



CSS Box Model

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Your Notes

CSS Box Model



Every HTML elements all are boxes. every html element is wrapped inside the box.

Box Model

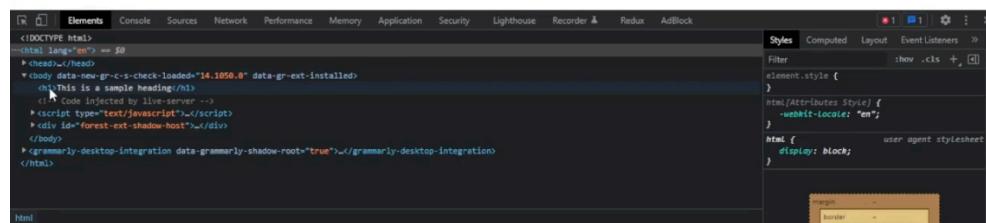
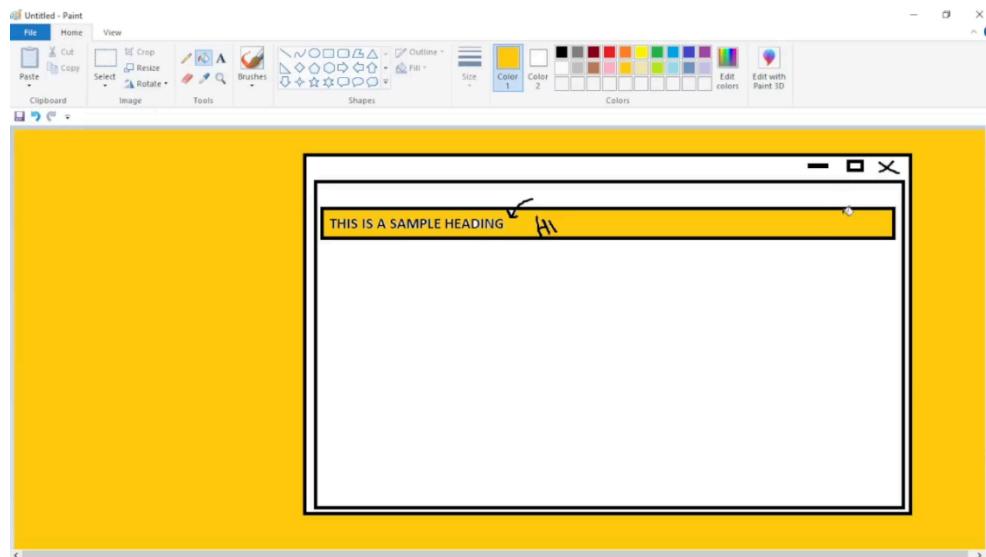
Box Model

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- Box model helps you to understand how elements are positioned and displayed on a website.
- All elements on a web page are interpreted by the browser as “living” inside of a box. This is what is meant by the box model.
- The box model includes:
 - The dimensions of an element’s box.
 - The borders of an element’s box. (border of element box is already learnt in the last topic)
 - The paddings of an element’s box.
 - The margins of an element’s box.

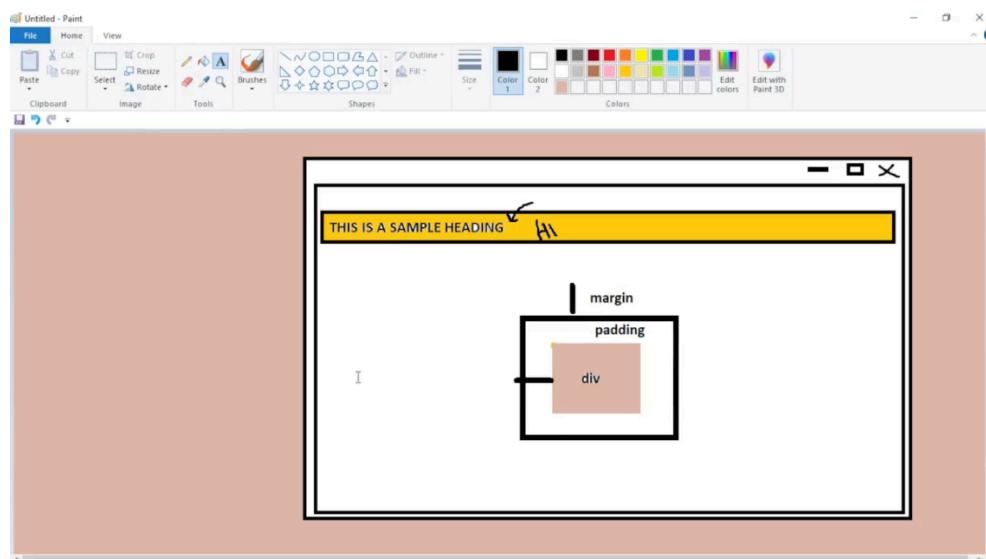


how the html element is take box space on webpage as follow as :



Padding : distance between border and content.

Margin : distance between other element and border to the given element.



```

<!DOCTYPE html>
<html lang="en">
  <head></head>
  <body data-new-gr-c-s-check-loaded="14.1050.0" data-gr-ext-installed>
    <h1 class="heading">This is a sample heading</h1> -- $0
    <!-- Code injected by live-server -->
    <script type="text/javascript"></script>
    <div id="forest-ext-shadow-host"></div>
    </body>
  </html>
<grammarly-desktop-integration data-grammarly-shadow-root="true"></grammarly-desktop-integration>

```

```

<!DOCTYPE html>
<html lang="en">
  <head></head>
  <body data-new-gr-c-s-check-loaded="14.1050.0" data-gr-ext-installed>
    <h1 class="heading">This is a sample heading</h1> -- $0
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    <div id="forest-ext-shadow-host"></div>
    </body>
  </html>
<grammarly-desktop-integration data-grammarly-shadow-root="true"></grammarly-desktop-integration>

```

dimensions of the element box are height and width.



Box Model Properties

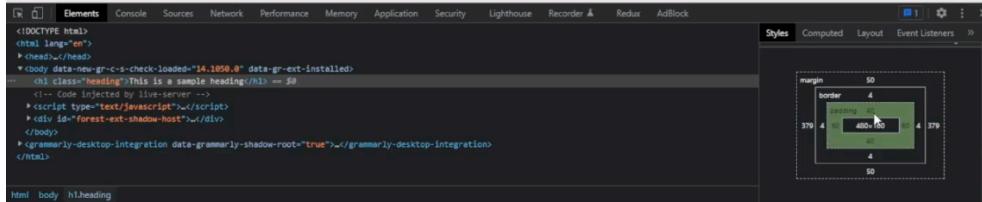
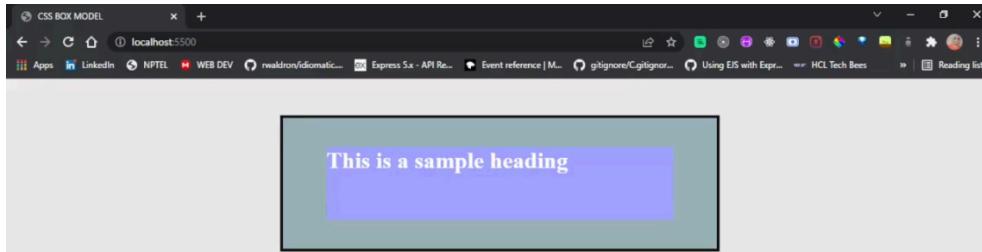
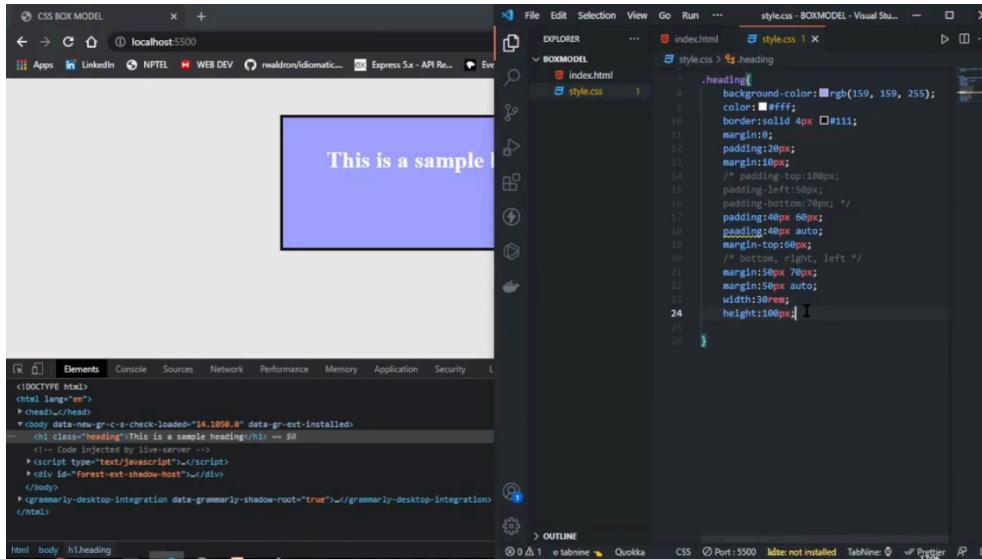
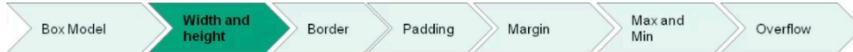
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- The content of any HTML element has two dimensions width and height.

- The dimension of the element can be modified with the properties width and height.

- Example:

```
#main {
  width: 400px;
  height: 1000px;
}
```



Borders

Borders

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- A *border* is a line that surrounds an element, like a frame around a painting.
- Different styles, width, color, radius can be kept for HTML elements with help of border properties.
 - border-style.
 - border-width.
 - border-color.
 - border-radius.



Padding

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- The space between the content and the border of the box is known as the padding.
- For example, padding is a space between the picture and its frame.
- The space can be modified by using the padding property in CSS.
- Example:

```

#main {
  padding: 40px;
}
  
```



Padding

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- The padding property is often used to expand the background color and make the content look spacious.
- The padding property can be specifically used to all four sides:
 - padding-top: 40px;
 - padding-right: 30px;
 - padding-bottom: 20px;
 - padding-left: 10px;



Padding

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- Padding shorthand property let's you specify all the padding properties as values on a single line.
- 4 values- Example: padding: 6px 11px 4px 9px;
 - padding-top: 6px;
 - padding-right: 11px;
 - padding-bottom: 4px;
 - padding-left: 9px;



Padding

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- 3 values - Example: padding: 5px 10px 20px;
 - padding-top: 5px;
 - padding-right: 10px; and padding-bottom: 10px;
 - padding-left: 20px;
- 2 values - Example: padding: 5px 10px;
 - padding-top: 5px; and padding-left: 5px;
 - padding-right: 10px; and padding-bottom: 10px;



Margin

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- Margin refers to the space directly outside the box, or margin can be referred to the space between the border of two elements.
- The margin property of the CSS is used to specify the size of the space between the borders of two elements.
- Example:


```
P{
margin: 20px;
}
```



Margin Shorthand Property

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- 4 values- Example: padding: 6px 11px 4px 9px;
 - where, margin-top: 6px; margin-right: 11px; margin-bottom: 4px; margin-left: 9px;
- 3 values - Example: margin: 5px 10px 20px; where,
 - margin-top: 5px;
 - margin-right: 10px; and margin-bottom: 10px;
 - margin-left: 20px;
- 2 values - Example: margin: 5px 10px;
 - margin-top: 5px; and margin-left: 5px;
 - margin-right: 10px; and margin-bottom: 10px;



Margin (margin: auto;)

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- The margin property also allows you to center content, with help of the value "auto".
- Example:


```
div.headline{
        width: 400px;
        margin: 0 auto;
      }
```
- The top and bottom margin of the div element will be set to 0.
- The auto value instructs the browser to adjust the left and right margins until the element is centered within its containing element.



Margin Collapse

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- padding is space added inside an element's border, while margin is space added outside an element's border.
- One additional difference is that top and bottom margins, also called vertical margins, **collapse**, while top and bottom padding does not.
- Horizontal margins (left and right), like padding, are always displayed and added together.



Margin Collapse

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- Example:

```
#elementa {
    margin: 10px;
}

#elementb {
    margin: 10px;
}

#elementc {
    margin: 30px 10px;
}
```



the width of element is not exceed than max-width of that element

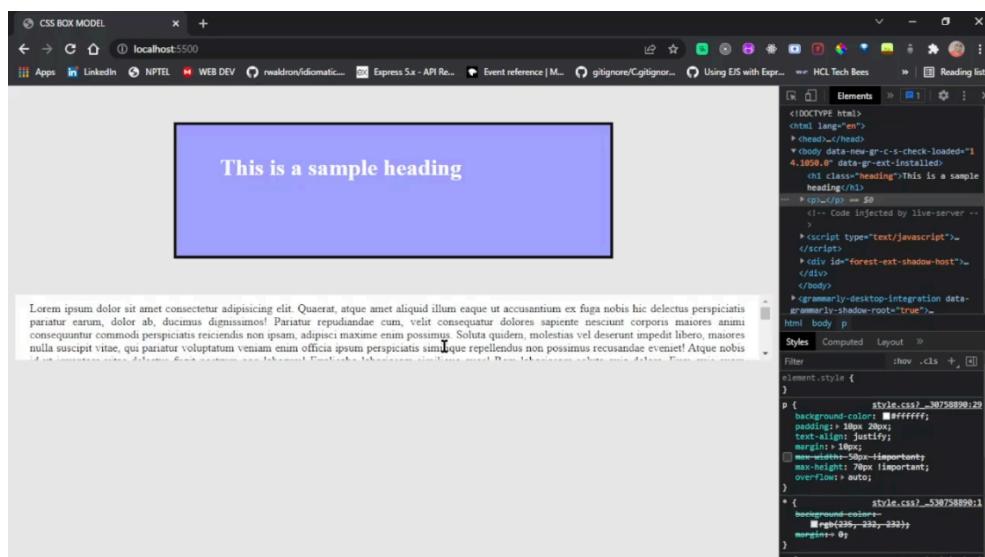
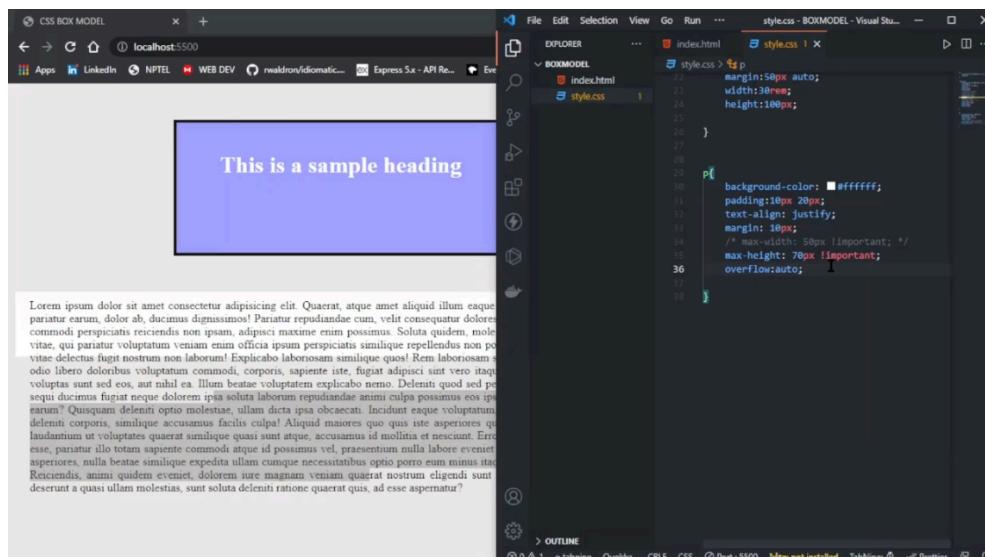
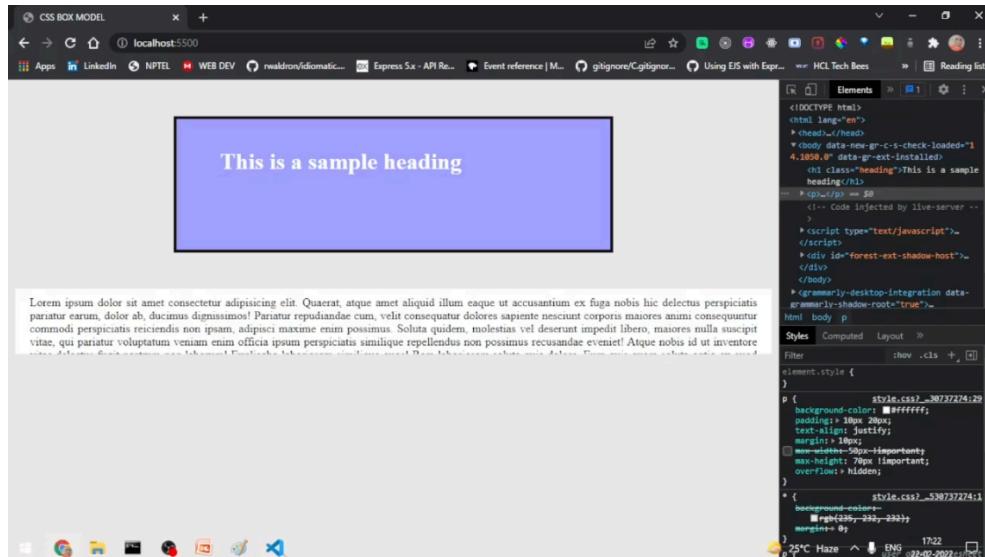
the height of element is not exceed than max-height of that element

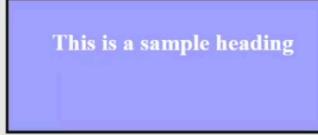
Here if you want to anyone not change value of any property then applied to that property as !important

```
style.css
1 p {
2     margin: 50px auto;
3     width: 30px;
4     height: 100px;
5 }
6
7 p {
8     background-color: #ffffff;
9     padding: 10px 20px;
10    text-align: justify;
11    margin: 10px;
12    max-width: 50px !important;
13    max-height: 50px !important;
14 }
```

To control the over flow of the content out side the element by following property

```
style.css
1 p {
2     margin: 50px auto;
3     width: 30px;
4     height: 100px;
5 }
6
7 p {
8     background-color: #ffffff;
9     padding: 10px 20px;
10    text-align: justify;
11    margin: 10px;
12    /* max-width: 50px !important; */
13    max-height: 70px !important;
14    overflow: hidden;
15    &::hidden !important;
16    &::hidden !important;
17    &::hidden !important;
18 }
```





The screenshot shows a browser window titled "CSS BOX MODEL" with the URL "localhost:5000". The page content is a purple rectangular box containing the text "This is a sample heading". The browser's developer tools are open, showing the "style.css" file with the following CSS code:

```

p {
    margin: 5px auto;
    width: 30px;
    height: 100px;
}

p {
    background-color: #ffffff;
    padding: 10px 20px;
    text-align: justify;
    margin: 10px;
    /* max-width: 50px !important; */
    max-height: 70px !important;
    overflow: visible !important;
}

```

The "outline" tab in the developer tools shows a blue border around the purple box, indicating the element being inspected.



The screenshot shows a browser window titled "CSS BOX MODEL" with the URL "localhost:5000". The page content is a purple rectangular box containing the text "This is a sample heading". The browser's developer tools are open, showing the "Elements" tab with the DOM structure and the "style.css" file with the following CSS code:

```

<!DOCTYPE html>
<html lang="en">
  <head></head>
  <body data-prerendered="1" data-prerender-installed="1" data-prerender-ready="1" data-prerender-sent="1" data-prerender-time="1465000000000" data-prerender-version="1" data-prerendering="true">
    <h1>This is a sample heading</h1>
    <p>This is a sample heading</p>
  </body>

```

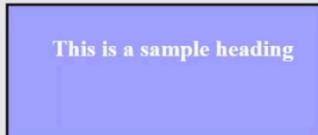
```

p {
    background-color: #ffffff;
    padding: 10px 20px;
    text-align: justify;
    margin: 10px;
    /* max-width: 50px !important; */
    max-height: 70px !important;
    overflow: visible !important;
}

p {
    background-color: #e6f2ff;
    margin: 0px;
}

```

The "Styles" tab in the developer tools shows the styles applied to the "p" element.



The screenshot shows a browser window titled "CSS BOX MODEL" with the URL "localhost:5000". The page content is a purple rectangular box containing the text "This is a sample heading". The browser's developer tools are open, showing the "style.css" file with the following CSS code:

```

p {
    margin: 5px auto;
    width: 30px;
    height: 100px;
}

p {
    background-color: #ffffff;
    padding: 10px 20px;
    text-align: justify;
    margin: 10px;
    /* max-width: 50px !important; */
    max-height: 70px !important;
    overflow: scroll;
}

p {
    background-color: #e6f2ff;
    margin: 0px;
}

```

The "outline" tab in the developer tools shows a blue border around the purple box, indicating the element being inspected.

The screenshot shows a browser window with the URL `localhost:5500`. Inside, there is a purple rectangular box containing the text "This is a sample heading". The browser's developer tools are open, specifically the Elements and Styles tabs. The DOM tree shows a `<h1>` element with the text "This is a sample heading". The Styles tab displays the following CSS rules:

```

<h1>
  background-color: #0000ff;
  color: white;
  padding: 10px;
  text-align: center;
  margin: 10px;
  max-width: 300px !important;
  max-height: 200px !important;
  overflow: scroll;
}

* {
  background-color: #0000ff;
  color: white;
  width: 200px;
  height: 100px;
  margin: 0;
}

```

The screenshot shows a browser window with the URL `localhost:5500`. Inside, there is a purple rectangular box containing the text "This is a sample heading". The browser's developer tools are open, specifically the Elements and Styles tabs. The DOM tree shows a `<h1>` element with the text "This is a sample heading". The Styles tab displays the following CSS rules:

```

<h1>
  background-color: #0000ff;
  color: white;
  padding: 10px;
  text-align: center;
  margin: 10px;
  max-width: 300px !important;
  max-height: 200px !important;
  overflow: scroll;
}

* {
  background-color: #0000ff;
  color: white;
  width: 200px;
  height: 100px;
  margin: 0;
}

```

Maximum and Minimum Width and Height

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- The web page can be viewed through displays of differing screen size, the content on the web page can suffer from those changes in size.
- To avoid this problem, CSS offers two properties that can limit how narrow or how wide an element's box can be sized to:
 - `min-width`—this property ensures a minimum width of an element's box.
 - `max-width`—this property ensures a maximum width of an element's box.
- Example:

```

p {
  min-width: 300px;
  max-width: 600px;
}

```



Maximum and Minimum Width and Height

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- Similar to width, You can also limit the minimum and maximum *height* of an element:
 - min-height—this property ensures a minimum height for an element's box.
 - max-height—this property ensures a maximum height of an element's box.
- Example:

```
p {
  min-height: 150px;
  max-height: 300px;
}
```



Overflow

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The overflow property controls what happens to content that spills, or overflows, outside its box. The most commonly used values are:

- hidden—when set to this value, any content that overflows will be hidden from view.
- scroll—when set to this value, a scrollbar will be added to the element's box so that the rest of the content can be viewed by scrolling.
- visible—when set to this value, the overflow content will be displayed outside of the containing element. Note, this is the default value.



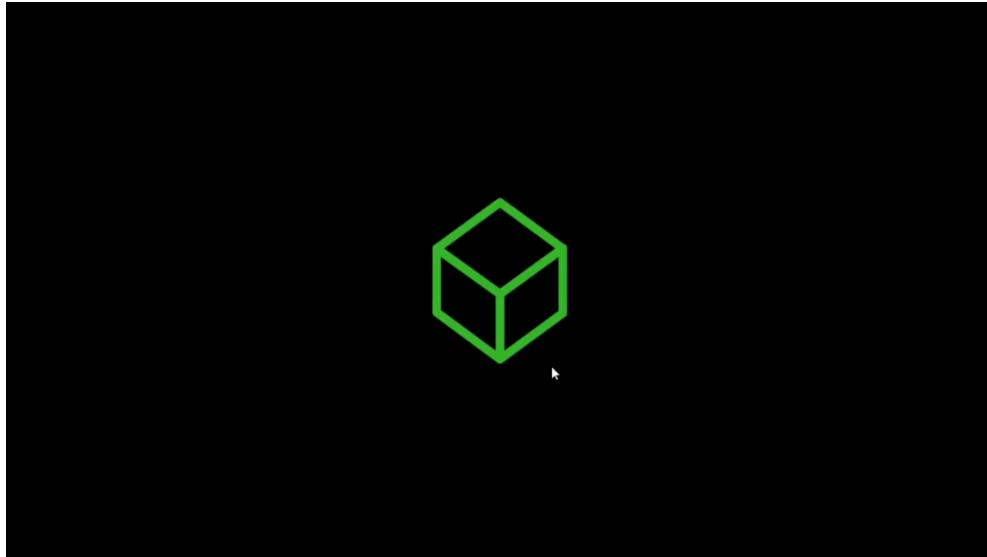
Overflow

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- Example:

```
p {
  overflow: scroll;
}
```





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