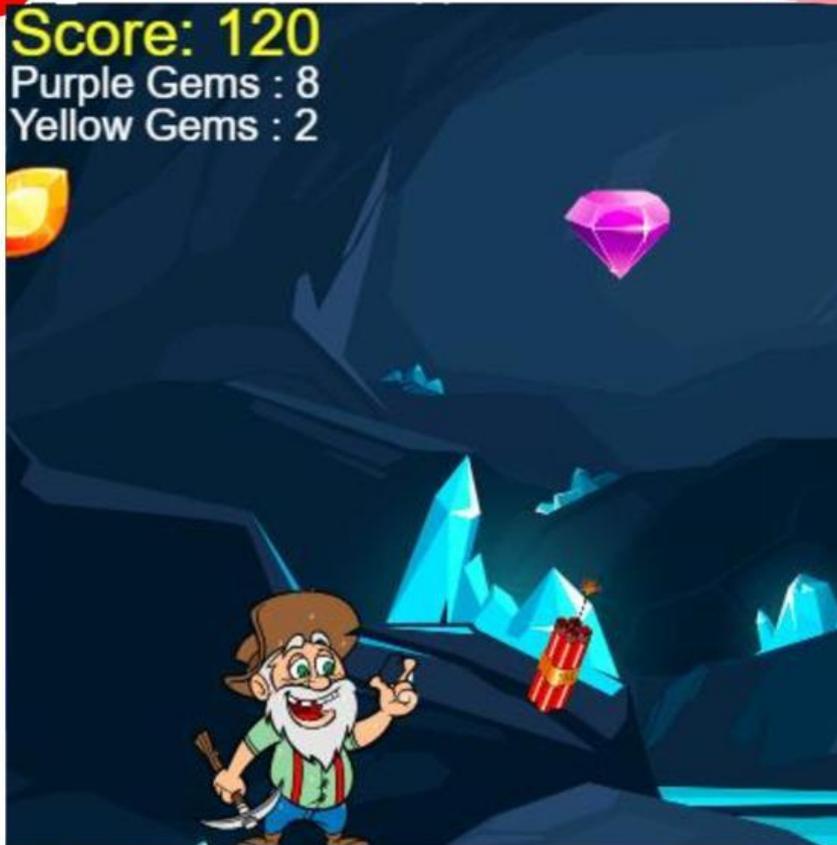# Project 89

89

DP EDUCATION

Coding School

Score: 120
Purple Gems : 8
Yellow Gems : 2

How It Works

Start Here

Run

See the App

Built on Code Studio ▲

❖ Let's create the "Gem miner" game.

❖ The basic sprites needed to create this game have been created and provided for you.

❖ Now create the variables required for the game as below.

```
var totalPurpleGems = 0;
var totalYellowGems = 0;
var totalDinamites = 0;
var score = 0;
var countForPurpleGems = 0;
var countForYellowGems = 0;
var countForDinamite = 0;
var countOfPurpleGemOfCollect = 0;
var countOfYellowGemOfCollect = 0;
```

❖ Then create the _____ sprite group in this way. This group is created at the top, but the related sprites are created at the bottom of the code.

```
var purpleGemGroup = createGroup();
var yellowGemGroup = createGroup();
var dinamiteGroup = createGroup();
```

❖ After coding everything in this way, create a new function below the draw function. Name it fallPurpleGems.

```
function fallPurpleGems()
{
    if(countForPurpleGems == 100)
    {
        countForPurpleGems = 0;
        var purpleGems = createSprite( randomNumber(0,400) ,20 );
        purpleGems.setAnimation(▼"purpleGem.png_1");
        purpleGems.scale = 0.2;
        purpleGemGroup.add(purpleGems);
        purpleGemGroup.setVelocityEach(0, 5);
        totalPurpleGems = totalPurpleGems + 1;
    }
}
```

❖ This function causes a purple gem to fall down from the top once in a while.

❖ Everything inside the function is created from above
Only if the variable "countForPurpleGems" equals 100.

❖ So when it equals 100, the value of that variable is set to 0 again in the function. This can be done repeatedly. The value of that variable is increased throughout the game's running time in the draw function.

⭐ (This code part `countForPurpleGems = countForPurpleGems + 1;` is contained in the draw function)

❖ Then a new sprite is created as purpleGems. But the x position of that sprite is a random number from 0 to 400 and the y position is 20.

`randomNumber(0,400),20)`

❖ Set the image named "purpleGem.png_1" in the library for that sprite.

❖ After the sprite is created, add it to the purpleGemGroup, which is one of the sprite groups created at the top. This code block is used for that.

`purpleGemGroup.add(purpleGems);`

❖ After adding to the group, a downward velocity should be given to the sprite in that group. This block has been used for that.
Here velocity in x direction is 0 and velocity in y direction is given as 5.

`purpleGemGroup.setVelocityEach(0, 5);`

❖ Finally, to calculate the amount of purpleGems sprite created in the group, the value of the "totalPurpleGems" variable defined above is increased by one
`totalPurpleGems = totalPurpleGems + 1;`

❖ In the same way, create functions for yellow gems and dynamite as follows.

```
function fallYellowGems() →
{
    if( countForYellowGems == 250 )
    {
        countForYellowGems = 0;
        var yellowGems = createSprite( randomNumber(0,400) ,10) → ;
        yellowGems.setAnimation(▼"yellowGem.png_1");
        yellowGems.scale = 0.2;
        yellowGemGroup.add(yellowGems);
        yellowGemGroup.setVelocityEach(0, 5);
        totalYellowGems = totalYellowGems + 1;
    }
}

function fallOfDinamite() →
{
    if( countForDinamite == 320 )
    {
        var dinamites = createSprite( randomNumber(0,400) ,10) → ;
        dinamites.setAnimation(▼"TNT.png_1");
        dinamites.scale = 0.2;
        countForDinamite = 0;
        dinamiteGroup.add(dinamites);
        dinamiteGroup.setVelocityEach(0, 5);
        totalDinamites = totalDinamites+1;
    }
}
```

❖ In that way, after creating all the functions, they should be called in the drawf function.
❖ But according to the game, when a dynamite is touched by a miner, the game should be over. If so, call those functions in an if block as follows to stop gems and dynamite falling from above.

```
function draw() {→
    if ( gameOver.visible != 1 ) {
        fallPurpleGems(); →
        fallYellowGems(); →
        fallOfDinamite(); →
    }
}
```

❖ After that, create the miner to move along the x axis when the mouse is moved. Use this block for that.

```
miner.x = World.mouseX ;
```

❖ Now we have finished creating the movement of the gems and dynamite falling down with the miner mouse, so let's create what happens when the miner touches the gems and dynamite

❖ Code the design as follows so that when a purple gem is touched, it disappears and a sound is heard, the number of points increases by 10, and the number of purple gems collected increases by one.

```
if ( purpleGemGroup.isTouching(miner) ) {
  for ( var i = 0 ; i < totalPurpleGems ; i++ ) {
    if ( purpleGemGroup.get(i) != undefined && purpleGemGroup.get(i).isTouching(miner) ) {
      purpleGemGroup.get(i).destroy();
      playSound(▼"sound://category_achievements/lighthearted_bonus_objective_1.mp3", ▼false); ⊥
      score = score + 10 ;
      countOfPurpleGemOfCollect = countOfPurpleGemOfCollect + 1 ;
    }
  }
}
```

❖ As above, set the sprite to disappear when a yellow gem is touched. Increase the number of points by 20 for making another sound. To calculate the number of yellow gems collected, increase the variable named "countOfYellowGemOfCollect" by one.

```
if ( yellowGemGroup.isTouching(miner) ) {
  for ( var i = 0 ; i < totalYellowGems ; i++ ) {
    if ( yellowGemGroup.get(i) != undefined && yellowGemGroup.get(i).isTouching(miner) ) {
      yellowGemGroup.get(i).destroy();
      playSound(▼"sound://category_achievements/lighthearted_bonus_objective_3.mp3", ▼false); ⊥
      score = score + 20 ;
      countOfYellowGemOfCollect = countOfYellowGemOfCollect + 1 ;
    }
  }
}
```

❖ In the same way, when a dynamite is touched, the gameover sprite is visible and change the image of the miner's sprite to "minerSad.png_1".

```
if ( dinamiteGroup.isTouching(miner) ) {
    for ( var i = 0; i < totalDinamites; i++ ) {
        if ( dinamiteGroup.get(i) != undefined && dinamiteGroup.get(i).isTouching(miner) ) {
            dinamiteGroup.get(i).destroy();
            playSound(▼"sound://category_explosion/8bit_explosion.mp3", ▼false); ⊸
            playSound(▼"sound://category_achievements/melodic_win_10.mp3", ▼false); ⊸
            miner.setAnimation(▼"minerSad.png_1");
            gameOver.visible = 1;
        }
    } +
}
```

❖ then drawSprite(); Call the function.

❖ Code below to display the amount of points and gems collected at the end.

```
fill(▼"yellow");
textSize(30);
text("Score: "+score, 10, 25); ⊟
fill(▼"white");
textSize(20);
text("Purple Gems : "+countOfPurpleGemOfCollect, 10, 45); ⊟
text("Yellow Gems : "+countOfYellowGemOfCollect, 10, 65); ⊟
```

❖ In the created sprite groups, it takes some time for one sprite to appear after one sprite in the group. Finally, code as follows in the related code draw function to increase the value of the variables used at the point where the red star is placed above the creation.

```
countForPurpleGems = countForPurpleGems + 1;
countForYellowGems = countForYellowGems + 1;
countForDinamite = countForDinamite + 1;
```