ADVANCED

Hit the Goal

INSTRUCTIONS:

Goal of the Project:

In Class 88, you learned to add movements of an image on keypress events, and have also learned the x and y coordinate system of canvas in depth.

In this project, you will focus on moving a ball using the arrow keys to hit a goal.

Story:

Let's make a simple golf game, where we move the ball using arrow keys (up/ down/ left/ right) to reach the hole in a golf course.

When the ball hits the goal, it should be removed from the canvas, and **"You have Hit the Goal!!!"** should be displayed on the header and the canvas border should become red in color.

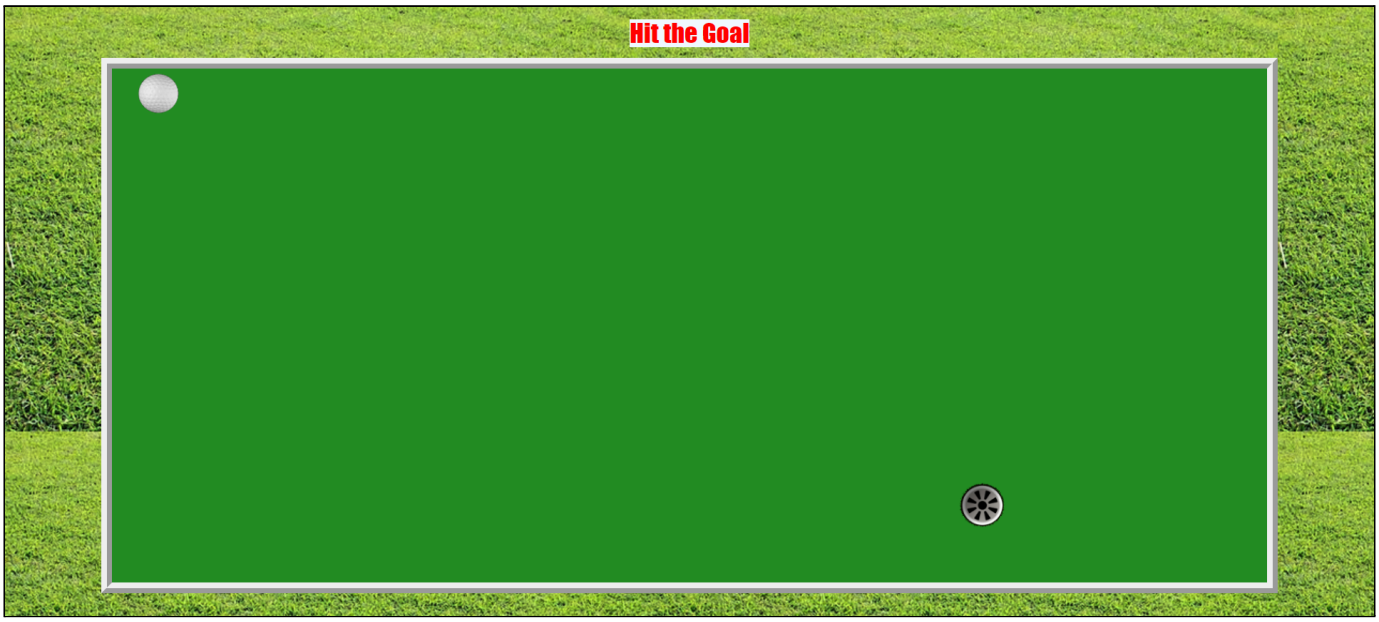
The table below shows the different keys and their respective **ASCII** values to upload images:

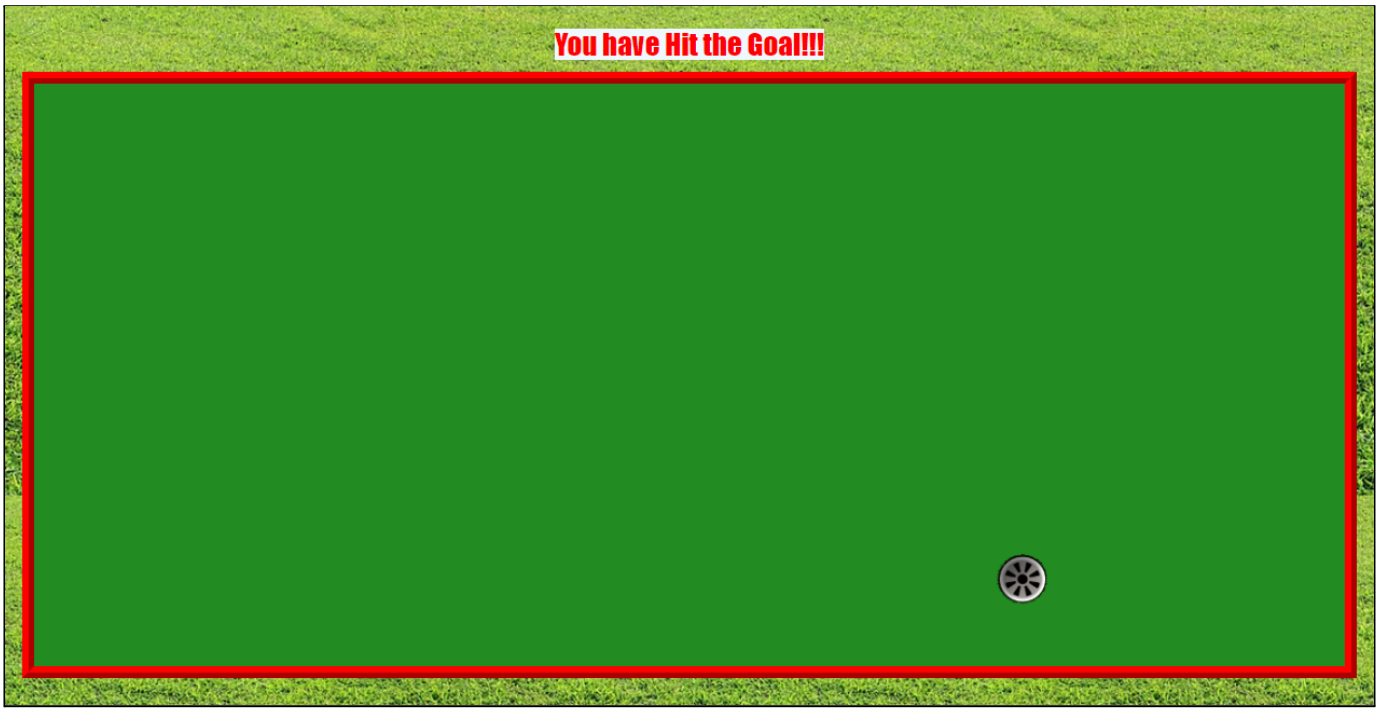
Key	ASCII Value
left	37
right	39
up	38
down	40

*Click here to see the output video.

ADVANCED

Hit the Goal





*This is just for your reference. We expect you to apply your creativity to the project.

ADVANCED

Hit the Goal

WhiteHat Jr
Live Online Coding for Kids

Getting Started:

1. Click on the Project Template
2. **Unzip** this folder.
3. Rename the downloaded unzipped folder as **Project 88.**
4. **Import** this folder **into VS Code**.
5. Start making changes.

Specific Tasks to Complete the Project:

1. Create a canvas element in the **index.html** file.

```
<canvas width="1100" height="500" id="myCanvas"></canvas>
```

2. Create a canvas variable in the **main.js** file.

```
var canvas = new fabric.Canvas('myCanvas');
```

3. Set initial positions for the ball and hole images.

```
ball_y=0;
ball_x=0;
hole_y=400;
hole_x=800;
```

4. Upload the golf image on the canvas using the **load_img()** function.

```
function load_img(){
    fabric.Image.fromURL("golf-h1.png", function(Img) {
        hole_obj = Img;
        hole_obj.scaleToWidth(50);
        hole_obj.scaleToHeight(50);
        hole_obj.set({
            top:hole_y,
            left:hole_x
        });
        canvas.add(hole_obj);
        });
    new_image();
}
```

5. Upload the ball image on the canvas using the **new_image()** function.

```
function new_image()
{
    fabric.Image.fromURL("ball.png", function(Img) {
    ball_obj = Img;
    ball_obj.scaleToWidth(50);
    ball_obj.scaleToHeight(50);
    ball_obj.set({
    top:ball_y,
    left:ball_x
    });
    canvas.add(ball_obj);
    });
}
```

6. Check if the coordinates of the ball and hole images match. If they match, then, remove the ball from the canvas.

```
if((ball_x==hole_x)&&(ball_y==hole_y)){
    canvas.remove(ball_obj);
```

7. If coordinates of the ball and hole images match, then, display “You have Hit the Goal!!!” and change the canvas border to ‘red’ color.

```
document.getElementById("hd3").innerHTML="You have Hit the Goal!!!";
document.getElementById("myCanvas").style.borderColor="red";
```

8. Define the ‘up’, ‘down’, ‘left’, and ‘right’ functions to move the ball.

```
function down()
{
    if(ball_y <=450)
    {
        ball_y = ball_y + block_image_height;
        console.log("block image height = " + block_image_height);
        console.log("When Down arrow key is pressed, X =  " + ball_x + " , Y = "+ball_y);
        canvas.remove(ball_obj);
        new_image();
    }
}
```

ADVANCED

Hit the Goal

Submitting the Project:

1. **SAVE** all the changes made to the project.
2. Click **Go-Live** to check if it is working.
3. To host your code as a website, follow the instructions given in this document.
4. Once you have hosted the website, copy the **GitHub** link and submit it on the **Student Dashboard > Projects** panel against the correct Class Number.

Hints:

1. Define a function of **fabric.js** for uploading an image on the canvas.

```
fabric.Image.fromURL("ball.png", function(Img) {
```

2. Set the different x coordinates for each image, so that images do not overlap.

3. Use the event listener – **addEventListener** to load an image on the click of a specific key.

```
window.addEventListener("keydown", my_keydown);
```

4. Provide the same width and height to both (ball and hole) images.

```
ball_obj.scaleToWidth(50);
ball_obj.scaleToHeight(50);
```

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

———— xxx ———— xxx ———— xxx ———— xxx ———— xxx ————