

Mernstack- Bootstrap Basic & Advanced

- Responsive Web Design with Media Queries

Theory Assignment

Question 1: What are media queries in CSS, and why are they important for responsive design?

Media queries are a feature in CSS that allow you to apply specific styles to a webpage based on the device's characteristics, such as its width, height, orientation, resolution, or aspect ratio. They enable developers to create designs that adapt to various screen sizes and device types, making websites more user-friendly and accessible.

Importance:

1. **Adaptability:** Media queries enable a website to adapt its layout and styling to various screen sizes and devices.
2. **Improved User Experience:** Ensures content is accessible and easy to navigate on any device.
3. **Mobile-First Design:** Allows developers to design for mobile devices first and progressively enhance for larger screens.

```
@media (min-width: 500px){  
  .container {  
    display: flex;  
  }  
}
```

Question 2: Write a basic media query that adjusts the font size of a webpage for screens smaller than 600px.

Basic Media Query for Adjusting Font Size:

```
body {  
  font-size: 16px;  
}  
@media (max-width: 600px) {  
  body {  
    font-size: 14px;  
  }  
}
```

- @media (max-width: 600px) applies the styles inside the block only if the screen width is 600 pixels or less.
- The font-size is set to 14px for smaller screens, while larger screens retain the default font size of 16px.

Lab Assignment

• Task: Build a responsive webpage that includes:

- A navigation bar.
- A content section with two columns.
- A footer.

Additional Requirements:

- Use media queries to make the webpage responsive for mobile devices.
- On smaller screens (below 768px), stack the columns vertically.
- Adjust the font sizes and padding to improve readability on mobile.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Responsive Webpage</title>
</head>
<body>
  <nav>
    <a href="#">Home</a>
    <a href="#">About</a>
    <a href="#">Services</a>
    <a href="#">Contact</a>
  </nav>

  <div class="content">
    <div class="column">
      <h2>Column 1</h2>
      <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed vitae sapien ut libero varius tincidunt.</p>
    </div>
    <div class="column">
      <h2>Column 2</h2>
      <p>Praesent non nulla at turpis malesuada tincidunt. Nullam ut est et felis suscipit consequat.</p>
    </div>
  </div>

  <footer>
    <p>&copy; footer is here</p>
  </footer>
</body>
</html>
```

```
* {
  margin: 0;
  padding: 0;
  box-sizing: border-box;
}

body {
  font-family: Arial, sans-serif;
  line-height: 1.6;
}

nav {
  background-color: #333;
  color: white;
  padding: 10px 20px;
  text-align: center;
}

nav a {
  color: white;
  text-decoration: none;
  margin: 0 10px;
}

nav a:hover {
  text-decoration: underline;
}

.content {
  display: flex;
  justify-content: space-between;
  padding: 20px;
}

.column {
  flex: 1;
  padding: 20px;
  margin: 10px;
  background-color: #f4f4f4;
  border: 1px solid #ddd;
  border-radius: 5px;
}
```

```

✓ footer {
  background-color: #333;
  color: white;
  text-align: center;
  padding: 10px 0;
  margin-top: 20px;
}

✓ @media (max-width: 768px) {
  ✓ .content {
    flex-direction: column;
  }

  ✓ nav {
    font-size: 18px;
    padding: 15px 10px;
  }

  ✓ body {
    font-size: 14px;
    padding: 10px;
  }

  ✓ .column {
    margin: 10px 0;
    padding: 15px;
  }

  ✓ footer {
    font-size: 14px;
  }
}

```

Output:



• Typography and Web Fonts

Theory Assignment

Question 1: Explain the difference between web-safe fonts and custom web fonts. Why might you use a web-safe font over a custom font?

Web-Safe Fonts:

- **Definition:** Web-safe fonts are a collection of fonts that are widely available across most operating systems and devices, ensuring consistent rendering without requiring additional resources.
- **Examples:** Arial, Times New Roman, Verdana, Georgia, and Courier New.

Custom Web Fonts:

- **Definition:** Custom web fonts are fonts that are not pre-installed on devices but are hosted on a server and loaded dynamically onto the webpage using technologies like @font-face in CSS or via font services (e.g., Google Fonts, Adobe Fonts).
- **Examples:** Roboto, Open Sans, Lato, or any unique font designed for branding purposes.

Why Use a Web-Safe Font Over a Custom Font?

Performance: Web-safe fonts do not require additional server requests, which improves page loading speed, particularly important for users on slow internet connections.

Browser Compatibility: Since web-safe fonts are pre-installed, they are rendered consistently across all devices and browsers, avoiding fallback font issues.

Simplicity: Web-safe fonts are easy to implement, making them ideal for quick prototypes, minimalist designs, or projects where performance is prioritized over visual appeal.

Question 2: What is the font-family property in CSS? How do you apply a custom Google Font to a webpage?

font-family is a CSS property used to specify the font of text. It defines a prioritized list of font names and fallback options to ensure text displays properly if the preferred font is unavailable.

Apply a Custom Google Font to a Webpage

1.Import the Font:

- Use the <link> tag in the <head> section of your HTML to import the font

```
<link href="https://fonts.googleapis.com/css2?family=jack:wght@400&display=swap" rel="stylesheet">
```

2.Apply the Font in CSS:

- Use the font-family property to apply the imported font.

```
body {  
  font-family: 'jack', sans-serif;  
}
```

Example:

```

<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Custom Google Font</title>
  <!-- Google Font -->
  <link href="https://fonts.googleapis.com/css2?family=jack:wght@400&display=swap" rel="stylesheet">
  <style>
    body {
      font-family: 'jack', sans-serif;
      line-height: 1.6;
      margin: 20px;
    }
    h1 {
      font-size: 2rem;
    }
    p {
      font-size: 1rem;
    }
  </style>
</head>
<body>
  <h1>Using Google Fonts</h1>
  <p>This webpage uses the Roboto font from Google Fonts.</p>
</body>
</html>

```

Lab Assignment

- Task: Create a blog post layout with the following:
- A title, subtitle, and body content.
- Use at least two different fonts (one for headings, one for body content).
- Style the text to be responsive and easy to read.

Additional Requirements:

- Use a custom font from Google Fonts.
- Adjust line-height, font-size, and spacing for improved readability.

```

<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Blog Post</title>
  <link href="https://fonts.googleapis.com/css2?family=Playfair+Display:wght@700&family=Roboto:wght@400&display=swap" rel="stylesheet">
</head>
<body>
  <h1>The Art of Minimalist Living</h1>
  <h2>How to simplify your life and find joy in less</h2>
  <div class="content">
    <p>Minimalism is about focusing on what truly matters by clearing the excess from your life. Start small by simplifying one area, and discover the joy of living intentionally.</p>
    <p>With minimalism, you create space for meaningful experiences and relationships. Begin your journey today and see how less can truly be more.</p>
  </div>
</body>
</html>

```

```

body {
  font-family: 'Roboto', sans-serif;
  line-height: 1.8;
  color: #333;
  margin: 20px;
  background-color: #f9f9f9;
}
h1 {
  font-family: 'Playfair Display', serif;
  font-size: 2.5rem;
  text-align: center;
  color: #2c3e50;
}
h2 {
  font-size: 1.2rem;
  text-align: center;
  color: #7f8c8d;
}
.content {
  max-width: 800px;
  margin: 20px auto;
  background: #fff;
  padding: 20px;
  border-radius: 8px;
  box-shadow: 0 4px 6px rgba(0, 0, 0, 0.1);
}
@media (max-width: 768px) {
  h1 { font-size: 2rem; }
  h2 { font-size: 1rem; }
  body { font-size: 0.9rem; }
}

```

Output:

The Art of Minimalist Living

How to simplify your life and find joy in less

Minimalism is about focusing on what truly matters by clearing the excess from your life. Start small by simplifying one area, and discover the joy of living intentionally.

With minimalism, you create space for meaningful experiences and relationships. Begin your journey today and see how less can truly be more.

