make your players bigger making it better to defend but harder to score as your players will block the ball. There will be a scoreboard and the first to 10 wins the game. After completion, it will ask if you want to play again or quit and then the program will act accordingly. At the beginning of every game, the player can choose between 8 different flags to represent their footballers and then the second user will choose between the other 7 flags. (USA, Argentina, Brazil, France, England, Netherlands, Belgium, Italy). It will be a 2 player game.
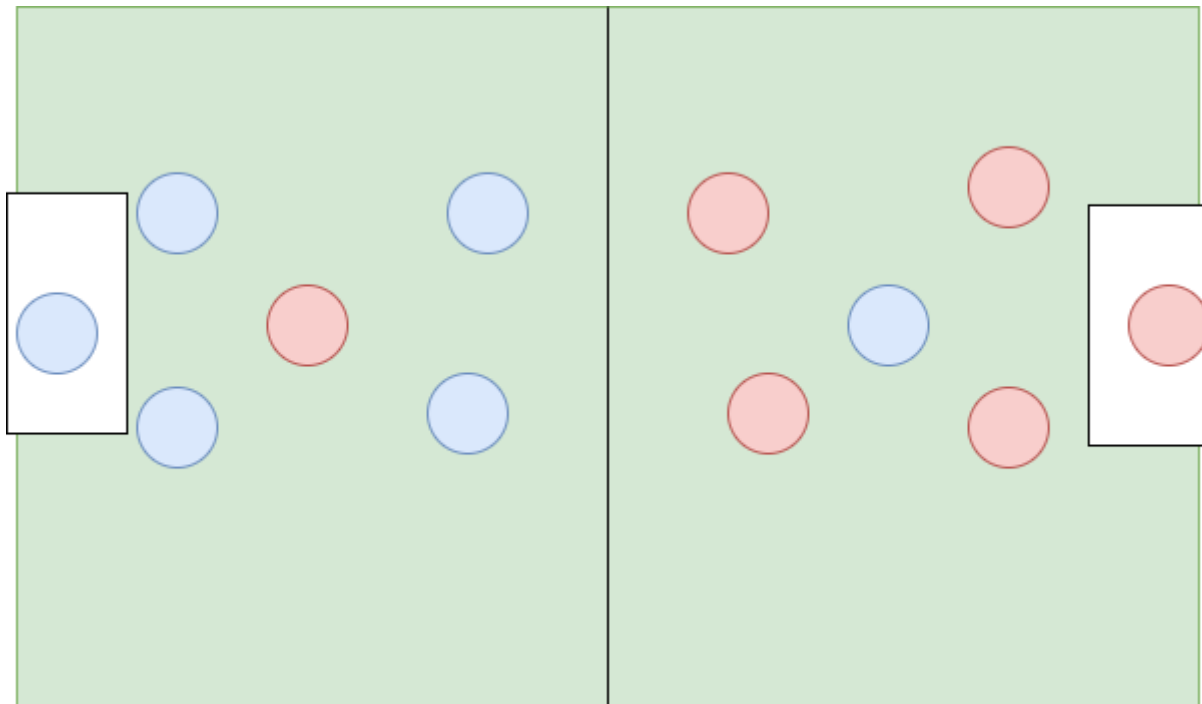
Part 2: Development Design

- ● Architecture

  The game will most likely take the architecture of a model-view-controller. There will be classes representing the ball and footballers. Within the main view will be the football pitch. The pitch will not be edited throughout the entire game. It will be a stationary background of your typical football pitch.

The model will keep track of the position of both the ball and footballers. The speed of the ball will be determined by whether a power up is present. The player speed will be consistent. There is no stamina bar as that does not seem necessary for foosball. Once ten goals are reached, the game will reset.

The controller will be responsible for managing the player's input and then passing this to either the view or model. The player will aim the mouse and click in the direction they want the ball to go. Once pressed, the information will be passed and then the view will be updated appropriately along with the model to understand the mouse press and the result of said mouse press.

I think I will need a class for the ball, footballer, model, view, and controller. In a separate file will be the sprites for all of the flags of the countries that have been previously listed. These sprites are useful because the player will determine which players are on his team and which are on the oppositions. As per the MVC architecture, the user will input to the controller that then requests data from the model and also sends data to the view.

- ● User Interface
  - ○ The user will use W/S to move the defense/goalie up or down, E/D to move their attacker/midfielders up or down
  - ○ The second user will use UP_Arrow/DOWN_Arrow to move the attackers/midfielders up or down and BACKSLASH/QUOTATIONS to move the defense/goalie up or down
  - ○ They will use the mouse to aim their shot

Part 3: Division of Labor
It's all me 🙂

Part 4: Timeline

Updated Project Timeline
Milestone One (3/30)
- ○ Field, and Ball Created
- ○ Initial Sprites uploaded
- ○ Ability to move mouse and make ball move to location of mouse
Milestone Two (4/12)
- ○ Ability to choose sprites at the beginning of the game
- ○ Players created with appropriate sprites
- ○ Movement of the players should be completed
- ○ Combination of mouse moving, ball physics, and footballer sprites
- ○ Begin testing after this milestone (ideally)
Final Game Submission (4/26)

- Completed game with completed Game Documentation

Final Exam Presentation (5/4)

- Completed slideshow or demo video (either works)