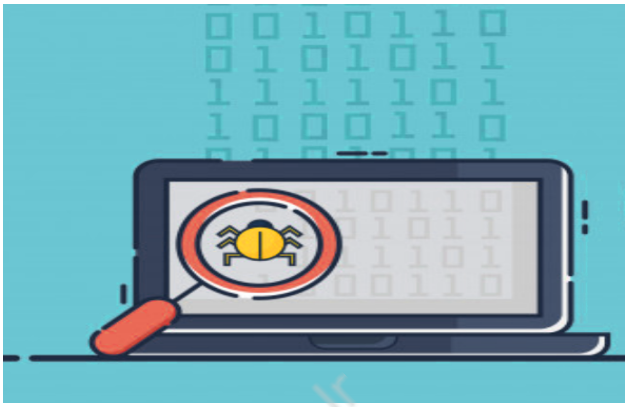
CODE DEBUGGING AND INFINITE GROUND



What is our GOAL for this MODULE?

Create the Trex game similar to what we see in the Chrome browser when not connected to the internet.

What did we ACHIEVE in the class TODAY?

- Create an infinitely scrolling ground for the dinosaur to run on
- Identified an additional condition needed in the program to stop the T-Rex from jumping again while it is in the air.
- Created an invisible ground sprite to make the T-Rex run below the ground

Which CONCEPTS/ CODING BLOCKS did we cover today?

- Identify bugs in the program
- Debug the code
- Infinite ground
- Ground visibility function

How did we DO the activities?

1. Move the dinosaur by adding backward velocity to the ground.

```
function draw(){
  background(220);

  ground.velocityX = -2;
  console.log(ground.x);

  //jump when space key is pressed
  if(keyDown("space"))
  {
    trex.velocityY = -10;
  }
  trex.velocityY = trex.velocityY + 0.8;

  //stop trex from falling down
  trex.collide(ground);

  drawSprites();
}
```

Output:

2. Add the code to reset the ground:

```
  //create ground Sprite
  ground = createSprite(200,180,400,20);
  ground.addImage("ground",groundImage);
  ground.x = ground.width/2;
}

function draw(){
  background(220);

  ground.velocityX = -2;
  console.log(ground.x);

  if (ground.x<0)
  {
    ground.x = ground.width/2;
  }
```

3. Use an actual ground image:

```
var trex ,trex_running;
var groundImage;

function preload()
{
  trex_running = loadAnimation("trex1.png", "trex3.png", "tre
x4.png");
  groundImage = loadImage("ground2.png");
}
```

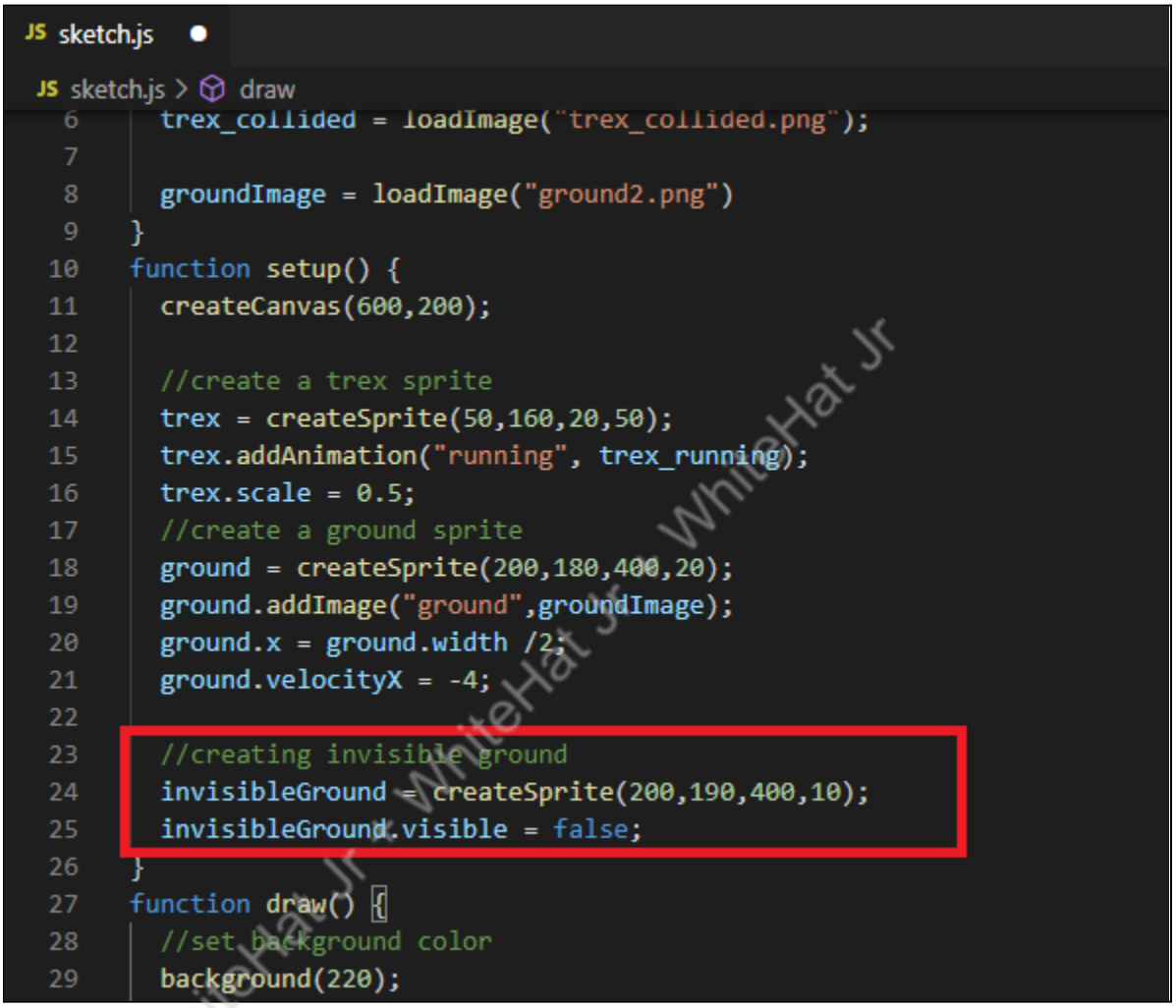
4. Fix bugs.
   Bug 1: The dinosaur is running above the ground. Let us create an invisible ground sprite just below the actual ground sprite:

```
function setup() {
  createCanvas(400, 400);

  //create a trex sprite
  trex = createSprite(50,380,20,50);
  trex.addAnimation("running", trex_running);
  trex.scale = 0.5;

  //create a ground sprite
  ground = createSprite(200,380,400,20);
  ground.addImage("ground",groundImage);
  ground.x = ground.width /2;
  ground.velocityX = -2;

  //creating invisible ground
  invisibleGround = createSprite(200,390,400,10);

}

function draw() {
  //set background color
  background(220);
```

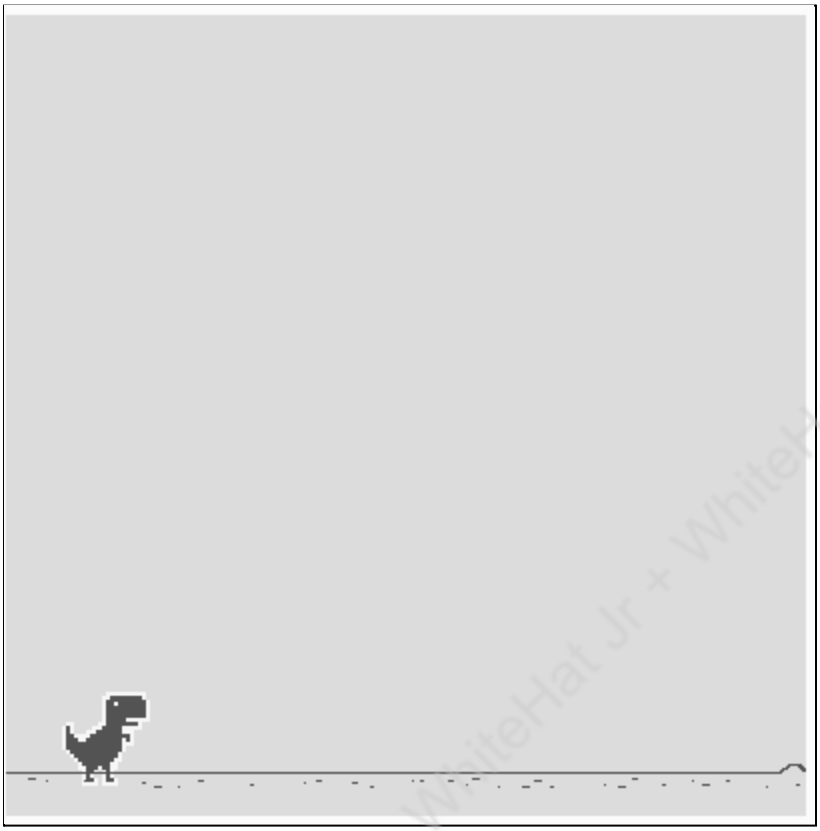
5. Instead of supporting the T-Rex on the ground, collide it with the invisible ground:

```
function draw() {
  //set background color
  background(220);

  console.log(trex.y)

  //jump when the space key is pressed
  if(keyDown("space")) {
    trex.velocityY = -10;
  }

  //add gravity
  trex.velocityY = trex.velocityY + 0.8

  if (ground.x < 0){
    ground.x = ground.width/2;
  }

  //stop trex from falling down
  trex.collide(invisibleGround);

  drawSprites();
}
```

6. Create visibility for the ground:



Output:



7. **Bug 2**: The Trex jumps even when it is in the air! Add an additional condition inside the **if** block where we make the T-Rex jump only when it is on the ground:

```
  //creating invisible ground
  invisibleGround = createSprite(200,390,400,10);
  invisibleGround.visible = false;
}

function draw() {
  //set background color
  background(220);

  console.log(trex.y)

  //jump when the space key is pressed
  if(keyDown("space") && trex.y >= 362) {
    trex.velocityY = -10;
  }

  //add gravity
  trex.velocityY = trex.velocityY + 0.8

  if (ground.x < 0){
    ground.x = ground.width/2;
  }

  //stop trex from falling down
  trex.collide(invisibleGround);

  drawSprites();
}
```

What's next?

Create floating clouds at different heights.

Extend Your Knowledge:

To know more about **frameCount** you can use the link here: Click here