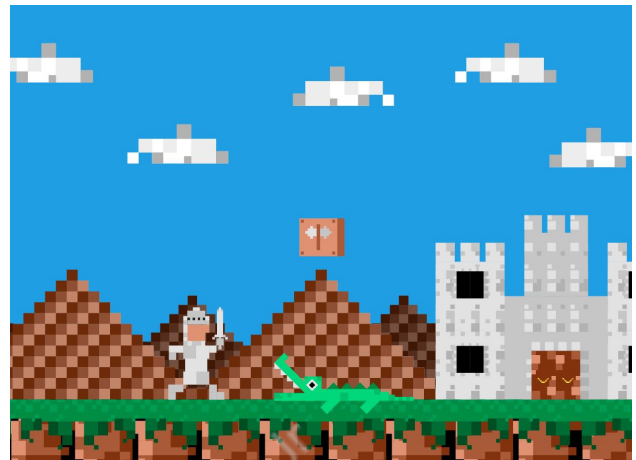


AI GAME



What is our GOAL for this MODULE?

We converted a normal Mario Game into an AI Mario Game using a pre-trained model which is posenet.

What did we ACHIEVE in the class TODAY?

- Started designing the UI for Mario Game.

Which CONCEPTS/ CODING did we cover today?

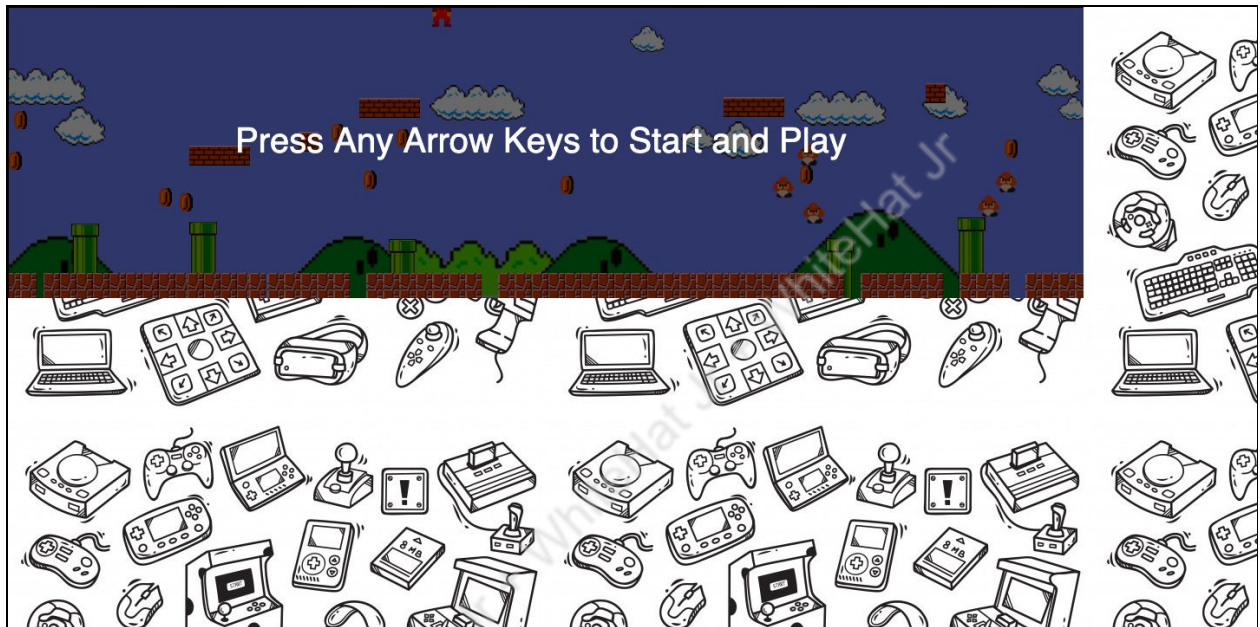
- Added code for setting background for the web page.
- Added a div for holding the heading text and instruction button.
- Added code for placing a big mario image.
- Added HTML code for play button button.
- Added code for creating an empty HTML element that will hold the status of the game.
- Added code for creating two empty div for holding the canvas and the webcam live view.

How did we DO the activities?

1. First add background to the webpage. For adding background to the webpage, we need to add a **background attribute** inside the body tag.

```
<body background="background.jpg">
```

Output:



2. Add center tag:

```
<body background="background.jpg">  
  <center>  
    </center>  
</body>
```

- We will put all our HTML code inside this center tag because we want everything to be in the center of the page.

- Then we will add a div that will be holding the heading and instruction button of the website. Also give some bootstrap classes and our class to it.

```
<body background="background.jpg">
  <center>
    <div class="btn btn-primary heading">
    </div>
  </center>
</body>
```

- btn** - This is a bootstrap class that will add padding and margin to this div hence, present it better.
- btn-primary** - This is a bootstrap class that will add a dark blue background, and border color to the div tag.
- heading** - is our class and we will give style in **style.css**.

Style in style.css:

```
.heading
{
width: 100%;
text-align: left;
}
```

- Setting the width as 100%, so that this heading covers the whole width of the screen.
 - Giving text-align left, so that our heading text comes on the left hand side of the screen.
- Now add a h3 tag inside the above created div, this h3 tag will be holding the heading text.

```
<body background="background.jpg">
  <center>
    <div class="btn btn-primary heading">
      <h3>AI MARIO GAME </h3>
    </div>
  </center>
</body>
```

Style in style.css

5. As this h3 tag is inside a div who has class as heading - so we can write:

```
.heading h3{
    display: inline;
}
```

- **display:inline** - This property is used when we want the elements to come in one line.
 - As you saw in the website the heading text and the instruction button are on the same line. So to get the heading text inline with the button we have set the display property of h3 tag to inline, this will help in keeping heading text and button in one line.

Output:



6. Now we will add a button for instruction in the above created div. As you saw in the demo when we press the instruction button a modal is opened. Do you remember we had used bootstrap modal, when we were creating a Blog page. We will be using the same bootstrap modal.

```
<body background="background.jpg">
  <center>
    <div class="btn btn-primary heading">
      <h3>AI MARIO GAME </h3>
      <button class="btn btn-primary" data-toggle="modal" data-target="#myModal">Instructions</button>
    </div>
  </center>
</body>
```

- Add a button tag `<button`
- The will add bootstrap class `<button class="btn btn-primary"`
- Then we will add `<button class="btn btn-primary" data-toggle="modal" -`
data-toggle is used to open the **modal**. The result of adding **data-toggle**, when this button will click modal will open
- Then we will add a target:

```
<button class="btn btn-primary" data-toggle="modal" data-target="#myModal">
```

- **data-target** - should contain an ID of an HTML element which should open, when this button is clicked. Put `#myModal` inside **data-target**. In the **next** class we will define a div with this `#myModal` ID, which will result in, when this button is click the div with ID `#myModal` will open.
- This **data-target** works the same as the "target" in anchor which we have learned already. It takes you to the specific element who's id has been passed.
- Then give text to this button and close the button tag.

```
<button class="btn btn-primary" data-toggle="modal" data-target="#myModal">Instructions</button>
```

Style in style.css

7. As this button tag is inside a div who has class as heading - so we can write

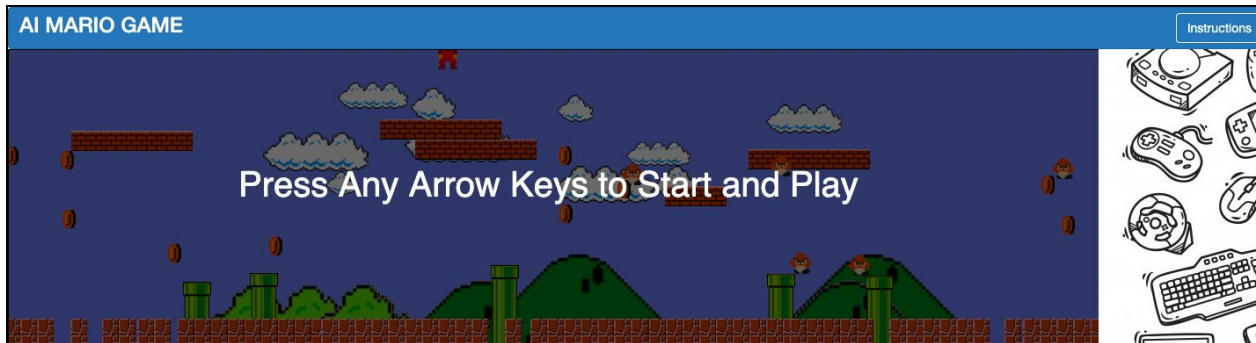
```
.heading button{
```

```
.heading button{
  float: right;
  border: 1px solid white;
}
```

- **float** - This property is used when we want the elements to be floated to the left or right hand side of the webpage.
- We want this instruction button to be on the right hand side of the page, for this we will give **float:right** property to this button.

- **border:1px solid white** result in a 1px broad white color border.

Output:



8. Now we will add a big image, after the div of heading, and give our class.

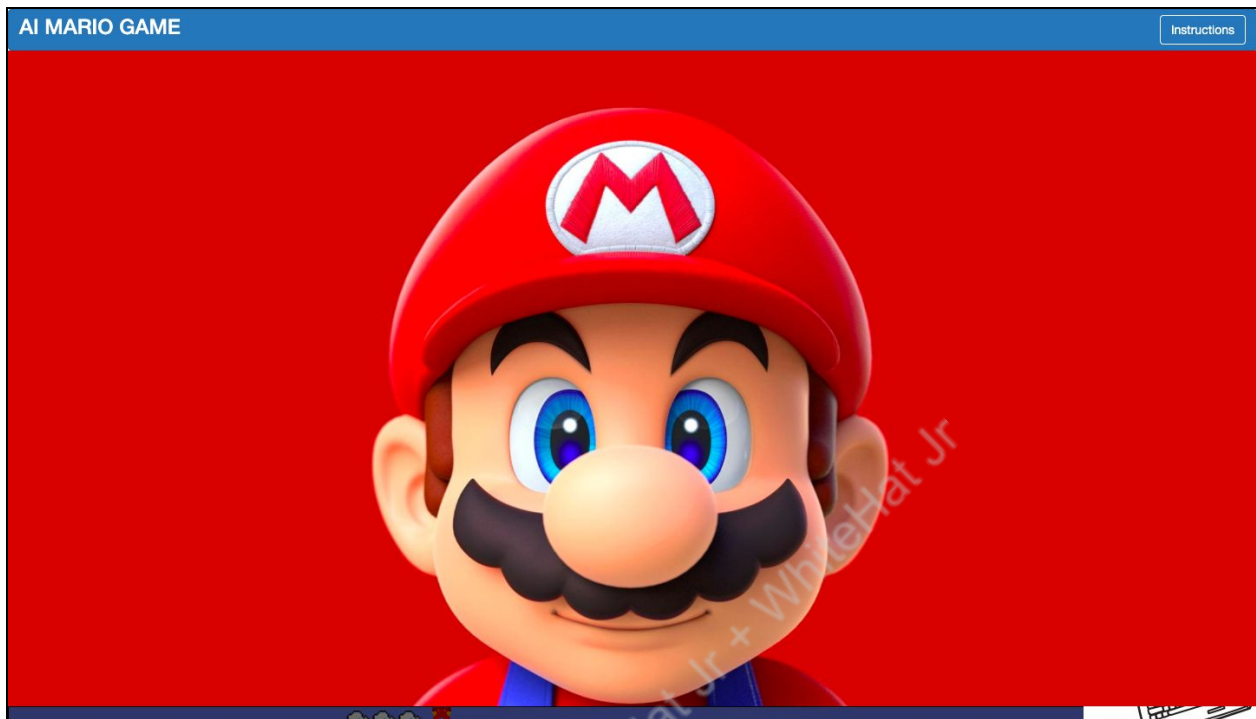
```
<body background="background.jpg">
  <center>
    <div class="btn btn-primary heading">
      <h3>AI MARIO GAME </h3>
      <button class="btn btn-primary" data-toggle="modal" data-target="#myModal">Instructions</button>
    </div>
    
  </center>
</body>
```

Style in style.css

```
.big_image
{
  width: 100%;
}
```

We want this image to cover the whole width of the screen, that's why give width:100%

Output:



9. Add 2 **br** tags to give line break.

```
<body background="background.jpg">
  <center>
    <div class="btn btn-primary heading">
      <h3>AI MARIO GAME </h3>
      <button class="btn btn-primary" data-toggle="modal" data-target="#myModal">Instructions</button>
    </div>
    
    <br><br>
  </center>
</body>
```

- We have added these 2 **br** tags so that there is a line break between **img** tag and the next tag which is the play game button.

10. Add a play game button, this button will be used to start the game. Also we will give some bootstrap class and "id" to this button tag.

```
<body background="background.jpg">
  <center>
    <div class="btn btn-primary heading">
      <h3>AI MARIO GAME </h3>
      <button class="btn btn-primary" data-toggle="modal" data-target="#myModal">Instructions</button>
    </div>

    
    <br><br>
    <button class="btn btn-success" onclick="startGame()" id="start">Play Game</button>
  </center>
</body>
```

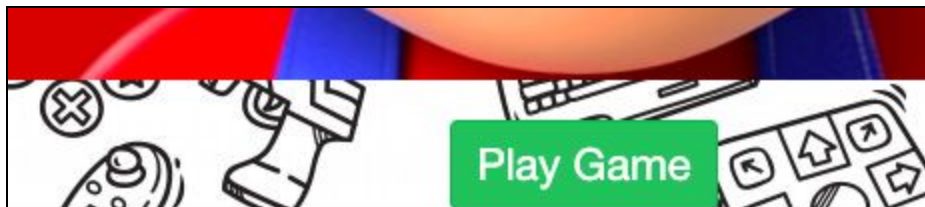
- **btn** - This is a bootstrap class that will add padding and margin to this div hence, present it better.
- **btn-success** - This is a bootstrap class that will add a light green background, and border color to the heading tag.
- **onclick = "startGame()"** - This will result in calling startGame() function when this button is clicked. This startGame() will be used to start the game. We will define this function in the next class.
- **id="start"** - we will use this id to give style in **style.css**.

Style in style.css:

```
#start
{
  font-size: 22px;
}
```

- We have increased the font size.

Output:



11. Add 2 **br** tags.

```
<body background="background.jpg">
  <center>
    <div class="btn btn-primary heading">
      <h3>AI MARIO GAME </h3>
      <button class="btn btn-primary" data-toggle="modal" data-target="#myModal">Instructions</button>
    </div>

    
    <br><br>
    <button class="btn btn-success" onclick="startGame()" id="start">Play Game</button>
    <br><br>
  </center>
</body>
```

- We have added these 2 **br** tags so that there is a line break between the Play Game Button tag and the next tag which is **h3** tag which will be used to hold the status of the game.

12. Add an **h3** tag which will be used to hold the status of the game. Also we will give some bootstrap class and "id" to this **h3** tag.

```
<body background="background.jpg">
  <center>
    <div class="btn btn-primary heading">
      <h3>AI MARIO GAME </h3>
      <button class="btn btn-primary" data-toggle="modal" data-target="#myModal">Instructions</button>
    </div>

    
    <br><br>
    <button class="btn btn-success" onclick="startGame()" id="start">Play Game</button>
    <br><br>
    <h3 id="status" class="btn btn-warning"></h3>
  </center>
</body>
```

- **id="status"** - id will be used to refer to this **h3** tag from JS while updating this **h3** tag with the game status. Also using this **id** we will give style in **style.css**.
- **btn** - This is a bootstrap class that will add padding and margin to this div and make it look better.
- **btn-warning** - This is a bootstrap class that will add a light orange background, and border color to the heading tag.

In `style.css`:

```
#start
{
  font-size: 22px;
}
```

As you have given style to HTML tag using the id as “**start**”

So add the id “**status**” next to Id “**start**” id with a comma separator.

```
#start, #status
{
  font-size: 22px;
}
```

This will result in the h3 tag which we just created will result in having the same style of font.

Output:



- We haven't given any text to the h3 tag, therefore, it seems to show vacant and unoccupied space.

13. Add 2 **br** tags.

```
<body background="background.jpg">
  <center>

    <div class="btn btn-primary heading">
      <h3>AI MARIO GAME </h3>
      <button class="btn btn-primary" data-toggle="modal" data-target="#myModal">Instructions</button>
    </div>

    
    <br><br>
    <button class="btn btn-success" onclick="startGame()" id="start">Play Game</button>
    <br><br>
    <h3 id="status" class="btn btn-warning"></h3>
    <br><br>
  </body>
```

- We have added these 2 br tags so that there is a line break between the h3 tag which will be used to hold the status of the game and the next tag which is div tag which will be used to hold the p5.js canvas.

14. Define an empty div, this will be used to hold the p5.js canvas. And why we are doing this I will be explaining to you in upcoming classes. Also give ID as **canvas**, because we will use this ID to refer to this div from JS code.

```
<body background="background.jpg">
  <center>

    <div class="btn btn-primary heading">
      <h3>AI MARIO GAME </h3>
      <button class="btn btn-primary" data-toggle="modal" data-target="#myModal">Instructions</button>
    </div>

    
    <br><br>
    <button class="btn btn-success" onclick="startGame()" id="start">Play Game</button>
    <br><br>
    <h3 id="status" class="btn btn-warning"></h3>
    <br><br>
    <div id="canvas"></div>
  </body>
```

15. Define an empty div, this will be used to hold the webcam live view. And why we are doing this I will be explaining to you in upcoming classes. Also give ID as `game_console`, because we will use this ID to refer to this div from JS code.

```
<body background="background.jpg">
  <center>

    <div class="btn btn-primary heading">
      <h3>AI MARIO GAME </h3>
      <button class="btn btn-primary" data-toggle="modal" data-target="#myModal">Instructions</button>
    </div>

    
    <br><br>
    <button class="btn btn-success" onclick="startGame()" id="start">Play Game</button>
    <br><br>
    <h3 id="status" class="btn btn-warning"></h3>
    <br><br>
    <div id="canvas"></div>
    <div id="game_console"></div>
  </body>
```

The output will be looking incomplete because we have not completed our HTML and CSS code. We will be completing it in the next class.

NOTE -

Whenever you are running the code, MAKE SURE TO TEST BY CLICKING ON GO LIVE BUTTON OF VISUAL STUDIO. THIS WILL RESULT IN RUNNING THE FILE ON THE LIVE



SERVER OF VISUAL STUDIO.

Because we are using an images and audio file, and p5.js just doesn't allow us to run any images and audio files from a local system, it needs to be run on a server.

What's NEXT?

We will continue building this AI Game.