Responsive web designing

Theory Assignment

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

Answer:
Media queries in CSS are a feature that allows developers to apply different styles based on the characteristics of the user's device, such as screen width, height, resolution, and orientation. They enable responsive design by ensuring that a webpage adapts to various screen sizes, from desktops to tablets and mobile devices.

Media queries are important for responsive design because they:

1. **Enhance User Experience** – Ensure that content is easily readable and navigable across diff:erent devices.

2. **Improve Accessibility** – Adapt layouts and font sizes for better usability.

3. **Optimize Performance** – Load appropriate styles only when necessary, reducing unnecessary resource usage.

4. **Support Multiple Devices** – Provide a seamless experience across different screen sizes without requiring separate codebases for mobile and desktop versions.

A basic example of a media query

```
@media screen and (max-width: 768px) {
    body {
        font-size: 14px;
    }
}
```

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

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

Lab Assignment

• Task: Build a responsive webpage that includes:

• A navigation bar.

• A content section with two columns.

• A footer.

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-s
    <title>Responsive Webpage</title>
    <link rel="stylesheet" href="styles.css">
</head>
<body>
    <nav class="navbar">
        <h1>My Website</h1>
    </nav>

    <main class="content">
        <section class="column left">
            <h2>Left Column</h2>
            <p>This is the left column content.</p>
        </section>
        <section class="column right">
            <h2>Right Column</h2>
            <p>This is the right column content.</p>
        </section>
    </main>

    <footer class="footer">
        <p>&copy; 2025 My Website</p>
    </footer>
</body>
</html>
```

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

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

.navbar {
    background: #333;
    color: white;
    padding: 15px;
    text-align: center;
}

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

.column {
    flex: 1;
    padding: 20px;
    border: 1px solid #ddd;
    margin: 10px;
}

.footer {
```

```css
.footer {
    background: #333;
    color: white;
    text-align: center;
    padding: 10px;
    position: relative;
    bottom: 0;
    width: 100%;
}

/* Responsive Design */
@media screen and (max-width: 768px) {
    .content {
        flex-direction: column;
    }
    .column {
        padding: 15px;
    }
    body {
        font-size: 16px;
    }
}
```

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?

Answer:
Web-safe fonts are pre-installed on most operating systems, ensuring consistent rendering across different devices and browsers. Examples include Arial, Times New Roman, and Courier. Since they are already available on users' systems, they do not require additional downloads, leading to faster page load times.

Custom web fonts, on the other hand, are fonts that are not pre-installed and must be loaded from an external source, such as Google Fonts or Adobe Fonts. They provide more design flexibility and branding options but may impact performance due to the need for additional HTTP requests.

You might use a web-safe font over a custom font when performance and loading speed are a priority, especially for users with slow internet connections or when ensuring compatibility across all devices without relying on external font providers.

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

Answer:
The font-family property in CSS specifies the typeface used for text. A fallback font stack can be provided in case the primary font is unavailable.

To apply a custom Google Font, use the following steps:

1. Include the Google Font link in the <head> of the HTML document:

<lin

khref="htt<ps://fonts.googleapis.com/css2?family=Roboto:wght@400;700&display=swap" rel="stylesheet">

2.Apply the font in CSS:

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

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.

```html
<!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">
    <style>
        body {
            font-family: 'Roboto', sans-serif;
            margin: 0;
            padding: 20px;
            background-color: #f9f9f9;
            color: #333;
            line-height: 1.6;
        }
        .container {
            max-width: 800px;
            margin: auto;
            background: #fff;
            padding: 20px;
            border-radius: 10px;
            box-shadow: 0 4px 8px rgba(0, 0, 0, 0.1);
        }
        h1 {
            font-family: 'Playfair Display', serif;
            font-size: 2.5em;
            margin-bottom: 10px;
        }
        h2 {
            font-family: 'Playfair Display', serif;
            font-size: 1.5em;
            color: #555;
            margin-bottom: 20px;
        }
        p {
            font-size: 1.1em;
            margin-bottom: 15px;
        }
            p {
                font-size: 1em;
            }
        }
    </style>
</head>
<body>
    <div class="container">
        <h1>Welcome to My Blog</h1>
        <h2>Exploring the Beauty of Web Design</h2>
        <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Pellentesque eu erat lacus, vel congue mauris. Fusce vehicula tincidu
        <p>Curabitur id eros nec arcu pretium tincidunt non eget augue. Integer ut nisi sapien. Suspendisse potenti.</p>
    </div>
</body>
</html>
```