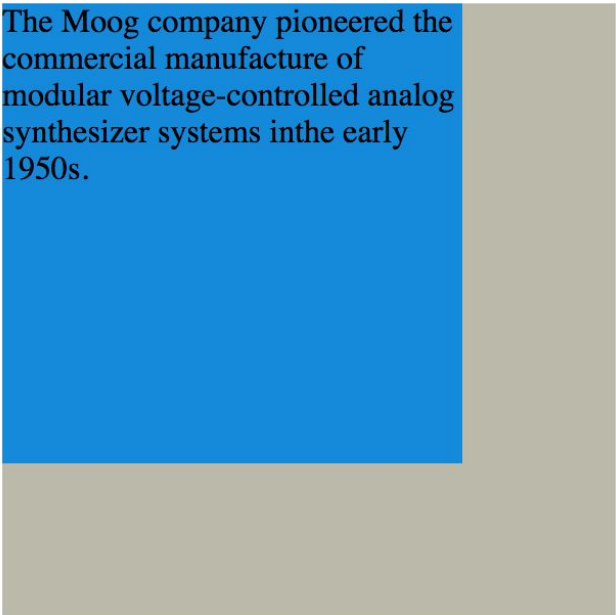# BIT

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Box Model

Box Dimensions

- Use **height** and **width** properties to define box dimensions
- Property value can be defined in:
  - px
  - percentage
  - ems

```css
div.box {
    height: 300px;
    width: 300px;
    background-color:  #bbbbaa;
}
p {

    height: 75%;
    width: 75%;
    background-color:  #0088dd;
}
```

The Moog company pioneered the commercial manufacture of modular voltage-controlled analog synthesizer systems inthe early 1950s.

```html
<div class="box">
    <p>
        The Moog company pioneered the commercial manufacture of modular
        voltage-controlled analog synthesizer systems inthe early 1950s.
    </p>
</div>
```

Limit Width

- Need for restricting min or max width
- Use **min-width** and **max-width**

```css
div {
    max-width: 900px;
    min-width: 600px;
    height: 100px;
    background:  #f00;
    color:  #fff;
}
```

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Limit Height

- Similar to limiting width
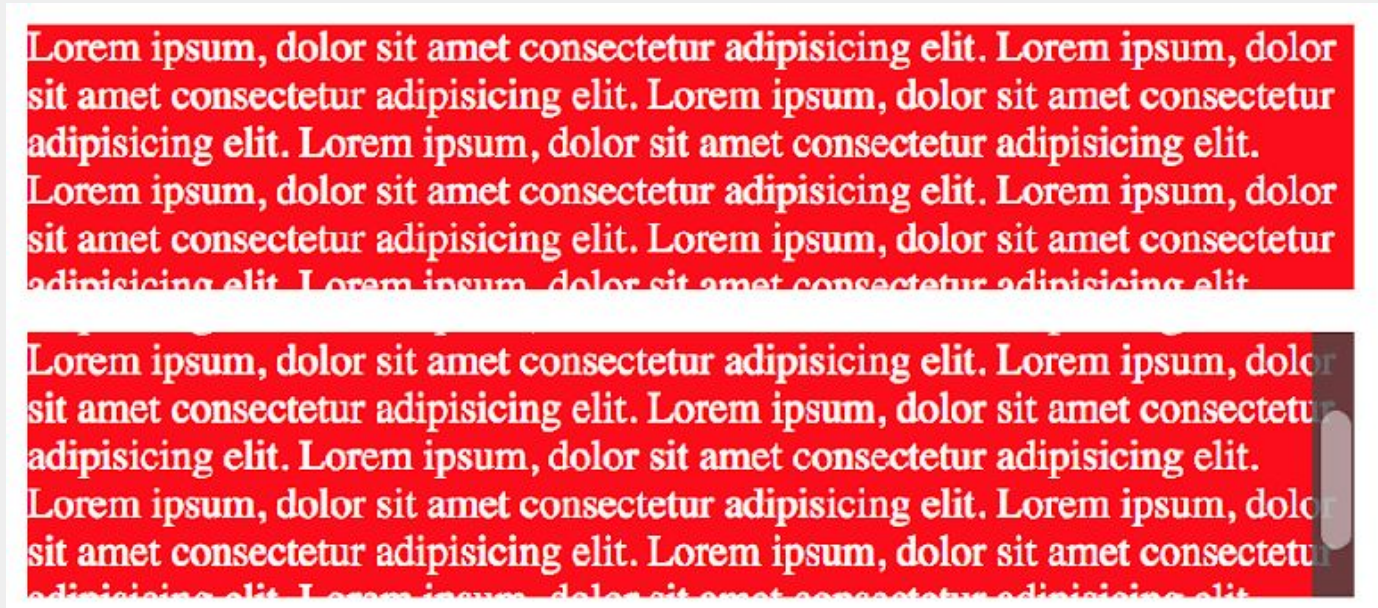- Use **min-height** and **max-height**


```css
p {
    width: 500px;
    min-height: 50px;
    max-height: 100px;
    color:    gray;
}

.first {
    background:  #f00;
}

.second {
    background:  #00f;
}
```

Overflowing Content

- What to do when box content is larger then the box itself
- Use **overflow** property to choose one of the two options:
  - **hidden**
  - **scroll**

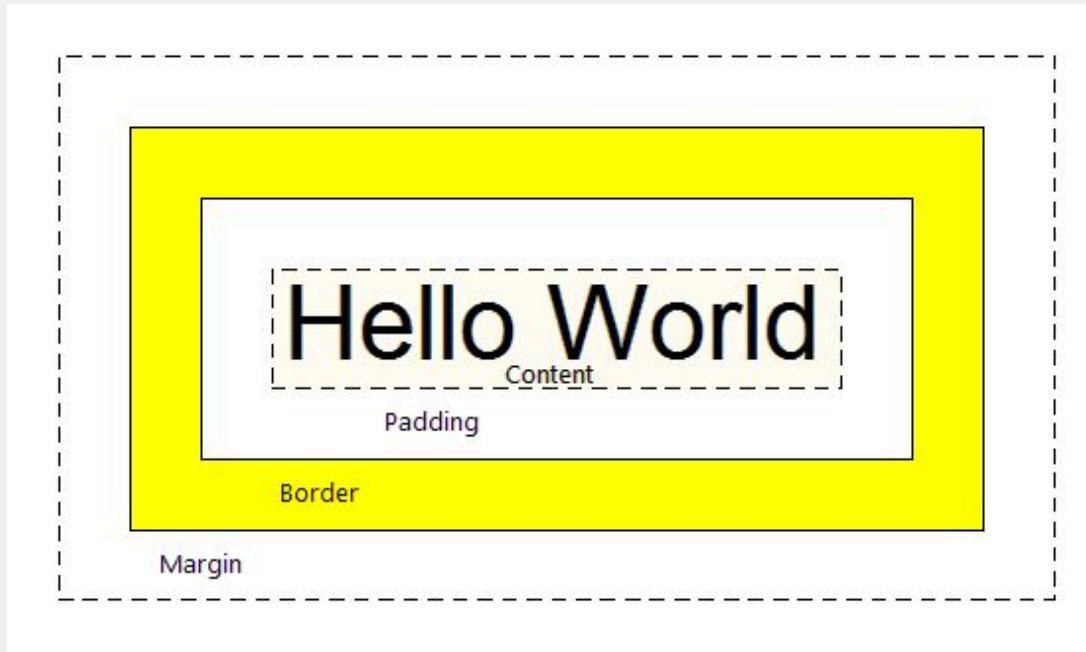

```css
p {
    width: 500px;
    height: 100px;
    color: ■gray;
    background: ■#f00;
}

.hide {
    overflow: hidden;
}

.scrollable {
    overflow: scroll;
}
```

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Exercise

Border, Margin and Padding

- Every box has three properties that control its appearance:
  - **Border** – edge of the box
  - **Margin** – outside of the border
  - **Padding** – between border and content

Border Width

- Use **border-width** to define width of the border
- Each border width can be defined separately
  - border-top-width
  - border-right-width
  - border-bottom-width
  - border-left-width
- Property value can be:
  - thin
  - medium
  - thick
  - px
- Define all borders with one property?

```css
p.one {
    border-width: 2px;
}
p.two {
    border-width: thick;
}
p.three {
    border-width: 1px 4px 12px 4px;
}
```
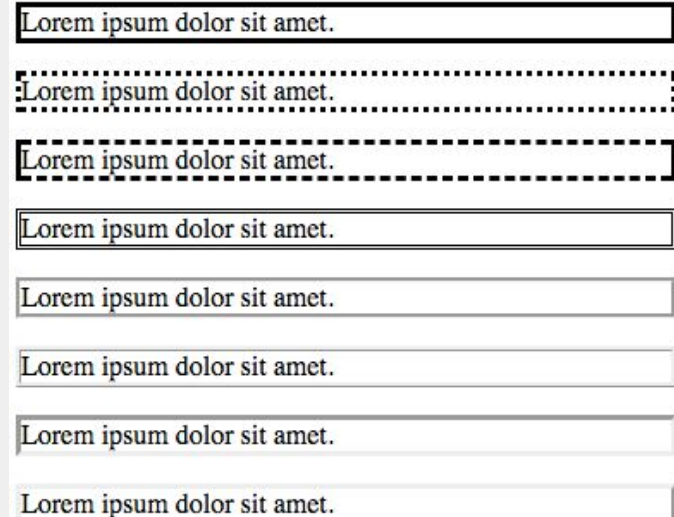
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Border Style

- To control border line style, use **border-style**

- Values that this property supports are given in the example

- Use **hidden** on **none** values to hide the border

- Individually change the styles
  - border-top-style
  - border-left-style
  - border-right-style
  - border-bottom-style

```
p.one    {border-style: solid;}
p.two    {border-style: dotted;}
p.three  {border-style: dashed;}
p.four   {border-style: double;}
p.five   {border-style: groove;}
p.six    {border-style: ridge;}
p.seven  {border-style: inset;}
p.eight  {border-style: outset;}
```

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Border Color and Shorthand

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- Use **border-color** to define color
- RGB values, HEX codes and CSS color names
- Borders can be individually colored

- Border width, style and color can be combined in one property (**border**)
  - The first value is width
  - The second value is style
  - The third value is color

- **border: 3px dotted #0088dd;**

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```
p.one {
    border-color: #0088dd;
    border-style: solid;
}
p.two {
    border-color: #bbbbaa  #111111  #ee3e80  #0088dd;
    border-style: solid;
}
p.three {
    border: #0088dd dotted 2px;
}
```

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Exercise

Padding

- Space between element's border and content
- Name of the property is **padding**
- Value can be defined in **px**, **%** or **ems**

- Padding can be set for each side separately
  - padding-top
  - padding-right
  - padding-bottom
  - padding-left

- Define padding using one line (clockwise)
  - padding: 10px 5px 3px 1px;

- Padding will increase width/height of the box

```css
p {
    width: 275px;
    border: 2px solid #0088dd;
}
p.using-padding {
    padding: 10px;
}
```

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Exercise

Margin

- Use **margin** property to specify the gap between elements
- Value can be defined in **px**, **%** or **ems**

- Margin can be set for each side separately
  - margin-top
  - margin-right
  - margin-bottom
  - margin-left

- Define margin using one line (clockwise)
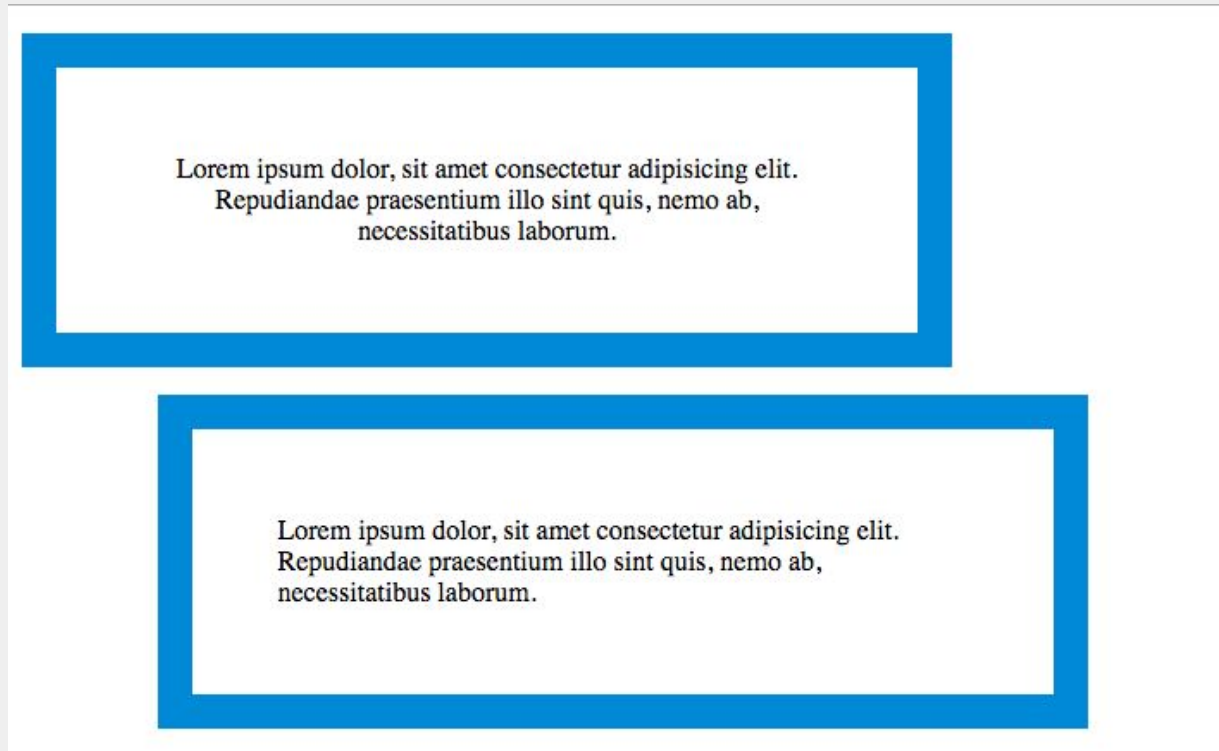 - margin: 10px 5px 10px 4px;

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Lorem ipsum dolor, sit amet consectetur adipisicing elit. Repudiandae praesentium illo sint quis, nemo ab, necessitatibus laborum.

```
p {
    width: 200px;
    border: 2px solid #0088dd;
    padding: 10px;
}

p.using-padding {
    margin: 20px;
}
```

Box Centering

- Use margin to center box **on page** or **inside a parent element**
- The box needs to have width defined
- Set *margin-left* and *margin-right* on **auto**


```css
body {
    text-align: center;
}
p {
    width: 300px;
    padding: 50px;
    border: 20px solid #0088dd;
}
p.example {
    margin: 10px auto 10px auto;
    text-align: left;
}
```
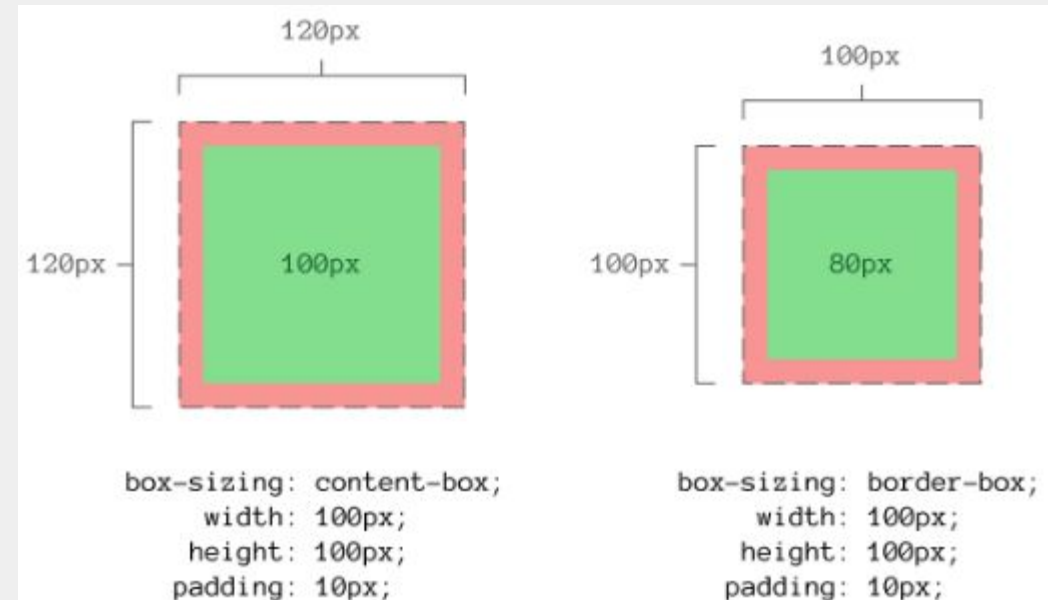
Box Sizing

When width is defined, it becomes width of the box content

When padding or margin is set, it increases the overall width of the box

box-sizing allows us to define what is covered by width

Values that box-sizing expects are:

● content-box
● border-box


```
box-sizing: content-box;
       width: 100px;
      height: 100px;
     padding: 10px;
```

```
box-sizing: border-box;
       width: 100px;
      height: 100px;
     padding: 10px;
```

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Exercise

Inline/Block Change

- Switch from inline to block element and vice versa
- The **display** property is used for this purpose
- Allowed values:
  - inline
  - block
  - inline-block
  - none

```
li {
    display: inline;
    margin-right: 10px;
}

li.coming-soon {
    display: none;
}
```

Home Products About Contact

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Exercise

Hiding Boxes

- The **visibility** property allows showing/hiding boxes
- Property can have one of the two values:
  - **hidden**
  - **visible**

- display VS visibility
  If the visibility of an element is set to hidden, a blank space will appear in its place. On the other hand, using the display property leaves no trace of the element on the page.

```css
li {
    display: inline;
    margin-right: 10px;
}
li.coming-soon {
    display: none;
}


li.coming-soon-hidden {
    visibility: hidden;
}
```

Home	Products	Services	About	Contact
Home	Products	About	Contact
Home	Products		About	Contact

Box Shadows (CSS3)

- Use **box-shadow** property to add a shadow around the box
- Similarly to the text shadow, this prop requires multiple values
  - Horizontal offset
  - Vertical offset
  - Blur distance
  - Spread radius

- Save time and use online generator
  - https://www.cssmatic.com/box-shadow

```
p.four {
    -moz-box-shadow: 0 0 10px ▢#777777;
    -webkit-box-shadow: 0 0 10px ▢#777777;
    box-shadow: 0 0 10px ▢#777777;
}

p.five {
    -moz-box-shadow: inset 0 0 10px ▢#777777;
    -webkit-box-shadow: inset 0 0 10px ▢#777777;
    box-shadow: inset 0 0 10px ▢#777777;
}
```

Rounded Corners (CSS3)

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- Use **border-radius** property to round corners
- Round corner by setting the diameter for value
  - *border-radius: 10px;*

- Each corner can be rounded separately

  border-radius: 10px 15px 5px 8px;

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```
p {
    border: 5px solid ■#ff0000;
    padding: 20;
    width: 275px;
    text-align: center;
    -webkit-border-radius: 10px;
    -moz-border-radius: 10px;
    border-radius: 10px;
}
```

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Exercise

Summary

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- CSS treats each HTML element as if it has its own box.

- You can use CSS to control the dimensions of a box.

- You can also control the borders, margin and padding for each box with CSS.

- It is possible to hide elements using the display and visibility properties.

- Block-level boxes can be made into inline boxes, and inline boxes into block-level boxes.

- CSS3 has introduced the ability to set rounded borders.

References

- Box Model - https://goo.gl/vjx4B8

- Box Shadow - https://goo.gl/VMtypn

- Box Sizing - https://goo.gl/fWkjsV

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