## INSTRUCTIONS:

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Goal of the Project:

In Class 16, you learned about the scope of local and global variables. You also learned to write the reset() function for the t-rex game and rewrote the pong game in the p5 editor.

In this project, you have to practice and apply what you have learned in the class and create a game where a monkey is searching for food. Add obstacles and a scoring system to make the game interesting.

Story:

A monkey has escaped from the zoo and is very hungry. Help the monkey collect Bananas by jumping over obstacles.
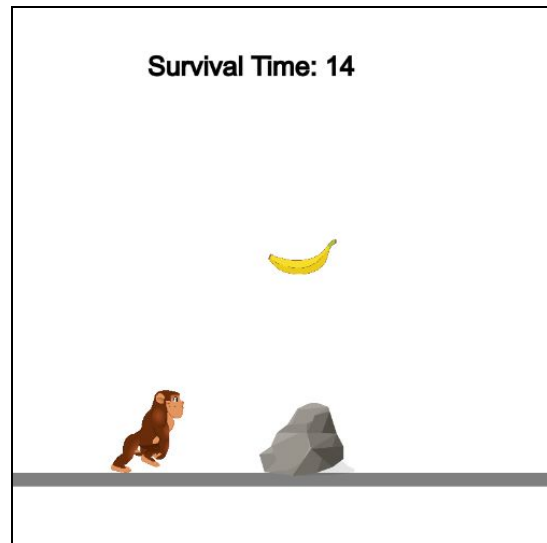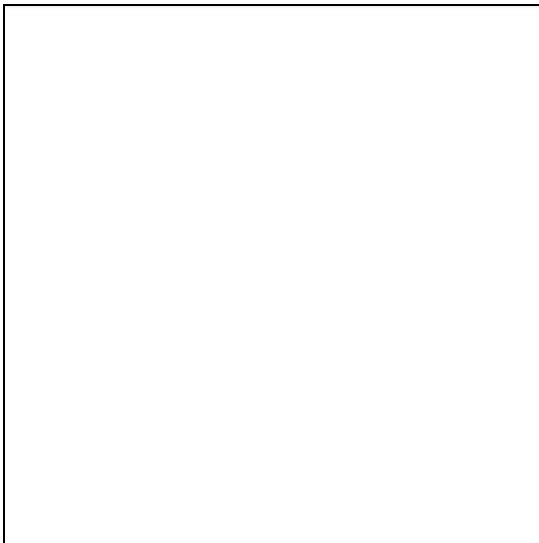
*This is just for your reference. We expect you to apply your own creativity in the project.

Getting Started:

1. Login to code.org
2. Click on the following link: Project Template
3. Click on "View Code".
4. Click on "Remix".
5. Rename the project to **Project 16** and click on **Save**.

Specific Task to complete the Project:

1. Create **global variables** for:
   - monkey
   - ground
   - bananaGroup
   - obstacleGroup.

2. Create a **sprite** for the **Monkey**, and assign the image from the animation tab.

3. Create a **sprite** for **ground** and give it a **velocity** in the **X direction**, so it starts moving.

4. In the **draw()** function:
   - When the **space key** is pressed, the **monkey should jump**.
     - Give it **gravity**, so it comes down after the jump.
   - To **create scrolling ground** - When the ground sprite has moved by half its width, reset the ground sprite to its center.
   - Make the monkey **collide** with the ground.

5. Write the **function** for the **food**:
   - Create a **banana sprite** after every 80 frames.
   - Give **random y position** for the banana, so that it appears at different locations on the screen. Range of y can be between **120, 200**.
   - Add an image of a banana, which should be available in the animation tab.
   - Set the **negative x velocity** and give **lifetime** to the food sprite to prevent memory leakage.
   - Add banana to the **bananaGroup**.

6. Write the **function** for **obstacles**:
   - Repeat the same steps used for obstacles function created in the class.
   - Create obstacles after **300 frames** and give it a **lifetime**.
   - Add the stone image to it, which should be available in the animation tab.

7. Use the **frameRate** concept you have learnt in the class, to calculate the score of how long the game has continued.

- Display this as **Survival Time**. (See Hints)

8. Click on **Run** once to check if the code is working.

*Refer to the images given above for reference.

Submitting the Project:

1. **SAVE** all the changes made to the project.
2. Click the "**SHARE**" button to generate a shareable link.
3. Copy this link and submit it in the Student Dashboard Projects panel against the correct class number.

Hints:

1. You can find the images under the **Animation Tab**.

2. Load animations using the following code.

```
//add image of banana
 banana.setAnimation("Banana");
banana.scale=0.05;
```

```
//add image to the obstacle
obstacle.setAnimation("Stone");
obstacle.scale=0.15;
```

3. Create player and ground sprites as follows:

```
player = createSprite(100,340,20,50);
player.setAnimation("monkey");
player.scale=0.1;

ground = createSprite(400,350,800,10);
ground.velocityX=-4;
ground.x=ground.width/2;
```

4. To display the Survival time, create a variable **survivalTime** and update it. Then display it as shown below:

```
var survivalTime=0;
```

```
stroke("black");
textSize(20);
fill("black");
survivalTime=Math.ceil(frameCount/frameRate())
text("Survival Time: "+ survivalTime, 100,50);
```

REMEMBER... Try your best, that's more important than being correct.
After submitting your project your teacher will send you feedback on your work.

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