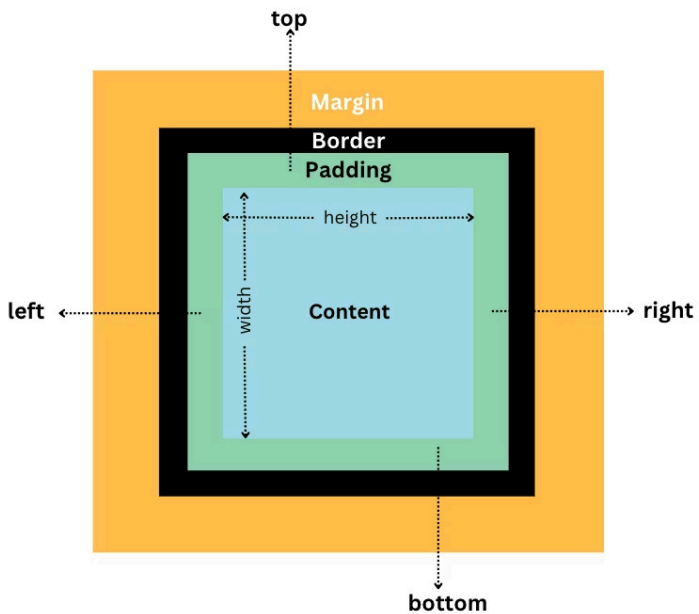
CSS : Box model

Lec-3

CSS Box Model

- All elements on a web page are interpreted by the browser as **living inside of a box**.
- The box model comprises of the **set of properties** that define the parts of an element that take up space on a web page.
- The properties include:

1. **Width and Height of the content area.**
2. **Padding:** Amount of space between **content area** and **border.**
3. **Border:** The **thickness** and **style** of the border surrounding **content area** and **padding**.
4. **Margin:** The amount of **space between border and outside edge** of element.



Height and Width Property

- An Element's content has two dimensions- **height** and **width.**
- By default the dimensions of an HTML box are **set to hold the raw contents of the box**.
- The CSS **height** and **width** property can be used to modify these default dimensions.
- **Eg:**

```
p{
  height: 80px;
  width: 240px;
}
```

Pixels (px) allows us to set the exact size of an element's content such as width and height of an content, such that it will be same on all devices i.e after giving value in pixel, an element that fills a laptop screen will **overflow (go beyond boundaries)** in a mobile screen.

Border Property

- A border is a line that surrounds an element, like a frame around a painting.
- Border can be set with a specific **width, style** and **color.**
- **Eg:**

```
p{
  border: 3px solid black;
}
```

- In order to modify the corners of an element's border, we use **border-radius** property.
- **Eg:**

```
div .container{
        border: 2px solid blue;
        border-radius: 5px;
      }
```

- In order to create a border that is **perfect circle**, first we create a element with same **width** and **height,** and then setting radius or **border-radius** as **50%.**
- **Eg:**

```
div .container{
        height: 60px;
        width: 60px;
        border: 3px solid blue;
        border-radius: 50%;
      }
```

Padding Property

- The **Space between contents of a box and the borders of a box** is known as padding.
- **Eg:**

```
p .content-header{
                border:3px solid coral;
                padding: 10px;
              }
```

- The **Padding** property is often used to expand the background color and make content look less cramped.
- If you want to be more specific about the amount of padding on each side of the box content, you can use the following properties specifically.

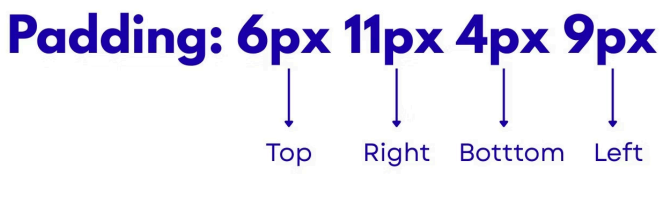
1. **padding-top**
2. **padding-right**
3. **padding-bottom**
4. **padding-left**

- Each property affects the padding on only one side of the box's contents, giving you more flexibility in customization.
- **Eg:**

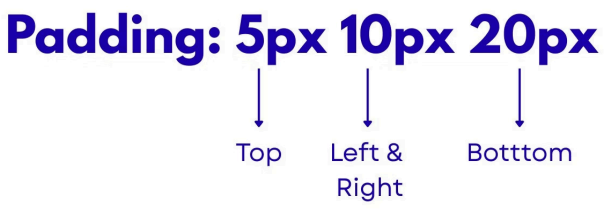
```
p .content-header{
                  border: 3px solid fuchsia;
                  padding-top: 10px;
                }
```

Shorthand Padding Property

1. **4 values:**



2. **3 values:**



3. **2 values:**

Margin Property

- Margin refers to the **space directly outside of the box**. The **margin** property is used to specify the size of this space.
- It has specific properties-

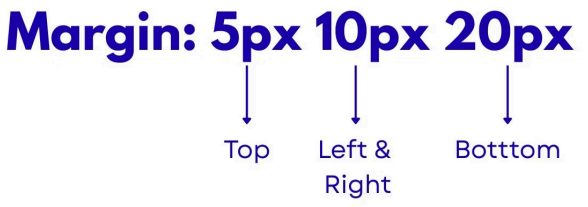
1. **margin-top**
2. **margin-left**
3. **margin-bottom**
4. **margin-right**

- Each property affects the margin on only one side of the box's contents, giving you more flexibility in customization.

Shorthand Margin Property

1. **4 values:**

2. **3 values:**



3. **2 values:**

Margin with Auto

- The **margin** property also lets you center content. However, you must follow a few syntax requirement.
- **Eg:**

```
div .headline{
            width: 400px;
            margin: 0 auto;
          }
```

- **margin: 0 auto;** will center the divs in their containing elements. The **0 sets top and bottom margin to 0px** and **auto will be giving instructions to browser to adjust left and right margins until the element is centered within it's containing element.**
- In order to center an element, **a width must be set for that element.** Otherwise, the width of the div will be automatically set to the full width of it's containing element.

Margin Collapse

- **Margin collapse** is when **two margins collapse into a single margin**.
- Top and bottom margins of elements are sometimes collapsed into a single margin that is **equal to the largest of the two margins**.
- **Eg:**

```
h1 {
  margin-bottom: 50px;
}

h2 {
  margin-top: 20px;
}
```

- In above eg, the **<h1> element has a bottom margin of 50px** and the **<h2> element has a top margin of 20px**. So, the **vertical margin between the <h1> and the <h2> would be a total of 70px (50px + 20px)**. But due to **margin collapse**, the **actual margin ends up being 50px i.e largest margin among two.**

Margin collapse only happens with top and bottom margins! Not left and right margins!