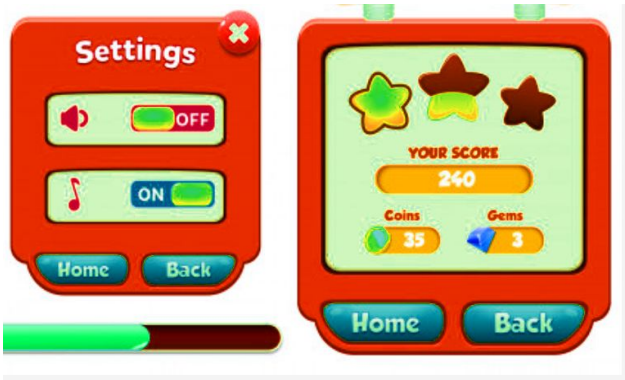
GAME ADAPTIVITY



What is our GOAL for this MODULE?

We learned about adding sounds to the game and making the game challenging for the player as the game progresses. We also learned to add artificial intelligence to the Trex to jump on seeing an obstacle automatically.

What did we ACHIEVE in the class TODAY?

- Added sounds to the game.
- Made the game increasingly complex as the game progresses.
- Added AI to the Trex.

Which CONCEPTS/ CODING BLOCKS did we cover today?

- playsound() function
- AND operator
- setCollider() function

How did we DO the activities?

1. Add sounds to the game.
    - jump sound: when the user presses the spacebar

```
89      //scoring
90      score = score + Math.round(frameCount/60);
91
92
93
94      if (ground.x < 0){
95        ground.x = ground.width/2;
96      }
97
98      //jump when the space key is pressed
99      if(keyDown("space")&& trex.y >= 100) {
100         trex.velocityY = -12;
101         jumpSound.play();
102     }
103
104     //add gravity
105     trex.velocityY = trex.velocityY + 0.8
106
```

    - die sound: when the obstacle touches the Trex

```
101
102     //add gravity
103     trex.velocityY = trex.velocityY + 0.8
104
105     //spawn the clouds
106     spawnClouds();
107
108     //spawn obstacles on the ground
109     spawnObstacles();
110
111     if(obstaclesGroup.isTouching(trex)){
112         gameState = END;
113         dieSound.play()
114     }
115   }
116    else if (gameState === END) {
117       gameOver.visible = true;
118       restart.visible = true;
119
120       ground.velocityX = 0;
121       trex.velocityY = 0
122       //change the trex animation
123       trex.changeAnimation("collided",trex_collided);
124
```

- milestone sound: every time the Trex score crosses 100 points

```
83  if(gameState === PLAY){
84    //move the
85    gameOver.visible = false;
86    restart.visible = false;
87
88    ground.velocityX = -4
89    //scoring
90    score = score + Math.round(frameCount/60);
91
92    if(score>0 && score%100 === 0){
93       checkPointSound.play()
94    }
95
96    if (ground.x < 0){
97      ground.x = ground.width/2;
98    }
99
100   //jump when the space key is pressed
101   if(keyDown("space")&& trex.y >= 100) {
102       trex.velocityY = -12;
103       jumpSound.play();
104   }
105
```

2. Increase the speed in the game as the game progresses.
   - add ground velocity

```
83  if(gameState === PLAY){
84    //move the
85    gameOver.visible = false;
86    restart.visible = false;
87
88    ground.velocityX = -(4 + 3* score/100)
89    //scoring
90    score = score + Math.round(frameCount/60);
91
92    if(score>0 && score%100 === 0){
93       checkPointSound.play()
94    }
95
96    if (ground.x < 0){
97      ground.x = ground.width/2;
98    }
99
```

- add obstacle velocity

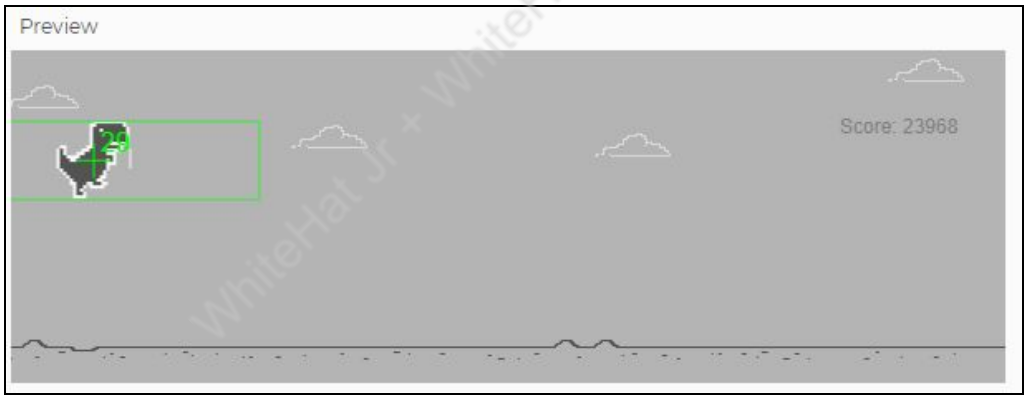
```
function spawnObstacles(){
 if (frameCount % 60 === 0){
   var obstacle = createSprite(400,165,10,40);
   obstacle.velocityX = -(6 + score/100);

    //generate random obstacles
    var rand = Math.round(random(1,6));
    switch(rand) {
      case 1: obstacle.addImage(obstacle1);
              break;
      case 2: obstacle.addImage(obstacle2);
              break;
      case 3: obstacle.addImage(obstacle3);
              break;
      case 4: obstacle.addImage(obstacle4);
              break;
      case 5: obstacle.addImage(obstacle5);
              break;
      case 6: obstacle.addImage(obstacle6);
              break;
      default: break;
    }

    //assign scale and lifetime to the obstacle
    obstacle.scale = 0.5;
    obstacle.lifetime = 300;
```

3. Add some AI to the Trex to make it jump on its own when it sees obstacles.

```

  invisibleGround = createSprite(200,190,400,10);
  invisibleGround.visible = false;

  //create Obstacle and Cloud Groups
  obstaclesGroup = createGroup();
  cloudsGroup = createGroup();

  console.log("Hello" + 5);

  trex.setCollider("rectangle",0,0,400,trex.height);
  trex.debug = true

  score = 0;

}

function draw() {

  background(180);
  //displaying score
  text("Score: "+ score, 500,50);

  console.log("this is ",gameState)

```

```
    //spawn the clouds
    spawnClouds();

    //spawn obstacles on the ground
    spawnObstacles();

    if(obstaclesGroup.isTouching(trex)){
        trex.velocityY = -12;
        jumpSound.play();
    }
  }
   else if (gameState === END) {
      gameOver.visible = true;
      restart.visible = true;

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

      //set lifetime of the game objects so that they are never
destroyed
```

Output:



What's next?

We'll learn the meaning of 'scope' in programming.

Extend Your Knowledge:

1. PlaySound in Javascript: Read more about the concept of **playsound()** function.