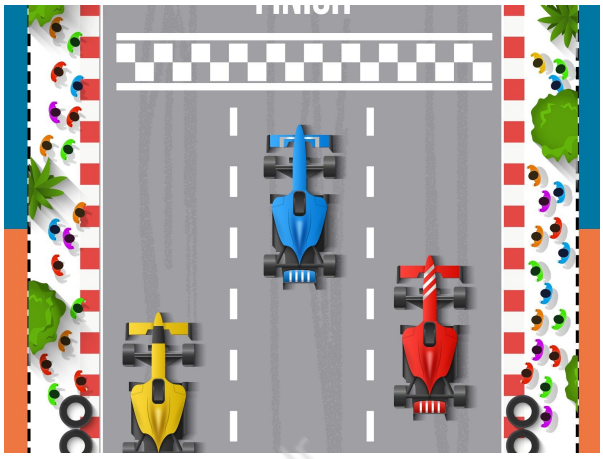
Real Car Racing



What is our GOAL for this MODULE?

The goal of this module is to create a multiplayer car racing game using a real time database .

What did we ACHIEVE in the class TODAY?

- In the car racing game, we added a track in the background
- Replaced the car sprites with images of real cars
- Wrote a condition to end the game

Which CONCEPTS/CODING BLOCKS did we cover today?

- Adding images to the sprites.
- Writing conditions to end the game.

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How did we DO the activities?

Building a game by adding custom graphics - choice of cars and tracks

In the last class, we created the rectangular car sprites which moved with the change in database values of distance covered for each car. We also adjusted the canvas size and position of all the elements to cover the display size.

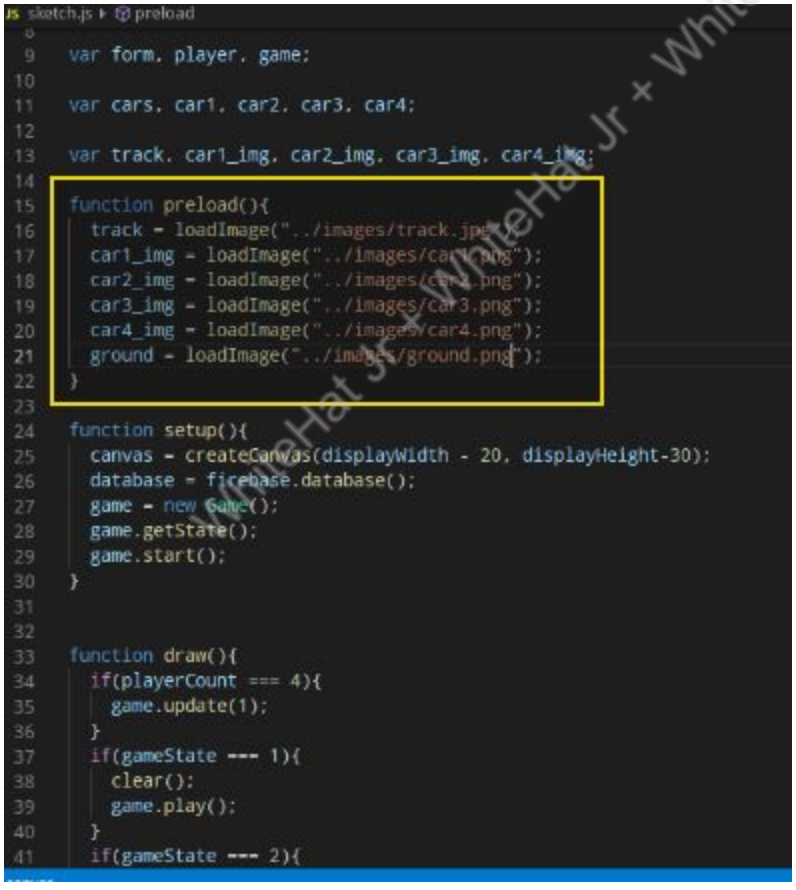
In this class, we:

- Add the track in the background
- Replace rectangular sprites with cars

We wrote the condition to end the game.

We load all the images. We have 5 images in total.

- ground
- track
- 4 images for all the cars



```
sketch.js ▸ preload
var form, player, game;

var cars, car1, car2, car3, car4;

var track, car1_img, car2_img, car3_img, car4_img;

function preload(){
  track = loadImage("../images/track.jpg");
  car1_img = loadImage("../images/car1.png");
  car2_img = loadImage("../images/car2.png");
  car3_img = loadImage("../images/car3.png");
  car4_img = loadImage("../images/car4.png");
  ground = loadImage("../images/ground.png");
}

function setup(){
  canvas = createCanvas(displayWidth - 20, displayHeight-30);
  database = firebase.database();
  game = new Game();
  game.getState();
  game.start();
}


function draw(){
  if(playerCount === 4){
    game.update(1);
  }
  if(gameState === 1){
    clear();
    game.play();
  }
  if(gameState === 2){
```

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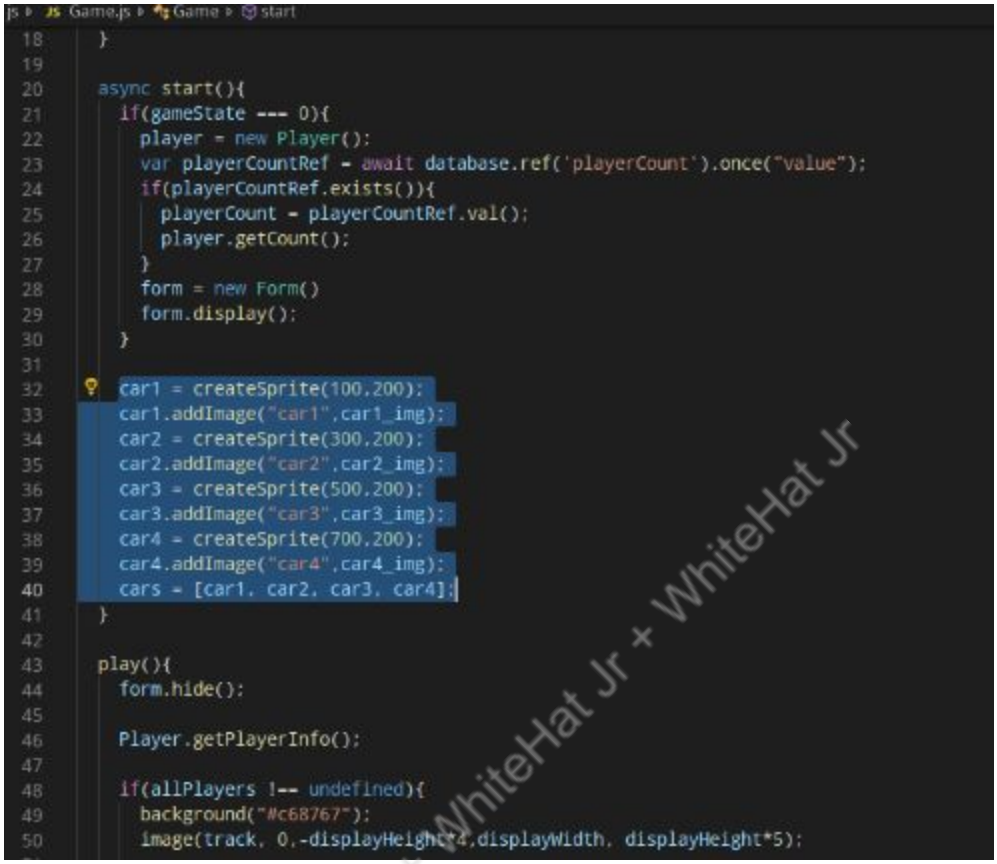
Adding the sprite images in the code.



```
}

async start(){
  if(gameState === 0){
    player = new Player();
    var playerCountRef = await database.ref('playerCount').once("value");
    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){
    background("#c68767");
    image(track, 0,-displayHeight*4,displayWidth, displayHeight*5);
```

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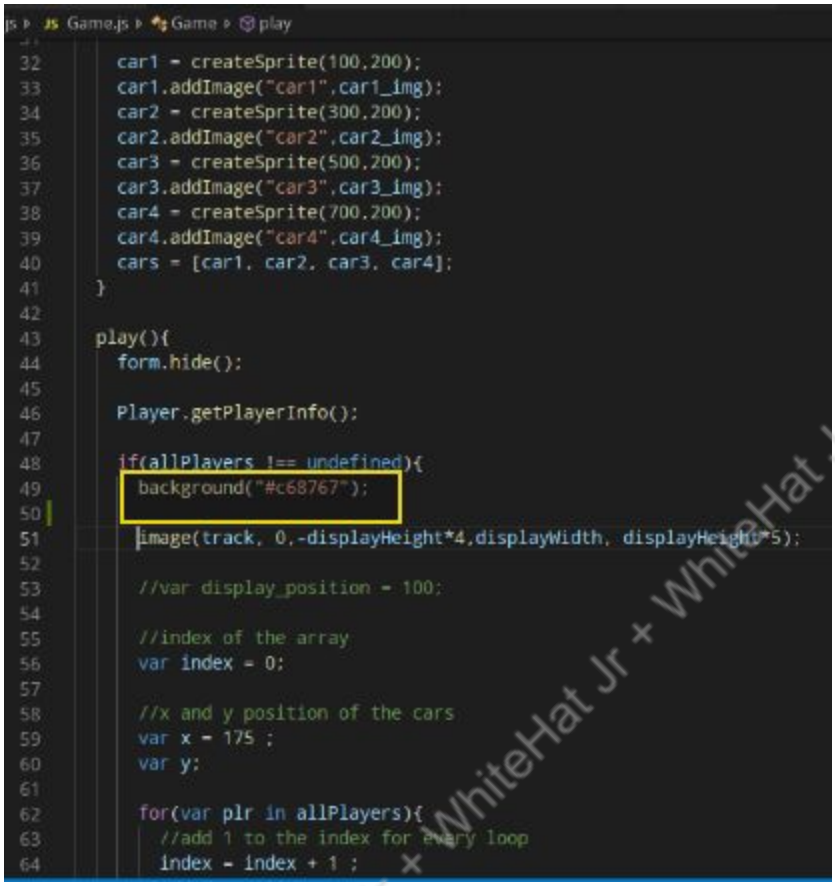
To load ground and the track where the car racing game will take place.



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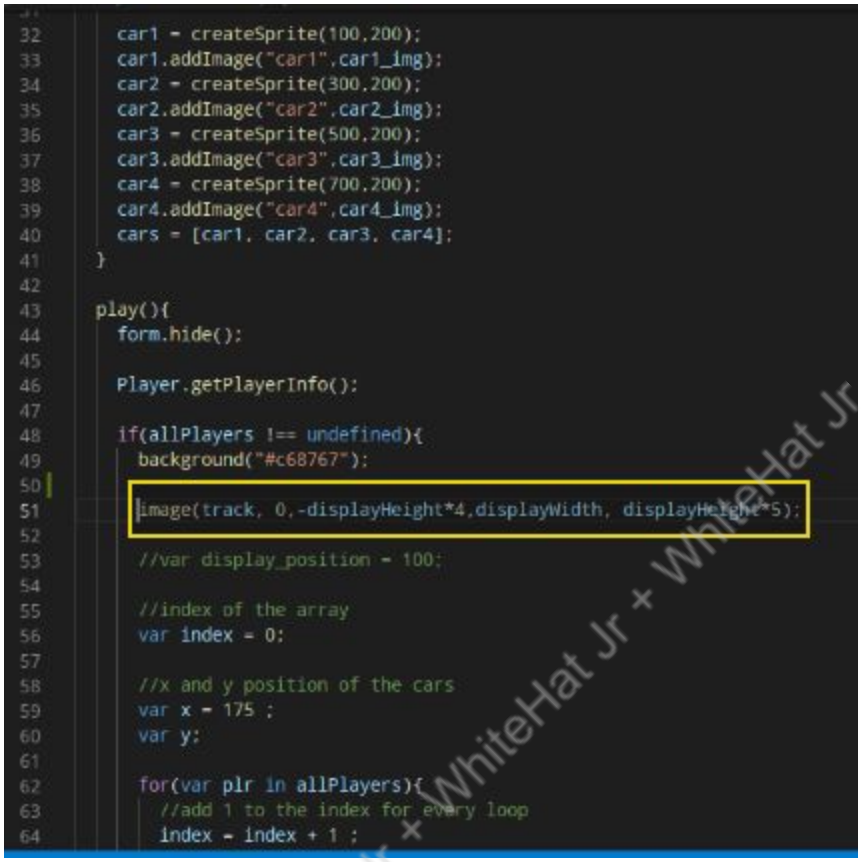
To add a track image in the game.



```
    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){
      background("#c68767");

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

      //var display_position = 100;

      //index of the array
      var index = 0;

      //x and y position of the cars
      var x = 175 ;
      var y;

      for(var plr in allPlayers){
        //add 1 to the index for every loop
        index = index + 1 ;
```

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```
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);
```

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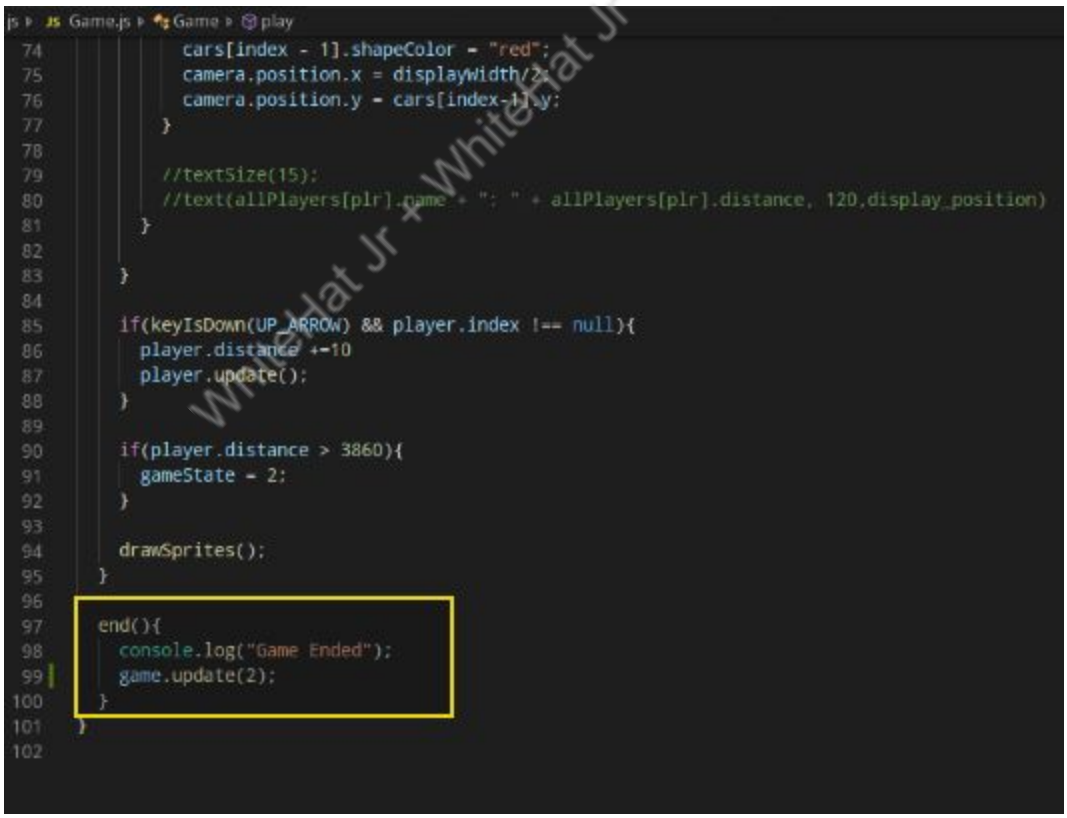
To write a condition to end the game when the player reaches the end sign on the road.

```
Game.js ▸ Game ▸ play
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);
80          //text(allPlayers[plr].name + ": " + allPlayers[plr].distance, 120,display_position)
81        }
82
83      }
84
85      if(keyIsDown(UP_ARROW) && player.index !== null){
86        player.distance +=10
87        player.update();
88      }
89
90      if(player.distance > 3860){
91        gameState = 2;
92      }
93
94      drawSprites();
95    }
```



```
Game.js ▸ Game ▸ play
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);
80          //text(allPlayers[plr].name + ": " + allPlayers[plr].distance, 120,display_position)
81        }
82
83      }
84
85      if(keyIsDown(UP_ARROW) && player.index !== null){
86        player.distance +=10
87        player.update();
88      }
89
90      if(player.distance > 3860){
91        gameState = 2;
92      }
93
94      drawSprites();
95    }
96
97    end(){
98      console.log("Game Ended");
99      game.update(2);
100   }
101 }
102
```

What's NEXT?

In the next class, you will be learning to create a reset button at the top of the game.

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EXTEND YOUR KNOWLEDGE:

You can learn about the conditions through the following link;
https://www.javascripttutorial.net/javascript-if-else/#:~:text=JavaScript%20if%20else%20shortcut%3A%20conditional%20operator&text=Like%20the%20if%20statement%2C%20the,the%20value%20of%20the%20expression_2%20.

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