

## GAME IN THE DATABASE



### What is our GOAL for this MODULE?

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

### What did we ACHIEVE in the class TODAY?

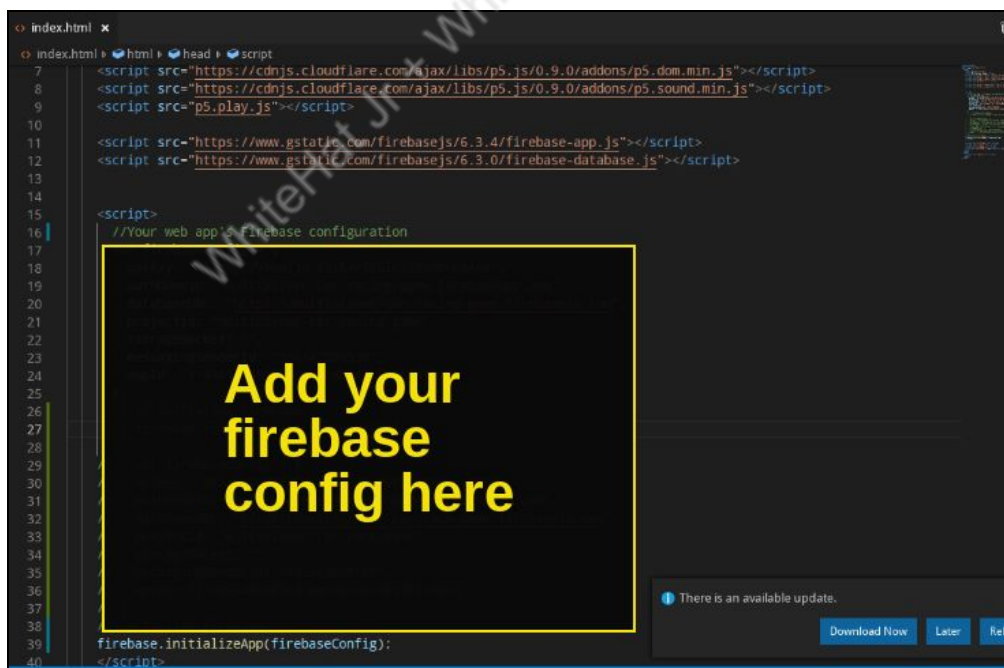
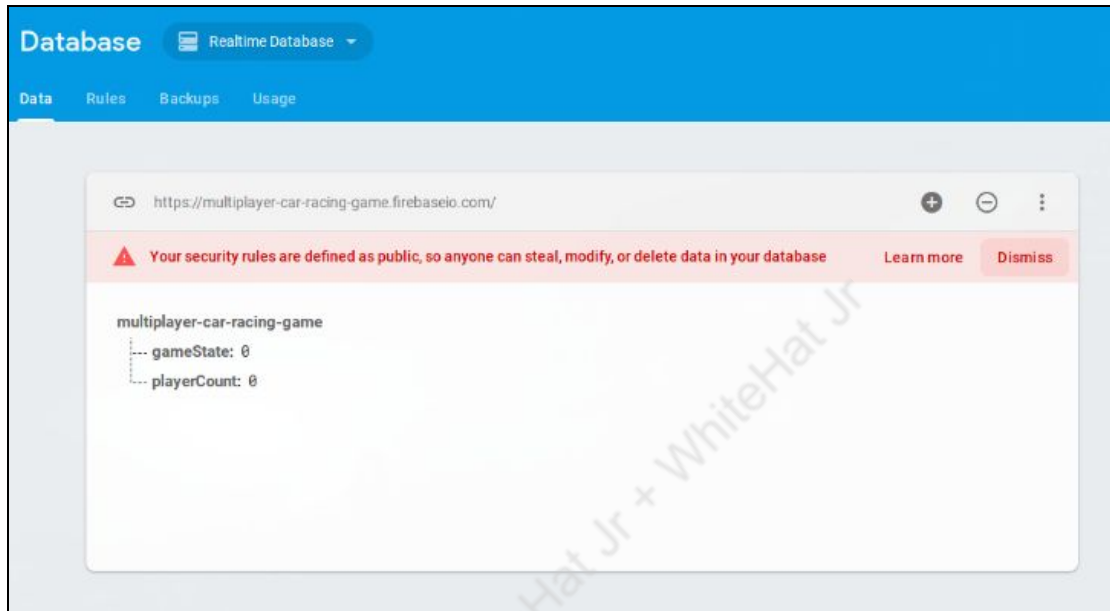
- We made a multiplayer car racing game which happens only in the database.
- We enabled press of the up arrow key to change the distance covered between the properties of each player in the database.
- The distance covered by all players is shown on the screen with the player playing the game being highlighted.

### Which CONCEPTS/CODING BLOCKS did we cover today?

- The concept of OOPs programming.
- Firebase database.
- Game states.

### How did we DO the activities?

1. Add the firebase configuration and make the necessary changes in the firebase database structure as shown below:

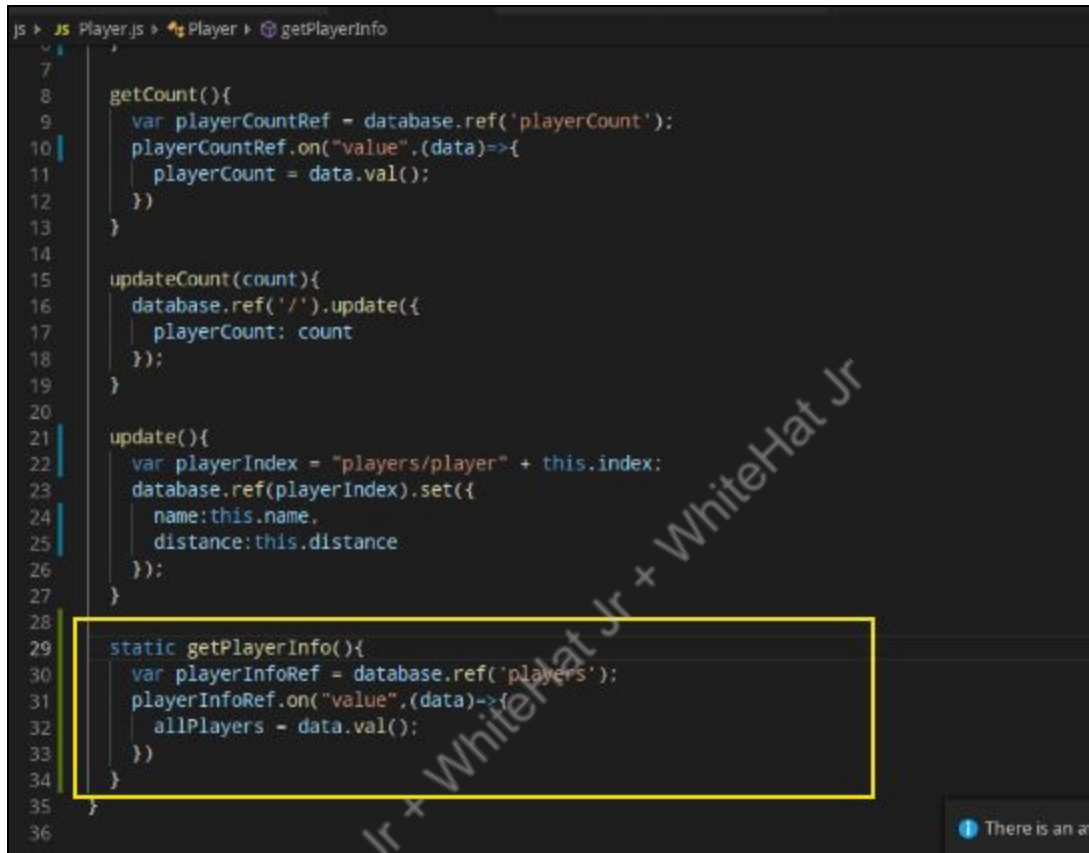


```
multiplayer-car-racing-game
{
  gameState: 0
  playerCount: 0
}
```

2. Use the update() function to update both name and distance of the player.

```
js > JS Player.js > Player > getPlayerInfo
7
8
9   getCount(){
10     var playerCountRef = database.ref('playerCount');
11     playerCountRef.on("value",(data)=>{
12       playerCount = data.val();
13     })
14   }
15
16   updateCount(count){
17     database.ref('/').update({
18       playerCount: count
19     });
20   }
21
22   update(){
23     var playerIndex = "players/player" + this.index;
24     database.ref(playerIndex).set({
25       name: this.name,
26       distance: this.distance
27     });
28   }
```

3. Store the player information inside the **getPlayerInfo** function and add a static keyword in front of the function.



```
js > JS Player.js > Player > getPlayerInfo
7
8   getCount(){
9     var playerCountRef = database.ref('playerCount');
10    playerCountRef.on("value",(data)=>{
11      playerCount = data.val();
12    })
13  }
14
15  updateCount(count){
16    database.ref('/').update({
17      playerCount: count
18    });
19  }
20
21  update(){
22    var playerIndex = "players/player" + this.index;
23    database.ref(playerIndex).set({
24      name:this.name,
25      distance:this.distance
26    });
27  }
28
29  static getPlayerInfo(){
30    var playerInfoRef = database.ref('players');
31    playerInfoRef.on("value",(data)=>{
32      allPlayers = data.val();
33    })
34  }
35
36}
```

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4. Get all the players' data and display them on the screen and change the distance and update it in the database when an 'UP' arrow key is pressed.
  - **Note:** we used 'plr' because the player is already defined.

```
6   form = new Form()
7   form.display();
8   }
9   }
10  }
11
12  play(){
13    form.hide();
14    textSize(30);
15    text("Game Start", 120, 100)
16    Player.getPlayerInfo();
17
18    if(allPlayers != undefined){
19      var display_position = 130;
20      display_position+=20;
21      textSize(15);
22      text(allPlayers[plr].name + ": " + allPlayers[plr].distance, 120, display_position)
23    }
24  }
25
26  if(keyIsDown(UP_ARROW) && player.index != null){
27    player.distance +=50
28    player.update();
29  }
30  }
```

5. Write the code to make the current player 'red'.

```
index.html JS Game.js
> JS Game.js > ...
19   if(gameState === 0){
20     player = new Player();
21     var playerCountRef = await database.ref('playerCount').once("value");
22     if(playerCountRef.exists()){
23       playerCount = playerCountRef.val();
24       player.getCount();
25     }
26     form = new Form()
27     form.display();
28   }
29 }
30
31 play(){
32   form.hide();
33   textSize(30);
34   text("Game Start", 120, 100)
35   Player.getPlayerInfo();
36
37   if(allPlayers !== undefined){
38     var display_position = 130;
39     for(var plr in allPlayers){
40       if (plr === "player" + player.index)
41         fill("red")
42       else
43         fill("black");
44
45       display_position+=20;
46       textSize(15);
47       text(allPlayers[plr].name + ": " + allPlayers[plr].distance, 120,display_position)
48     }
49   }
50
51   if(keyIsDown(UP_ARROW) && player.index !== null){
52     player.distance +=50
53     player.update();
54   }
55 }
```

### What's NEXT?

In the next class, you will be learning about game camera and display size.

### EXTEND YOUR KNOWLEDGE:

1. Learn about firebase from the official docs: <https://firebase.google.com/docs/firestore>.