CSS Box Model and Typography - Lab

Topics Covered

Everything in CSS has a box around it, and understanding these boxes is key to being able to create more complex layouts with CSS, or to align items with other items. In this lesson, we will take a look at the CSS *Box Model*. You'll get an understanding of how it works and the terminology that relates to it.

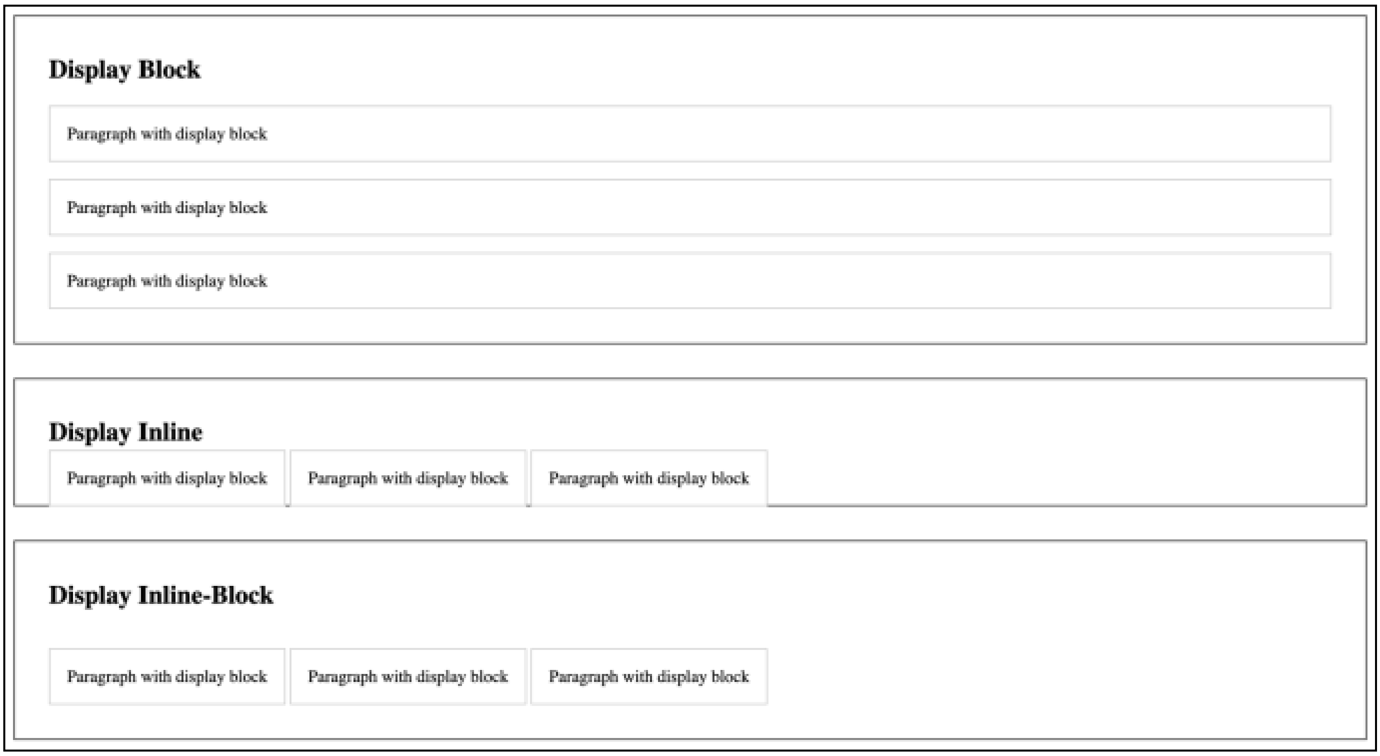
Resources

- **The Box Model**
  - https://developer.mozilla.org/en-US/docs/Learn/CSS/Building_blocks/The_box_model
- **Typography**
  - https://developer.mozilla.org/en-US/docs/Learn/CSS/Styling_text/Fundamentals
- **Position**
  - https://developer.mozilla.org/en-US/docs/Learn/CSS/CSS_layout/Positioning

Tasks

1. Box Model - display

This task aims to provide students with a practical understanding of how the **display** property affects the rendering of HTML elements, which is crucial for creating well-designed and functional web pages.



Display Block

Paragraph with display block

Paragraph with display block

Paragraph with display block

Display Inline

Paragraph with display block Paragraph with display block Paragraph with display block

Display Inline-Block

Paragraph with display block Paragraph with display block Paragraph with display block

For full screenshot check the screenshot.png file in the folder for the task

Objective

Create a webpage that demonstrates the use and effects of the CSS **display** property on HTML elements, emphasizing how it controls whether and how elements are displayed.

Requirements

1. **File Setup**:
   - Create an **HTML** document named **display-examples.html**
   - Create a **CSS** file named **display-examples.css**

2. **Element Creation**:
   - Create 3 sections by using the section tag and place one **h2** heading inside along with 3 paragraphs.
   - Add class to each section – **block**, **inline**, **inline-block**

3. **CSS Styling**:
   - Sections
     1. Border of 2px solid black
     2. Padding 1em from top and bottom and 2em from left and right
     3. Bottom margin 2em

   - All paragraphs in sections
     1. Border of 1px solid #ccc
     2. Padding of 1em

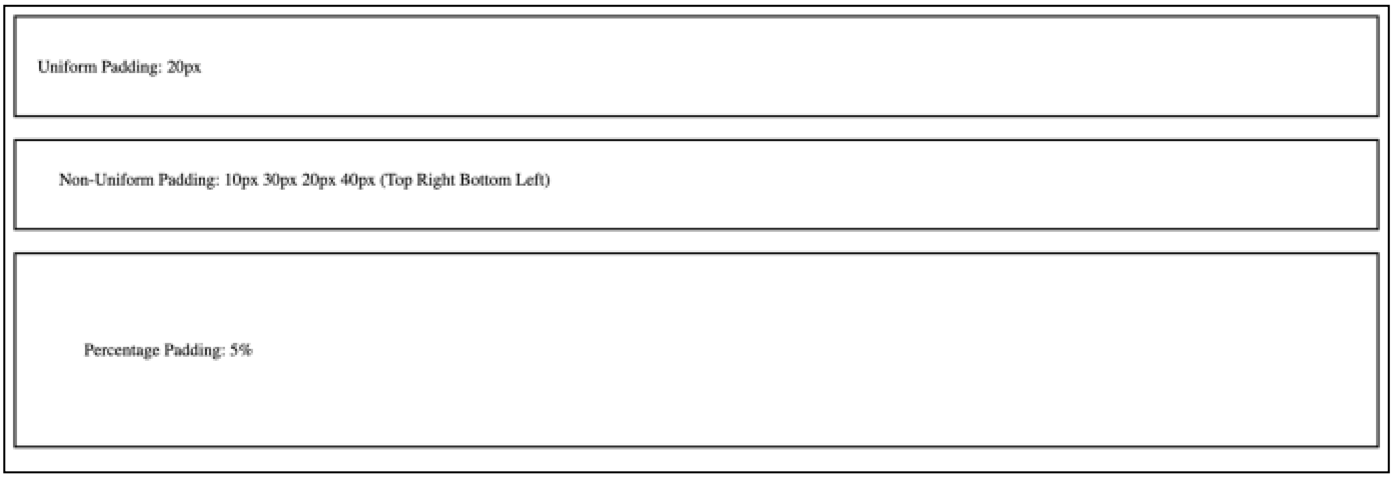
   - All paragraphs in a section with class "**block**"
     1. Display of block

   - All paragraphs in a section with class "**inline**"
     1. Display of inline

   - All paragraphs in a section with class "**inline-block**"
     1. Display of inline-block

2. Box Model – padding

This task aims to provide students with a hands-on understanding of how padding affects element sizing and spacing, which is crucial for mastering CSS layout techniques.



Uniform Padding: 20px

Non-Uniform Padding: 10px 30px 20px 40px (Top Right Bottom Left)

Percentage Padding: 5%

For full screenshot check the screenshot.png file in the folder for the task

Requirements

1. **File Setup**:
   - Create an **HTML** document named **padding-examples.html**
   - Create a **CSS** file named **padding-examples.css**

2. **Element Creation**:
   - Create 3 **<div>** elements each designed to showcase different aspects and effects of padding
   - Add a paragraph inside of each div with the appropriate text to show what case it represents.

3. **Styling**
   - Add classes to each div element for each type of padding

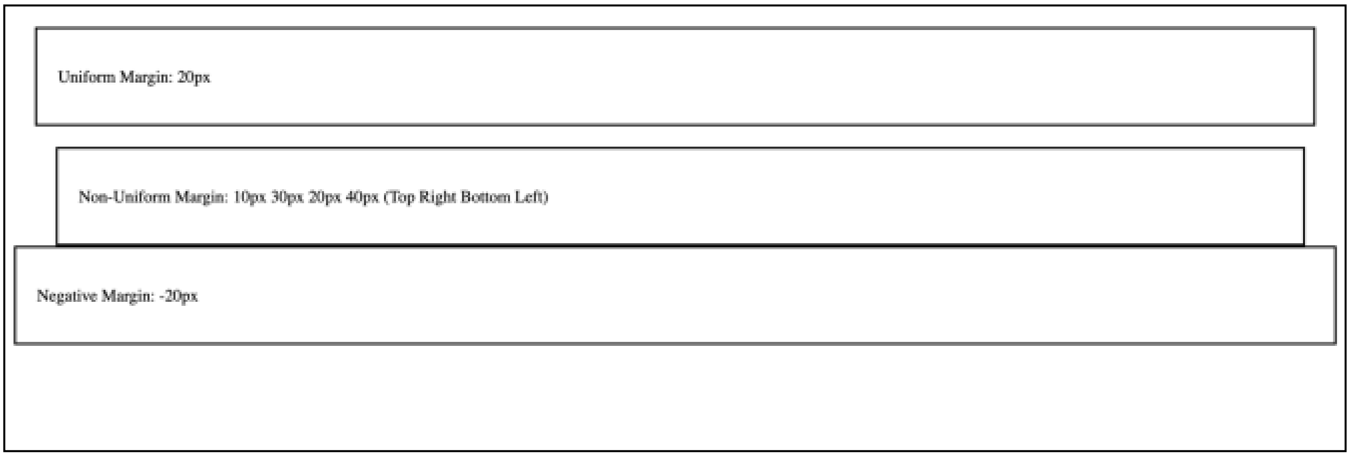
     1. First element – Uniform padding
        - padding: 20px;

     2. Second element – Non-Uniform Padding
        - padding: 10px 30px 20px 40px;
          - order is – top, right, bottom, left

     3. Third element – Percentage Padding
        - padding: 5%;
          - in this scenario the % value is derived from the width of the element

3. Box Model – margin

This task aims to provide students with a practical understanding of how the **margin** property affects the layout and spacing of elements, which is crucial for creating well-designed web pages.



Uniform Margin: 20px

Non-Uniform Margin: 10px 30px 20px 40px (Top Right Bottom Left)

Negative Margin: -20px

For full screenshot check the screenshot.png file in the folder for the task

Requirements

1. **File Setup**:
   - Create an **HTML** document named **margin-examples.html**
   - Create a **CSS** file named **margin-examples.css**

2. **Element Creation**:
   - Place 3 paragraphs each inside its own **<div>** element

- Add a paragraph inside of each div with the appropriate text to show what case it represents.

3. **Styling**
   - Add classes to each div element for each type of margin

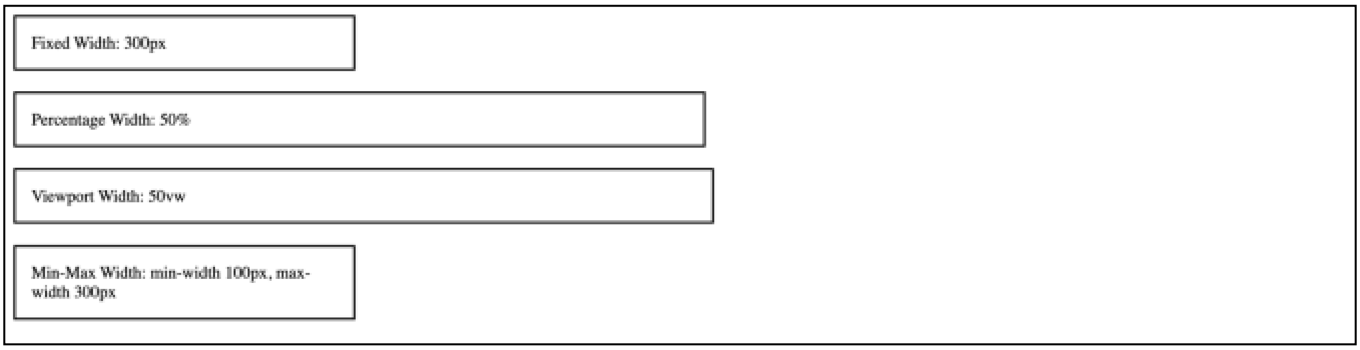
     1. First element – Uniform margin
        - margin: 40px;

     2. Second element – Non-Uniform Padding
        - margin: 10px 30px 20px 40px;
          - order is – top, right, bottom, left

     3. Third element – Negative margin
        - margin: -20px;
          - In this case the only effect is that the element will be moved up 20px as it is impossible to move it negatively 20px in all directions

4. Box Model – width

This task aims to provide students with a practical understanding of how the **width** property affects the horizontal sizing of elements, which is crucial for creating well-designed and responsive web pages.



Fixed Width: 300px

Percentage Width: 50%

Viewport Width: 50vw

Min-Max Width: min-width 100px, max-width 300px

For full screenshot check the screenshot.png file in the folder for the task

Requirements

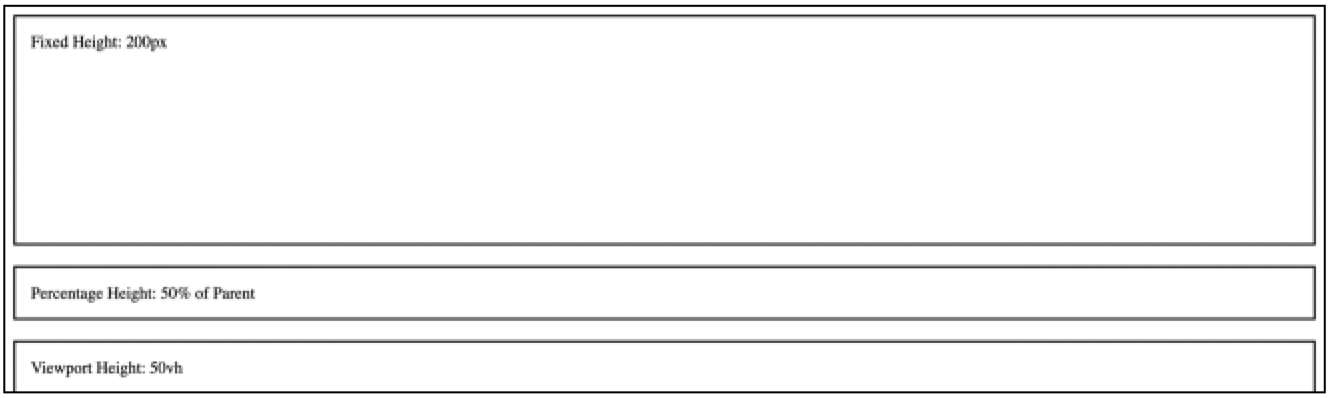
1. **File Setup**:
   - Create an **HTML** document named **width-examples.html**
   - Create a **CSS** file named **width-examples.css**

2. **Element Creation**:
   - Create 4 **<div>** elements
   - Add a paragraph inside of each div with the appropriate text to show what case it represents.

3. **CSS Styling**:
   - Add classes for each div element for the following cases:
     1. Fixed Width – 300px
     2. Percentage Width – 50%
     3. Viewport Width – 50vw
     4. Min-Max Width – min-width 100px, max-width 300px

5. Box Model – height

This task aims to provide students with a practical understanding of how the **height** property affects the vertical sizing of elements, which is crucial for creating well-designed web pages.



Fixed Height: 200px

Percentage Height: 50% of Parent

Viewport Height: 50vh

For full screenshot check the screenshot.png file in the folder for the task

Requirements

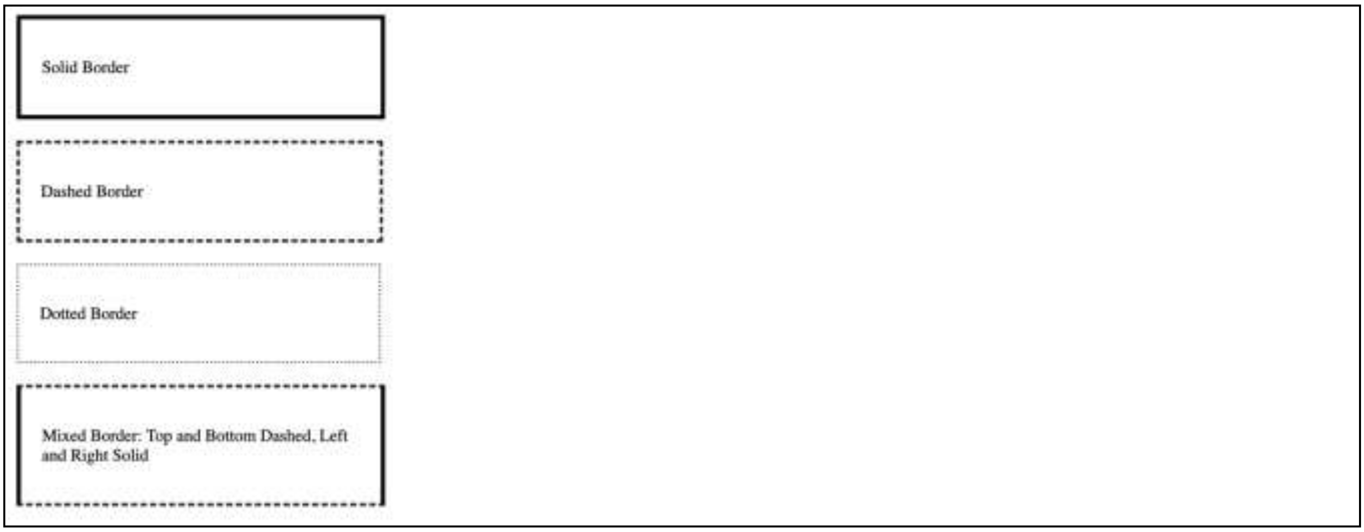
1. **File Setup**:
    - Create an **HTML** document named **height-examples.html**
    - Create a **CSS** file named **height-examples.css**

2. **Element Creation**:
    - Create 4 **<div>** elements
    - Add a paragraph inside of each div with the appropriate text to show what case it represents.

3. **CSS Styling**:
    - Add classes for each div element for the following cases:
        1. Fixed Height - 200px
        2. Percentage Height - 50%
        3. Viewport Height – 50vh
        4. Min-Max Height – min-height 100px, max-height 300px

6. Box Model – border

This task aims to provide students with a practical understanding of how the **border** property can be used to enhance the visual aesthetics of web elements, which is crucial for effective web design.



Solid Border

Dashed Border

Dotted Border

Mixed Border: Top and Bottom Dashed, Left and Right Solid

For full screenshot check the screenshot.png file in the folder for the task

Requirements

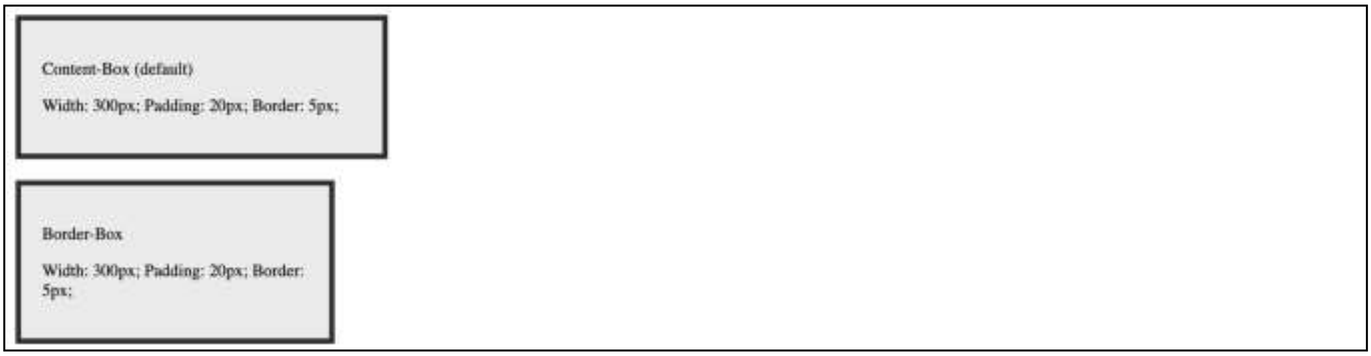
1. **File Setup**:
    - Create an **HTML** document named **border-examples.html**
    - Create a **CSS** file named **border-examples.css**

2. **Element Creation**:
    - Create 4 **<div>** elements
    - Add a paragraph inside of each div with the appropriate text to show what case it represents.

3. **CSS Styling**:
    - Add classes for each div element for the following cases:
        1. Solid Border – 4px solid black
        2. Dashed Border – 3px dashed #333
        3. Dotted Border – 2px dotted #666
        4. Mixed Border
            1. Top – 3px dashed #333
            2. Bottom – 3px dashed #333
            3. Left – 4px solid #000;
            4. Right – 4px solid #000;

7. Box Model – box-sizing

This task aims to provide students with a practical understanding of how the **box-sizing** property affects the sizing of elements in CSS, thereby enhancing their ability to manage layouts more effectively in web design.



Content-Box (default)

Width: 300px; Padding: 20px; Border: 5px;

Border-Box

Width: 300px; Padding: 20px; Border: 5px;

For full screenshot check the screenshot.png file in the folder for the task

Requirements

1. **File Setup**:
   - Create an **HTML** document named **box-sizing.html**
   - Create a **CSS** file named **box-sizing.css**

2. **Element Creation**:
   - Create 2 **<div>** elements

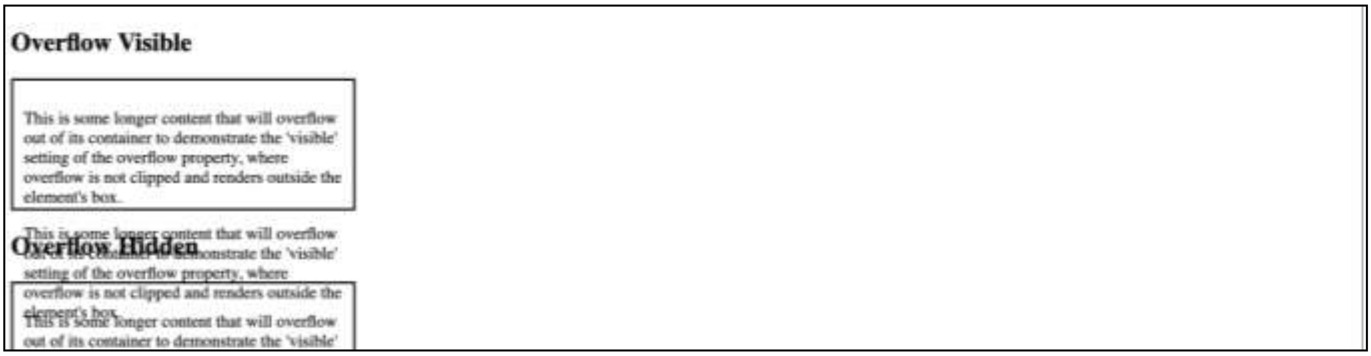
3. **CSS Styling**:
   - Apply the following classes to all div elements
     1. Width – 300px
     2. Padding – 20px
     3. Border – 5px solid #333
     4. Margin Bottom – 20px
     5. Background - #eee

   - Add classes for the 2 values of box-sizing and apply the following styles:
     1. Content-box
        1. Box-sizing – content-box

     2. Border-box
        1. Box-sizing – border-box

8. Box Model - overflow

This task aims to provide students with a practical understanding of how the **overflow** property affects the display of overflowing content within elements, which is crucial for creating well-designed and functional web pages.



Overflow Visible

This is some longer content that will overflow out of its container to demonstrate the 'visible' setting of the overflow property, where overflow is not clipped and renders outside the element's box.

This is some longer content that will overflow out of its container to demonstrate the 'visible' setting of the overflow property, where overflow is not clipped and renders outside the element's box.

Overflow Hidden

This is some longer content that will overflow out of its container to demonstrate the 'visible'

For full screenshot check the screenshot.png file in the folder for the task

Requirements

1. **File setup**:
   - Create an **HTML** document named **overflow-examples.html**
   - Create a **CSS** file named **overflow-examples.css**

2. **Element Creation**:
   - Create a set of **<div> and <h2>** elements for the following cases:

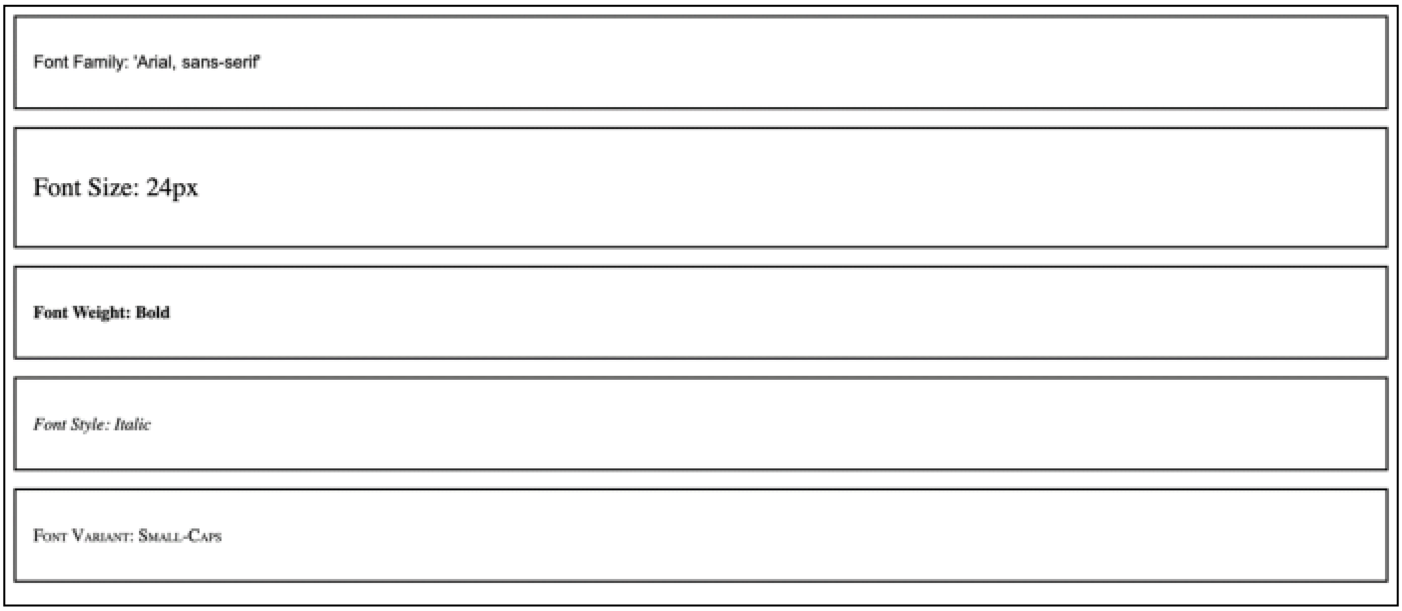
        - Overflow Visible
        - Overflow Hidden
        - Overflow Scroll

    - Add 2 **<p>** elements inside each of the divs
        - Use the copy provided in the text.txt file

3. **CSS Styling**:
    - Add classes to the div elements and apply the following styles to the appropriate cases:
        - Overflow - Visible
        - Overflow - Hidden
        - Overflow - Scroll

9. Font Properties

This task aims to provide students with a practical understanding of how various CSS **font** properties can be used to style text, which is crucial for creating visually appealing and readable web content.



Font Family: 'Arial, sans-serif'

Font Size: 24px

Font Weight: Bold

Font Style: Italic

Font Variant: Small-Caps

For full screenshot check the screenshot.png file in the folder for the task

Requirements

1. **File Setup**:
    - Create an **HTML** document named **font-examples.html**
    - Create a **CSS** file named **font-example.css**

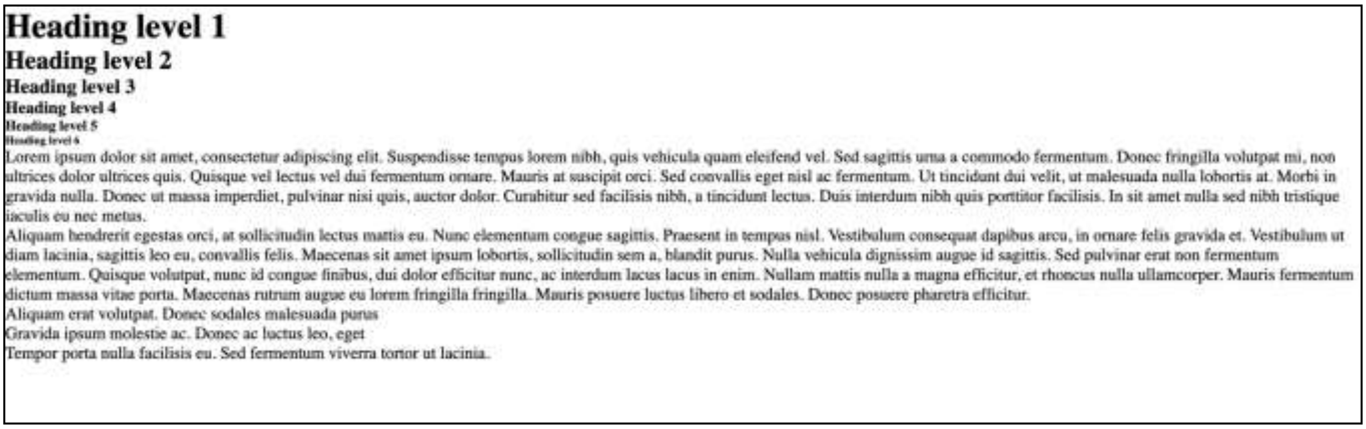
2. **Element Creation**:
    - Create 5 **<div>** elements with **<p>** elements inside

3. **CSS Styling**:
    - Apply different class to each div element to illustrate how each font property affects the text appearance:
        - font-family - Arial, sans-serif).
        - font-size **-** 24px

- font-weight - bold
- font-style - italic
- font-variant - small-caps

10. Reset CSS

This task aims to provide students with an exercise and a practical example of how to reset most of the whitespace styling from browsers and set the stage for their custom styles.



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Heading level 4

Heading level 5

Heading level 6

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For full screenshot check the screenshot.png file in the folder for the task

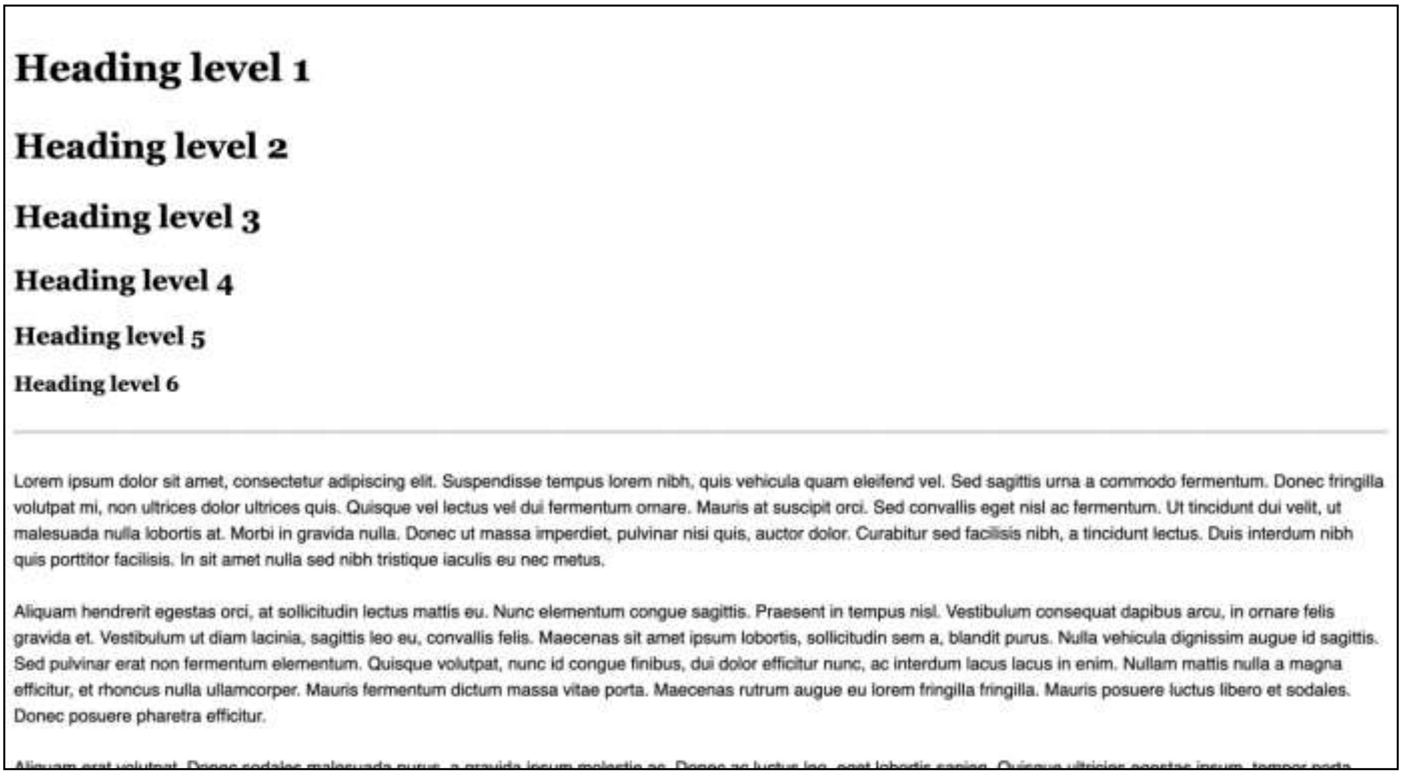
Requirements

1. **File setup**:
   - Create an **HTML** document named **reset.html**
   - Create a **CSS** file named **reset.css**

2. **CSS Styling**:
   - Remove all padding and margin from all elements
   - Set box-sizing to inherit on all elements
   - Set box-sizing to border-box on the html element

11. Typography CSS

This task aims to provide students with an exercise and a practical example of how to set the styling for text in a web page.



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For full screenshot check the screenshot.png file in the folder for the task

Requirements

1. **File setup**:
    - Create an **HTML** document named **typography.html**
    - Create a **CSS** file named **typography.css**
    - Copy the reset.css file from **Task 10 Reset.css**
    - Include the reset.css in the html file

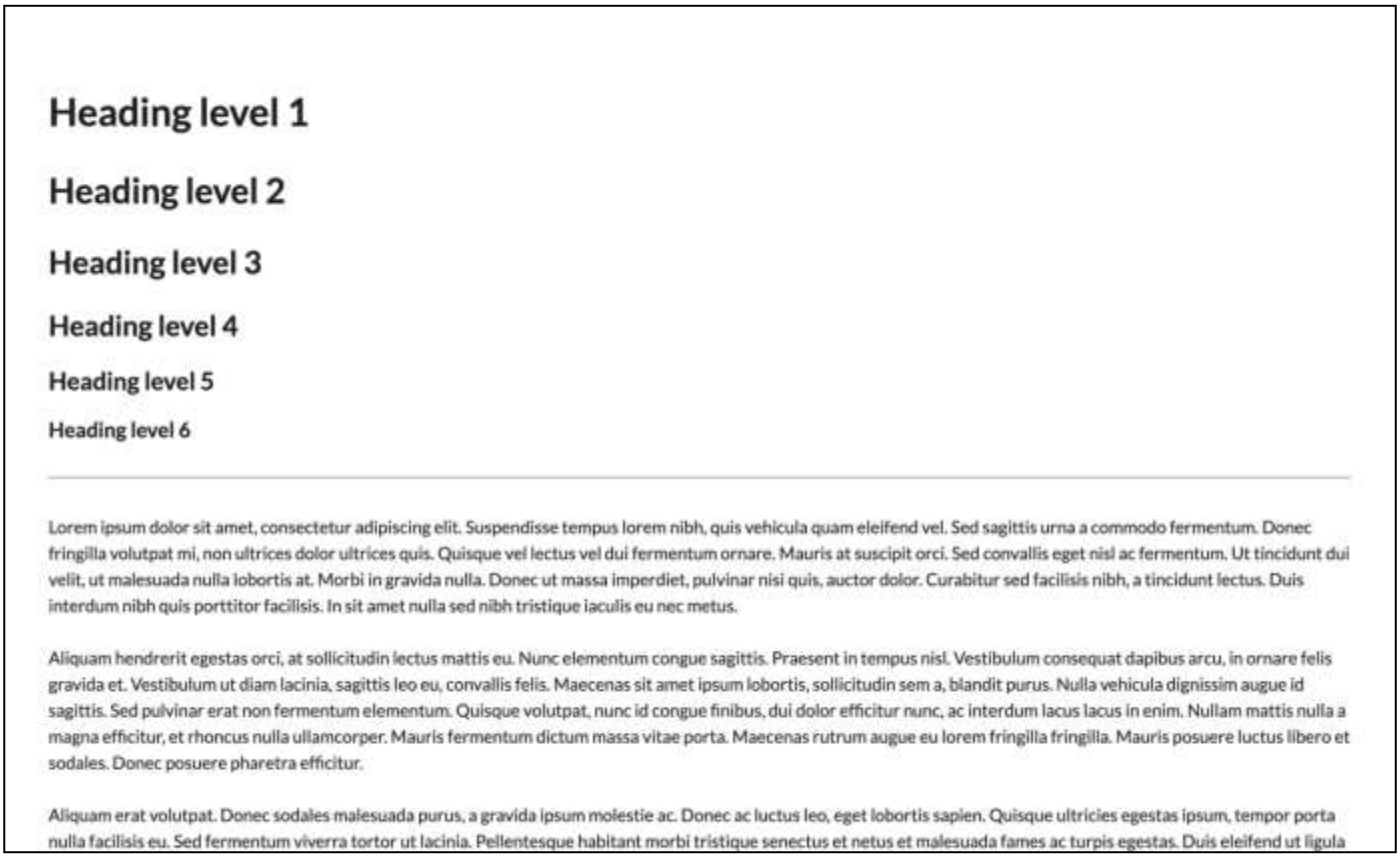
2. **Element Creation**:
    - Use the copy in the text.txt file for the elements
    - Add heading elements, from h1 to h6
    - Add **hr** element
    - Add 3 **paragraphs**
    - Add **hr** element
    - Add **h2** element
    - Add **p** element
    - Create a nested **unordered** list like the one in the screenshot
    - Add **p** element
    - Create a simple **ordered** list
    - Add **p** element
    - Create a **table** like the one in the screenshot
    - Add **p** element
    - Create a **blockquote** element like the one in the screenshot
    - Add 3 **p** elements

3. **Styling**
    - HTML element should have the following styles

    - Font-size – 16px
    - Line-height – 1.5
    - Font-family – Helvetica, sans-serif
- Paragraphs, Ordered and Un-ordered lists should have padding-bottom – 1.5rem
- Ordered and Un-ordered lists should have padding-left – 1.5rem
- Headings should have the following styles
    - Line-height – 1.2
    - Margin-top – 1em
    - Margin-bottom – 0.5em
    - Font-family – Georgia
- Add styles for tables, blockquote and hr according to the screenshot

12. Font specimen - Lato

This task aims to provide students with an exercise and a practical example of how to change the font family



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For full screenshot check the screenshot.png file in the folder for the task

Requirements

1. **File setup**:
    - Create an **HTML** document named **font-specimen-lato.html**
    - Create a **CSS** file named **font-specimen-lato.css**

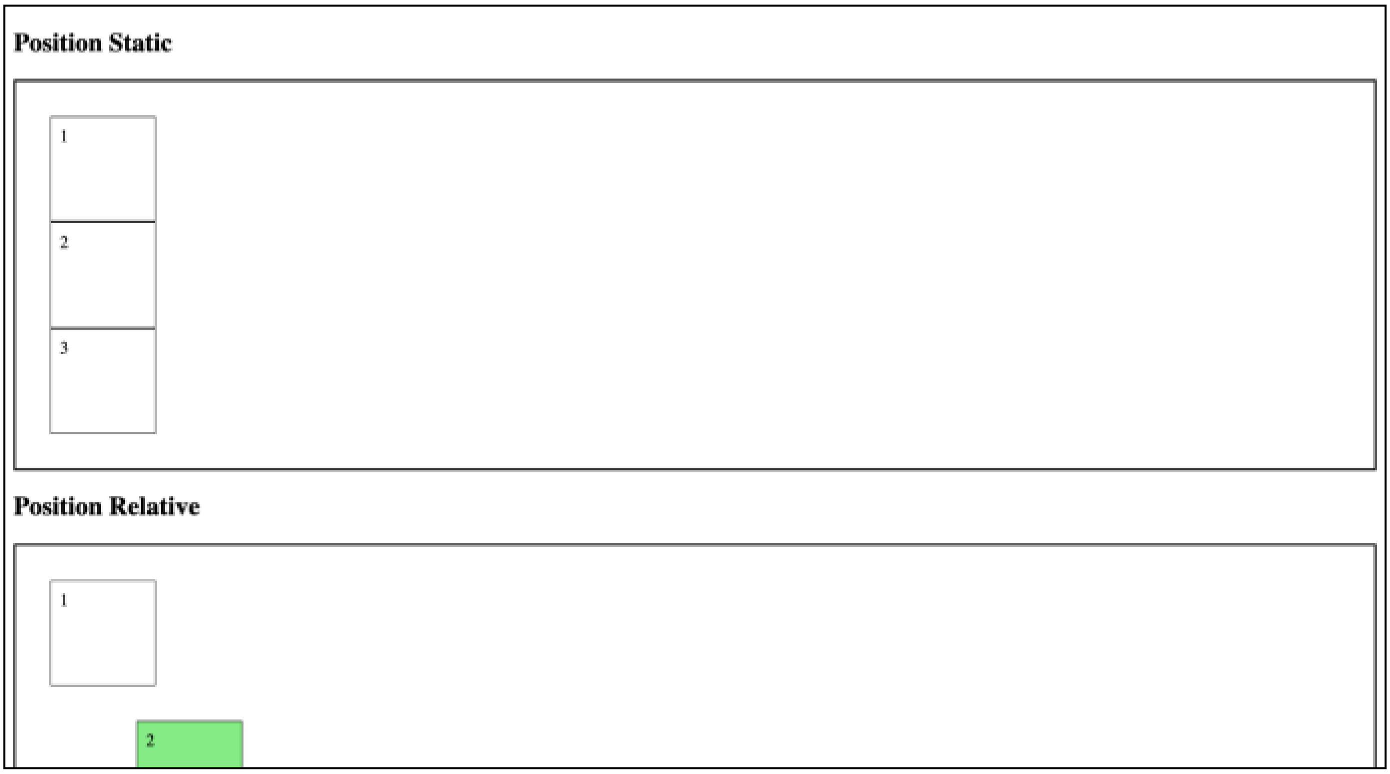
    - Copy the html from task 12 Typography CSS
    - Copy the **typography.css** file
    - Include the **typography.css** file in the html file

2. **Styling**

- Set the font-family of the html element to "Lato, sans-serif"
- Set the font-family of the body and all heading elements to "inherit"

13. Position

This task aims to provide students with an exercise for using the position property



Position Static

Position Relative

For full screenshot check the screenshot.png file in the folder for the task

Requirements

1. **File setup**:
    - Create an **HTML** document named **position.html**
    - Create a **CSS** file named **position.css**

3. **Element Creation**:
    - Create 3 **<section>** elements with **<h2>** elements before each for the following cases
        1. Position Static
        2. Position Relative
        3. Position Relative + Absolute

    - Add 3 **<div>** elements with class "item" inside of each section

4. **CSS Styling**:
    - All section elements should have the following styles:
        1. Border – 2px solid #000
        2. Padding – 2em
        3. Position - Relative

    - All div elements with class “item” should have the following styles:

   1. Border – 1px solid #333
   2. Padding – 0.5em
   3. Width – 5em
   4. Height – 5em

- For the second .item element of the Position relative section – add the following styles
   1. Position – relative
   2. Left – 5em
   3. Top – 2em
   4. Background – lightgreen

- For the second .item element of the Position relative + Absolute section – add the following styles
   1. Position – absolute
   2. Left – 4em
   3. Top – 4em
   4. Background – lightgreen