Bugs - The Curious Case of Disappearing Game Objects

What is our GOAL for this MODULE?

Fix the problem of disappearing obstacles and clouds and change the animation effect of Trex when the game ends.

What did we ACHIEVE in the class TODAY?

- Set the collider radius so that the game ended when the Trex touched the obstacle
- Designed a solution to the problem of disappearing obstacles and clouds
- Added animation when the game ends

Which CONCEPTS/ CODING BLOCKS did we cover today?

- Adding and changing animation
- Radius collider

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How did we DO the activities?

1. Change the collider of T-Rex to fix the bug:

   - The **sprite.setCollider()** function is used to set the collider shape and size —
     trex.setCollider("circle",0,0,40):

```
invisibleGround = createSprite(200,390,400,10);
invisibleGround.visible = false;

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

console.log("Hello" + 5);

trex.setCollider("circle",0,0,40);
trex.debug = true

score = 0;

}
```
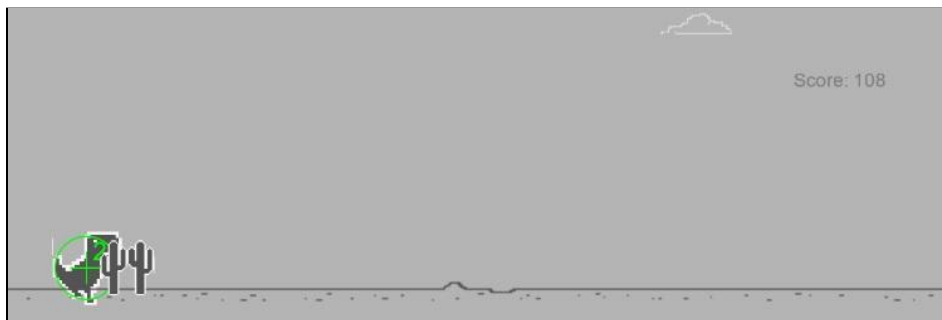
Output:

Score: 108

2. Print the **gameState** in the **console** and see it change when the collision happens:

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

  console.log("this is ",gameState)


  if(gameState === PLAY){
    //move the ground
    ground.velocityX = -4;
    //scoring
    score = score + Math.round(frameCount/60);

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

3. Change the T-Rex animation after the **END** state changes to a different image where its eyes pop out after the collision:

```
    }
  }
  else if (gameState === END) {
    ground.velocityX = 0;
    //change the trex animation
    trex.changeAnimation("collided", trex_collided);
    obstaclesGroup.setVelocityXEach(0);
    cloudsGroup.setVelocityXEach(0);

  }
```

4. Set the **lifetime** of the game object to **-1**.

   - This is so that every frame will move away from **0** and never reach **0**
   - This will avoid objects disappearing from the canvas

```javascript
        trex.changeAnimation("collided", trex_collided);

        //set lifetime of the game objects so that they are never destroyed
      obstaclesGroup.setLifetimeEach(-1);
      cloudsGroup.setLifetimeEach(-1);

        obstaclesGroup.setVelocityXEach(0);
        cloudsGroup.setVelocityXEach(0);
      }
```

5. **Resolve the bug:** When we press space just at the time of the collision, the T-Rex flies upwards without gravity:

```javascript
    if(obstaclesGroup.isTouching(trex)){
        gameState = END;
    }
}
  else if (gameState === END) {
    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
    obstaclesGroup.setLifetimeEach(-1);
    cloudsGroup.setLifetimeEach(-1);

    obstaclesGroup.setVelocityXEach(0);
    cloudsGroup.setVelocityXEach(0);

  }
```

What's next?

Project Booster class to solve the bugs in the previous projects

Extend Your Knowledge:

Learn and experiment more about Collider Radius at:

https://www.toptal.com/game/video-game-physics-part-i-an-introduction-to-rigid-body-dynamics