

GAME CAMERA AND DISPLAY SIZE



What is our GOAL for this MODULE?

We used our knowledge about game cameras to focus on the current player.

What did we ACHIEVE in the class TODAY?

- We used the data from the database to design the car racing game when the game is in play state.
- We used Game Camera to focus the game on the active player in the game.
- We were able to adjust the game canvas to the size of the display device.

Which CONCEPTS/CODING BLOCKS did we cover today?

- Camera positions.
- Adjusting the camera size.

How did we DO the activities?

1. Use 'displayWidth' and 'displayHeight' in the code to create the canvas to fill the browser.

```
js sketch.js > setup
29  track_img = loadImage( "Images/track.png" );
30
31  bronze_img = loadImage("Images/bronze.png");
32  silver_img = loadImage("Images/silver.png");
33  gold_img = loadImage("Images/gold.png");
34  }
35
36  function setup() {
37    //create the canvas
38    createCanvas(displayWidth , displayHeight );
39
40    //create the database
41    database = firebase.database();
42
43    //set the variables
44    gameState = 0;
45    distance = 0;
46    finishedPlayers = 0;
47    yVel = 0;
48    xVel = 0;
49
50    xSet = false;
51
52    game = new Game();
53    game.getState();
54    game.start();
55  }
```

2. Change the positions of the form elements with 'displayWidth' and 'displayHeight' .

```
4   this.input = createInput("Name");
5   this.button = createButton('Play');
6   this.greeting = createElement('h2');
7   this.title = createElement('h2');
8 }
9 hide(){
10  this.greeting.hide();
11  this.button.hide();
12  this.input.hide();
13  this.title.hide();
14 }
15
16 display(){
17  this.title.html("Car Racing Game");
18  this.title.position(displayWidth/2 - 50, 0);
19
20  this.input.position(displayWidth/2 - 40 , displayHeight/2 - 80);
21  this.button.position(displayWidth/2 + 30, displayHeight/2);
22
23  this.button.mousePressed(()=>{
24    this.input.hide();
25    this.button.hide();
26    player.name = this.input.value();
27    playerCount+=1;
28    player.index = playerCount;
29    player.update();
30    player.updateCount(playerCount);
31    this.greeting.html("Hello " + player.name)
32    this.greeting.position(displayWidth/2 - 70, displayHeight/4);
33  });
34
35 }
36 }
```

There is an available update.

Download Now

3. Initialize the car variables inside sketch.js

```
js sketch.js ▶ draw
1  var canvas, backgroundImage;
2
3  var gameState = 0;
4  var playerCount;
5  var allPlayers;
6  var distance = 0;
7  var database;
8
9  var form, player, game;
10
11  var cars, car1, car2, car3, car4;
12
13
14  function setup(){
15    canvas = createCanvas(displayWidth - 20, displayHeight - 30);
16    database = firebase.database();
17    game = new Game();
18    game.getState();
19    game.start();
20  }
21
22
23  function draw(){
24    if(playerCount === 4){
25      game.update(1);
26    }
27    if(gameState === 1){
28      clear();
29      game.play();
30    }
31  }
32
```

4. Create the sprite for all the players.

```
JS Game.js > Game > play
10 //
11
12 }
13
14 update(state){
15   database.ref('/').update({
16     gameState: state
17   });
18 }
19
20 async start(){
21   if(gameState === 0){
22     player = new Player();
23     var playerCountRef = await database.ref('playerCount').once(
24       'value');
25     if(playerCountRef.exists()){
26       playerCount = playerCountRef.val();
27       player.getCount();
28     }
29     form = new Form()
30     form.display();
31   }
32   car1 = createSprite(100,200);
33   car2 = createSprite(300,200);
34   car3 = createSprite(500,200);
35   car4 = createSprite(700,200);
36   cars = [car1, car2, car3, car4];
37
38
39 play(){
40   form.hide();
41
42   Player.getPlayerInfo();
43 }
```

5. Assign the x and y position to the player.

```
36     cars = [car1, car2, car3, car4];
37 }
38
39 play(){
40     form.hide();
41
42     Player.getPlayerInfo():
43
44     if(allPlayers != undefined){
45         //var display_position = 100;
46
47         //index of the array
48         var index = 0;
49
50         //x and y position of the cars
51         var x = 0;
52         var y;
53
54         for(var plr in allPlayers){
55             //add 1 to the index for every loop
56             index = index + 1 ;
57
58             //position the cars a little away from each other in x direction
59             x = x + 200;
60             //use data from the database to display the cars in y direction
61             y = displayHeight - allPlayers[plr].distance;
62             cars[index-1].x = x;
63             cars[index-1].y = y;
64
65             if (index === player.index){
66                 cars[index - 1].shapeColor = red;
67             }
68         }
69     }
```

6. Give a different color to the active player in the browser.

```
Game.js > Game

var index = 0;

//x and y position of the cars
var x = 0;
var y;

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

    //position the cars a little away from each other in x direction
    x = x + 200;
    //use data from the database to display the cars in y direction
    y = displayHeight - allPlayers[plr].distance;
    cars[index-1].x = x;
    cars[index-1].y = y;

    if (index === player.index){
        fill("red")
    }
    else{fill("white")}

    //textSize(15);
    //text(allPlayers[plr].name + ": " + allPlayers[plr].distance, 120, displ
}
}
```

7. Set camera position for each player in the game.

```
Game.js > Game > play ...

if(allPlayers !== undefined){
  //var display_position = 100;

  //index of the array
  var index = 0;

  //x and y position of the cars
  var x = 0;
  var y;

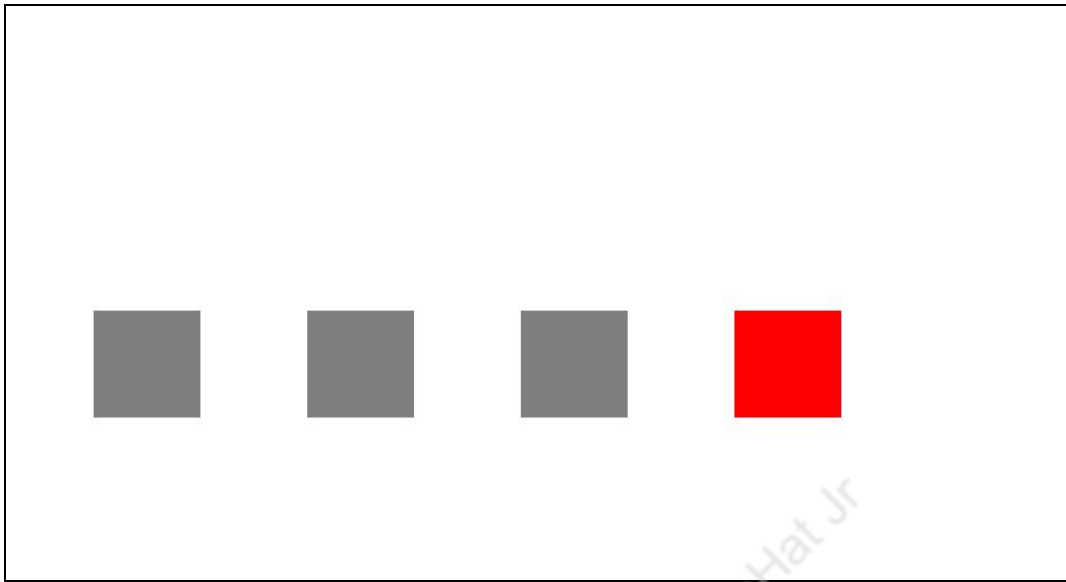
  for(var plr in allPlayers){
    //add 1 to the index for every loop
    index = index + 1 ;

    //position the cars a little away from each other in x direction
    x = x + 200;
    //use data from the database to display the cars in y direction
    y = displayHeight - allPlayers[plr].distance;

    cars[index-1].x = x;
    cars[index-1].y = y;

    if (index === player.index){
      fill("red");
      camera.position.x = displayWidth/2;
      camera.position.y = cars[index-1].y
    }else{
      fill("white")
    }

    //textSize(15);
    //text(allPlayers[plr].name + ": " + allPlayers[plr].distance, 120,display_position)
  }
}
```

What's NEXT?

In the next class, you will be learning about replacing the sprites with real cars of their choice.

EXTEND YOUR KNOWLEDGE:

1. Read this document for know more about the camera positions in p5:
<https://p5js.org/reference/#/p5.Camera>