



## What is our GOAL for this MODULE?

We used our knowledge of functions to create custom functions to serve the ball, reset the ball, and draw the net.

## What did we ACHIEVE in the class TODAY?

- Wrote custom functions to serve the ball, reset the ball, and draw the net.
- Drew the net using line instruction and for-loop.

# Which CONCEPTS/ CODING BLOCKS did we cover today?

Custom functions

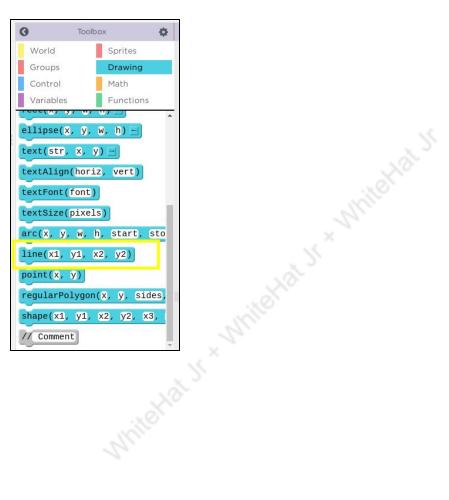


#### How did we DO the activities?

\*Note: In coding, we have a principle D-R-Y: Don't Repeat Yourself.

Remember: Good Programmers don't like to repeat themselves while writing code.

1. Use a pre-defined line() instruction(a function).

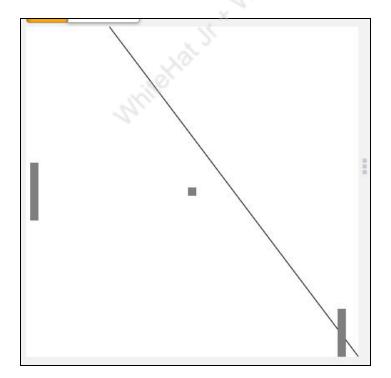




- 2. Draw a line by giving the start and the end coordinates.
  - Code:

```
var playerPaddle = createSprite(380, 200, 10, 70);
    var computerPaddle = createSprite(10,200,10,70);
 5
    function draw() {
 8 +
 9
       //clear the screen
10
11
12
13
14
15
16
17
18
19
22
23
24
25
26
27
28
29
30
      background("white");
      //make the player paddle move with the mouse's y position
      playerPaddle.y = World.mouseY;
      //AI for the computer paddle
      //make it move with the ball's y position
      computerPaddle.y = ball.y;
      line(100, 0, 400, 400);
      //create edge boundaries
      //make the ball bounce with the top and the bottom edges
      createEdgeSprites();
      ball.bounceOff(topEdge);
      ball.bounceOff(bottomEdge);
      //make the ball bounce off the paddles
ball.bounceOff(playerPaddle);
      ball.bounceOff(computerPaddle);
```

Output:

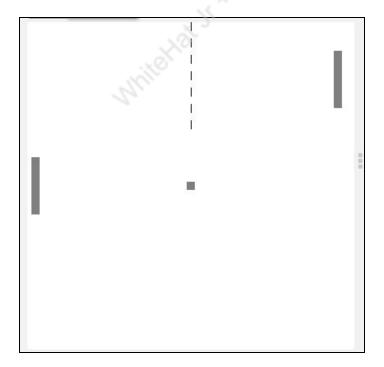




- 3. Make several small (dashed) lines with height 10 and leave a gap of 10 after every dash.
  - Code:

```
12
      //make the player paddle move with the mouse's y position
13
      playerPaddle.y = World.mouseY;
14
15
      //AI for the computer paddle
      //make it move with the ball's y position
16
17
      computerPaddle.y = ball.y;
18
19
20
21
      line(200,0,200,0+10);
22
      line(200,0+20,200,0+20+10);
23
      line(200,0+20+20,200,0+20+20+10);
      line(200,0+20+20+20,200,0+20+20+20+10);
24
      line(200,0+20+20+20+20,200,0+20+20+20+20+10);
25
26
      line(200,0+20+20+20+20+20,200,0+20+20+20+20+20+10);
27
      line(200,0+20+20+20+20+20+20,200,0+20+20+20+20+20+20+10);
28
29
      //create edge boundaries
30
      //make the ball bounce with the top and the bottom edges
31
      createEdgeSprites();
32
      bounceOff(topEdge, bottomEdge, playerPaddle,computerPaddle);
33
34
      //serve the ball when space is pressed
35
      if (keyDown("space")) {
36 -
        ball.velocityY = 3;
37
38
        ball.velocityX = 4;
```

• Output:

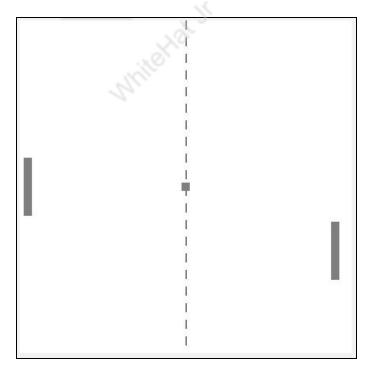




- 4. Use For Loop to run the same instructions without repeating the code.
  - Code:

```
12
      //make the player paddle move with the mouse's y position
13
      playerPaddle.y = World.mouseY;
14
15
      //AI for the computer paddle
      //make it move with the ball's y position
16
      computerPaddle.y = ball.y;
17
18
     for (var num = 0; num < 400; num = num +20) {
19 -
     line(200, num, 200, num+10);
20
21
22
23
24
25
      //create edge boundaries
26
      //make the ball bounce with the top and the bottom edges
27
      createEdgeSprites();
28
      bounceOff(topEdge, bottomEdge, playerPaddle,computerPaddle);
29
30
31
      //serve the ball when space is pressed
      if (keyDown("space")) {
32 -
        ball.velocityY = 3;
33
34
        ball.velocityX = 4;
35
36
37
      //reset the ball to the centre if it crosses the screen
38
39 -
      if(ball.x > 400 || ball.x <0) {
40
        ball.x = 200;
        ball.y = 200;
41
```

• Output:



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- 5. Teach the computer to draw the net using a custom-defined function **drawnet()**.
  - Code:

```
8 - function draw() {
      //clear the screen
background("white");
 9
11
12
       //make the player paddle move with the mouse's y position
13
      playerPaddle.y = World.mouseY;
14
      //AI for the computer paddle //make it move with the ball's y position
15
16
      computerPaddle.y = ball.y;
17
18
19
     drawnet();
20
     for (var num = 0; num < 400; num = num +20) {
21 -
22
       line(200, num, 200, num+10);
23
24
25
26
27
       //create edge boundaries
28
       //make the ball bounce with the top and the bottom edges
29
      createEdgeSprites();
30
       //serve the ball when space is pressed
31
      if (keyDown("space")) {
  ball.velocityY = 3;
32 -
                WhiteHat Jr * WhiteHat Jr
33
         ball.velocityX = 4;
34
```



6. Teach the computer to serve the ball and reset the ball by writing custom-defined functions.

```
resetball();
34
35
36
      ball.bounceOff(topEdge);
37
      ball.bounceOff(bottomEdge);
38
39
      ball.bounceOff(playerPaddle);
      ball.bounceOff(computerPaddle);
40
41
42
      drawSprites();
43
   }
44
45 - function drawnet() {
46
      for (var num = 0; num < 400; num = num +20) {
47 -
48
       line(200, num, 200, num+10);
49
     }
50
51
52
53 - function serveball() {
54
      ball.velocityY = 3;
      ball.velocityX = 4;
55
56
   }
57
58
  function resetball() {
59
        ball.x = 200;
60
        ball.y = 200;
61
        ball.velocityX = 0;
        ball.velocityY = 0;
62
63
```

# What's next?

We will understand the different states of a game. We will also learn how to store information about the in-game states.