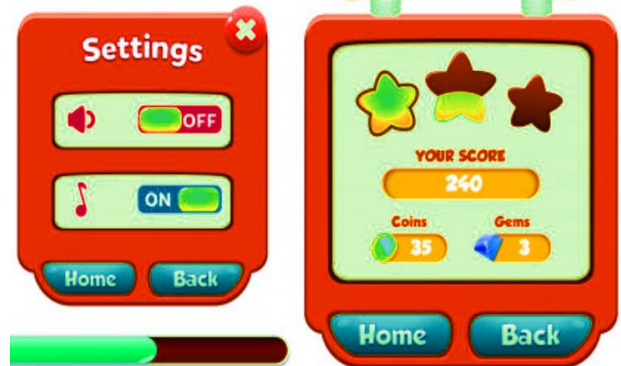


## SCOPE OF VARIABLES



### What is our GOAL for this MODULE?

We used our knowledge of variables, functions, loops, game states, etc to reset the game and set up a local environment to run the Trex code locally.

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

- Changed the scope of variable from local to global.
- Reset the game when the reset icon is pressed.

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

- Scope of variables.
- Changing game state.

### How did we DO the activities?

1. Declare and identify the scope of different variables.

```
1  var PLAY = 1;
2  var END = 0;
3  var gameState = PLAY;
4
5  var trex, trex_running, trex_collided;
6  var ground, invisibleGround, groundImage;
7
8  var cloudsGroup, cloudImage;
9  var obstaclesGroup, obstacle1, obstacle2, obstacle3,
10 obstacle4, obstacle5, obstacle6;
11
12 var score;
13 var gameOverImg, restartImg;
14 var jumpSound, checkPointSound, dieSound;
15 function preload() {
16
17
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99
100
```

console Clear

2. Declare the message variable in the **setup()** function.

```
37
38 function setup() {
39   createCanvas(600, 500);
40
41   var message = "This is a message";
42   console.log(message);
43
44   trex = createSprite(50, 380, 20, 50);
45
46   trex.addAnimation("running", trex_running);
47   trex.addAnimation("collided", trex_collided);
48
49
50   trex.scale = 0.5;
51
52   ground = createSprite(200, 380, 400, 20);
53   ground.addImage("ground", groundImage);
54
55
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63
64
65
66
67
68
69
70
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87
88
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```

console

your code is already using that name as a variable. You may

3. Log the message in the **draw()** function.

```
82 }
83
84 function draw() {
85   background(180);
86   console.log(message);
87   //displaying score
88   text("Score: "+ score, 500,50);
89
90
91   if(gameState === PLAY){
92     //move the
93     gameOver.visible = false;
94     restart.visible = false;
95
96     ground.velocityX = -(4 + 3* score/100)
97     //scoring
98
```

Console

✖ Uncaught ReferenceError: message is not defined (sketch: line 87)

4. Reset the game by pressing the reset icon.



5. Use the **mousePressedOver()** instruction to detect if the mouse is pressed over the reset sprite and display "Restart the Game" when the mouse is pressed.

```
143
144 //stop trex from falling down
145 trex.collide(invisibleGround);
146
147 if(mousePressedOver(restart)) {
148     console.log("Restart the Game");
149 }
150
151 drawSprites();
152 }
153
154 function spawnObstacles(){
155     if (frameCount % 60 === 0){
156         var obstacle = createSprite(400,365,10,40);
157         obstacle.velocityX = -(6 + score/100);
158     }
```

6. Replace the console log with the **reset()** function which resets everything in the game to its original state instead of printing the "restart the game" message .

```
142
143
144 //stop trex from falling down
145 trex.collide(invisibleGround);
146
147 if(mousePressedOver(restart)) {
148     reset();
149 }
150
151 drawSprites();
152 }
153
154 function reset(){
155
156 }
157
158
```

Console

7. Write code for the reset function.

```
sketch.js Saved: just no
152 }
153
154 function reset(){
155     gameState = PLAY;
156     gameOver.visible = false;
157     restart.visible = false;
158 }
159
160
161
162
163 function spawnObstacles(){
164     if (frameCount % 60 === 0){
165         var obstacle = createSprite(400,365,10,40);
166         obstacle.velocityX = -(6 + score/100);
167
168         //generate random obstacles
```

8. Destroy all the obstacles and clouds in the game using the **destroyEach()** function.

```
sketch.js Saved: 15
151 drawSprites();
152 }
153
154 function reset(){
155     gameState = PLAY;
156     gameOver.visible = false;
157     restart.visible = false;
158
159     obstaclesGroup.destroyEach();
160     cloudsGroup.destroyEach();
161 }
162
163
164
165 function spawnObstacles(){
166     if (frameCount % 60 === 0){
167         var obstacle = createSprite(400,365,10,40);
```



9. Change the Trex collided animation to Trex running.

```
154 function reset(){
155
156     gameState = PLAY;
157     gameOver.visible = false;
158     restart.visible = false;
159
160     obstaclesGroup.destroyEach();
161     cloudsGroup.destroyEach();
162
163     trex.changeAnimation("running", trex_running);
164
165 }
166
167
```

10. Move the **mousePressedOver()** reset condition inside the end gameState.

```
    }
    else if (gameState === END) {
        gameOver.visible = true;
        restart.visible = true;

        if(mousePressedOver(restart)) {
            reset();
        }

        ground.velocityX = 0;
        trex.velocityY = 0
        //change the trex animation
        trex.changeAnimation("collided", trex
```

11. Reset the score.

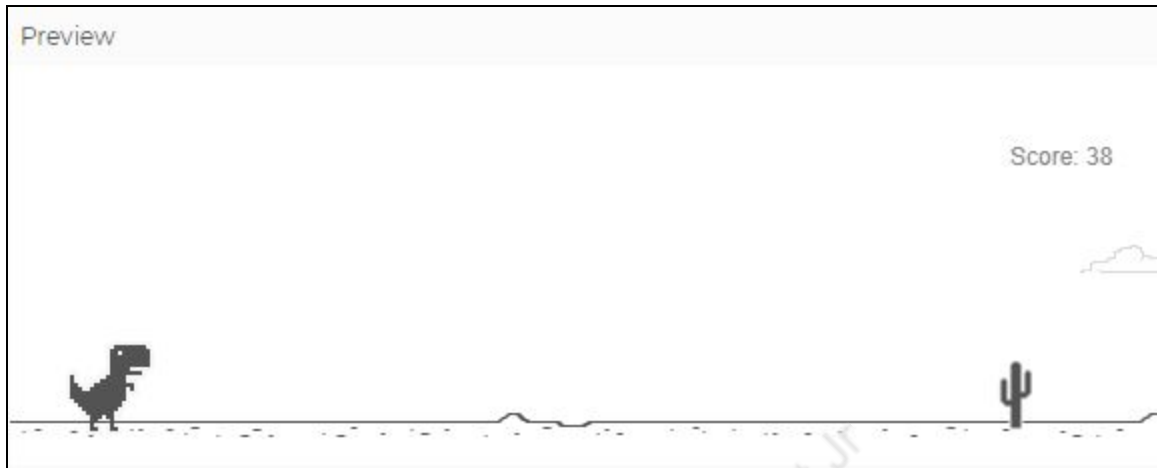
```
155 drawSprites();
156 }
157
158 function reset(){
159
160     gameState = PLAY;
161     gameOver.visible = false;
162     restart.visible = false;
163     trex.changeAnimation("running", trex_running);
164
165     obstaclesGroup.destroyEach();
166     cloudsGroup.destroyEach();
167     score = 0;
168
169
170 }
171
```

Console

12. Update the score count based on the frame rate to fix the issue of score resetting to 0 temporarily and then starting from the old score.

```
88 if (gameState === PLAY){
89     //move the
90     gameOver.visible = false;
91     restart.visible = false;
92
93     ground.velocityX = -(4 + 3* score/100)
94     //scoring
95     score = score + Math.round(getFrameRate()/60);
96
97     if(score>0 && score%100 === 0){
98         checkPointSound.play()
99     }
100
101     if (ground.x < 0){
102         ground.x = ground.width/2;
103     }
104
105 }
```

**Output:**



### What's next?

We'll learn to write code on the local machine.

### Extend Your Learning:

1. Learn more about making games in p5:  
<https://creative-coding.decontextualize.com/making-games-with-p5-play/>