WhiteHat Jr
Live Online Coding for Kids

INSTRUCTIONS:

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Goal of the Project:

In Class 2, you learned how to define customized functions. Also, you learned how to create edge sprites and bounce off the ball from the edges. You will now create a small maze game to bounce the moving balls from edges and box Sprites.

In this project, you will have to practice what you have learned in the class and apply it to make the ball move and bounce inside the maze and restrict it from going out of the canvas.

Story:

Dodo loves to play with the ball and have it bounce from the walls and different objects. But there is always a fear of breaking things inside the home. Dodo's mother helps him create an arena full of objects in the backyard, but since Dodo has begun his coding journey now, he is eager to try his hand at creating a virtual arena where he can bounce his ball around and play without fear of breaking things.

Can you help Dodo build such an arena?
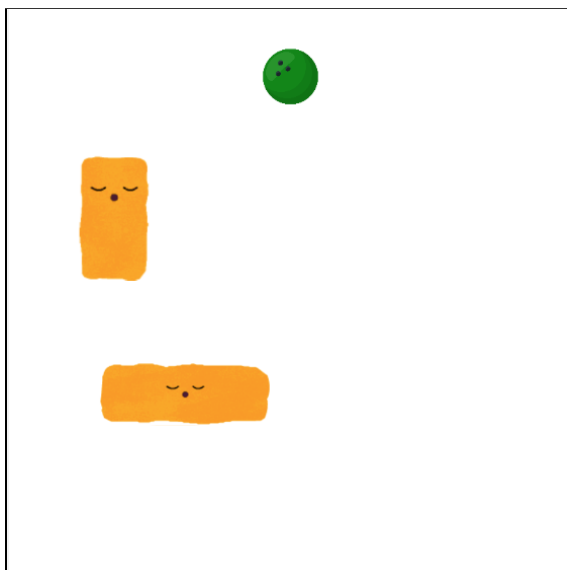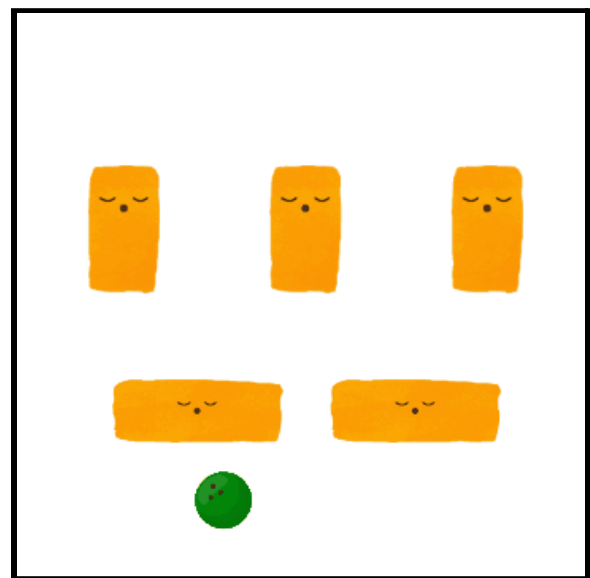
Starting position   Working GIF

*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"**. You will see **//comments** in green for your help.
4. Click on **"Remix"**.
5. Rename the project to **Project 2** and click on **Save**.

Specific Tasks to complete the Project:

1. Click on the **Animation** tab and find all the animations needed for the project already been added.

2. You will find **one vertical box** and **one horizontal box** sprite already created in the scene. Create two more vertical boxes and one more horizontal box as shown in the final output. The position for these boxes is specified in the comments. Please make sure you set the animation and scale right for these boxes.

3. You will also see the **ball** sprite being created in the scene. But you will notice, right now it isn't moving. You will have to assign the ball **velocityX** and **velocityY** to make it move.

4. Write a command to create Edge sprites in the scene. *(See Hint 1)*

5. Head to the **draw()** function and write an instruction to bounce off the ball from the **canvas edges**.

6. Now have the ball bounce off from all the boxes. You will find an instruction to bounce off the ball from **vertical_box1**. Similarly, write instructions to bounce off the ball from **vertical_box2**, **vertical_box3, horizontal_box1, horizontal_box2**. *(See Hint 2)*

   `sprite.bounceOff(target)` *Makes the sprite bounce off the target when they touch each other.*

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

8. Optional: Try interchanging the **bounceOff()** instruction with the **bounce()** instruction, and the **displace()** instruction**.** Run the code once again and observe the change.

Submitting the Project:
1. **SAVE** all the changes made to the project.
2. Click on "**Run**" once to check if it is working.
3. Click the "**SHARE**" button to generate a shareable link.
4. Copy this link and submit it in the Student Dashboard Projects panel against the correct class number.

Hints:

1. Create edge sprites as follows:

```
createEdgeSprites();
```

2. The ball can bounce off from the walls as follows:

```
ball.bounceOff(vertical_box1);
ball.bounceOff(vertical_box2);
ball.bounceOff(vertical_box3);

ball.bounceOff(horizontal_box1);
ball.bounceOff(horizontal_box2);
```

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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