RANDOM NUMBERS

What is our GOAL for this MODULE?

Spawn game objects at different positions for our Trex Game.

What did we ACHIEVE in the class TODAY?

- Generated random numbers and used them inside a game.
- Used the concept of frameCount to introduce a delay in the game.
- Spawned a sequence of game objects at different positions.

Which CONCEPTS/ CODING BLOCKS did we cover today?

- Random numbers
- Frame count
- Spawning

How did we DO the activities?

1. Write code to generate a random number between **1** to **100** and store it in a variable called **rand**.
   Math functions are inbuilt in JavaScript. Math provides us with a random function which we can use to get the random number.

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

  //generate random numbers
  var rand =  Math.round(random(1,100))
  console.log(rand)

}

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;
  }
```


Remember: Every time we run the code, a different random number will be printed on the screen.

2. Write code inside the **spawnClouds()** function to spawn the clouds at different random heights:

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

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

  //Spawn Clouds
  spawnClouds()

  drawSprites();
}

//function to spawn the clouds
function spawnClouds(){
 // write your code here

}
```

3. Write code to create just one small cloud sprite. Write the code to generate a cloud for every 60 frames and give it some x-velocity so that it appears to be moving:

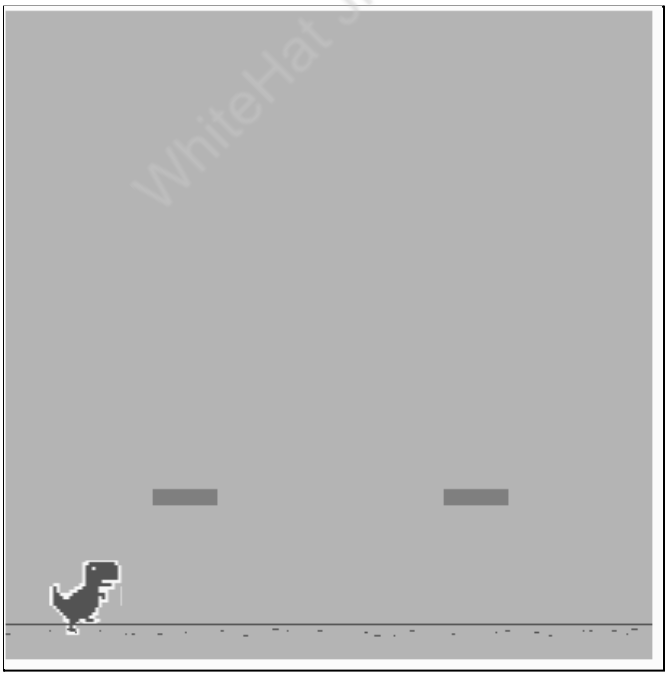
```
  //Spawn Clouds
  spawnClouds()

  drawSprites();
}

//function to spawn the clouds
function spawnClouds(){
 // write your code here
  if (frameCount % 60 === 0) {
      cloud = createSprite(600,300,40,10);
      cloud.velocityX = -3;

  }
}
```

Output:



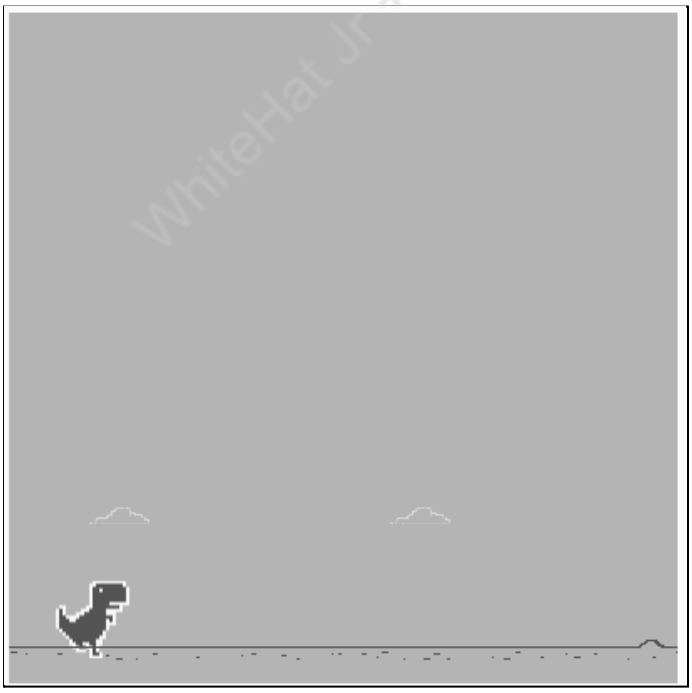
4. Add image for the cloud using the **addImage()** function:

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

  drawSprites();
}

function spawnClouds() {
  //write code here to spawn the clouds
  if (frameCount % 60 === 0) {
    cloud = createSprite(600,120,40,10);
    cloud.addImage(cloudImage)
    cloud.scale = 0.4;
    cloud.velocityX = -3;
  }
}
```

Output:



5. Change the height of the clouds and make it more random:

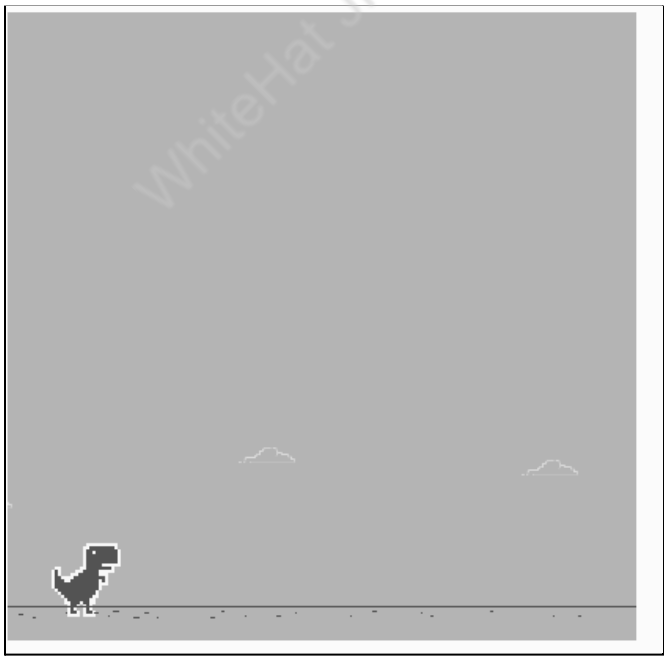
```
  //spawn the clouds
  spawnClouds();

  drawSprites();
}

function spawnClouds() {
  //write code here to spawn the clouds
  if (frameCount % 60 === 0) {
    cloud = createSprite(600,300,40,10);
    cloud.addImage(cloudImage)
    cloud.y = Math.round(random(280,320))
    cloud.scale = 0.4;
    cloud.velocityX = -3;

  }
}
```

Output:



What's next?

Fixing memory leaks that make games and apps crash.

Extend Your Knowledge:

You can read more about the different functions of p5.play by exploring the examples in the following link:
https://molleindustria.github.io/p5.play/examples/index.html?fileName=animation.js