

## INSTRUCTIONS:

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### Goal of the Project:

In class 34, you reviewed all the concepts we have covered so far in working with Matter.js and using Classes to create Angry Birds Game.

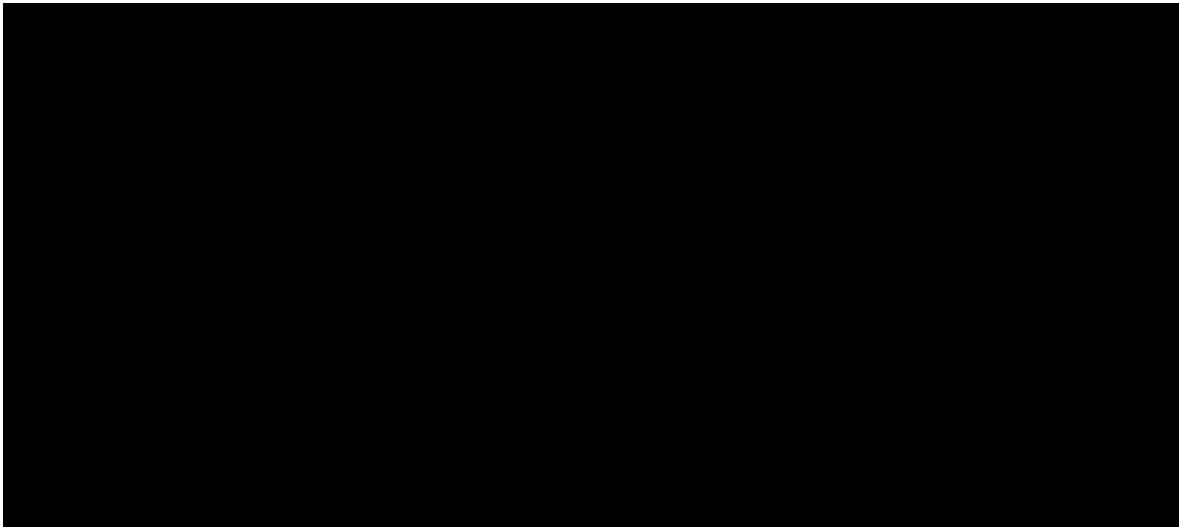
In this project, you will apply what you have learned in the class to achieve the following goals.

<b>Main Goal</b>	<ul style="list-style-type: none"><li>• Add background images and create a ground for the game.</li><li>• Add a superhero who can fly.</li></ul>
<b>Additional Goal 1</b>	<ul style="list-style-type: none"><li>• Hide the Rope in which the superhero is connected.</li><li>• Create multiple boxes arranged on the ground.</li></ul>
<b>Additional Goal 2</b>	<ul style="list-style-type: none"><li>• Add a monster sprite and set an image to it.</li></ul>

### Story:

Yohaán loves playing video games. And there he was playing a game in which a hero kills the monster with his great power. So, he decided to create a short animated game for himself. And in creating this game he needs your help. Can you help him?

See a video of this in action [here](#).



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

### Getting Started:

1. Use the template on GitHub, available for download [here](#).
2. **Unzip** this folder, rename the unzipped folder as **Project-34**.
3. **Import** this folder into **VS Code**.
  - Click on file -> Open Folder -> Select the folder that we renamed in the correct location.
4. Download the images from [here](#).
5. Start editing your code in **sketch.js**.

### Specific Tasks to Achieve the Main Goal:

1. Create an image folder and add all the downloaded images there.
2. Preload the images in `preload()` and add a background image in the background.
3. Import the constants in the `sketch.js` file such as:
  - Engine
  - World
  - Bodies
  - Mouse Constraints
4. Create a new world using a physics engine.
5. Create a **js** folder and inside it:
  - Create a **Ground.js** file.
  - Create a **Hero.js** file.
  - Also, create a **Fly.js** file.
6. Add all the three js files(i.e. **Ground.js**, **Hero.js**, **Fly.js**) in the `index.html` file.
7. In `draw()` :
  - Create an **object** for the Ground class and set its x,y, width, and height.
  - Create an **object** for the Hero class and set its x,y, and radius.
  - Create an **object** for the Fly class and pass bodyA and pointB parameters to it.
8. Inside `Ground.js` file :
  - Create a **Ground** class.
  - Set it's property true as **isStatic**.
  - Create a rectangle body and display it using **display()**.
  - Add white color to the ground.
9. Inside `Hero.js` file :
  - Create a **Hero** class that will take X and Y coordinates for the position.
  - Add an image for the hero.
  - Create a circle body and add it to the **World**.
  - Write a **display()** to show the hero.
10. Inside `Fly.js` file :
  - Copy the **Rope.js** code from your class project wrecking ball.
  - Update the class name to **Fly**.
11. Add the mouse function to drag the hero with the mouse.
12. Make sure the project works before you submit it.

### Submitting the Project:

1. Upload your completed project to your own GitHub account.
2. Create a New Repository named “**Project 34**”.
3. **Upload** working code to this GitHub repository.
4. Enable GitHub pages for your repository.
5. Copy the link to the GitHub pages link in the Student Dashboard.

### Hints for the Main Goal:

1. You can use the code given below to drag hero using the mouse:

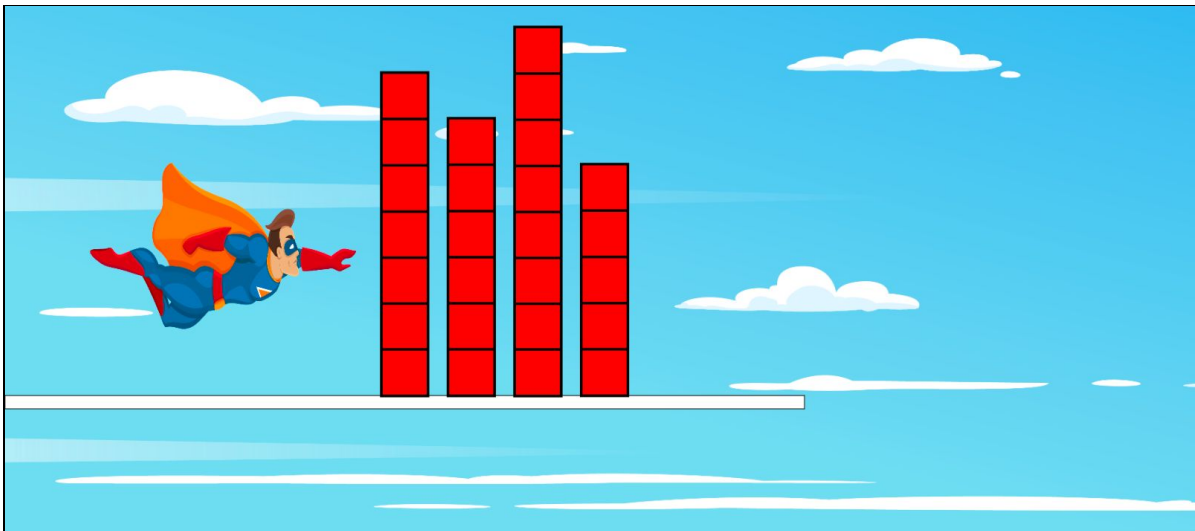
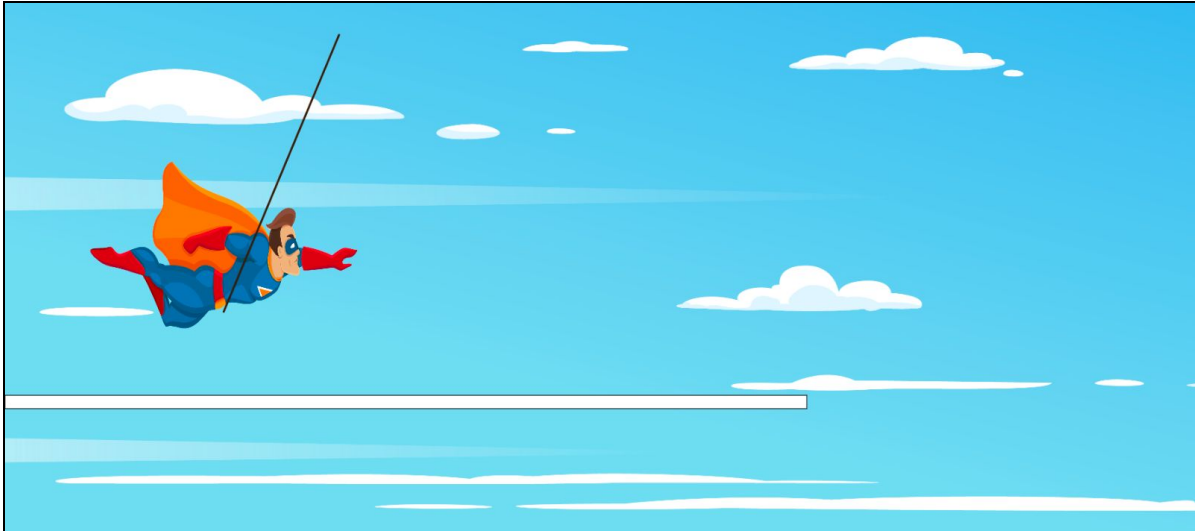
```
function mouseDragged() {  
    Matter.Body.setPosition(hero.body, { x: mouseX, y: mouseY });  
}
```

2. You can use the code given below to add a hero image:

```
constructor(x,y,r)  
{  
    var options = {  
        density: 1,  
        frictionAir: 1  
    };  
    this.x=x;  
    this.y=y;  
    this.r=r;  
    this.image=loadImage("Superhero-01.png");  
    this.body=Bodies.circle(this.x, this.y, (this.r)/2, options)  
    World.add(world, this.body);  
}
```

**Additional Goal 1:**

Now you have to help Yohaán in creating multiple blocks as a hurdle in the game.



### Specific Tasks to Achieve Additional Goal 1:

1. Create Blocks.js file inside the js folder. Then:
  - Create a block class that will take X and Y coordinates for the position.
  - Assign some **restitution, density, and friction** inside the constructor.
  - Create a rectangle body and add it to the World object.
  - Write a **display( )** to display the rectangle blocks.
  - Give some **strokeWeight** and color to the blocks.
2. Create multiple objects for the Block class and pass different x,y, width, and height so that blocks can be created in a stack form.
3. To hide the Fly rope, set **strokeWeight** as 0 in Fly class.
4. Make sure the project works before you submit it.

**\*SAVE** all the changes made to the project and **SUBMIT** the shareable link in the Student Dashboard Projects panel against the correct class number.

**Hints for the Additional Goal 1:**

1. You can use the code given below to create Block class:

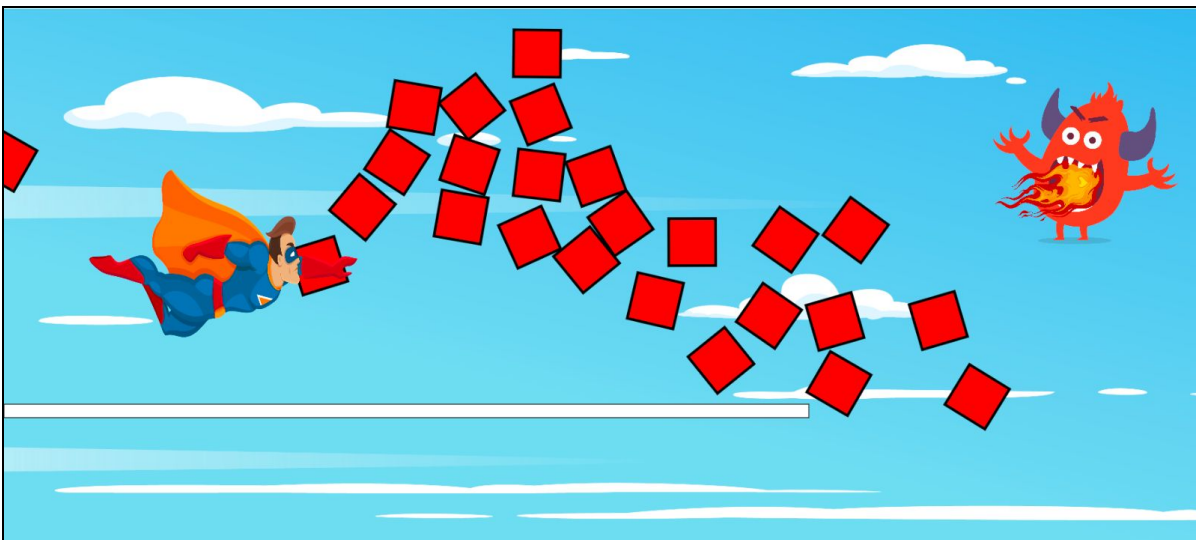
```
class Block {
  constructor(x, y, width, height) {
    var options = {
      'restitution':0.8,
      'friction':1.0,
      'density':20,
    }
    this.body = Bodies.rectangle(x, y, width, height, options);
    this.width = width;
    this.height = height;
    World.add(world, this.body);
  }
  display(){
    var pos =this.body.position;
    var angle = this.body.angle;
    push();
    translate(pos.x, pos.y);
    rotate(angle);
    rectMode(CENTER);
    strokeWeight(4);
    stroke("black");
    fill("red");
    rect(0, 0, this.width, this.height);
    pop();
  }
}
```

2. You can use the code given below to hide the fly rope.

```
strokeWeight(0);
```

**Additional Goal 2:**

Lastly, you have to help Yohaán in creating a monster for the game. And that's it.

**Specific Tasks to Achieve Additional Goal 2:**

1. Create a Monster.js file inside the js folder.
2. Write a similar code that you have written to create a superhero.
3. Add a monster image in the Monster class.
4. Create an **object** for the Monster class and set its x,y, and radius.
5. Make sure the project works before you submit it.



\***SAVE** all the changes made to the project and **SUBMIT** the shareable link in the Student Dashboard Projects panel against the correct class number.

### Hints for the Additional Goal 2:

1. You can use the code given below to add the monster image:

```
this.image=loadImage("Monster-01.png");  
this.body=Bodies.circle(this.x, this.y, (this.r)/2, options)  
World.add(world, this.body);
```

**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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