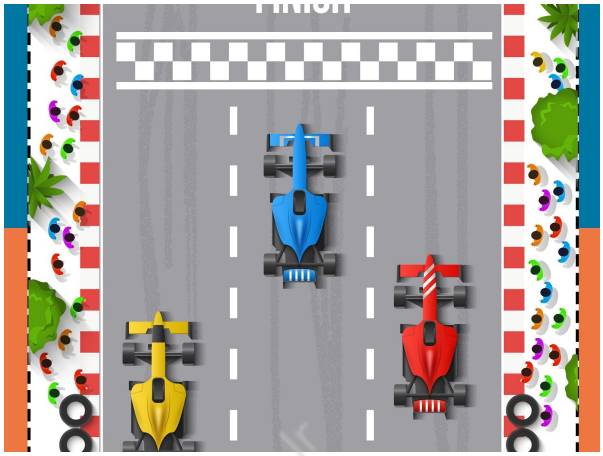
PRO-C40

REAL CAR RACING



What is our GOAL for this MODULE?

We used our knowledge about Firebase to create a multiplayer car racing game.

What did we ACHIEVE in the class TODAY?

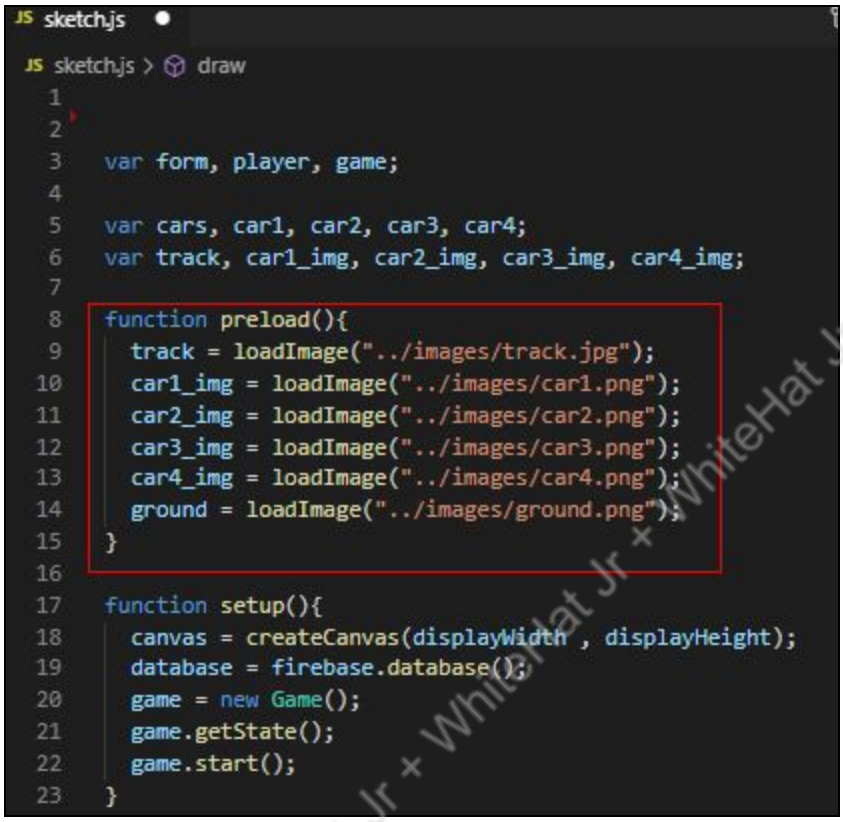
- Added a track in the background.
- Replaced the car sprites with images of real cars.
- Wrote a condition to end the game.
- Create a reset button at the top of the game which will reset the playerCount and gameState in our game.

Which CONCEPTS/CODING BLOCKS did we cover today?

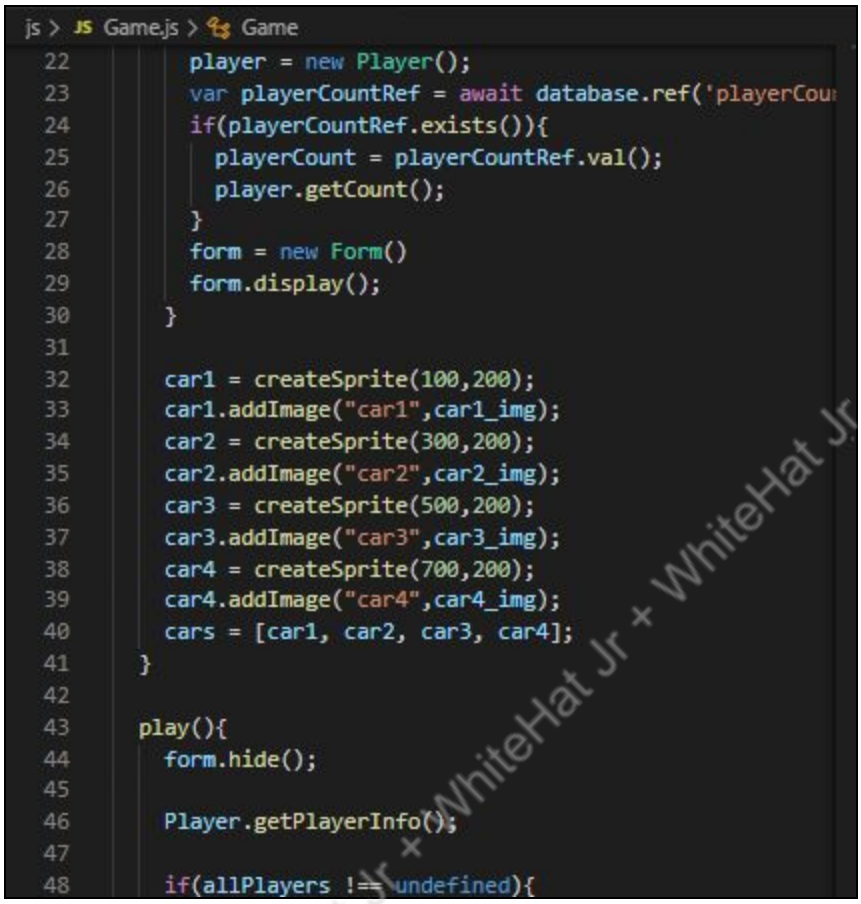
- Adding images to the sprites.
- Writing conditions to end the game.
- Writing a reset function.

How did we DO the activities?

1. Load the car image inside the **preload()** function.

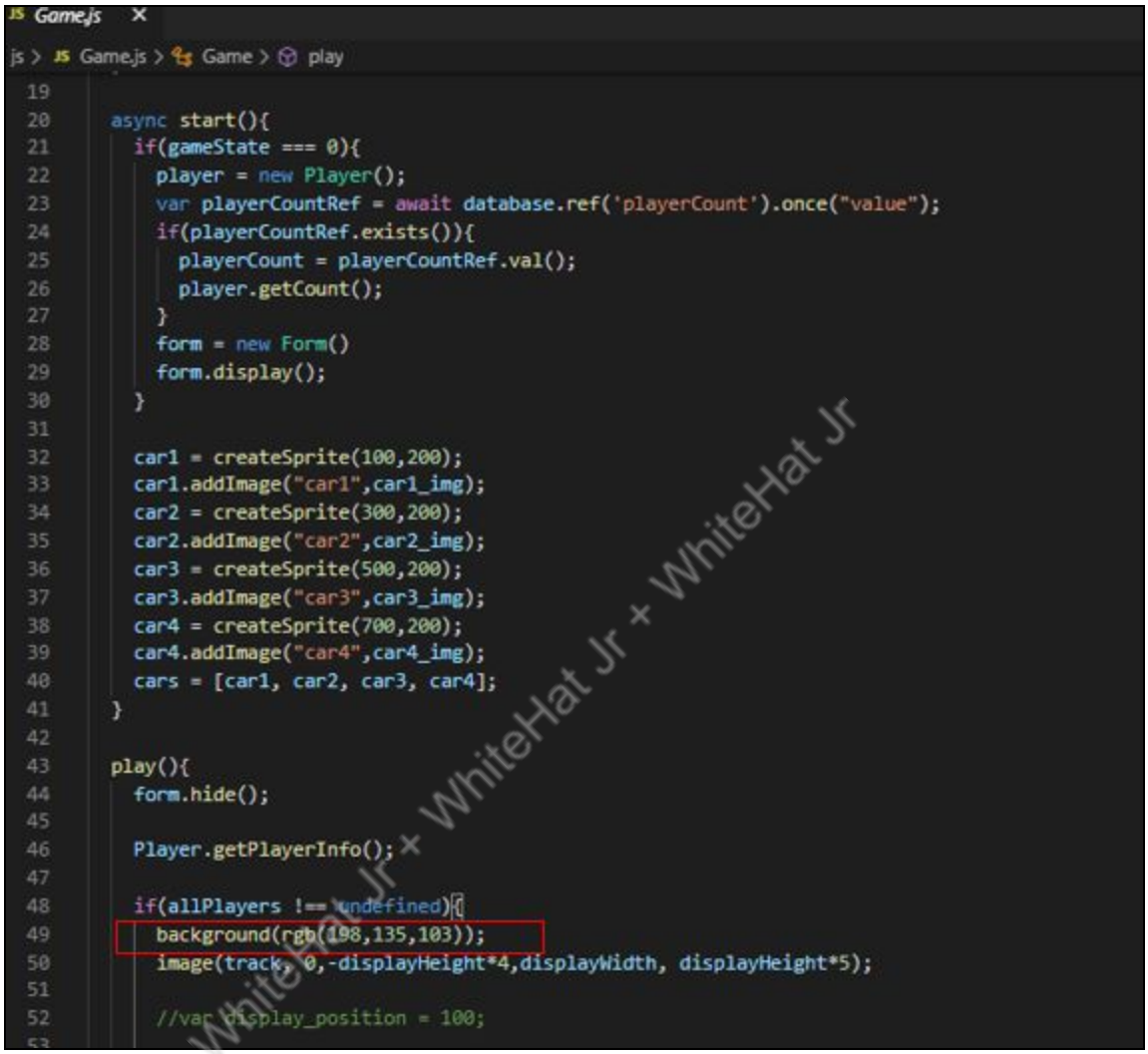


2. Adding the sprite images in the code.



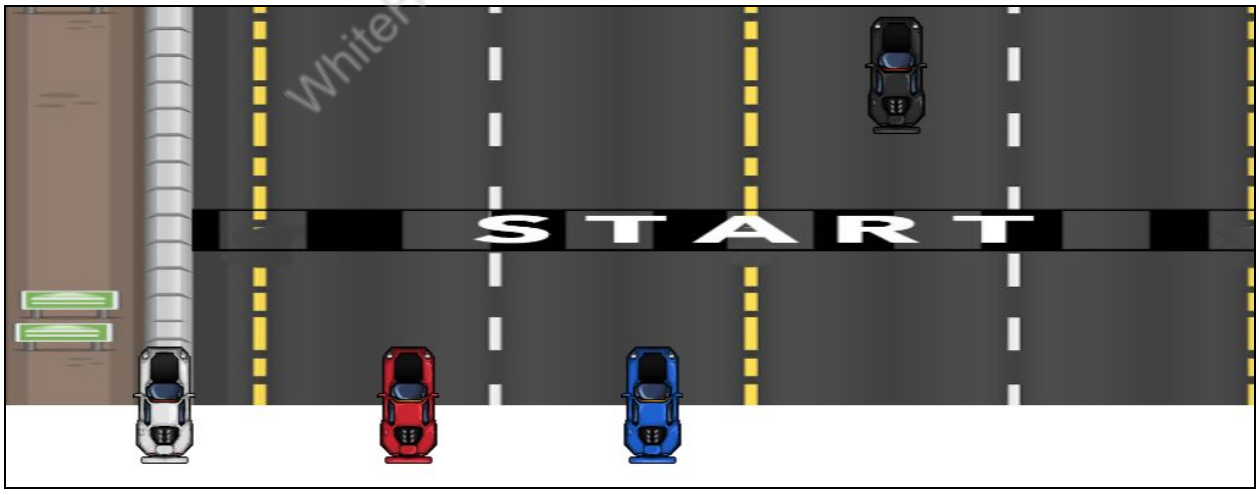
```
js > JS Game.js > Game
22          player = new Player();
23          var playerCountRef = await database.ref('playerCou
24          if(playerCountRef.exists()){
25            playerCount = playerCountRef.val();
26            player.getCount();
27          }
28          form = new Form()
29          form.display();
30        }
31
32        car1 = createSprite(100,200);
33        car1.addImage("car1",car1_img);
34        car2 = createSprite(300,200);
35        car2.addImage("car2",car2_img);
36        car3 = createSprite(500,200);
37        car3.addImage("car3",car3_img);
38        car4 = createSprite(700,200);
39        car4.addImage("car4",car4_img);
40        cars = [car1, car2, car3, car4];
41      }
42
43      play(){
44        form.hide();
45
46        Player.getPlayerInfo();
47
48        if(allPlayers !== undefined){
```

3. Load ground and the track where the car racing game will take place.



4. Add a track image in the game.

```
Game.js > Game
        if(playerCountRef.exists()){
          playerCount = playerCountRef.val();
          player.getCount();
        }
        form = new Form()
        form.display();
      }

      car1 = createSprite(100,200);
      car1.addImage("car1",car1_img);
      car2 = createSprite(300,200);
      car2.addImage("car2",car2_img);
      car3 = createSprite(500,200);
      car3.addImage("car3",car3_img);
      car4 = createSprite(700,200);
      car4.addImage("car4",car4_img);
      cars = [car1, car2, car3, car4];
    }

    play(){
      form.hide();

      Player.getPlayerInfo();

      if(allPlayers !== undefined){
        //var display_position = 100;
            background(rgb(198,135,103));

        image(track, 0,-displayHeight*4,displayWidth, displayHeight*5);
```



5. Change the value of x to align the car.

```
47
48    if(allPlayers !== undefined){
49      background("#c68767");
50
51      image(track, 0,-displayHeight*4,displayWidth, displayHeight*5);
52
53      //var display_position = 100;
54
55      //index of the array
56      var index = 0;
57
58      //x and y position of the cars
59      var x = 175 ;
60      var y;
61
62      for(var plr in allPlayers){
63        //add 1 to the index for every loop
64        index = index + 1 ;
65
66        //position the cars a little away from each other in x direction
67        x = x + 200;
68        //use data form the database to display the cars in y direction
69        y = displayHeight - allPlayers[plr].distance;
70        cars[index-1].x = x;
71        cars[index-1].y = y;
72
73        if (index === player.index){
74          cars[index - 1].shapeColor = "red";
75          camera.position.x = displayWidth/2;
76          camera.position.y = cars[index-1].y;
77        }
78
79        //textSize(15);
```

6. Write a condition to end the game when the player reaches the end sign on the road.

Game.js

```
> JS Game.js > Game > play
72          if (index === player.index){
73            cars[index - 1].shapeColor = "red";
74            camera.position.x = displayWidth/2;
75            camera.position.y = cars[index-1].y;
76          }
77
78          //textSize(15);
79          //text(allPlayers[plr].name + ": " + allPlayers[plr].distance, 120,displ
80        }
81
82      }
83
84      if(keyIsDown(UP_ARROW) && player.index !== null){
85        player.distance +=10
86        player.update();
87      }
88
89      if(player.distance > 3860){
90        gameState = 2;
91      }
92
93      drawSprites();
94    }
```

sketch.js

```
JS sketch.js > ...
17    car1_img = loadImage("../images/car1.png");
18    car2_img = loadImage("../images/car2.png");
19    car3_img = loadImage("../images/car3.png");
20    car4_img = loadImage("../images/car4.png");
21    ground = loadImage("../images/ground.png");
22  }
23
24  function setup(){
25    canvas = createCanvas(displayWidth - 20, displayHeight-30);
26    database = firebase.database();
27    game = new Game();
28    game.getState();
29    game.start();
30  }
31
32
33  function draw(){
34    if(playerCount === 4){
35      game.update(1);
36    }
37    if(gameState === 1){
38      clear();
39      game.play();
40    }
41    if(gameState === 2){
42      game.end();
43    }
44  }
45
```

```
Game.js
Game.js > Game > play
72          if (index === player.index){
73            cars[index - 1].shapeColor = "red";
74            camera.position.x = displayWidth/2;
75            camera.position.y = cars[index-1].y;
76          }
77
78          //textSize(15);
79          //text(allPlayers[plr].name + ": " + allPlayers[plr].distance, 120,displ
80        }
81
82      }
83
84      if(keyIsDown(UP_ARROW) && player.index !== null){
85        player.distance +=10
86        player.update();
87      }
88
89      if(player.distance > 3860){
90        gameState = 2;
91      }
92
93      drawSprites();
94    }
95
96    end(){
97      console.log("Game Ended");
98    }
99  }
100
```

7. Create a reset button inside the form.

```
1   class Form {
2
3     constructor() {
4       this.input = createInput("Name");
5       this.button = createButton('Play');
6       this.greeting = createElement('h2');
7       this.title = createElement('h2');
8       this.reset = createButton('Reset');
9     }
10    hide(){
11      this.greeting.hide();
12      this.button.hide();
13      this.input.hide();
14      this.title.hide();
15    }
16
17    display(){
18      this.title.html("Car Racing Game");
19      this.title.position(displayWidth/2 - 50, 0);
20
21      this.input.position(displayWidth/2 - 40 , displayHeight/2 - 80);
22      this.button.position(displayWidth/2 + 30, displayHeight/2);
23      this.reset.position(displayWidth-100,20);
24
25      this.button.mousePressed(()=>{
26        this.input.hide();
27        this.button.hide();
28        player.name = this.input.value();
29        playerCount+=1;
```

8. Add the code for the reset button to make the playerCount and gameState as 0.

What's NEXT?

In the next class, we will look at some of the common techniques to debug the code when it is not behaving as expected.

EXTEND YOUR KNOWLEDGE:

1. Learn about the conditions here.