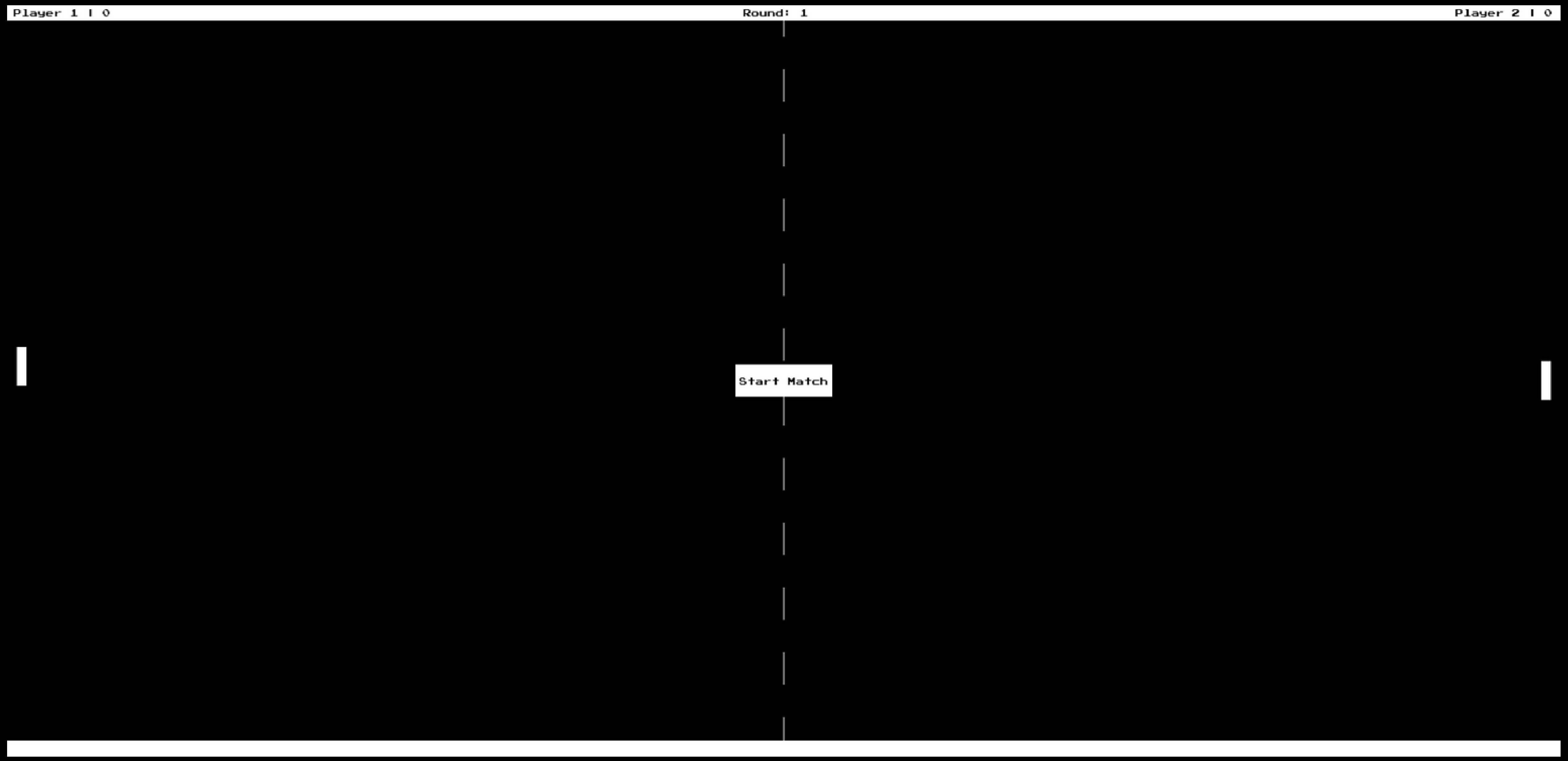
PONG

SESSION 3

PROJECT SO FAR

From the last session you should have a one-sided working game, as below:



WHAT ARE WE GOING TO DO TODAY?

- Implement an AI player
- Add sound
- Troubleshoot errors

SESSiON MATERiALS

FORK OR DOWNLOAD THE GITHUB REPO:

HTTPS://GITHUB.COM/INFPALS/IP2023-BIG-PROJECT-1-UPDATED-TEMPLATE

ATTENDANCE FORM

Please fill in to let us know you came and that we should keep planning similar events.

AI PLAYER

- The AI player will be inside an AIController class.
    - The constructor will have 2 variables, paddle and ball.
        - You only need to pass the paddle, as the ball can be accessed via this.
    - The class will also have a prediction getter and an update(dT) method.
- Each time update(dT) is called, a prediction will tell the AI where the ball is going to be.

Discuss in groups ideas for prediction methods!

PREDICTION & UPDATE

- The simplest predictor is one that just follows the ball, so the getter will return the y position of the ball.
  - There are many alternative methods, feel free to improve upon this!

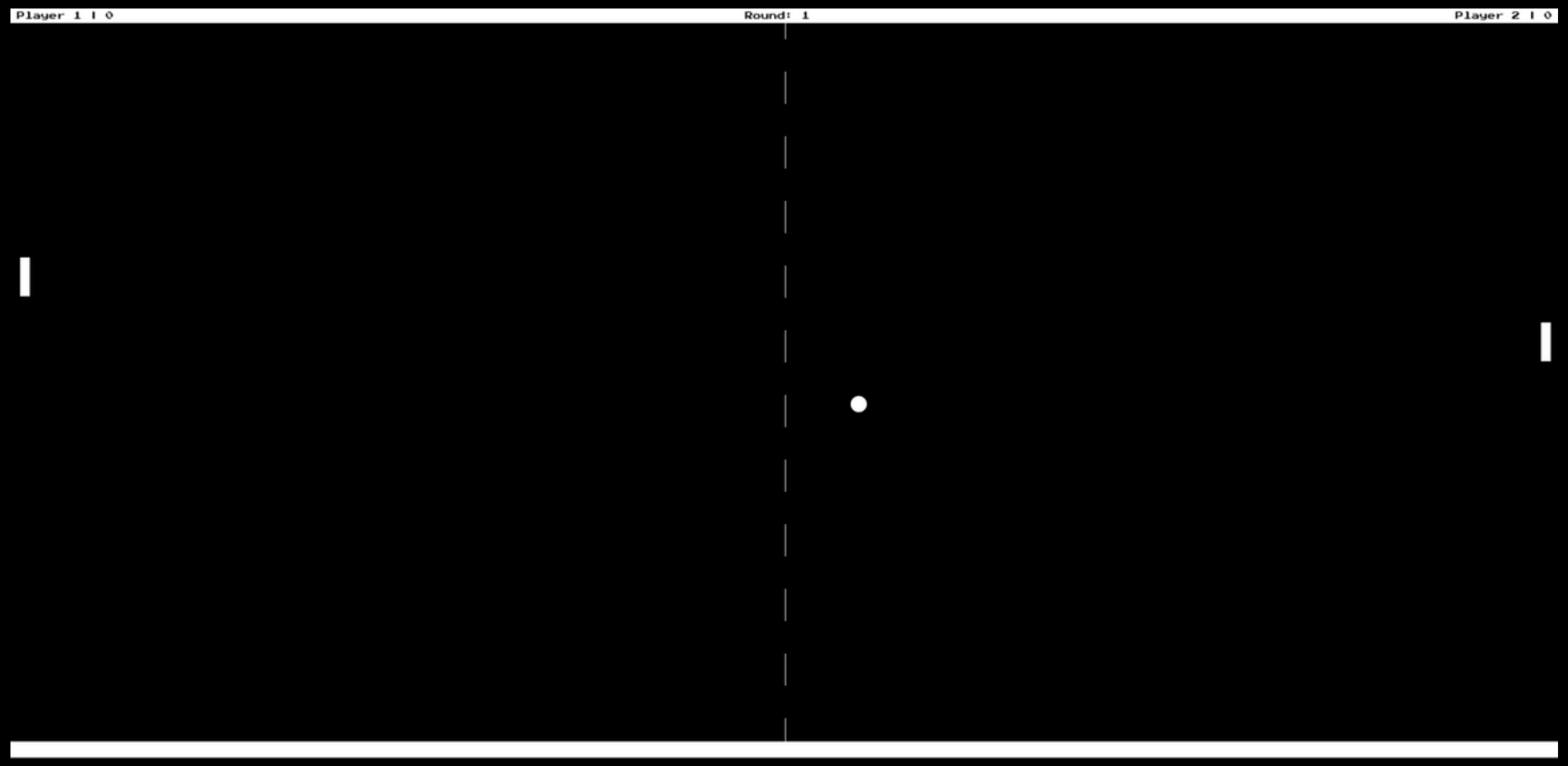
- Now in the update method you can make the paddle y position increase and decrease depending on the prediction.
  - It might also make sense to catch times when not to move, e.g. when the ball is moving away from the paddle (use velocity.x) or if the ball y position is within a certain tolerance of the paddle, as this will make it smoother.
- Then to test this, instantiate AIController in Court and assign it to the right paddle.
  - Also call the AIController.update function from court.update
- You may find your AI is impossible to defeat.
  - To make it less smart you can make it so it only predicts and moves the paddle when the ball is within a certain range making it sometimes impossible for the AI to reach the other end of the court.
  - Alternatively, increase the speed of the ball or decrease the paddle increments/decrements.

SOUNDS

- To make the game more interesting, you can add sounds.
- In the ball class, to instantiate a sound use the built-in Audio class passing the URL:
    - e.g. this.sound = new Audio(‘/path/to/sound’)
    - Note that the audio files have been included and URLs provided in the SETTINGS variable for easy access.
- To play a sound you must first reset the time and then use the play method.
    - this.sound.currentTime = 0
    - this.sound.play()
- Implement these into the ball.update method for when a wall is hit, point is scored, or the ball hits a paddle.
    - Hint: your current if statements should fall into these 3 categories.

THANK YOU FOR COMiNG!

You should now have a working game with AI and sounds.
Feel free to extend upon this and make it unique!



Hope to see you next semester for more InfPALS workshops and Big Projects.