Javascript _Day - 4 Hands On _Sana Naveen

Problem 1

Problem Statement :

1. Ensure learners understand responsiveness and screen adaptability.
2. Hands-on Tasks:
3. Add viewport meta tag to the HTML page
4. Use media queries to:
5. Change background color on mobile screen
6. Adjust font size for smaller screens
7. Convert navigation into vertical layout on mobile
8. Test the page using browser responsive mode

Code :

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">


  <meta name="viewport" content="width=device-width, initial-scale=1.0">

  <title>Responsive Page</title>
  <link rel="stylesheet" href="style.css">
</head>
<body>

  <header>
    <h1>Google</h1>
  </header>

  <nav class="navbar">
    <a href="#">Home</a>
    <a href="#">About</a>
    <a href="#">Services</a>
    <a href="#">Contact</a>
  </nav>

  <section class="content">
    <h2>Welcome</h2>
    <p>
```

This page changes layout and styles based on screen size.
Resize the browser to see responsiveness.
</p>
</section>

</body>
</html>

Code Screenshot :

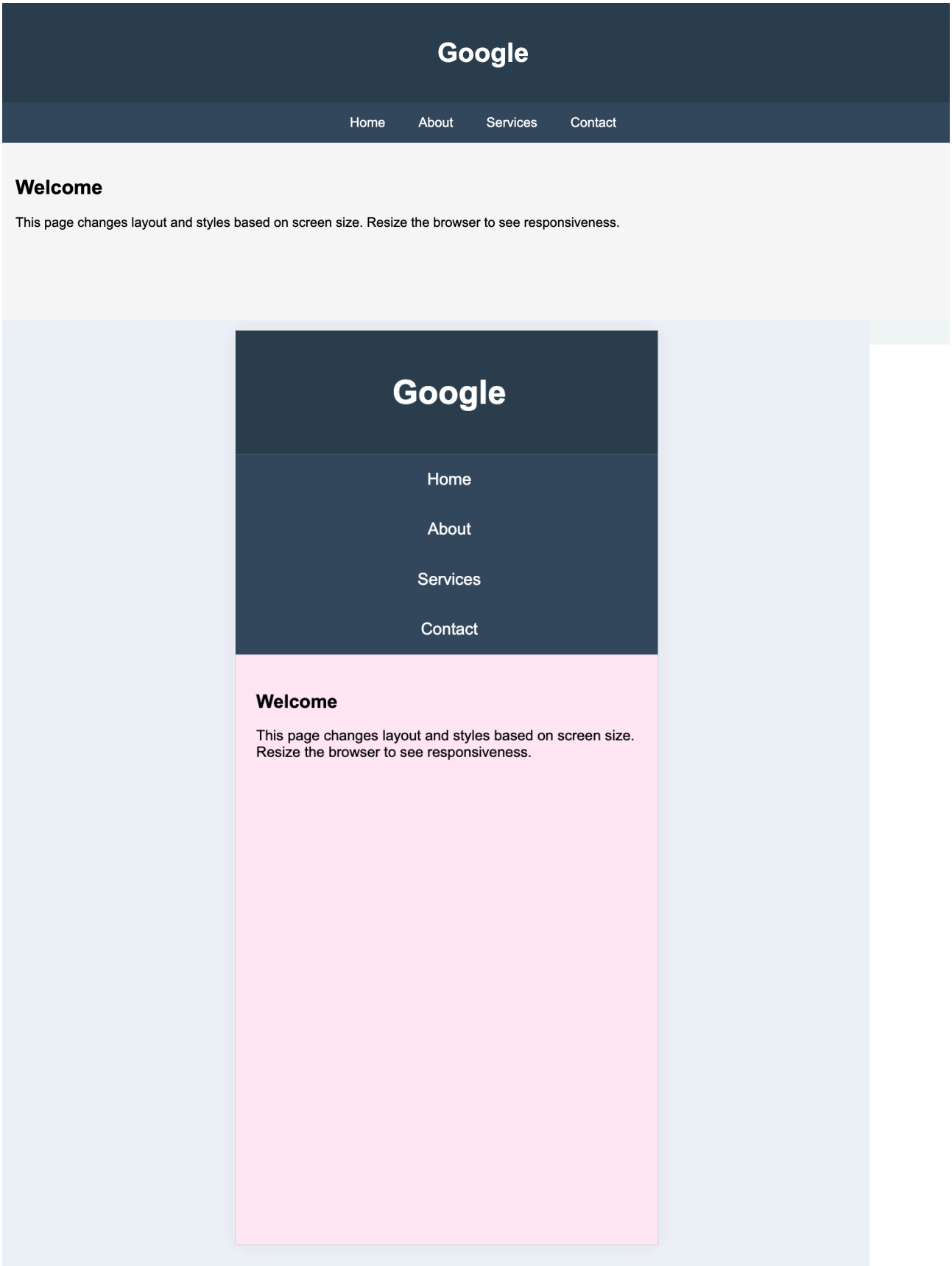
Sample > feb_19 > css > home.html > ...

```
<!--Naveen_Js_Day - 4 Hands On - Problem1-->
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">


    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Responsive Page</title>
    <link rel="stylesheet" href="style.css">
</head>
<body>

    <header>
        <h1>Google</h1>
    </header>

    <nav class="navbar">
        <a href="#">Home</a>
        <a href="#">About</a>
        <a href="#">Services</a>
        <a href="#">Contact</a>
    </nav>

    <section class="content">
        <h2>Welcome</h2>
        <p>
            This page changes layout and styles based on screen size.
            Resize the browser to see responsiveness.
        </p>
    </section>

</body>
</html>

```

Sample > feb_19 > css > # style.css > ...

```
/* Naveen_Js_Day - 4 Hands On - Problem1  */

body {
    margin: 0;
    font-family: Arial, sans-serif;
    background-color: #f4f6f9;
}

header {
    background-color: #2c3e50;
    color: white;
    text-align: center;
    padding: 20px;
}

.navbar {
    background-color: #34495e;
    display: flex;
    justify-content: center;
}

.navbar a {
    color: white;
    text-decoration: none;
    padding: 15px 20px;
}

.navbar a:hover {
    background-color: #1abc9c;
}

.content {
    padding: 20px;
}

@media (max-width: 768px) {

    body {
        background-color: #ffe6f0;
    }

    .navbar {
        flex-direction: column;
        align-items: center;
    }

    .navbar a {
        width: 100%;
        text-align: center;
        display: block;
    }

    .content h2 {
        font-size: 18px;
    }

    .content p {
        font-size: 14px;
    }
}

```

Output Screenshot :



Explanation :

This webpage uses the viewport meta tag to make it responsive on different screen sizes. The navigation bar is arranged horizontally using Flexbox on desktop. Inside the media query (max-width: 768px), the background colour changes, the navigation becomes vertical, and font sizes are reduced for better mobile readability.

Problem 2

Problem Statement :

A school wants a simple JavaScript program to evaluate a student's performance based on marks obtained in a subject.

- Accept the student's marks as a variable
- Use if–else statements to assign grades:
  - Marks ≥ 75 → Grade A
  - Marks ≥ 60 → Grade B
  - Marks ≥ 40 → Grade C
  - Marks < 40 → Fail

Display the grade on the web page or console

Technical Constraints

- Use JavaScript variables (let or const)
- Use numeric data types
- Use comparison and logical operators
- No functions or arrays allowed
- Output using console.log() or document.write()

Code :

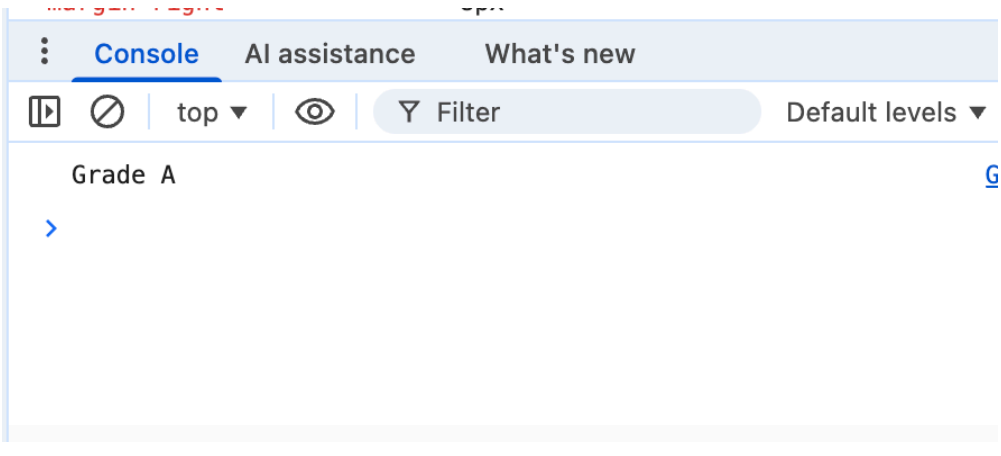
```
<!DOCTYPE html>
<html>
<head>
   <title>Student Grade Evaluation</title>
</head>
<body>

<script>

   let marks = prompt("Enter a number")

   if (marks >= 75) {
      console.log("Grade A");
   }
   else if (marks >= 60) {
      console.log("Grade B");
   }
   else if (marks >= 40) {
      console.log("Grade C");
   }
   else {
      console.log("Fail");
   }

</script>

</body>
</html>
```

Code Screenshot :

Sample > feb_19 > css > Grade.html > ...

```
<!--Naveen_Js_Day - 4 Hands On - Problem2-->
<!DOCTYPE html>
<html>
<head>
    <title>Student Grade Evaluation</title>
</head>
<body>

<script>

    let marks = prompt("Enter a number")

    if (marks >= 75) {
        console.log("Grade A");
    }
    else if (marks >= 60) {
        console.log("Grade B");
    }
    else if (marks >= 40) {
        console.log("Grade C");
    }
    else {
        console.log("Fail");
    }

</script>

</body>
</html>

```

Output Screenshot :



Explanation :

This HTML file includes a JavaScript program inside the <script> tag to evaluate a student's grade based on marks. A numeric variable marks is declared using let. The program uses if–else if–else conditional statements with comparison operators (>=) to check the marks range and assign the appropriate grade. The result is displayed in the browser console using console.log().

Problem 3

Problem Statement :

An online store wants to apply a discount based on the total purchase amount.

Requirements

- Store purchase amount in a variable
- Apply discount rules:
  - Amount ≥ 5000 → 20% discount
  - Amount ≥ 3000 → 10% discount
  - Amount < 3000 → No discount
- Calculate and display:
  - Discount amount
  - Final payable amount

Technical Constraints

- Use arithmetic operators
- Use if–else statements
- Use only primitive data types

No user input (hardcoded values allowed)

Code:

```
<!DOCTYPE html>
<html>
<head>
   <title>Online Store Discount</title>
</head>
<body>

<script>


   let amount = 4500;

   let discount = 0;
   let finalAmount = 0;


   if (amount >= 5000) {
      discount = amount * 0.20;
   }
   else if (amount >= 3000) {
      discount = amount * 0.10;
   }
   else {
      discount = 0;
   }


   finalAmount = amount - discount;

   document.write("Purchase Amount: ₹" + amount + "<br>");
   document.write("Discount Amount: ₹" + discount + "<br>");
```

```
    document.write("Final Payable Amount: ₹" + finalAmount);
</script>

</body>
</html>
```

Code Screenshot :

Sample > feb_19 > css > shop.html > html

```
<!--Naveen_Js_Day - 4 Hands On - Problem3-->
<!DOCTYPE html>
<html>
<head>
    <title>Online Store Discount</title>
</head>
<body>

<script>


    let amount = 4500;

    let discount = 0;
    let finalAmount = 0;


    if (amount >= 5000) {
        discount = amount * 0.20;
    }
    else if (amount >= 3000) {
        discount = amount * 0.10;
    }
    else {
        discount = 0;
    }


    finalAmount = amount - discount;


    document.write("Purchase Amount: ₹" + amount + "<br>");
    document.write("Discount Amount: ₹" + discount + "<br>");
    document.write("Final Payable Amount: ₹" + finalAmount);

</script>

</body>
</html>
```

Output Screenshot :

Purchase Amount: ₹4500
Discount Amount: ₹450
Final Payable Amount: ₹4050

Explanation :

This program calculates the discount based on a fixed purchase amount stored in a variable. It uses if–else statements and comparison operators to check the amount range and apply the appropriate discount percentage. Arithmetic operators are used to calculate the discount amount and final payable amount. The result is displayed on the webpage using JavaScript.

Problem 4

Problem Statement :
A traffic control system needs a JavaScript program that displays instructions based on traffic signal colour.

Requirements

- Store signal colour in a variable ("red", "yellow", "green")
- Use a switch statement to display:
- Red → Stop
- Yellow → Get Ready
- Green → Go

Handle invalid signal input gracefully

Technical Constraints

- Must use switch–case
- Use string data types
- Use console.log() for output
- No if–else allowed
-

Code:

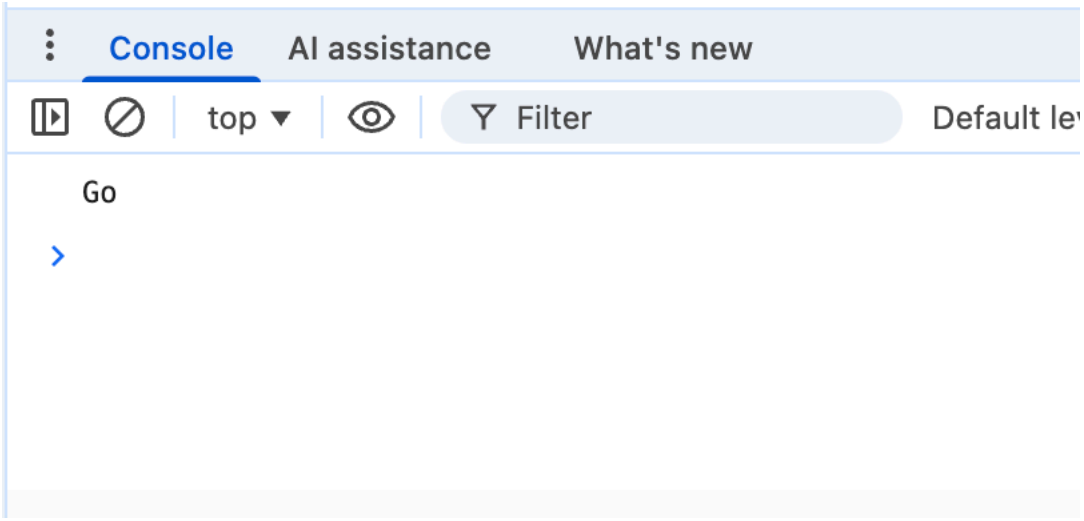
```
<!DOCTYPE html>
<html>
<head>
   <title>Traffic Signal System</title>
</head>
<body>

<script>


   let signal = "green";

   switch (signal) {

      case "red":
         console.log("Stop");
         break;

      case "yellow":
         console.log("Get Ready");
         break;

      case "green":
         console.log("Go");
         break;
```

```
        default:
            console.log("Invalid signal color");
    }

</script>

</body>
</html>
```

Code Screenshot :

```
Sample > feb_19 > css > signal.html > html > body > script > signal
<!--Naveen_Js_Day - 4 Hands On - Problem4-->

<!DOCTYPE html>
<html>
<head>
    <title>Traffic Signal System</title>
</head>
<body>

<script>


    let signal = "green";

    switch (signal) {

        case "red":
            console.log("Stop");
            break;

        case "yellow":
            console.log("Get Ready");
            break;

        case "green":
            console.log("Go");
            break;

        default:
            console.log("Invalid signal color");
    }

</script>

</body>
</html>
```

Output Screenshot :



Explanation :

This HTML document creates an employee onboarding webpage using the standard HTML5 structure. The <!DOCTYPE html> declaration defines the document type (note: it is written twice here, but it should appear only once). The <head> section sets the character encoding and page title. Inside the <body>, structured sections are organised using <header>, <section>, <article>, and <footer>. A table displays employee details in rows and columns, while ordered and unordered lists present company policies and facilities.

Problem 5

Problem Statement :
A utility program is required to analyse numbers and provide insights such as positivity, parity, and range.

Requirements

- Store a number in a variable
- Use conditional (ternary) operator to check:
- Positive or Negative
- Use if–else to check:
- Even or Odd
- Use a loop to print all numbers from 1 to the given number

Technical Constraints

- Store a number in a variable
- Use conditional (ternary) operator to check:
- Positive or Negative
- Use if–else to check:
- Even or Odd
- Use a loop to print all numbers from 1 to the given number

Code:

```
<!DOCTYPE html>
<html>
<head>
   <title>Number Analysis</title>
</head>
<body>

<script>


   let num = prompt("Enter a number");


   let result = (num >= 0) ? "Positive" : "Negative";
   document.write("Number is: " + result +"<br>");


   if (num % 2 === 0) {
      document.write(" Number is Even " +"<br>");
   } else {
      document.write(" Number is Odd "+"<br>");
   }


   document.write(" Numbers from 1 to " + num + " : ");
   for (let i = 1; i <= num; i++) {
      document.write(i);
   }
```

</script>

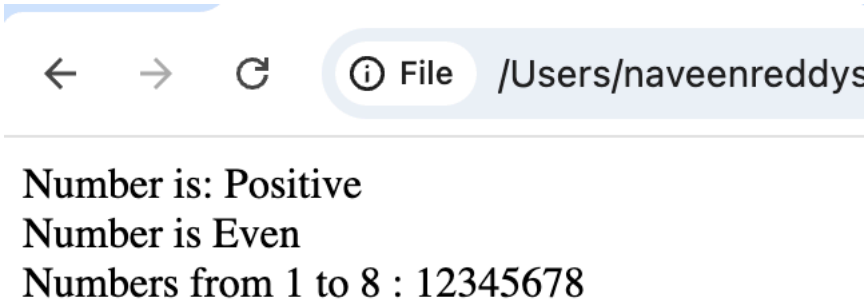
</body>
</html>

Code Screenshots :

Sample > feb_19 > css > number.html > ...

```
<!--Naveen_Js_Day - 4 Hands On - Problem5-->
<!DOCTYPE html>
<html>
<head>
    <title>Number Analysis</title>
</head>
<body>

<script>


    let num = prompt("Enter a number");


    let result = (num >= 0) ? "Positive" : "Negative";
    document.write("Number is: " + result +"<br>");


    if (num % 2 === 0) {
        document.write(" Number is Even " +"<br>");
    } else {
        document.write(" Number is Odd "+"<br>");
    }


    document.write(" Numbers from 1 to " + num + " : ");
    for (let i = 1; i <= num; i++) {
        document.write(i);
    }

</script>

</body>
</html>

```

Out Screenshot :



Explanation :

This program takes a number from the user using prompt() and stores it in a variable. The ternary operator is used to determine whether the number is positive or negative. An if–else statement checks whether the number is even or odd using the modulus operator (%). A for loop then prints all numbers from 1 up to the entered number. The results are displayed on the webpage using document.write().