**1. Develop and demonstrate a HTML document that illustrates a) Image as a background b) Hyperlink using an image c) Hyperlink with another web page (A, Base, Href) d) Link to email address, FTP Websites.**

<!DOCTYPE html>

<html>

<head>

<title> First Program </title>

<!-- Image as a background -->

<style>

body {

background-image: url("image1.jpg");

background-size: cover;

}

</style>

<base href="https://www.google.com" />

</head>

<body>

<!-- Hyperlink using an image -->

<h1>Hyperlink using an image </h1>

<a href="https://www.google.com" target="\_blank">

<img src="C:\Users\Desktop\CMA\prog1\image2.jpg" alt="Linked Image"></img>

</a>

<br><br>

<!-- Hyperlink with another webpage -->

<h2>Hyperlink with another webpage </h1>

<a href="https://www.google.com" target="\_blank">Click here</a> <br>

<a href="" target="\_blank">BaseURL1-Blank</a> <br>

<a href="gmail" target="\_blank">BaseURL1-GMAIL</a>

<br><br>

<!-- Link to email address, FTP Websites -->

<h3>Link to email address, FTP Websites </h1>

<a href="mailto:prasan08@gmail.com">Email</a>

<br>

<a href="ftp://ftp.adobe.com/">FTP Website</a>

</body>

</html>

**2. Multimedia: - a) Develop a web page to play audio file using <a>Tag. b) Develop a web page to play video file using <Embed>Tag.**

<!DOCTYPE html>

<html>

<head>

<title>Audio-Video Player</title>

</head>

<body>

<h1>Audio Player</h1>

<a href="audio.mp3">Click here to play audio</a>

<br>

<h1>Video Player</h1>

<embed src="video.mp4" width="640" height="360" autostart="false">

</body>

</html>

**3. Write a JavaScript program to determine whether a given year is a leap year in the Gregorian calendar.**

<!DOCTYPE html>

<html>

<head>

<title>Program - Leap Year Checker</title>

<script>

function checkLeapYear() {

// Get the input year from the user

var year = parseInt(document.getElementById("year").value);

// Check if it's a leap year

var isLeapYear = (year % 4 === 0 && year % 100 !== 0) || year % 400 === 0;

// Display the result

var result = document.getElementById("result");

if (isLeapYear) {

result.textContent = year + " is a leap year.";

} else {

result.textContent = year + " is not a leap year.";

}

}

</script>

</head>

<body>

<h1>Leap Year Checker</h1>

<p>Enter a year to check if it's a leap year:</p>

<input type="number" id="year" />

<button onclick="checkLeapYear()">Check</button>

<h3><p id="result"></p></h3>

</body>

</html>

**4. Write a JavaScript program to convert temperatures to and from Celsius, Fahrenheit**

<!DOCTYPE html>

<html>

<head>

<title>Program Temperature Converter</title>

<script>

function convertToCelsius() {

var fahrenheit = parseFloat(document.getElementById("fahrenheit").value);

var celsius = (fahrenheit - 32) \* (5 / 9);

document.getElementById("result").textContent = celsius.toFixed(2) + "°C";

}

function convertToFahrenheit() {

var celsius = parseFloat(document.getElementById("celsius").value);

var fahrenheit = (celsius \* 9 / 5) + 32;

document.getElementById("result").textContent = fahrenheit.toFixed(2) + "°F";

}

</script>

</head>

<body>

<h1>Temperature Converter</h1>

<label for="fahrenheit">Fahrenheit:</label>

<input type="number" id="fahrenheit" />

<button onclick="convertToCelsius()">Convert to Celsius</button>

<br /> <br />

<label for="celsius">Celsius:</label>

<input type="number" id="celsius" />

<button onclick="convertToFahrenheit()">Convert to Fahrenheit</button>

<br />

<p id="result"></p>

</body>

</html>

**5. Create an animation using HTML.**

<!DOCTYPE html>

<html>

<head>

<title>HTML Animation Example</title>

<style>

.box {

width: 200px;

height: 200px;

background-color: red;

position: absolute;

animation-name: move;

animation-duration: 5s;

animation-iteration-count: infinite;

animation-direction: alternate;

}

<!-- @keyframes, you can reference the animation name in your CSS code using the animation-name

property to apply the animation to an element -->

@keyframes move {

0% {

transform: translateX(0);

}

100% {

transform: translateX(1000px);

}

}

</style>

</head>

<body>

<div class="box"></div>

</body>

</html>

**6. Create an interactive web page using HTML5 layout tags**

<!DOCTYPE html>

<html>

<head>

<title>Interactive Web Page</title>

<script>

function toggleContent() {

var hiddenContent = document.getElementById("hidden-content");

hiddenContent.classList.toggle("hidden");

}

</script>

<style>

body {

font-family: Arial, sans-serif;

}

header {

background-color: #333;

color: #fff;

padding: 20px;

text-align: center;

}

nav {

background-color: #555;

color: #fff;

padding: 10px;

}

section {

margin-bottom: 20px;

}

footer {

background-color: #333;

color: #fff;

padding: 20px;

text-align: center;

}

.button {

padding: 10px 20px;

background-color: #555;

color: #fff;

border: none;

cursor: pointer;

}

.button:hover {

background-color: #333;

}

.hidden {

display: none;

}

</style>

</head>

<body>

<header>

<h1>Welcome to My Interactive Web Page</h1>

</header>

<nav>

<ul>

<li><a href="#">Home</a></li>

<li><a href="#">About</a></li>

<li><a href="#">Contact</a></li>

</ul>

</nav>

<section>

<h3>About Me</h3>

<p>This is paragraph about me</p>

</section>

<section>

<h3>Contact Information</h3>

<p>Email: example@example.com</p>

<p>Phone: 123-456-7890</p>

</section>

<section>

<h3>Toggle Content</h3>

<button class="button" onclick="toggleContent()">Toggle</button>

<div id="hidden-content" class="hidden">

<p>This is hidden content that can be toggled on and off.</p>

</div>

</section>

<footer>

<p>&copy; 2023 My Interactive Web Page. All rights reserved.</p>

</footer>

</body>

</html>

**7. Write a JavaScript that calculates the squares and cubes of the numbers from 0 to 10 and outputs HTML text that displays the resulting values in an HTML table format.**

!DOCTYPE html>

<html>

<head>

<title>Table Calculation Example</title>

<style>

table {

border-collapse: collapse;

width: 40%;

}

th, td {

border: 1px solid black;

padding: 8px;

text-align: center;

}

th {

background-color: #f2f2f2;

} </style>

</head>

<body>

<h2>Squares and cubes of the numbers from 0 to 10 :</h2>

<div id="table-container"></div>

<script>

function generateTable() {

var tableData = '<table>';

tableData += '<tr><th>Number</th><th>Square</th><th>Cube</th></tr>';

for (var i = 0; i <= 10; i++) {

var square = i \* i;

var cube = i \* i \* i;

tableData += '<tr>';

tableData += '<td>' + i + '</td>';

tableData += '<td>' + square + '</td>';

tableData += '<td>' + cube + '</td>';

tableData += '</tr>';

}

tableData += '</table>';

return tableData;

}

var tableHTML = generateTable();

document.getElementById('table-container').innerHTML = tableHTML;

</script>

</body>

</html>

**8. Demonstrate canvas in HTML5.**

<!DOCTYPE html>

<html>

<head>

<title>Canvas Example</title>

<style>

canvas {

border: 1px solid black;

}

</style>

</head>

<!-- the canvas element is a graphical container that allows you to draw graphics,

animations, and other visual elements using JavaScript. -->

<body>

<canvas id="myCanvas" width="400" height="200"></canvas>

<script>

var canvas = document.getElementById("myCanvas");

var context = canvas.getContext("2d");

// Draw a rectangle

context.fillStyle = "#FF0000";

context.fillRect(50, 50, 200, 100);

// Draw a circle

context.beginPath();

context.arc(300, 100, 50, 0, 2 \* Math.PI);

context.fillStyle = "#0000FF";

context.fill();

context.closePath();

</script>

</body>

</html>