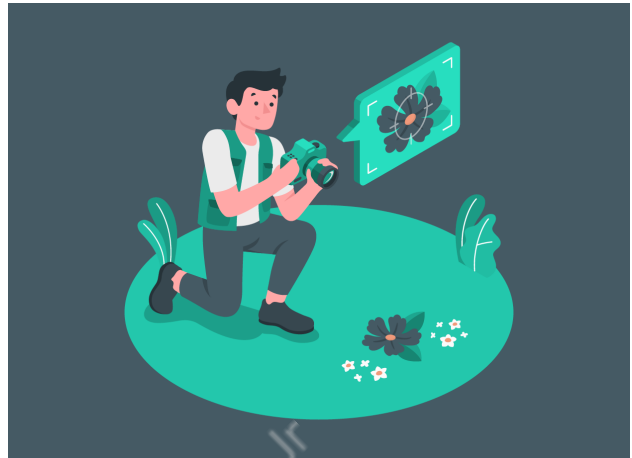


## REALTIME OBJECT IDENTIFICATION



### What is our GOAL for this MODULE?

We learned how to import a video in p5.js canvas, and how to do object detection on the imported video, and create a web app out of it.

### What did we ACHIEVE in the class TODAY?

- Designed the AI Video Surveillance Web App.

### Which CONCEPTS/ CODING did we cover today?

- Added code for setting background for the web page.
- Added code for creating a heading tag and giving style to it.
- Added code for start button.
- Added code for creating a HTML element that will hold the number of objects detected and giving style to it.
- Added code for creating a HTML element that will hold the status and giving style to it.
- Added code for copyright footer.

### 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">  
<center>  
  
</center>
```

- Write a **background attribute** inside the body tag and inside this **attribute** mention the image name which is **background.jpg**, put the same image name because this image is present in the **AI-Video-Surveillance** folder which you will be downloading from in class.

Output:



- As you see the background image is repeated since the image is too small therefore it cannot cover the complete screen.
- We want a single image to completely cover the background, so use **background-size:cover;** style property The background-size property specifies the size of the background image. It resizes the background image, as per the

CSS we mention.

- Mention a CSS **cover**, and give it to `background-size`. So it will be `background-size: cover`.

**cover** - Resize the background image to cover the entire webpage, if the image is smaller than the size of the screen it will stretch the image, if the image is larger than the size of the screen size it would trim the edges and make sure that the image fits on to the entire screen.

```
body
{
  background-size: cover;
}
```

Then the output will be:



2. Then add a **h1 tag** for holding the heading of the website. Also give some bootstrap class and our class.

```
<body background="background.jpg">
<center>
<h1 class="btn btn-warning heading">AI Video Surveillance</h1>
</center>
```

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

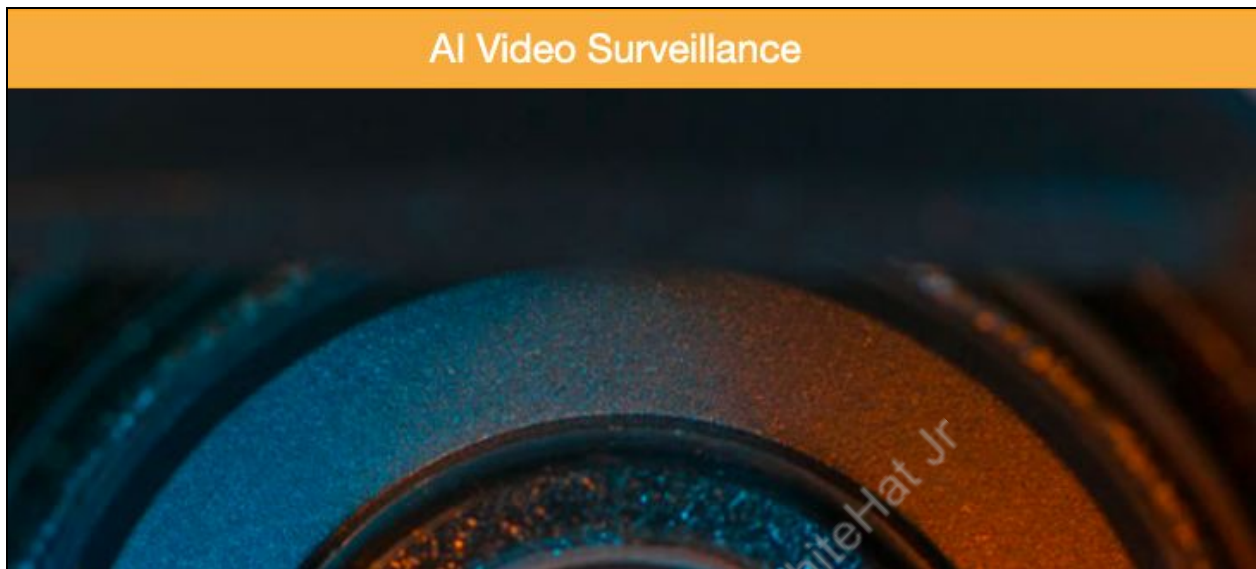
Style in style.css.

```
.heading
{
font-size: 23px;
width: 100%;
margin: 0px;
}
```

- We are setting the font-size as 23px.
- Setting the width as 100%, so that this heading covers the whole width of the screen.
- Giving margin as 0px, so that our heading touches all the end of the screen. And no gap is left.



Output:



3. Now add 2 **br** tags.

```
<body background="background.jpg">
<center>
  <h1 class="btn btn-warning heading">AI Video Surveillance</h1>
  <br><br>
</center>
```

- We have added these 2 **br** tags so that there is a line break between **h1** tag and the next tag which is the start button.
4. Now add a start button, this button will be used to start the video and object detection process. Also give some bootstrap class and "id" to this button tag.

```
<body background="background.jpg">
<center>
  <h1 class="btn btn-warning heading">AI Video Surveillance</h1>
  <br><br>
  <button onclick="start()" class="btn btn-success" id="start">start</button>
</center>
```

- **onclick = "start()"** - This will result in calling **start()** function when this button is clicked. This **start()** will be used to start the video and object detection

process. Define this function in the next class.

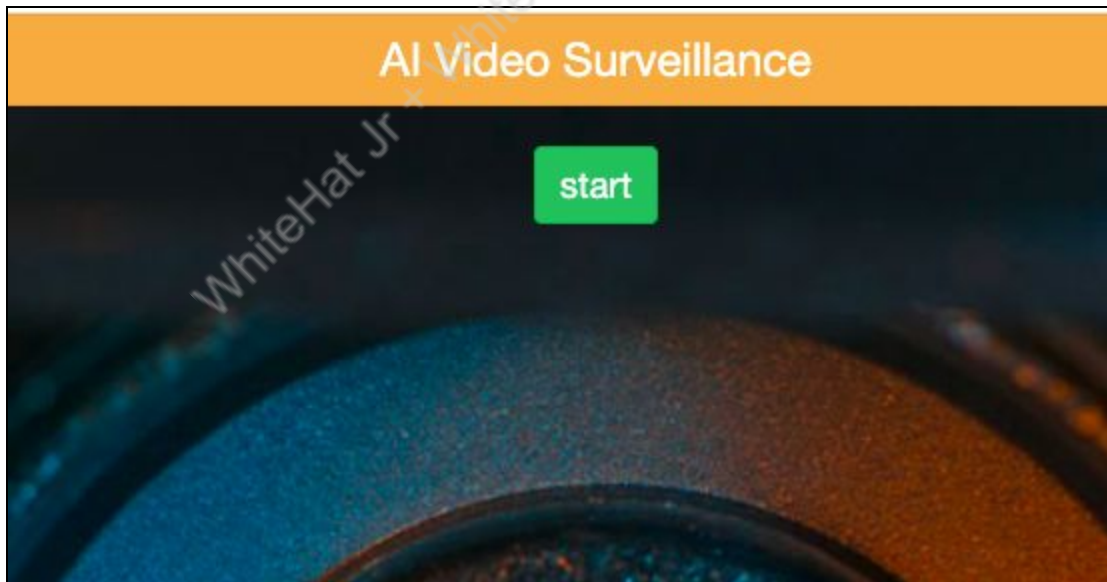
- **btn** - This is a bootstrap class that will add padding and margin to this div hence, present it better.
- **btn-success** - This is a bootstrap class that will add a light green background, and border color to the heading tag.
- **id="start"** - use this id to give style in **style.css**.

#### Style in style.css

```
#start
{
  font-size: 18px;
}
```

- We have increased the font size.

Output:



5. Now add 2 **br** tags.

```
<body background="background.jpg">
<center>
  <h1 class="btn btn-warning heading">AI Video Surveillance</h1>
  <br><br>
  <button onclick="start()" class="btn btn-success" id="start">start</button>
  <br><br>
</center>
```

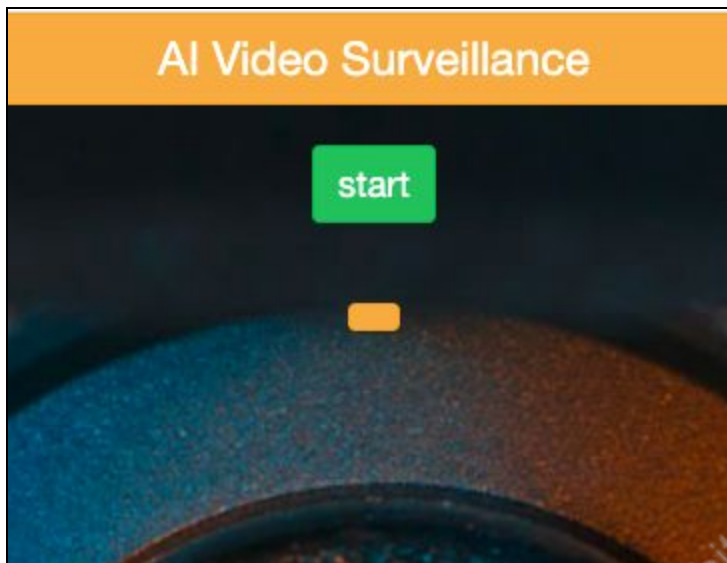
- We have added these 2 **br** tags so that there is a line break between the **start** button tag and the next tag which is **h3** tag that holds the number of objects.

6. Add a **h3** tag, the purpose of this **h3** tag will be to hold the number of objects which are detected by the **cocossd** model. Also give some bootstrap class and "id" to this **h3** tag.

```
<body background="background.jpg">
<center>
  <h1 class="btn btn-warning heading">AI Video Surveillance</h1>
  <br><br>
  <button onclick="start()" class="btn btn-success" id="start">start</button>
  <br><br>
  <h3 id="number_of_objects" class="btn btn-warning"></h3>
</center>
```

- **id="number\_of\_objects"** - id will be used to refer to this **h3** tag from JS while updating this **h3** tag with the number of objects detected. Also using this **id** 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.

Output:



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

In **style.css**:

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

```
#start
{
  font-size: 18px;
}
```

we want this same style of font to get applied to the h3 tag which we just created, so add the id “**number\_of\_objects**” next to **start** id with a comma separator.

```
#status , #number_of_objects
{
  font-size: 18px;
}
```

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



7. Now add 2 **br** tags.

```
<body background="background.jpg">
<center>
  <h1 class="btn btn-warning heading">AI Video Surveillance</h1>
  <br><br>
  <button onclick="start()" class="btn btn-success" id="start">start</button>
  <br><br>
  <h3 id="number_of_objects" class="btn btn-warning"></h3>
  <br><br>
</center>
```

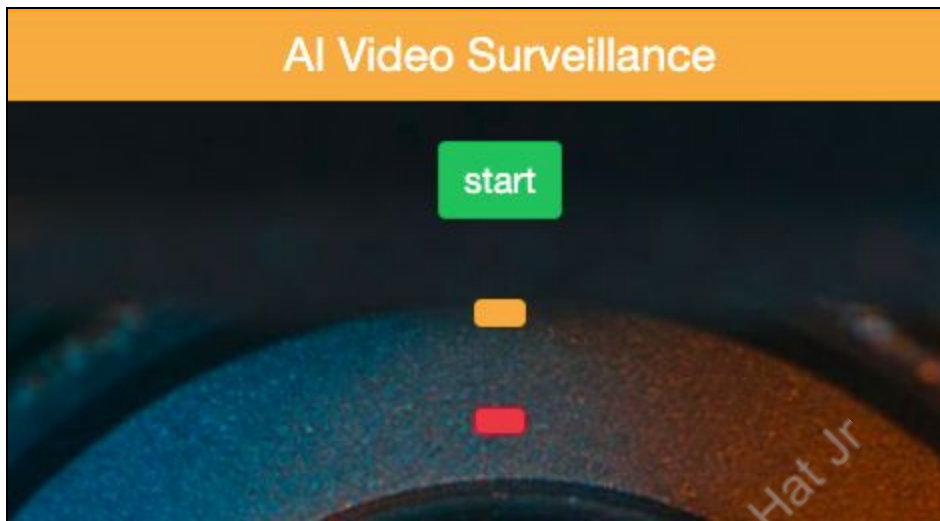
- We have added these 2 **br** tags so that there is a line break between the **h3** tag which is used to hold the number of objects and the next tag which is a **h3** tag used to hold the status of the model.

8. Then add an **h3** tag which will be used to hold the status of object detection. Also give some bootstrap class and "id" to this **h3** tag.

```
<body background="background.jpg">
<center>
  <h1 class="btn btn-warning heading">AI Video Surveillance</h1>
  <br><br>
  <button onclick="start()" class="btn btn-success" id="start">start</button>
  <br><br>
  <h3 id="number_of_objects" class="btn btn-warning"></h3>
  <br><br>
  <h3 id="status" class="btn btn-danger"></h3>
</center>
```

- **id="status"** - id will be used to refer to this **h3** tag from JS while updating this **h3** tag with the object detection status. Also using this **id** 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-danger** - This is a bootstrap class that will add a red background, and border color to the heading tag.

Output:



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

In **style.css**.

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

```
#status
{
  font-size: 18px;
}
```

we want this same style of font to get applied to the h3 tag which we just created, so add the id “**status**” next to **number\_of\_objects** id with a comma separator.

```
#start , #number_of_objects , #start
{
  font-size: 18px;
}
```

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

9. Now will add a div that will hold the copyright footer of the website.

```
<body background="background.jpg">
<center>
  <h1 class="btn btn-warning heading">AI Video Surveillance</h1>
  <br><br>
  <button onclick="start()" class="btn btn-success" id="start">start</button>
  <br><br>
  <h3 id="number_of_objects" class="btn btn-warning"></h3>
  <br><br>
  <h3 id="status" class="btn btn-danger"></h3>
</center>

<div class="copy_right_footer">
  Developed by - WhitehatJr Team
</div>
```

- This footer will be a sticky footer. Sticky footer means it will always be at a particular point around the bottom of the page.

You should write your name.

10. Define the div with our class.

```
<div class="copy_right_footer">
```

- **copy\_right\_footer** - This is the name of the **div**'s class. Give style to this **div** using this class.

11. Now let's style this div.

For understanding sticky footers, run [ME](#), and change the following values of the footer.

```
<style>

.footer {
  position: fixed;
  bottom: 0;
  width: 100%;
  background-color: red;
  color: white;
  text-align: center;
}

</style>
</head>
<body>

<h2>Fixed/Sticky Footer Example</h2>
<!-- The footer is placed at the bottom of the page -->
```

```
.copy_right_footer {
  position: fixed;
  color: #6c757d;
  bottom: 0;
  width: 100%;
  background-color: #f5f5f5;
  line-height: 3;
  text-align: center;
}
```

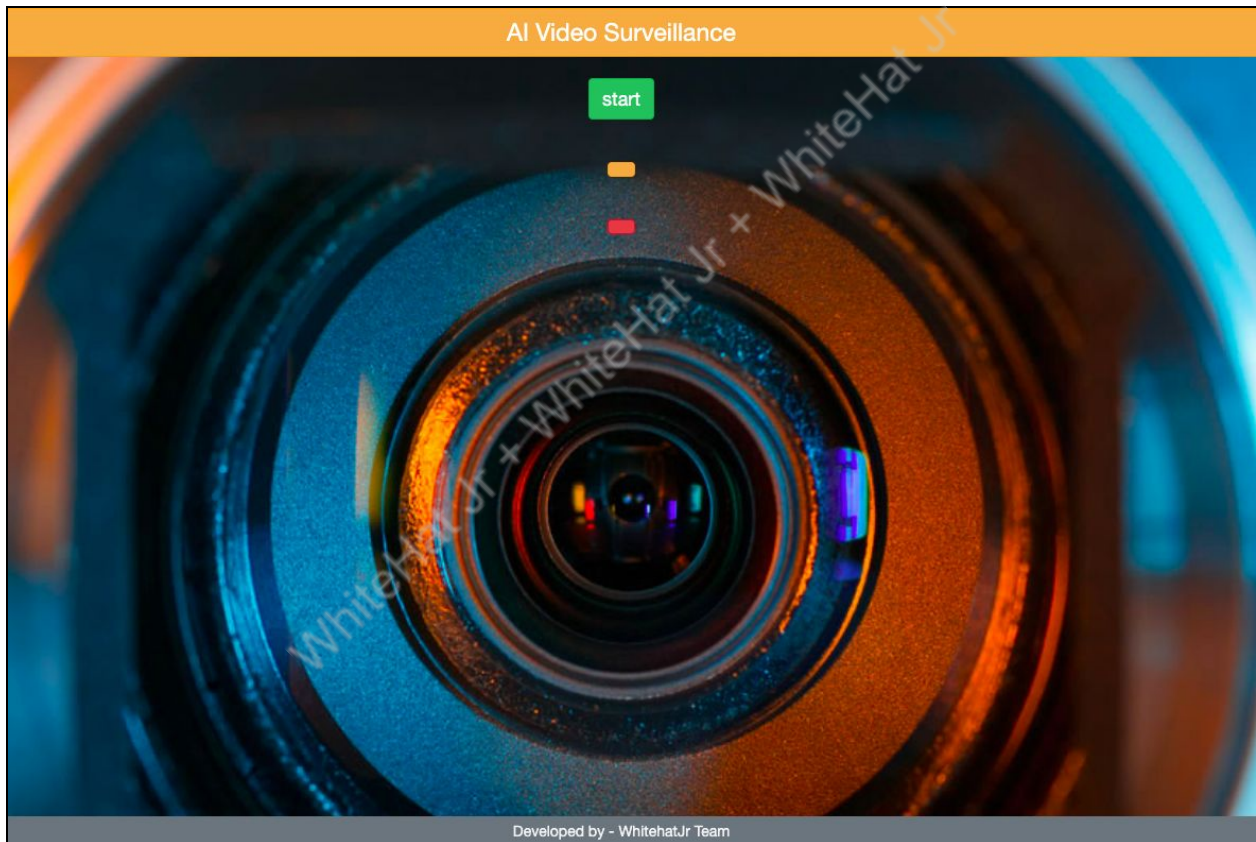
- We have set the position to be fixed, because we want this div to be at a fixed position on the website.
- Then we set the text color to this - `#6c757d`, which is a shade of lightgrey. You can use any color.
- We have set bottom to 0, because we want the div to be at the extreme bottom of the page.
- Setting width to 100% will result in - the div element will cover the complete

screen's width (horizontally).

- Then we have set the background color to this - `#f5f5f5;`, which is a very light shade of light pink. You can use any color.
- Then we have set the line-height, which means it will increase the height of the div a little.
- Then we have made the text to the center on the screen, using

```
text-align: center;
```

Output:





12. In the next class create a p5.js canvas, but we'll give its styling now, thereby, we'll be done with the HTML and CSS code. To give style for p5.js canvas we can directly

write - **canvas** and start adding style properties.

```
canvas
{
border:2px solid white;
border-radius: 10px;
margin-top: 130px;
box-shadow: 5px 5px 5px white;
}
```


- **border:2px solid white** result in 2px broad white color border.
- We have added **border-radius: 10px;** to give a rounded border effect.

For understanding box-shadow, run [ME](#), and change the values of box-shadow, in style.css:

```
#example2 {
border: 1px solid;
padding: 10px;
box-shadow: 5px 10px 18px yellow;
}
```

#### 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 a video file, and p5.js just doesn't allow us to run any video file from a local system, it needs to be run on a server.

### What's NEXT?

We will continue building this web application.

WhiteHat Jr + WhiteHat Jr + WhiteHat Jr