

RANDOM NUMBERS



What is our GOAL for this MODULE?

We spawned game objects at different positions for our T rex 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.

How did we DO the activities?

1. Use Math.random() method to get the random number.
 - Generate a random number between 1 to 100 and store it in a variable called 'rand'. Every time we run the code, a different random number will be printed on the screen.

```
27 //creating invisible ground
28 invisibleGround = createSprite(200,390,400,10);
29 invisibleGround.visible = false;
30
31 //generate a random number
32 var rand = Math.round(random(1,100))
33 console.log(rand)
34
35
36 }
37
38 function draw() {
39 //set background color
40 background(220);
41
42
43 // console.log(trex.y)
44
45 //jump when the space key is pressed
46 if(keyDown("space") && trex.y >= 362) {
47     trex.velocityY = -10;
48 }
49 }
```

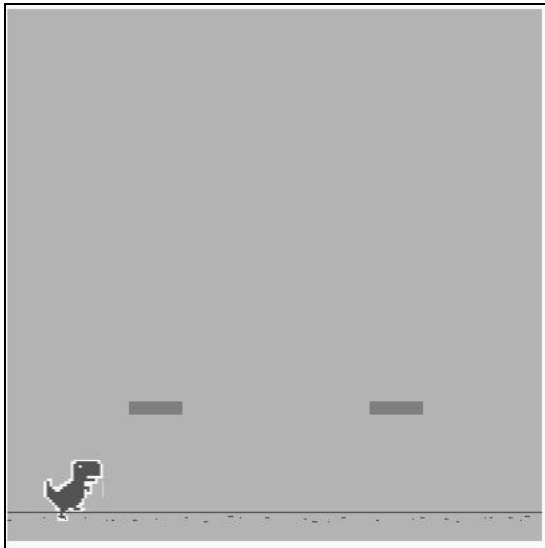
2. Spawn clouds in the game at random heights.

```
50
51 ▼ if (ground.x < 0){
52     ground.x = ground.width/2;
53 }
54
55 //stop trex from falling down
56 trex.collide(invisibleGround);
57
58 //Spawn the clouds
59 spawnClouds();
60
61 drawSprites();
62 }
63
64 ▼ function spawnClouds(){
65     // write code here to spawn the clouds
66 }
67
```

3. Create one small cloud sprite and generate it outside the screen; give it some x-velocity so that it appears to be moving. Generate a cloud for every 60 frames.

```
56 //spawn the clouds
57 spawnClouds();
58
59 drawSprites();
60 }
61
62 ▼ function spawnClouds() {
63     //write code here to spawn the clouds
64 ▼ if (frameCount % 60 === 0) {
65     var cloud = createSprite(600,300,40,10);
66     cloud.velocityX = -3;
67 }
68 }
69
70
```

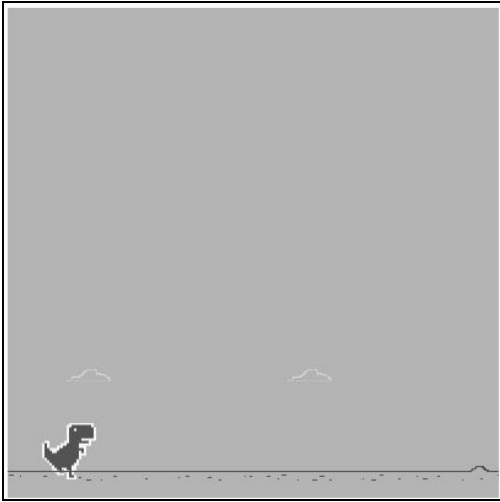
Output:



4. Add animation to the cloud.

```
60 //Spawn the clouds
61 spawnClouds();
62
63 drawSprites();
64 }
65
66 function spawnClouds() {
67     //write code here to spawn the clouds
68     if (frameCount % 60 === 0) {
69         var cloud = createSprite(600,120,40,10);
70         cloud.addImage(cloudImage);
71         cloud.scale = 0.4;
72         cloud.velocityX = -3;
73     }
74 }
75
```

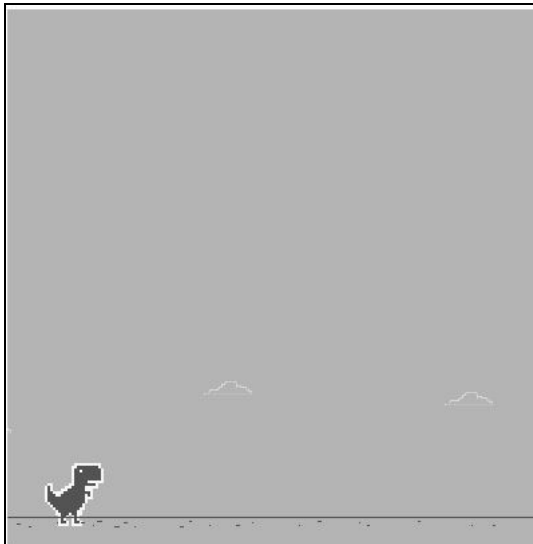
Output:



5. Change the height of the clouds, make it more random.

```
56 //spawn the clouds
57 spawnClouds();
58
59 drawSprites();
60 }
61
62 function spawnClouds() {
63     //write code here to spawn the clouds
64     if (frameCount % 60 === 0) {
65         var cloud = createSprite(600,300,40,10);
66         cloud.addImage(cloudImage)
67         cloud.y = Math.round(random(280,320))
68         cloud.scale = 0.4;
69         cloud.velocityX = -3;
70     }
71 }
72
73
```

Output:



6. Change the depth of the clouds to be the same as the Trex and then increase the depth of the Trex by 1. This will ensure that Trex has a higher depth than the clouds.

```
61
62 ▼ function spawnClouds() {
63     //write code here to spawn the clouds
64 ▼   if (frameCount % 60 === 0) {
65       var cloud = createSprite(600,300,40,10);
66       cloud.addImage(cloudImage)
67       cloud.y = Math.round(random(280,320))
68       cloud.scale = 0.4;
69       cloud.velocityX = -3;
70
71       //adjust the depth
72       cloud.depth = trex.depth
73       trex.depth = trex.depth + 1;
74   }
75 }
```

What's next?

We will be fixing memory leaks which make games and apps crash.

Extend Your Knowledge:

1. [p5 Functions](#): Read more about the different functions of p5.play

WhiteHat Jr + WhiteHat Jr + WhiteHat Jr