USER INTERFACE DESIGN

23CSE113 LAB

MANUAL

SUBMITTED BY	
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ROLL NO	AV.SC.U4CSE25254
YEAR/SEM/SECTION	1ST YEAR/ SEM-2/CSE-C
CREDITS	03

SUBMITTED TO	DR. RAJ KUMAR BATCHU
DESIGNATION	ASST.PROFFESSOR (Sl. Grade)
DEPARTMENT	SCHOOL OF COMPUTING

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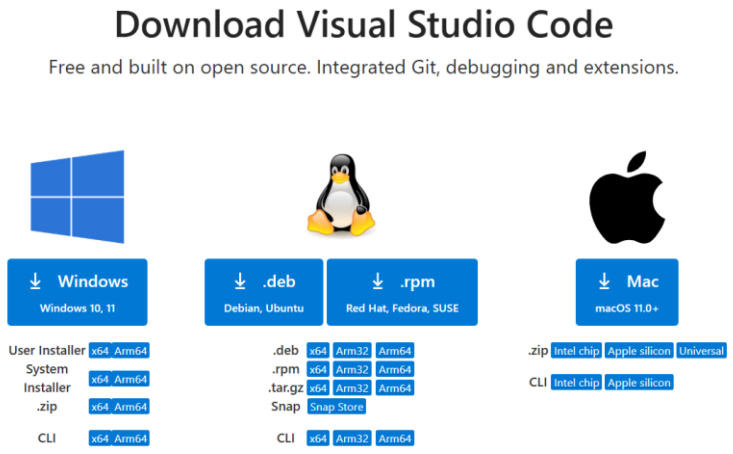
WEEK-1

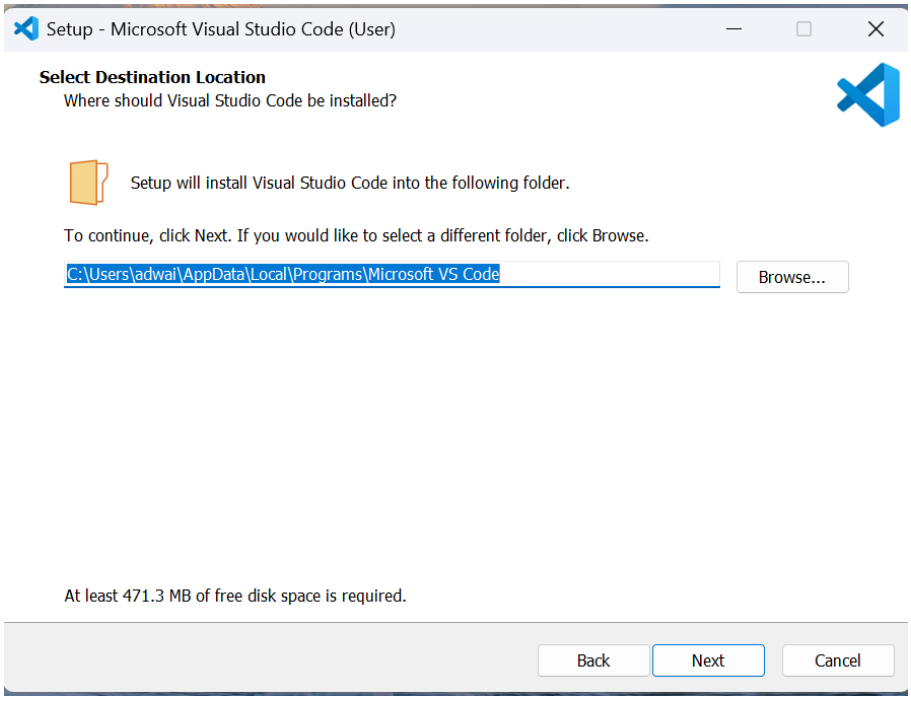
1.AIM: Steps to install VS code

PROCEDURE:

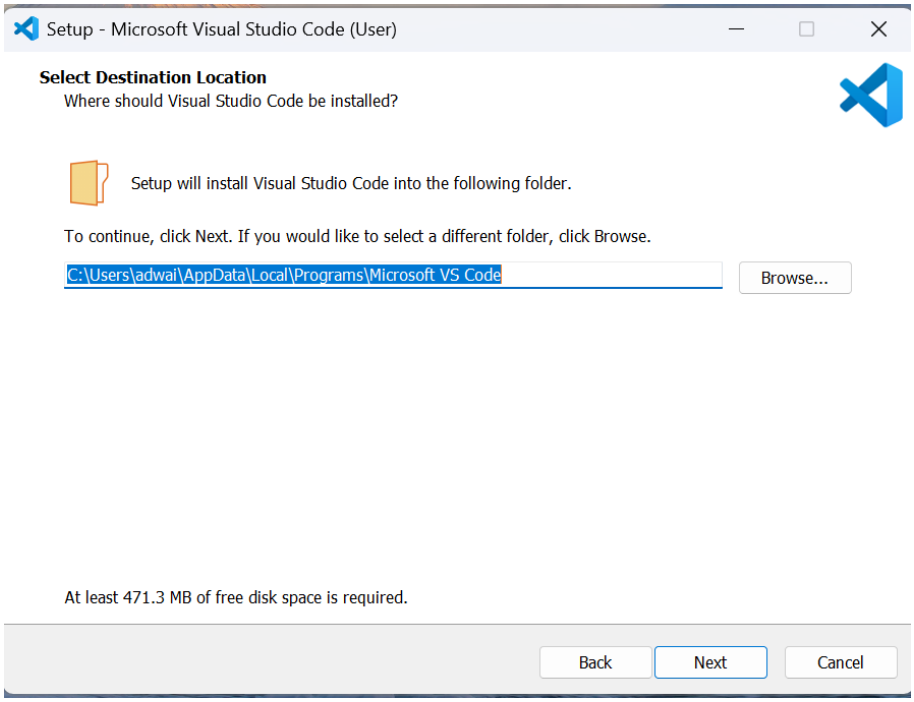
STEP-1



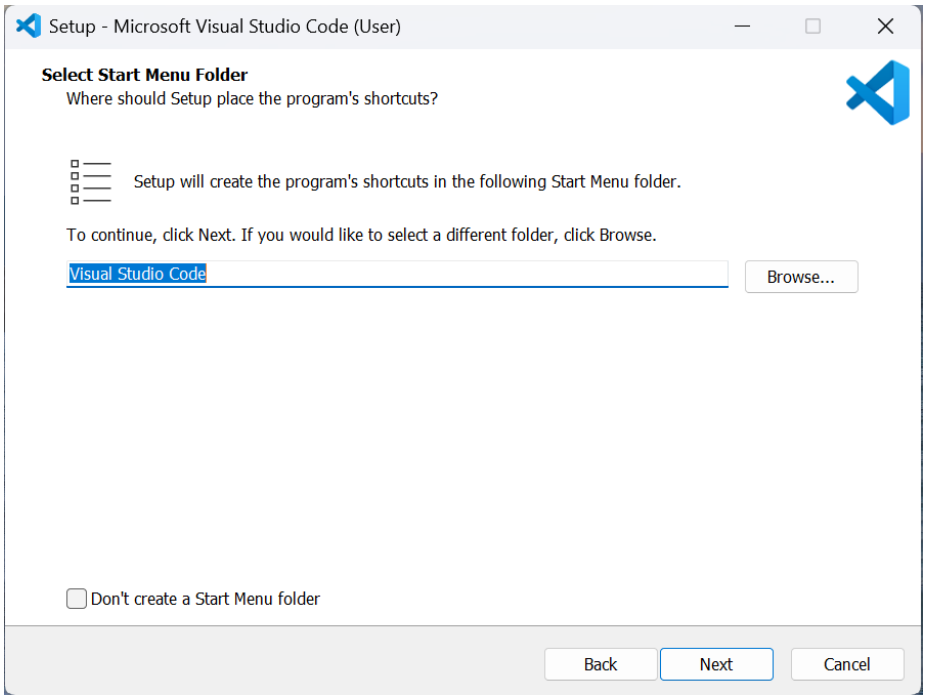
STEP-2



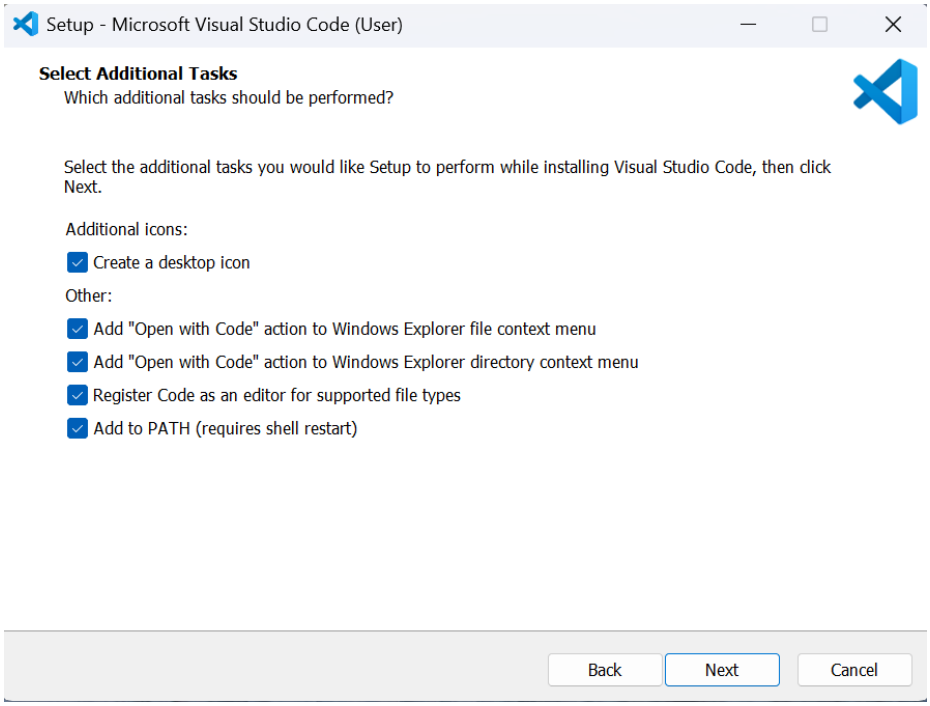
STEP-3


Setup - Microsoft Visual Studio Code (User)
Select Destination Location
Where should Visual Studio Code be installed?
Setup will install Visual Studio Code into the following folder.
To continue, click Next. If you would like to select a different folder, click Browse.
C:\Users\adwai\AppData\Local\Programs\Microsoft VS Code
Browse...
At least 471.3 MB of free disk space is required.
Back
Next
Cancel

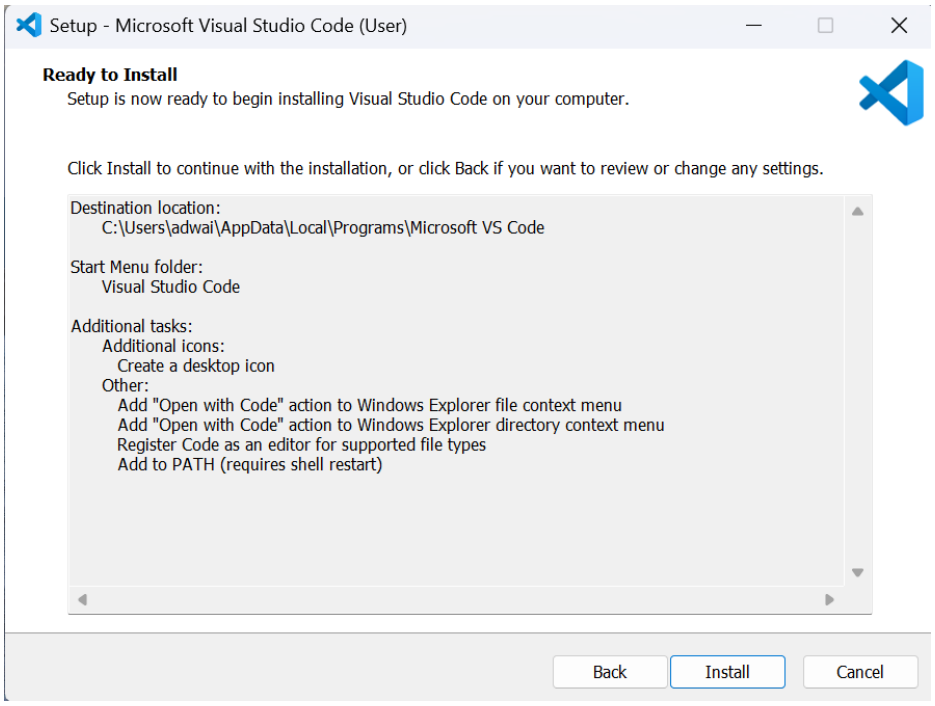
STEP-4


Setup - Microsoft Visual Studio Code (User)
Select Start Menu Folder
Where should Setup place the program's shortcuts?
Setup will create the program's shortcuts in the following Start Menu folder.
To continue, click Next. If you would like to select a different folder, click Browse.
Visual Studio Code
Browse...
Don't create a Start Menu folder
Back
Next
Cancel

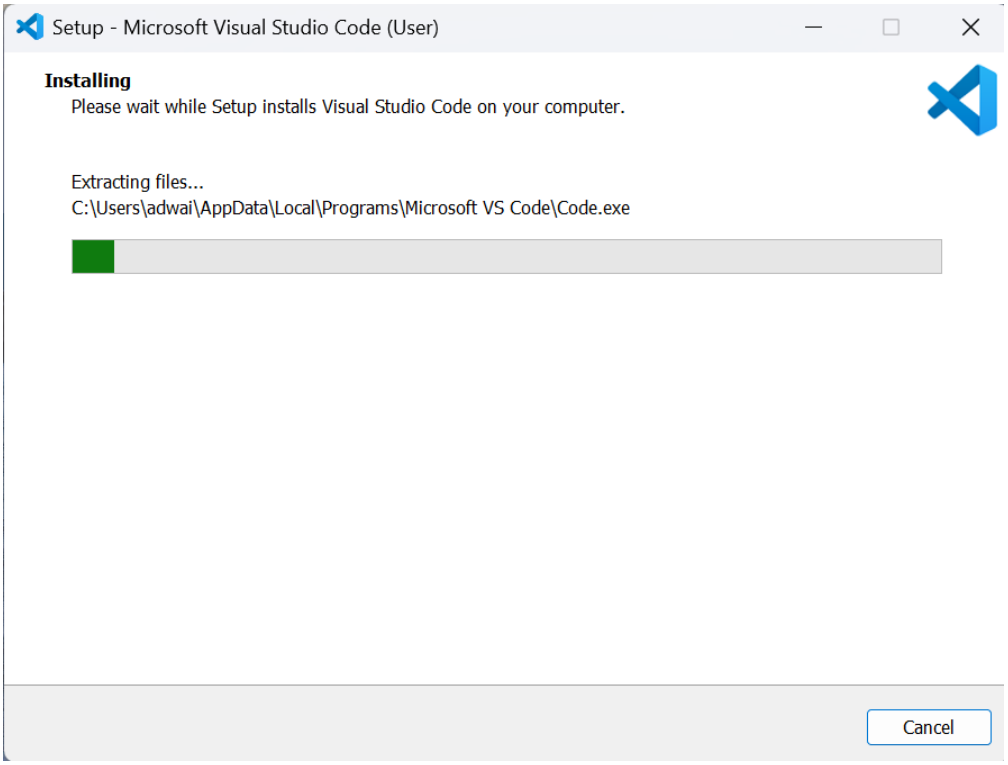
STEP-5


Setup - Microsoft Visual Studio Code (User)
Select Additional Tasks
Which additional tasks should be performed?
Select the additional tasks you would like Setup to perform while installing Visual Studio Code, then click Next.
Additional icons:
Create a desktop icon
Other:
Add "Open with Code" action to Windows Explorer file context menu
Add "Open with Code" action to Windows Explorer directory context menu
Register Code as an editor for supported file types
Add to PATH (requires shell restart)
Back
Next
Cancel

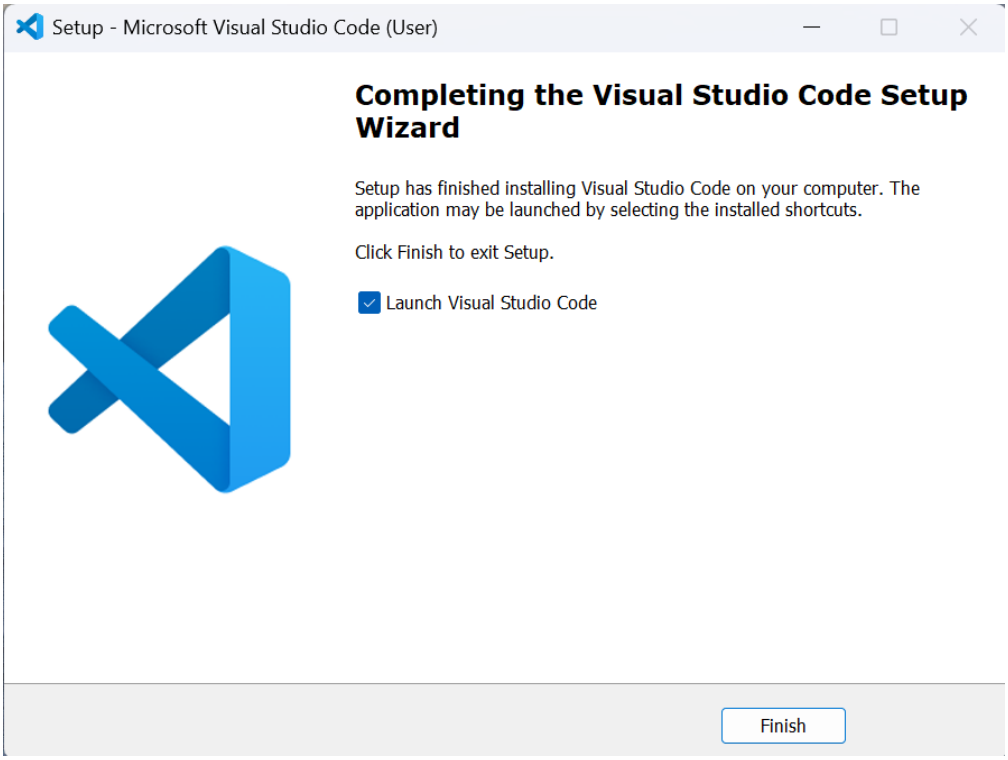
STEP-6


Setup - Microsoft Visual Studio Code (User)
Ready to Install
Setup is now ready to begin installing Visual Studio Code on your computer.
Click Install to continue with the installation, or click Back if you want to review or change any settings.
Destination location:
C:\Users\adwai\AppData\Local\Programs\Microsoft VS Code
Start Menu folder:
Visual Studio Code
Additional tasks:
Additional icons:
Create a desktop icon
Other:
Add "Open with Code" action to Windows Explorer file context menu
Add "Open with Code" action to Windows Explorer directory context menu
Register Code as an editor for supported file types
Add to PATH (requires shell restart)
Back
Install
Cancel

STEP-7


Setup - Microsoft Visual Studio Code (User)
Installing
Please wait while Setup installs Visual Studio Code on your computer.
Extracting files...
C:\Users\adwai\AppData\Local\Programs\Microsoft VS Code\Code.exe
Cancel

STEP-8

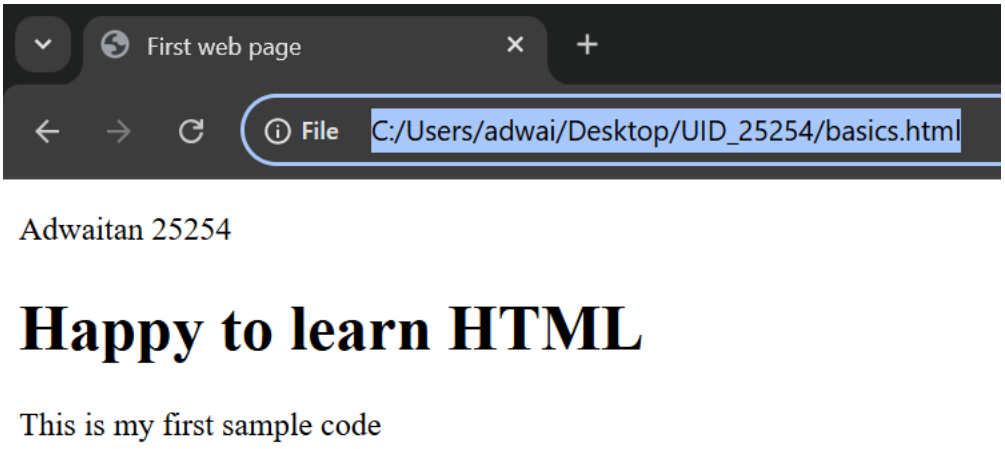

Setup - Microsoft Visual Studio Code (User)
Completing the Visual Studio Code Setup Wizard
Setup has finished installing Visual Studio Code on your computer. The application may be launched by selecting the installed shortcuts.
Click Finish to exit Setup.
Launch Visual Studio Code
Finish

2.AIM: To learn the basics of html (basics.html)

PROGRAM:

```
<!DOCTYPE html>
<html>
  <head>
    <title>First web page</title>
  </head>
  <body>
    <p>Adwaitan 25254</p>
    <h1>Happy to learn HTML</h1>
    <p>This is my first sample code</p>
  </body>
</html>
```

OUTPUT:



EXPLANATION OF THE TAGS:

- HTML stands for Hyper Text Markup Language.
- HTML is used to create and structure web pages.
- It tells the web browser what to display and how to display.
- **<!DOCTYPE html>:** The <!DOCTYPE html> element tells the browser, this is an HTML5 document. And version.
- **<html>:** The element is the root element of an HTML page.
- **<head>:** The element contains meta information about the HTML page.
- **<title>:** The <title> element specifies a title for the HTML page.
- **<body>:** The <body> element contains all visible content like text, images, links, tables, etc.
- **<h1>:** This is a heading.
- **<p>:** This is a paragraph**.**

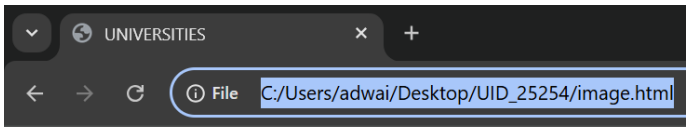
3.AIM: Understanding basic html tags.

Tags-<p>; <h1>; <img>; <color>;

PROGRAM:

```
<!DOCTYPE html>
<html>
  <head>
    <title>UNIVERSITIES</title>
  </head>
  <body>
    <p>Adwaitan <br> 25254</p>
    <h1 style="color:rgb(115, 51, 51)">AMRITA UNIVERSITY</h1>
    <p  style="color:blueviolet">deemed to be university</p>
    <img src="https://upload.wikimedia.org/wikipedia/en/3/30/Amrita_Vishwa_Vidyapeetham_-
_Logo_Icon.svg" width="100" height="100">
    <p>link to amrita</p>
    <a href="https://www.amrita.edu/">AMRITA</a>
    <h1>SRM</h1>
    <p>deemed to be univesity</p>
    <img
src="https://upload.wikimedia.org/wikipedia/en/7/7a/SRM_Institute_of_Science_and_Technology_L
ogo.svg" width="100" height="100">
    <p>link to srm</p>
    <a href="https://www.srmist.edu.in/">SRM</a>
    <h1 style="color:aqua">VIT</h1>
    <p style="color:red">deemmed to be univesity</p>
    <img
src="https://upload.wikimedia.org/wikipedia/en/c/c5/Vellore_Institute_of_Technology_seal_2017.sv
g" width="100" height="100">
    <p>link to vit</p>
    <a href="https://vit.ac.in/">VIT</a>
  </body>
</html>
```

OUTPUT:



Adwaitan
25254

AMRITA UNIVERSITY

deemed to be university

link to amrita

AMRITA

SRM

deemed to be univesity

link to srm

SRM

VIT

deemmed to be univesity

link to vit

VIT

EXPLANATION OF THE TAGS:

- **
:** The HTML <br> element defines a line break. it is an empty tag with no end tag.
- **Style:** The HTML style attribute is used to add styles to an element such as color, font, size and more.
- **<img>:** The <img> tag is a fundamental HTML element used to embed an image into a web page
- **<a>:** The <a> tag, which stands for “anchor”, is used to define a hyperlink.

WEEK-2

1.AIM: Design a basic webpage with a headings, paragraph, pre, table by adding styles.

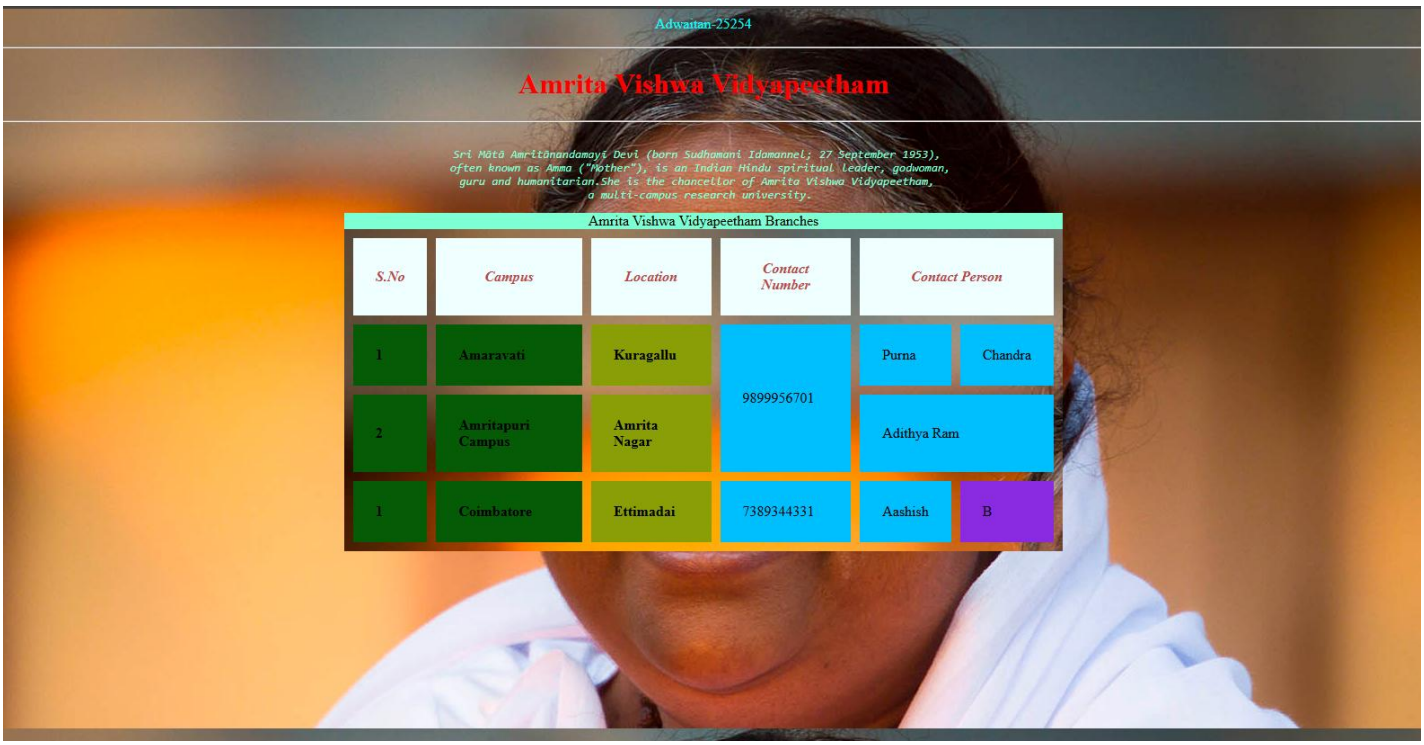
PROGRAM:

```
<html>

<head>

<title>Example web page</title>

</head>

<body background="amrita1.jpg">

<p style="text-align: center;color: aqua;">Adwaitan-25254</p>

<hr style="color:fuchsia">

<h1 style="color:red;text-align: center;">Amrita Vishwa Vidyapeetham</h1>

<hr style="color:fuchsia">

<pre style="color:aquamarine;font-style: italic;text-align: center;">

Sri Mātā Amritānandamayī Devi (born Sudhamani Idamannel; 27 September 1953),

often known as Amma ("Mother"), is an Indian Hindu spiritual leader, godwoman,

guru and humanitarian.She is the chancellor of Amrita Vishwa Vidyapeetham,

a multi-campus research university.

</pre>

<table width="800" border:"2" cellpadding="25" cellspacing="10" align="center" background="amrita1.jpg">

<caption style="background-color: aquamarine;color: black;">Amrita Vishwa Vidyapeetham
Branches</caption>

<tr>

<th style="background-color: azure;color:rgb(186, 70, 70);font-style: italic;">S.No</th>

<th style="background-color: azure;color:rgb(186, 70, 70);font-style: italic;">Campus</th>

<th style="background-color: azure;color:rgb(186, 70, 70);font-style: italic;">Location</th>

<th style="background-color: azure;color:rgb(186, 70, 70);font-style: italic;">Contact Number</th>
```

```
<th colspan="2" style="background-color: azure;color:rgb(186, 70, 70);font-style: italic;">Contact
Person</th>

</tr>

<tr>

<td style="background-color: rgb(6, 91, 6);"><b>1</b></td>

<td style="background-color: rgb(6, 91, 6);"><b>Amaravati</b></td>

<td style="background-color: rgb(138, 158, 7);"><b>Kuragallu</b></td>

<td rowspan="2" style="color:black;background-color: deepskyblue;">9899956701</td>

<td style="background-color:deepskyblue;">Purna</td>

<td style="background-color: deepskyblue;">Chandra</td>

</tr>

<tr>

<td style="background-color: rgb(6, 91, 6);"><b>2</b></td>

<td style="background-color: rgb(6, 91, 6);"><b>Amritapuri Campus</b></td>

<td style="background-color: rgb(138, 158, 7);"><b>Amrita Nagar</b></td>

<td colspan="2" style="background-color:deepskyblue;">Adithya Ram</td>

</tr>

<tr>

<td style="background-color: rgb(6, 91, 6);"><b>1</b></td>

<td style="background-color: rgb(6, 91, 6);"><b>Coimbatore</b></td>

<td style="background-color: rgb(138, 158, 7);"><b>Ettimadai</b></td>

<td rowspan="2" style="color:black;background-color: deepskyblue;">7389344331</td>

<td style="background-color:deepskyblue;">Aashish</td>

<td style="background-color: blueviolet;">B</td>

</tr>

</table>

</body>
```

</html>

OUTPUT:



EXPLANATION OF THE TAGS:

- **<table>:** To create a table using html.
- **<tr>:** Table row- Everything inside here belongs in one single row.
- **<th>:** Table header- This is used for the **header cells**, usually the top row or the first column.
- **<td>:** Table Data- This is a standard cell that holds the actual information.
- **<b>:** To make the text bold.

WEEK-3

1.AIM: Create the class time table using HTML elements.

PROGRAM:

```
<html>
  <body><p style="text-align: center;">Adwaitan 25254</p></body>
  <table widith="420" border="1"  style="text-align: center;" cellpading="0" cellspacing="0">
    <caption><b>TIMETABLE</b></caption>
    <tr>
      <th style="text-align: center; " colspan="12">Master Time Table CSE II Semester C Section</th>
    </tr>
    <tr>
      <td colspan="4">Dept of cse</td>
      <td colspan="8" rowspan="3">class Room Venue: 512</td>
    </tr>
    <tr>
      <td colspan="4">class:B-tech cse</td>
    </tr>
    <tr>
      <td colspan="4">Semester-II</td>
    </tr>
    <tr>
      <td colspan="4">Class Advisors: <br>1. Name: Mr. Budati Jaya Lakshminarayana<br>Email : bj_lakshminarayana@av.amrita.edu<br>Mobile Number :+91-7989795768</td>
      <td colspan="8"><br>2. Name: Dr. Arun Kumar S<br>Email : s_arunkumar@av.amrita.edu<br>Mobile Number : +91-8940857202</td>
    </tr>
    <tr>
```

```
    <!--TIME / DAY-->
    <td rowspan="2">Time/day</td>
    <td>slot 1</td>
    <td>slot 2</td>
    <td rowspan="2">10.35am-<br>10.45am</td>
    <td>slot 3</td>
    <td>slot 4</td>
    <td>slot 5</td>
    <td rowspan="2">1.15pm to 2.05pm</td>
    <td>slot 6</td>
    <td rowspan="2">3.00pm - 3.10pm</td>
    <td>slot 7</td>
    <td>slot 8</td>
</tr>
<tr>
    <!--time-->
    <td>8.55-9.45am</td>
    <td>9.45-10.35am</td>
    <td>10.45-11.35am</td>
    <td>11.35-12.25pm</td>
    <td>12.25-1.15pm</td>
    <td>2.10-3.00pm</td>
    <td>3.10-4.00pm</td>
    <td>4.00-4.50pm</td>
</tr>
<tr>
```

```
        <!--mon-->
        <td>monday</td>
        <td colspan="2">23MAT116 Discrete Mathematics_lab2</td>
        <td rowspan="5" style="background-color: yellow; color:black;transform: rotate(-180deg); writing-mode: vertical-rl; "><b>Short break</b></td>
        <td> 23PHY115 Modern Physics</td>
        <td>23CSE111Object Oriented Programming</td>
        <td>22ADM111Glimpses of Glorious India</td>
        <td rowspan="5" style="background-color: yellow;transform: rotate(-180deg); writing-mode: vertical-rl;"><b>Lunch break</b></td>
        <td>22ADM111Glimpses of Glorious India(P)</td>
        <td rowspan="5" style="background-color: yellow;transform: rotate(-180deg); writing-mode: vertical-rl;"><b>Short break</b></td>
        <td colspan="2">Library/Sports</td>
    </tr>
    <tr>
        <!--tue-->
        <td>Tuesday</td>
        <td colspan="2">23CSE113 User Interface Design LAB(BYOD)</td>
        <td> 23MAT117 Linear Algebra</td>
        <td>23MAT116 Discrete Mathematics</td>
        <td style="color: red;"><b>COUNSELLING</b></td>
        <td> 23MEE115 Manufacturing Practice LAB</td>
        <td colspan="2"> 23MEE115 Manufacturing Practice LAB</td>
    </tr>
    <tr>
        <!--wed-->
```

```
    <td>wednesday</td>
    <td> 23PHY115 Modern Physics</td>
    <td>23CSE113 User Interface Design</td>
    <td colspan="2">23MAT117 Linear Algebra_LAB(BYOD)</td>
    <td style="color: red;"><b>COUNSELLING</b></td>
    <td><b>Library</b></td>
    <td>22ADM111Glimpses of Glorious India(P)</td>
    <td><b>Library/sports</b></td>
  </tr>
  <tr>
    <!--Thursday-->
    <td>Thursday</td>
    <td>23CSE111Object Oriented Programming</td>
    <td>23MAT116 Discrete Mathematics</td>
    <td colspan="2">23CSE111Object Oriented Programming</td>
    <td> 23MAT117 Linear Algebra</td>
    <td><b>Library</b></td>
    <td colspan="2"><b>Library/sports</b></td>
  </tr>
  <tr>
    <!--friday-->
    <td>Friday</td>
    <td>23CSE111Object Oriented Programming</td>
    <td>23MAT116 Discrete Mathematics</td>
    <td> 23PHY115 Modern Physics</td>
    <td>23CSE113 User Interface Design</td>
```

```
        <td> 23MAT117 Linear Algebra</td>

        <td><b>Library</b></td>

        <td colspan="2"><b>Library/sports</b></td>

      </tr>

    </table>

    </html>
```

OUTPUT:

Adwaitan 25254

TIMETABLE

Master Time Table CSE II Semester C Section											
Dept of cse class:B-tech cse Semester-II				class Room Venue: 512							
Class Advisors: 1. Name: Mr. Budati Jaya Lakshminarayana Email : bj_lakshminarayana@av.amrita.edu Mobile Number :+91-7989795768				2. Name: Dr. Arun Kumar S Email : s_arunkumar@av.amrita.edu Mobile Number : +91-8940857202							
Time/day	slot 1	slot 2	10.35am-10.45am	slot 3	slot 4	slot 5	1.15pm to 2.05pm	slot 6	3.00pm - 3.10pm	slot 7	slot 8
	8.55-9.45am	9.45-10.35am		10.45-11.35am	11.35-12.25pm	12.25-1.15pm		2.10-3.00pm		3.10-4.00pm	4.00-4.50pm
monday	23MAT116 Discrete Mathematics_lab2		Short break	23PHY115 Modern Physics	23CSE111Object Oriented Programming	22ADM111Glimpses of Glorious India	Lunch break	22ADM111Glimpses of Glorious India(P)	Short break	Library/Sports	
Tuesday	23CSE113 User Interface Design LAB(BYOD)			23MAT117 Linear Algebra	23MAT116 Discrete Mathematics	COUNSELLING		23MEE115 Manufacturing Practice LAB		23MEE115 Manufacturing Practice LAB	
wednesday	23PHY115 Modern Physics	23CSE113 User Interface Design		23MAT117 Linear Algebra_LAB(BYOD)		COUNSELLING		**Library**		22ADM111Glimpses of Glorious India(P)	**Library/sports**
Thursday	23CSE111Object Oriented Programming	23MAT116 Discrete Mathematics		23CSE111Object Oriented Programming		23MAT117 Linear Algebra		**Library**		**Library/sports**	
Friday	23CSE111Object Oriented Programming	23MAT116 Discrete Mathematics		23PHY115 Modern Physics	23CSE113 User Interface Design	23MAT117 Linear Algebra		**Library**		**Library/sports**	

EXPLANATION OF THE TAGS:

- **<table>:** To create a table using html.
- **<tr>:** Table row- Everything inside here belongs in one single row.
- **<th>:** Table header- This is used for the **header cells**, usually the top row or the first column.
- **<td>:** Table Data- This is a standard cell that holds the actual information.
- **<b>:** To make the text bold.

2.AIM: Create an HTML webpage that should display syllabus of all the subjects of an image format also time table.

PROGRAM:

```
<!DOCTYPE html>

<html>

   <head style="text-align: center;">

      <title>SYALLABUS AND TIMETABLE</title>

   </head>

   <body style="text-align: center; background-color: rgb(93, 218, 253);color: brown;">

      <p style="text-align: center;">Adwaitan 25254</p>

      <h2>SYALLABUS</h2>

      <h4 >DISCRETE MATHEMATICS</h4>

      <img src="discreate.jpg">

      <h4>LINEAR ALGEBRA</h4>

      <img src="linear.jpg">

      <h4>OBJECT ORIENTED PROGRAMMING</h4>

      <img src="oops.jpg">

      <h4>MODERN PHYSICS</h4>

      <img src="modren.jpg">

      <h4>USER INTERFACE DESIGN</h4>

      <img src="uid.jpg">

      <h4>MANUFACTURING PRACTICE</h4>

      <img src="manufacturing.jpg">

      <h4> GLIMPSES OF GLORIOUS INDIA </h4>

      <img src="goi.jpg">

      <table widith="420" border="1"  style="text-align: center; color: black;" cellpading="0" cellspacing="0">

      <caption>TIMETABLE</caption>
```

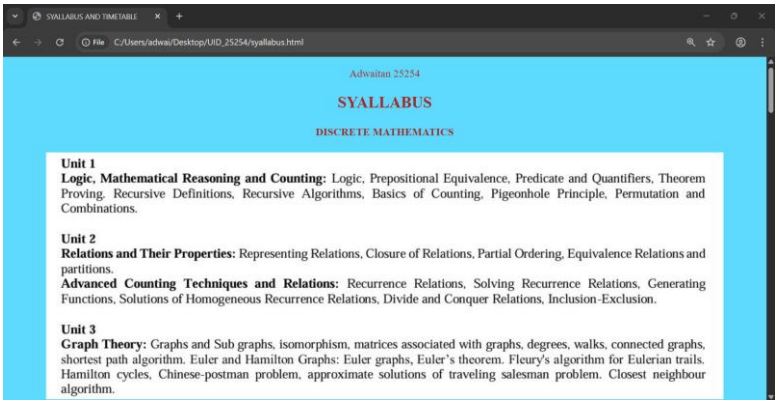
```
<tr>
    <th style="text-align: center; " colspan="12">Master Time Table CSE II Semester C Section</th>
</tr>
<tr>
    <td colspan="4">Dept of cse</td>
    <td colspan="8" rowspan="3">class Room Venue: 512</td>
</tr>
<tr>
    <td colspan="4">class:B-tech cse</td>
</tr>
<tr>
    <td colspan="4">Semester-II</td>
</tr>
<tr>
    <td colspan="4">Class Advisors: <br>1. Name: Mr. Budati Jaya Lakshminarayana<br>Email : bj_lakshminarayana@av.amrita.edu<br>Mobile Number :+91-7989795768</td>
    <td colspan="8"><br>2. Name: Dr. Arun Kumar S<br>Email : s_arunkumar@av.amrita.edu<br>Mobile Number : +91-8940857202</td>
</tr>
<tr>
    <!--TIME / DAY-->
    <td rowspan="2">Time/day</td>
    <td>slot 1</td>
    <td>slot 2</td>
    <td rowspan="2">10.35am-<br>10.45am</td>
    <td>slot 3</td>
    <td>slot 4</td>
```

```
        <td>slot 5</td>
        <td rowspan="2">1.15pm to 2.05pm</td>
        <td>slot 6</td>
        <td rowspan="2">3.00pm - 3.10pm</td>
        <td>slot 7</td>
        <td>slot 8</td>
    </tr>
    <tr>
        <!--time-->
        <td>8.55-9.45am</td>
        <td>9.45-10.35am</td>
        <td>10.45-11.35am</td>
        <td>11.35-12.25pm</td>
        <td>12.25-1.15pm</td>
        <td>2.10-3.00pm</td>
        <td>3.10-4.00pm</td>
        <td>4.00-4.50pm</td>
    </tr>
    <tr>
        <!--mon-->
        <td>monday</td>
        <td colspan="2">23MAT116 Discrete Mathematics_lab2</td>
        <td rowspan="5" style="background-color: yellow; color:black;transform: rotate(-180deg); writing-mode: vertical-rl; "><b>Short break</b></td>
        <td> 23PHY115 Modern Physics</td>
        <td>23CSE111Object Oriented Programming</td>
        <td>22ADM111Glimpses of Glorious India</td>
```

```
        <td rowspan="5" style="background-color: yellow; transform: rotate(-180deg); writing-mode: vertical-rl;"><b>Lunch break</b></td>
        <td>22ADM111Glimpses of Glorious India(P)</td>
        <td rowspan="5" style="background-color: yellow;transform: rotate(-180deg); writing-mode: vertical-rl;"><b>Short break</b></td>
        <td colspan="2">Library/Sports</td>
      </tr>
      <tr>
        <!--tue-->
        <td>Tuesday</td>
        <td colspan="2">23CSE113 User Interface Design LAB(BYOD)</td>
        <td> 23MAT117 Linear Algebra</td>
        <td>23MAT116 Discrete Mathematics</td>
        <td style="color: red;"><b>COUNSELLING</b></td>
        <td> 23MEE115 Manufacturing Practice LAB</td>
        <td colspan="2"> 23MEE115 Manufacturing Practice LAB</td>
      </tr>
      <tr>
        <!--wed-->
        <td>wednesday</td>
        <td> 23PHY115 Modern Physics</td>
        <td>23CSE113 User Interface Design</td>
        <td colspan="2">23MAT117 Linear Algebra_LAB(BYOD)</td>
        <td style="color: red;"><b>COUNSELLING</b></td>
        <td><b>Library</b></td>
        <td>22ADM111Glimpses of Glorious India(P)</td>
        <td><b>Library/sports</b></td>
```

```
    </tr>
    <tr>
      <!--Thursday-->
      <td>Thursday</td>
      <td>23CSE111Object Oriented Programming</td>
      <td>23MAT116 Discrete Mathematics</td>
      <td colspan="2">23CSE111Object Oriented Programming</td>
      <td> 23MAT117 Linear Algebra</td>
      <td><b>Library</b></td>
      <td colspan="2"><b>Library/sports</b></td>
    </tr>
    <tr>
      <!--friday-->
      <td>Friday</td>
      <td>23CSE111Object Oriented Programming</td>
      <td>23MAT116 Discrete Mathematics</td>
      <td> 23PHY115 Modern Physics</td>
      <td>23CSE113 User Interface Design</td>
      <td> 23MAT117 Linear Algebra</td>
      <td><b>Library</b></td>
      <td colspan="2"><b>Library/sports</b></td>
    </tr>
  </table>
  </body>
</html>
```

OUTPUT:



Adwaitan 25254

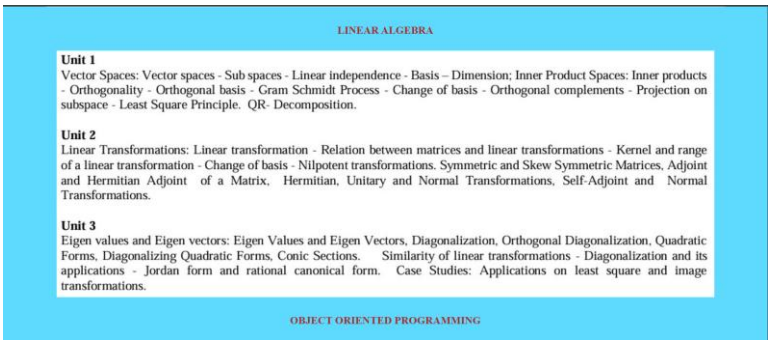
SYALLABUS

DISCRETE MATHEMATICS

Unit 1
Logic, Mathematical Reasoning and Counting: Logic, Prepositional Equivalence, Predicate and Quantifiers, Theorem Proving. Recursive Definitions, Recursive Algorithms, Basics of Counting, Pigeonhole Principle, Permutation and Combinations.

Unit 2
Relations and Their Properties: Representing Relations, Closure of Relations, Partial Ordering, Equivalence Relations and partitions.
Advanced Counting Techniques and Relations: Recurrence Relations, Solving Recurrence Relations, Generating Functions, Solutions of Homogeneous Recurrence Relations, Divide and Conquer Relations, Inclusion-Exclusion.

Unit 3
Graph Theory: Graphs and Sub graphs, isomorphism, matrices associated with graphs, degrees, walks, connected graphs, shortest path algorithm. Euler and Hamilton Graphs: Euler graphs, Euler's theorem. Fleury's algorithm for Eulerian trails. Hamilton cycles, Chinese-postman problem, approximate solutions of traveling salesman problem. Closest neighbour algorithm.



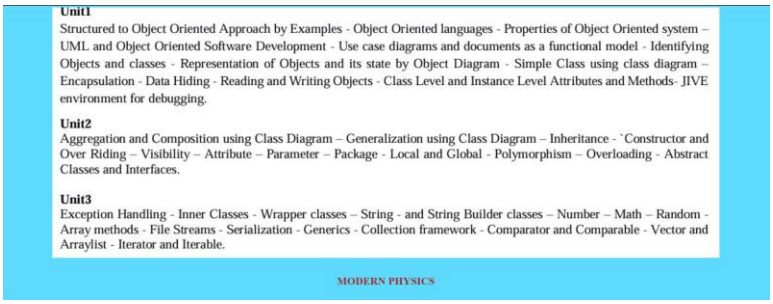
LINEAR ALGEBRA

Unit 1
Vector Spaces: Vector spaces - Sub spaces - Linear independence - Basis – Dimension; Inner Product Spaces: Inner products - Orthogonality - Orthogonal basis - Gram Schmidt Process - Change of basis - Orthogonal complements - Projection on subspace - Least Square Principle. QR- Decomposition.

Unit 2
Linear Transformations: Linear transformation - Relation between matrices and linear transformations - Kernel and range of a linear transformation - Change of basis - Nilpotent transformations. Symmetric and Skew Symmetric Matrices, Adjoint and Hermitian Adjoint of a Matrix, Hermitian, Unitary and Normal Transformations, Self-Adjoint and Normal Transformations.

Unit 3
Eigen values and Eigen vectors: Eigen Values and Eigen Vectors, Diagonalization, Orthogonal Diagonalization, Quadratic Forms, Diagonalizing Quadratic Forms, Conic Sections. Similarity of linear transformations - Diagonalization and its applications - Jordan form and rational canonical form. Case Studies: Applications on least square and image transformations.

OBJECT ORIENTED PROGRAMMING

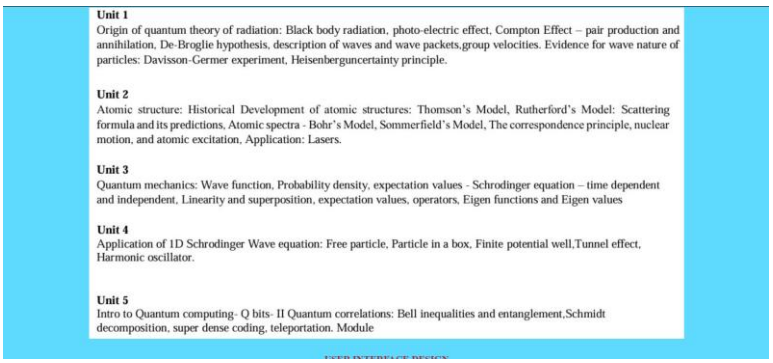


Unit1
Structured to Object Oriented Approach by Examples - Object Oriented languages - Properties of Object Oriented system – UML and Object Oriented Software Development - Use case diagrams and documents as a functional model - Identifying Objects and classes - Representation of Objects and its state by Object Diagram - Simple Class using class diagram – Encapsulation - Data Hiding - Reading and Writing Objects - Class Level and Instance Level Attributes and Methods- JIVE environment for debugging.

Unit2
Aggregation and Composition using Class Diagram – Generalization using Class Diagram – Inheritance - `Constructor and Over Riding – Visibility – Attribute – Parameter – Package - Local and Global - Polymorphism – Overloading - Abstract Classes and Interfaces.

Unit3
Exception Handling - Inner Classes - Wrapper classes – String - and String Builder classes – Number – Math – Random - Array methods - File Streams - Serialization - Generics - Collection framework - Comparator and Comparable - Vector and Arraylist - Iterator and Iterable.

MODERN PHYSICS



Unit 1
Origin of quantum theory of radiation: Black body radiation, photo-electric effect, Compton Effect – pair production and annihilation, De-Broglie hypothesis, description of waves and wave packets,group velocities. Evidence for wave nature of particles: Davisson-Germer experiment, Heisenberguncertainty principle.

Unit 2
Atomic structure: Historical Development of atomic structures: Thomson's Model, Rutherford's Model: Scattering formula and its predictions, Atomic spectra - Bohr's Model, Sommerfield's Model, The correspondence principle, nuclear motion, and atomic excitation, Application: Lasers.

Unit 3
Quantum mechanics: Wave function, Probability density, expectation values - Schrodinger equation – time dependent and independent, Linearity and superposition, expectation values, operators, Eigen functions and Eigen values

Unit 4
Application of 1D Schrodinger Wave equation: Free particle, Particle in a box, Finite potential well,Tunnel effect, Harmonic oscillator.

Unit 5
Intro to Quantum computing- Q bits- II Quantum correlations: Bell inequalities and entanglement,Schmidt decomposition, super dense coding, teleportation. Module

USER INTERFACE DESIGN

Unit 1

Introduction to Internet and Web design – Working of Web – Roles of Front-end, Back-end and Full stack development – Web Server – Internet protocols – Web Hosting – HTML – HTML Tags – Create a simple Web Page – Marking up Text – Adding Links – Adding Images – SVG – Table Markup – Embedded Media - Web Based Forms – HTML Forms - CSS for Presentation - Basic Style Sheet - A CSS Style Primer - Using Style Classes - Using Style IDs - Formatting Text - Advanced Typography with CSS3 - Working with Margins, Padding, Alignment, and Floating. Responsive web design, Introduction to version control systems.

Unit 2

CSS Box Model and Positioning - Creating Layouts Using Modern CSS - Backgrounds and Borders - CSS Transformations and Transitions - Animating with CSS and the Canvas - Dynamic Web Pages – Web Scripting - JavaScript programming for Web Applications – Including JavaScript in HTML – HTML5 Form Controls and Validation - Document Object Model - DOM manipulation and events - Event Handlers

Unit 3

Overview of UI Frameworks – User Interface Design Concepts in Web Development – Accessibility - Introduction to Electron - Overview of Electron - Setting up an Electron project - Creating a basic desktop application with Electron - Object communication - Introduction to other popular frameworks and libraries (e.g., JavaFX, WPF, GTK).

MANUFACTURING PRACTICE

1. **Additive Manufacturing Laboratory –12 hours**

Introduction to digital manufacturing. Introduction to Additive Manufacturing - types – additive manufacturing applications - Materials for 3D printing, CAD Modelling for Additive manufacturing, Slicing and STL file generation- G code generation - 3D printing of simple geometries.

2. **Mechanical Engineering Laboratory –12 hours**

Study of tools and equipment used for basic manufacturing processes.
Manual arc welding practice for making Butt and Lap joints - Soldering Practice
Introduction to Machine Tools and Machining Processes

3. **Automation lab –12 hours**

Design, simulate and test pneumatic and electro-pneumatic circuits. Introduction to PLC –PLC programming for automation applications.

4. **Automobile Engineering lab –9 hours**

Overview of automobiles – components –functioning of various sub-systems; Power train, steering system, suspension system and braking system. Introduction to electric vehicles, hybrid vehicles, alternate fuels. Introduction to E Mobility.

GLIMPSES OF GLORIOUS INDIA

Face the Brutes, Role of Women in India, Acharya Chanakya, God and Iswara, Bhagavad Gita: From Soldier to Samsarin to Sadhaka, Lessons of Yoga from Bhagavad Gita, Indian Soft powers, Preserving Nature through Faith, Ancient Indian Cultures (Class Activity), Practical Vedanta, To the World from India, Indian Approach to Science.

TIMETABLE

Master Time Table CSE II Semester C Section

Dept of cse class:B-tech cse Semester-II				class Room Venue: 512							
Class Advisors: 1. Name: Mr. Budati Jaya Lakshminarayana Email : bj_lakshminarayana@av.amrita.edu Mobile Number :+91-7989795768				2. Name: Dr. Arun Kumar S Email : s_arunkumar@av.amrita.edu Mobile Number : +91-8940857202							
Time/day	slot 1	slot 2	10.35am-10.45am	slot 3	slot 4	slot 5	1.15pm to 2.05pm	slot 6	3.00pm - 3.10pm	slot 7	slot 8
	8.55-9.45am	9.45-10.35am		10.45-11.35am	11.35-12.25pm	12.25-1.15pm		2.10-3.00pm		3.10-4.00pm	4.00-4.50pm
monday	23MAT116 Discrete Mathematics_lab2		Short break	23PHY115 Modern Physics	23CSE111Object Oriented Programming	22ADM111Glimpses of Glorious India	Lunch break	22ADM111Glimpses of Glorious India(P)	Short break	Library/Sports	
Tuesday	23CSE113 User Interface Design LAB(BYOD)			23MAT117 Linear Algebra	23MAT116 Discrete Mathematics	COUNSELLING		23MEE115 Manufacturing Practice LAB		23MEE115 Manufacturing Practice LAB	
wednesday	23PHY115 Modern Physics	23CSE113 User Interface Design		23MAT117 Linear Algebra_LAB(BYOD)		COUNSELLING		**Library**		22ADM111Glimpses of Glorious India(P)	**Library/sports**
Thursday	23CSE111Object Oriented Programming	23MAT116 Discrete Mathematics		23CSE111Object Oriented Programming		23MAT117 Linear Algebra		**Library**		**Library/sports**	
Friday	23CSE111Object Oriented Programming	23MAT116 Discrete Mathematics		23PHY115 Modern Physics	23CSE113 User Interface Design	23MAT117 Linear Algebra		**Library**		**Library/sports**	

WEEK-4

1.AIM: A college wants to collect student details through an online admission form. Design a registration form using only HTML tags (no CSS). The form should contain proper labels, table alignment, background color, and borders.

PROGRAM:

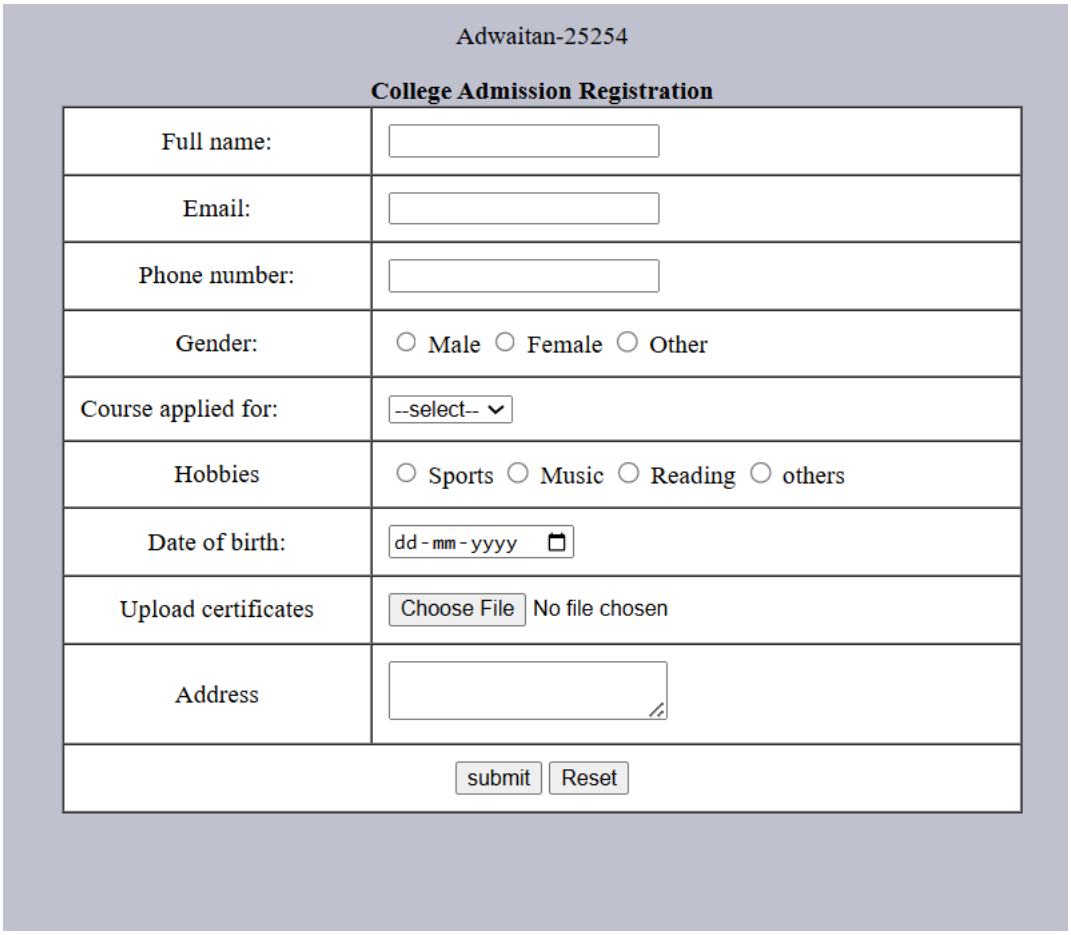
```
<!DOCTYPE html>

<html>

  <head>

    <title>REGISTRATION</title>

  </head>

  <body style="background-color: #BFC1CF;">

    <p style="text-align: center;">Adwaitan-25254</p>

    <table width="600" border="1" cellpadding="10" cellspacing="0" style="background-color: white;"
align="center">

      <caption style="text-align: center;"><b>College Admission Registration</b></caption>

      <tr>

        <td style="text-align: center;">

          <label for="fname" style="cursor: pointer;">Full name:</label>

        </td>

        <td style="text-align: left;">

          <input type="text" id="fname" name="fname">

        </td>

      </tr>

      <tr>

        <td style="text-align: center;">

          <label for="email" style="cursor: pointer;">Email:</label>

        </td>

        <td>
```

```
        <input type="text" id="email" name="email">
    </td>
</tr>
<tr>
    <td style="text-align: center;">
        <label for="pn" style="cursor: pointer;">Phone number:</label>
    </td>
    <td>
        <input type="number" id="pn" name="pn">
    </td>
</tr>
<tr>
    <td style="text-align: center;">Gender:</td>
    <td>
        <input type="radio" id="male" name="gender" value="male">
        <label for="male" style="cursor: pointer;">Male</label>
        <input type="radio" id="female" name="gender" value="female">
        <label for="female" style="cursor: pointer;">Female</label>
        <input type="radio" id="others" name="gender" value="others">
        <label for="others" style="cursor: pointer;">Other</label>
    </td>
</tr>
<tr>
    <td>
        <label for="Course" style="cursor: pointer;">Course applied for:</label>
    </td>
```

```
    <td>
        <select id="Course" name="Course">
            <option value="">--select--</option>
            <option value="Btech">Btech</option>
            <option value="B.sc">B.sc</option>
            <option value="B.com">B.com</option>
            <option value="BBA">BBA</option>
            <option value="Mtech">Mtech</option>
        </select>
    </td>
</tr>
<tr>
    <td style="text-align: center;">Hobbies</td>
    <td>
        <input type="radio" id="Sports" name="Sports" value="Sports" style="cursor: pointer;">
        <label for="Sports" style="cursor: pointer;">Sports</label>
        <input type="radio" id="Music" name="Music" value="Music" style="cursor: pointer;">
        <label for="Music" style="cursor: pointer;">Music</label>
        <input type="radio" id="Reading" name="Reading" value="Reading">
        <label for="Reading" style="cursor: pointer;">Reading</label>
        <input type="radio" id="others" name="others" value="others">
        <label for="others" style="cursor: pointer;">others</label>
    </td>
</tr>
<tr>
    <td style="text-align: center; cursor: pointer;">Date of birth:</td>
```

```
            <td><input type="date" name="dob" style="cursor: pointer;"></td>
        </tr>
        <tr>
            <td style="text-align: center;cursor: pointer;">Upload certificates</td>
            <td>
                <input type="file" name="filename" style="cursor: pointer;">
            </td>
        </tr>
        <tr>
            <td style="text-align: center;">Address</td>
            <td>
                <textarea></textarea>
            </td>
        </tr>
        <tr>
            <td colspan="2" style="text-align: center;"><button>submit</button>
            <button>Reset</button>
            </td>
        </tr>
    </table>
  </body>
</html>
```

OUTPUT:



Adwaitan-25254

College Admission Registration

Full name:	
Email:	
Phone number:	
Gender:	○ Male ○ Female ○ Other
Course applied for:	--select--
Hobbies	○ Sports ○ Music ○ Reading ○ others
Date of birth:	dd-mm-yyyy
Upload certificates	Choose File No file chosen
Address	
submit Reset	

EXPLANATION OF THE TAGS:

- <label>: It is used to add a name or description to form inputs like text boxes, radio buttons, and checkboxes.
- <input>: The <input> element is used to collect user input in an HTML form. It can create different types of input fields depending on the type attribute.
- <textarea>: For multi-line text input like comments or messages.
- <button>: The <button> element defines a clickable button.

2.AIM: A company wants to design a webpage that displays two different forms side by side using iframes. One iframe should display a Login Form and the other iframe should display a Registration Form.

Program:

```
<!DOCTYPE html>

<html>

  <body style="background-color:#f2f6fc;">

    <p style="text-align: center;">Adwaitan-25254</p>

    <div style="flex:1; width: 300px;height: 260px; margin: auto;border: 2px solid;padding: 15px;float:
left;margin-right: 20px;">

      <table Width="300" border="1" cellpadding="0" cellspacing="0">

        <caption>User login</caption>

        <tr>

          <td style="text-align: center;">

            <label for="Username" style="cursor: pointer;">Username:</label>

          </td>

          <td>

            <input type="text" id="Username" name="Username">

          </td>

        </tr>

        <tr>

          <td style="text-align: center;">

            <label for="password" style="cursor: pointer;">Password:</label>

          </td>

          <td>

            <input type="password" id="password" name="password">

          </td>

        </tr>
```

```
            <tr>
                <td colspan="2" style="text-align: center;"><button>login</button></td>
            </tr>
        </table>
    </div>
    <div style="flex:1; width: 300px;height: 260px; margin: auto;border: 2px solid;padding: 15px; float:
left;">
        <table width="300" border="1" cellpading="0" cellspacing="0">
            <caption>User registration</caption>
            <tr>
            <td style="text-align: center;">
                <label for="fname" style="cursor: pointer;">Full name:</label>
            </td>
            <td style="text-align: left;">
                <input type="text" id="fname" name="fname">
            </td>
        </tr>
        <tr>
            <td style="text-align: center;">
                <label for="email" style="cursor: pointer;">Email:</label>
            </td>
            <td>
                <input type="text" id="email" name="email">
            </td>
        </tr>
        <tr>
            <td style="text-align: center;">
```

```
            <label for="pno" style="cursor: pointer;">Phone number:</label>
          </td>
          <td>
            <input type="number" id="pno" name="pno">
          </td>
        </tr>
        <tr>
          <td style="text-align: center;">
            <label for="password" style="cursor: pointer;">Password:</label>
          </td>
          <td>
            <input type="password" id="password" name="password">
          </td>
        </tr>
        <tr>
          <td colspan="2" style="text-align: center;">
            <button>Register</button>
            <button>Reset</button>
          </td>
        </tr>
        </table>
      </div>
  </body>
</html>
```

OUTPUT:

Adwaitan-25254

User login

Username:	
Password:	
login	

User registration

Full name:	
Email:	
Phone number:	
Password:	
Register Reset	

WEEK-5

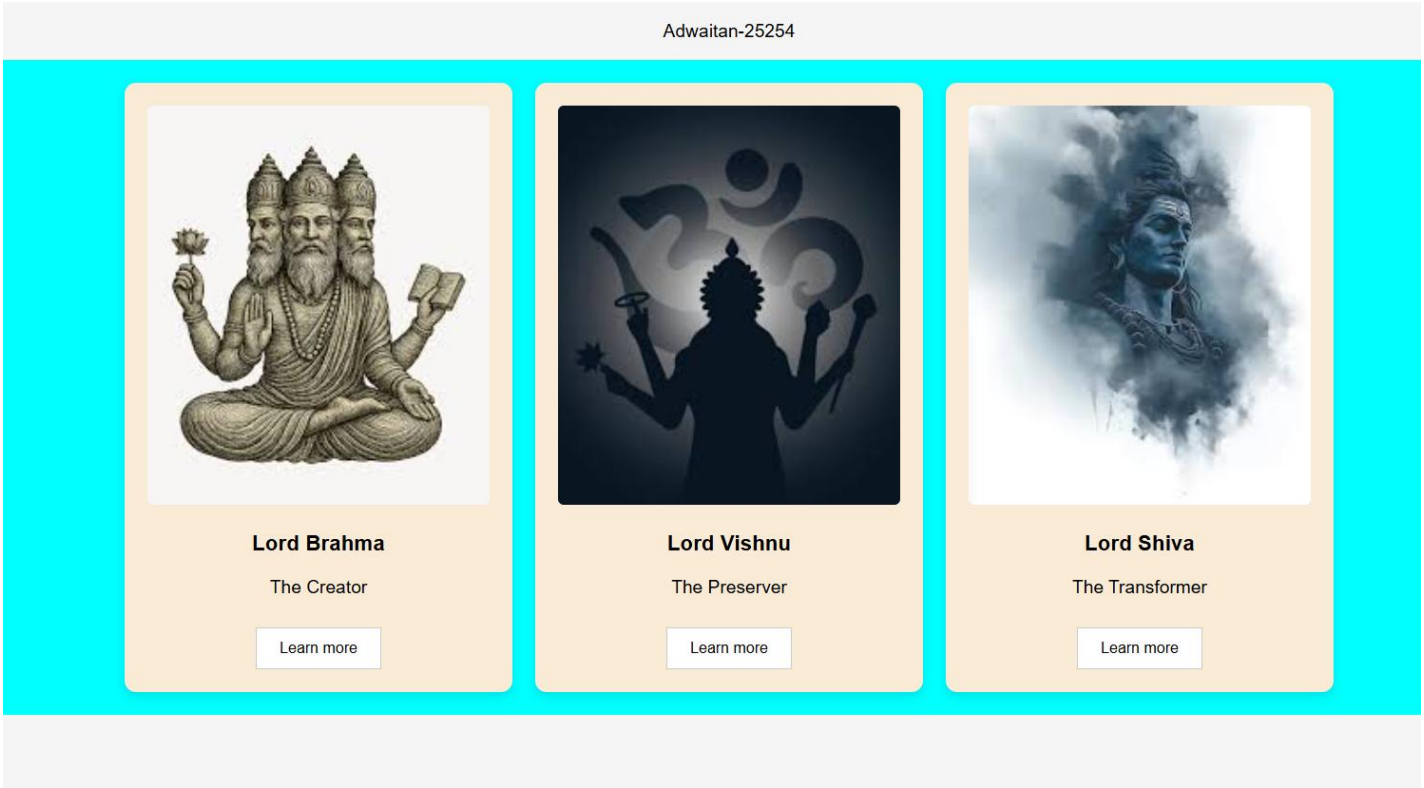
1. **Aim:** Create a card layout using tag. Consider three cards and a button for each card using HTML and CSS.
   Program:

```
<!DOCTYPE html>
<html>
<head>
  <style>
    body {
      font-family: Arial, sans-serif;
      text-align: center;
      background-color: whitesmoke;
      margin: 0;
      padding: 20px;
    }
    .container {
      display: flex;
      flex-wrap: wrap;
      justify-content: center;
      gap: 20px;
      background-color: aqua;
      padding: 20px;
    }
    .card {
      width: 300px;
      background-color: antiquewhite;
      padding: 20px;
      border-radius: 10px;
      box-shadow: 0 4px 8px rgba(0,0,0,0.1);
    }
```

```
    .image {
        width: 100%;
        height: 350px;
        object-fit: cover;
        border-radius: 5px;
    }
    .button {
        cursor: pointer;
        background-color: white;
        border: 1px solid #ccc;
        padding: 10px 20px;
        margin-top: 10px;
        transition: 0.3s;
    }
    .button:hover {
        background-color: #ddd;
    }
  </style>
</head>
<body>
  <p style="text-align: center;">Adwaitan-25254</p>
  <div class="container">
    <div class="card">
        <img class="image" src="brahma.jpg" alt="Lord Brahma">
        <h3>Lord Brahma</h3>
        <p>The Creator</p>
        <button class="button">Learn more</button>
    </div>
    <div class="card">
```

```
        <img class="image" src="vishnu.jpg" alt="Lord Vishnu">
        <h3>Lord Vishnu</h3>
        <p>The Preserver</p>
        <button class="button">Learn more</button>
      </div>
      <div class="card">
        <img class="image" src="shiva.jpg" alt="Lord Shiva">
        <h3>Lord Shiva</h3>
        <p>The Transformer</p>
        <button class="button">Learn more</button>
      </div>
    </div>
</body>
</html>
```

OUTPUT:



2. **Aim:** Navigation using iframe (mini website). Create 3 basic pages like contact.html, home.html, and about.html.

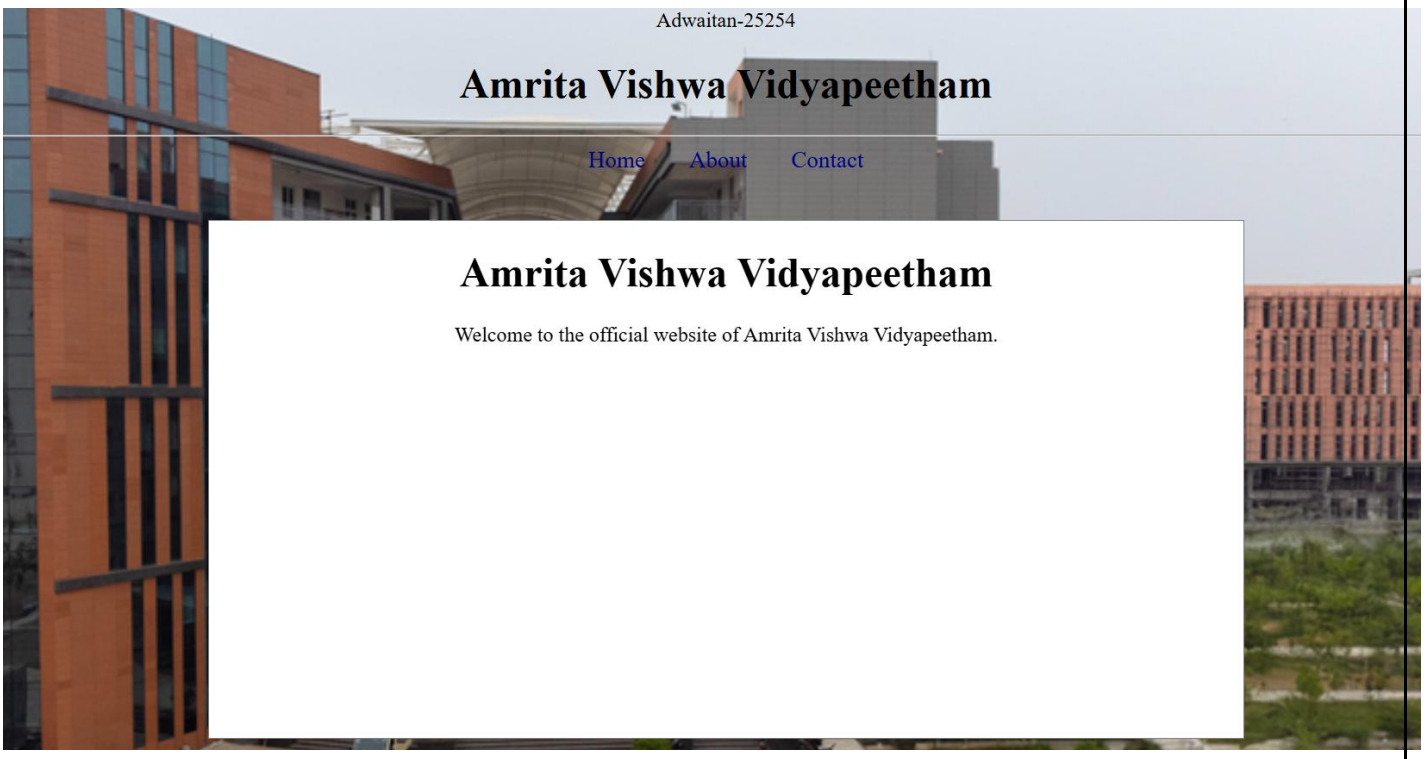
Program:

```
<!DOCTYPE html>
<html>
<head>
  <title>Mini Website</title>
  <style>
    body {
    background-image: url("amrita.jpg");
    background-size: cover;
    background-repeat: no-repeat;
    background-position: center;
    }
    iframe {
      background-color: white;
      border: 1px solid gray;
    }
     a {
    text-decoration: none;
    color: darkblue;
    font-size: 18px;
    margin: 0 15px;
     }
    a:hover {
    text-decoration: underline;
    }
  </style>
</head>
```

```
<body>
  <h1 align="center">Amrita Vishwa Vidyapeetham</h1>
  <hr>
  <center>
    <a href="home.html" target="homepage">Home</a>
    <a href="about.html" target="homepage">About</a>
    <a href="contact.html" target="homepage">Contact</a>
  </center>
  <br><br>
  <center>
    <iframe name="homepage" width="800" height="400">
    </iframe>
  </center>
</body>
</html>
<!DOCTYPE html>
<html>
<body>
  <center>
    <h1>Amrita Vishwa Vidyapeetham</h1>
    <p>Welcome to the official website of Amrita Vishwa Vidyapeetham.</p>
  </center>
</body>
</html>
<!DOCTYPE html>
<html>
<body>
  <center>
  <h2>Contact Us</h2>
```

```
    <p>Email: info@amrita.edu</p>
    <p>Phone: +917601032898</p>
    </center>
</body>
</html>
<!DOCTYPE html>
<html>
<body>
    <center>
    <h1>Amrita Vishwa Vidyapeetham</h1>
    <h2>About Us</h2>
    <p>Amrita Vishwa Vidyapeetham is a multi-campus university in India.</p>
    <p>It offers various undergraduate and postgraduate programs.</p>
    </center>
</body>
</html>
```

OUTPUT:



3. **Aim:** Design Amrita Login page by showing different campuses on homepage upon clicking on each campus the details about the campus should be displayed on the same page, use HTML and CSS to design stylish webpage.

Program:

```
<!DOCTYPE html>
<html>
<head>
  <title>Mini Website</title>
  <style>
    body {
    background-color: rgb(11, 220, 196);
    }
    iframe {
      background-color: white;
      border: 1px solid gray;
    }
     a {
```

```
        text-decoration: none;
        color: darkblue;
        font-size: 18px;
        margin: 0 15px;
         }
        a:hover {
        text-decoration: underline;
        }
    </style>
</head>
<body>
    <p style="text-align: center;">Adwaitan-25254</p>
    <h1 align="center">Amrita Vishwa Vidyapeetham</h1>
    <hr>
    <center>
        <a href="amaravati.html" target="homepage1">Amaravati</a>
        <a href="bengaluru.html" target="homepage1">Bengaluru</a>
        <a href="coimbatore.html" target="homepage1">Coimbatore</a>
        <a href="chennai.html" target="homepage1">Chennai</a>
    </center>
    <br><br>
    <center>
        <iframe name="homepage1" width="800" height="400">
        </iframe>
    </center>
</body>
</html>
<!DOCTYPE html>
<html>
```

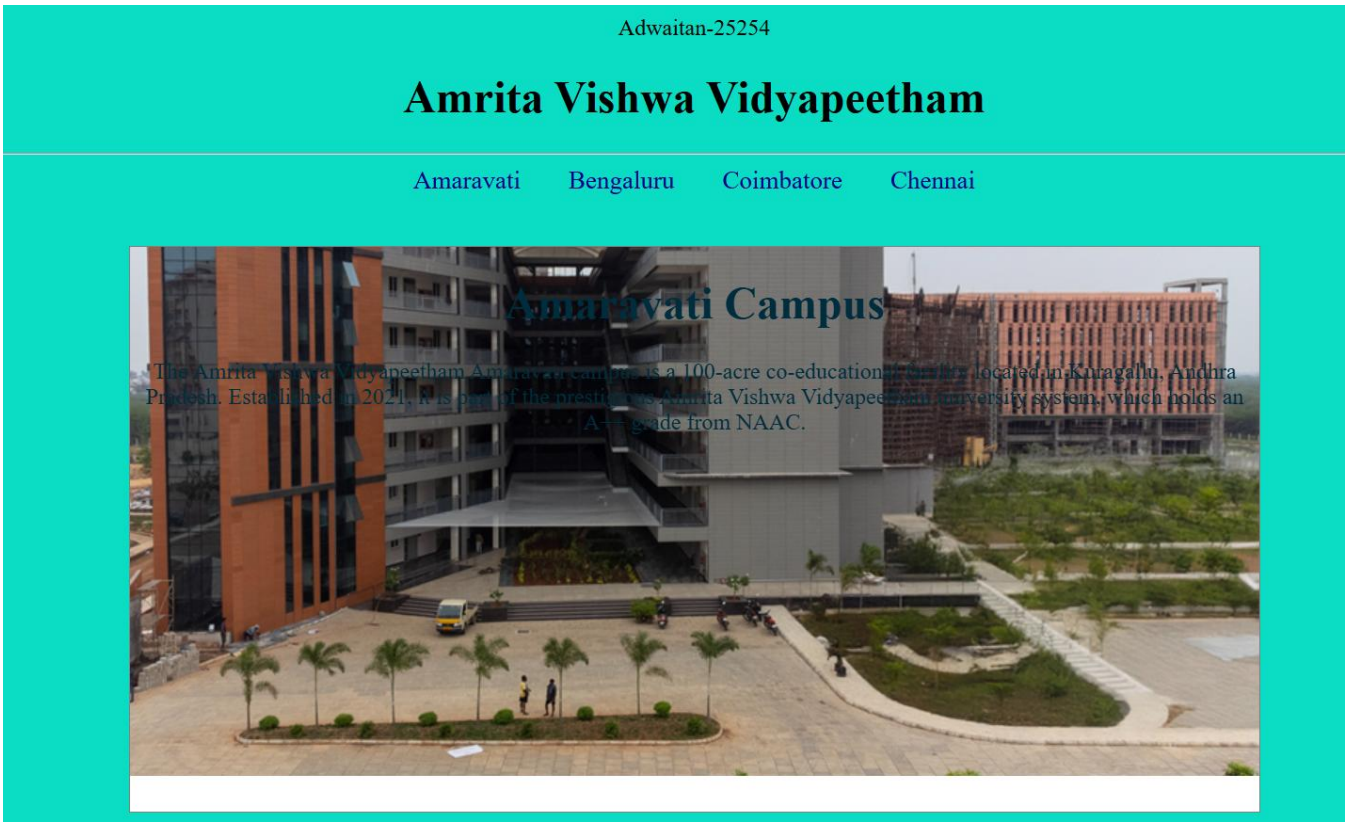
```
<head>
  <style>
    body {
      background-image: url("amrita.jpg");
      background-size: cover;
      background-repeat: no-repeat;
      background-position: center;
    }
  </style>
</head>
<body style="color: rgb(1, 46, 63);">
  <center>
    <h1>Amaravati Campus</h1>
    <p>The Amrita Vishwa Vidyapeetham Amaravati campus is a 100-acre
      co-educational facility located in Kuragallu, Andhra Pradesh.
      Established in 2021, it is part of the prestigious
      Amrita Vishwa Vidyapeetham university system, which holds an
      A++ grade from NAAC.</p>
  </center>
</body>
</html>
<!DOCTYPE html>
<html>
<head>
  <style>
    body {
      background-image: url("bengaluru.jpg");
      background-size: cover;
      background-repeat: no-repeat;
```

```
        background-position: center;
      }
    </style>
  </head>
  <body>
    <center>
      <h1>Bengaluru Campus</h1>
      <p>The Amrita Vishwa Vidyapeetham Bengaluru campus is a 25- to 50-acre
        facility located in Kasavanahalli, off Sarjapur Road in South Bengaluru.
        Established in 2002, the campus integrates modern academic infrastructure
        with a serene environment featuring green lawns and a temple atmosphere.</p>
    </center>
  </body>
  </html>
  <!DOCTYPE html>
  <html>
  <head>
    <style>
      body {
        background-image: url("chennai.jpg");
        background-size: cover;
        background-position: center;
      }
    </style>
  </head>
  <body>
    <center>
      <h1>Chennai Campus</h1>
      <p>The Amrita Vishwa Vidyapeetham Chennai campus, established in 2019,
```

```
        is a 13.5-acre modern facility located in Vengal Village,
        Thiruvallur District. As part of a university ranked 8th best in India
        by NIRF 2025, the campus primarily focuses on high-demand engineering
        specialisations and research.</p>
    </center>
</body>
</html>
<!DOCTYPE html>
<html>
<head>
    <style>
        body {
            background-image: url("campus2.jpg");
            background-size: cover;
            background-repeat: no-repeat;
            background-position: center;
        }
    </style>
</head>
<body>
    <center>
        <h1>Coimbatore Campus</h1>
        <p>The Amrita Vishwa Vidyapeetham Coimbatore campus is the headquarters and
            first campus of the university system, situated on a lush 400-acre site
            at the foothills of the Western Ghats in Ettimadai. As of late 2025 and
            early 2026, the campus continues to lead in national rankings and
            placement outcomes.</p>
    </center>
</body>
```

</html>

Output:


Adwaitan-25254
Amrita Vishwa Vidyapeetham
Amaravati Bengaluru Coimbatore Chennai
Amaravati Campus
The Amrita Vishwa Vidyapeetham Amaravati campus is a 100-acre co-educational campus located in Kuragallu, Andhra Pradesh. Established in 2021, it is part of the prestigious Amrita Vishwa Vidyapeetham university system, which holds an A++ grade from NAAC.

WEEK-6

Aim: Design a responsive e-commerce application using the grid layout. This application should contain different categories of products such as electronics, clothing, home-appliances, books. Based on the category we select corresponding products should be displayed on the sidebar.

PROGRAM:

```
<!DOCTYPE html>
<html>
  <head>
    <style>
      body {
        background-color: azure;
        margin: 0;
        font-family: sans-serif;
      }
      a {
        text-decoration: none;
        color: inherit;
      }
      .container {
        display: grid;
        grid-template-columns: minmax(160px, 15%) 1fr;
        grid-template-rows: auto auto 1fr auto;
        grid-template-areas: "store store"
                             "sale sale"
                             "categories products"
                             "rights rights";
        min-height: 100vh;
      }
      .header {
        grid-area: store;
```

```
    background-color: aquamarine;
    display: flex;
    padding: 20px;
    font-weight: bold;
    text-transform: uppercase;
    justify-content: center;
    align-items: center;
    color: white;
}
.sale {
    grid-area: sale;
    background-color: rgb(36, 36, 118);
    color: white;
    font-weight: bold;
    text-transform: uppercase;
    padding: 12px;
}

.categories {
    grid-area: categories;
    padding: 30px 0px;
    font-weight: bold;
    background-color: #e0f2f1;
    border-right: 1px solid #ccc;
}

.category-title {
    font-size: 1.2em;
    margin: 0 20px 20px 20px;
```

```
    border-bottom: 2px solid aquamarine;
    padding-bottom: 5px;
}
.category-item {
    display: block;
    padding: 10px 20px;
    cursor: pointer;
    transition: background-color 0.3s;
    font-weight: normal;
}
.category-item:hover {
    background-color: #b2dfdb;
    color: #004d40;
}
.products {
    grid-area: products;
    padding: 30px;
    background-color: white;
    display: flex;
    flex-wrap: wrap;
    gap: 25px;
    justify-content: center;
}
.product-table-container {
    border: 1px solid #eee;
    width: 260px;
    padding: 20px;
    background-color: #fff;
    box-sizing: border-box;
```

```
    border-radius: 4px;
}
.product-table {
    width: 100%;
    border-collapse: collapse;
}
.product-table th {
    padding-bottom: 15px;
    font-size: 1.1em;
    color: #333;
}
.product-table td {
    padding: 8px 0;
    text-align: center;
}
.product-img {
    width: 100%;
    height: 180px;
    object-fit: cover;
    border-radius: 4px;
    background-color: #f9f9f9;
}
.price-text {
    color: #00796b;
    font-weight: bold;
    padding-top: 15px;
    font-size: 1.1em;
}
.footer {
```

```
            grid-area: rights;
            background-color: black;
            color: white;
            text-align: center;
            padding: 20px;
            font-size: 14px;
        }
        .button {
            cursor: pointer;
            background-color: rgb(36, 36, 118);
            color: white;
            border: none;
            padding: 12px 24px;
            margin-top: 15px;
            display: inline-block;
            border-radius: 4px;
            font-size: 13px;
            text-transform: uppercase;
            font-weight: bold;
        }
        .button:hover {
            background-color: #4a4ae2;
        }
    </style>
</head>
<body>
    <div class="container">
        <div class="header">
            <a href="#"><h3>E-COMMERCE STORE</h3></a>
```

```
</div>
<div class="sale">
  <marquee scrollamount="10">
    🔥 Flash sale is live! - get 50% off on all items 🔥
  </marquee>
</div>
<div class="categories">
  <div class="category-title">CATEGORIES</div>
  <a href="#" class="category-item">Electronics</a>
  <a href="#" class="category-item">Fashion</a>
  <a href="#" class="category-item">Home & Living</a>
  <a href="#" class="category-item">Accessories</a>
  <a href="#" class="category-item">Beauty</a>
</div>
<div class="products">
  <div class="product-table-container">
    <table class="product-table">
      <tr><th>Smart Watch Pro</th></tr>
      <tr>
        <td>
          <img src="https://images.unsplash.com/photo-1523275335684-
37898b6baf30?w=300&q=80" alt="Smart Watch" class="product-img">
        </td>
      </tr>
      <tr><td class="price-text">₹15,999</td></tr>
      <tr>
        <td>
          <a href="#" class="button">Buy Now</a>
        </td>
```

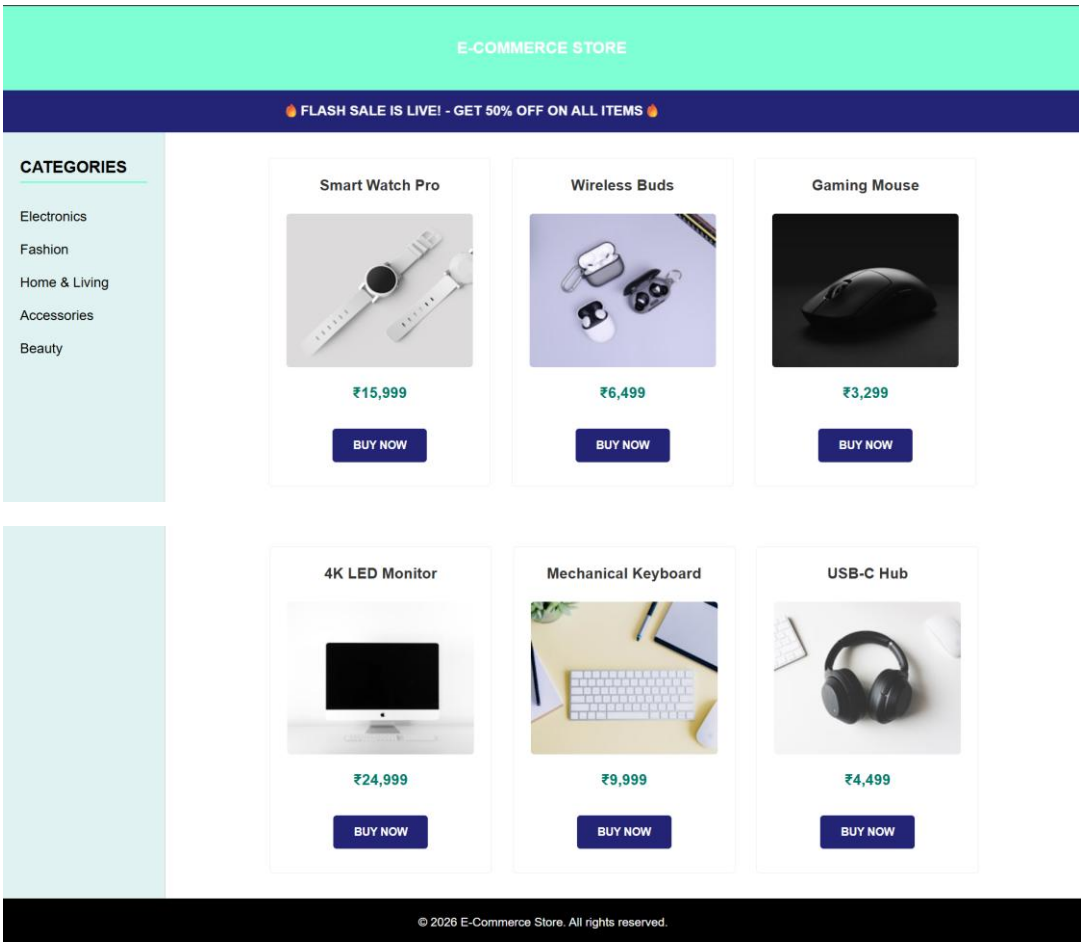
```
            </tr>
          </table>
        </div>
        <div class="product-table-container">
          <table class="product-table">
            <tr><th>Wireless Buds</th></tr>
            <tr>
              <td>
                <img src="https://images.unsplash.com/photo-1590658268037-
6bf12165a8df?w=300&q=80" alt="Wireless Buds" class="product-img">
              </td>
            </tr>
            <tr><td class="price-text">₹6,499</td></tr>
            <tr>
              <td>
                <a href="#" class="button">Buy Now</a>
              </td>
            </tr>
          </table>
        </div>
        <div class="product-table-container">
          <table class="product-table">
            <tr><th>Gaming Mouse</th></tr>
            <tr>
              <td>
                <img src="https://images.unsplash.com/photo-1615663245857-
ac93bb7c39e7?w=300&q=80" alt="Gaming Mouse" class="product-img">
              </td>
            </tr>
            <tr><td class="price-text">₹3,299</td></tr>
```

```
            <tr>
              <td>
                <a href="#" class="button">Buy Now</a>
              </td>
            </tr>
          </table>
        </div>
        <div class="product-table-container">
          <table class="product-table">
            <tr><th>4K LED Monitor</th></tr>
            <tr>
              <td>
                <img src="https://images.unsplash.com/photo-1527443224154-
c4a3942d3acf?w=300&q=80" alt="LED Monitor" class="product-img">
              </td>
            </tr>
            <tr><td class="price-text">₹24,999</td></tr>
            <tr>
              <td>
                <a href="#" class="button">Buy Now</a>
              </td>
            </tr>
          </table>
        </div>
        <div class="product-table-container">
          <table class="product-table">
            <tr><th>Mechanical Keyboard</th></tr>
            <tr>
              <td>
```

```
                <img src="https://images.unsplash.com/photo-1511467687858-
23d96c32e4ae?w=300&q=80" alt="Keyboard" class="product-img">
            </td>
        </tr>
        <tr><td class="price-text">₹9,999</td></tr>
        <tr>
            <td>
                <a href="#" class="button">Buy Now</a>
            </td>
        </tr>
    </table>
  </div>
  <div class="product-table-container">
    <table class="product-table">
        <tr><th>USB-C Hub</th></tr>
        <tr>
            <td>
                <img src="https://images.unsplash.com/photo-1546435770-a3e426bf472b?w=300&q=80"
alt="Hub" class="product-img">
            </td>
        </tr>
        <tr><td class="price-text">₹4,499</td></tr>
        <tr>
            <td>
                <a href="#" class="button">Buy Now</a>
            </td>
        </tr>
    </table>
  </div>
</div>
```

```
        <div class="footer">
            <div>© 2026 E-Commerce Store. All rights reserved.</div>
        </div>
    </div>
  </body>
</html>
```

OUTPUT:

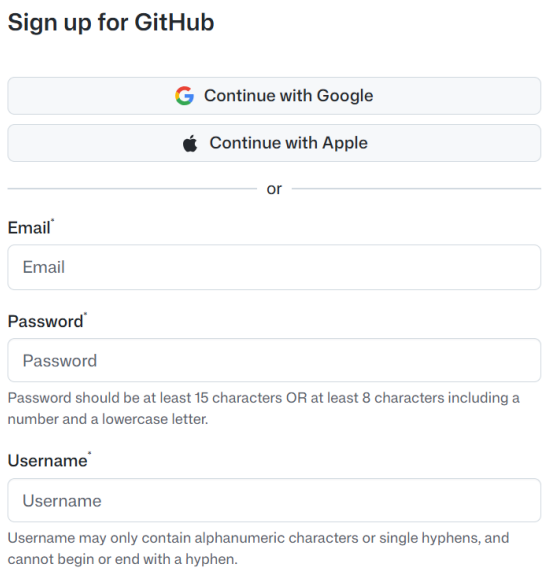


WEEK-7

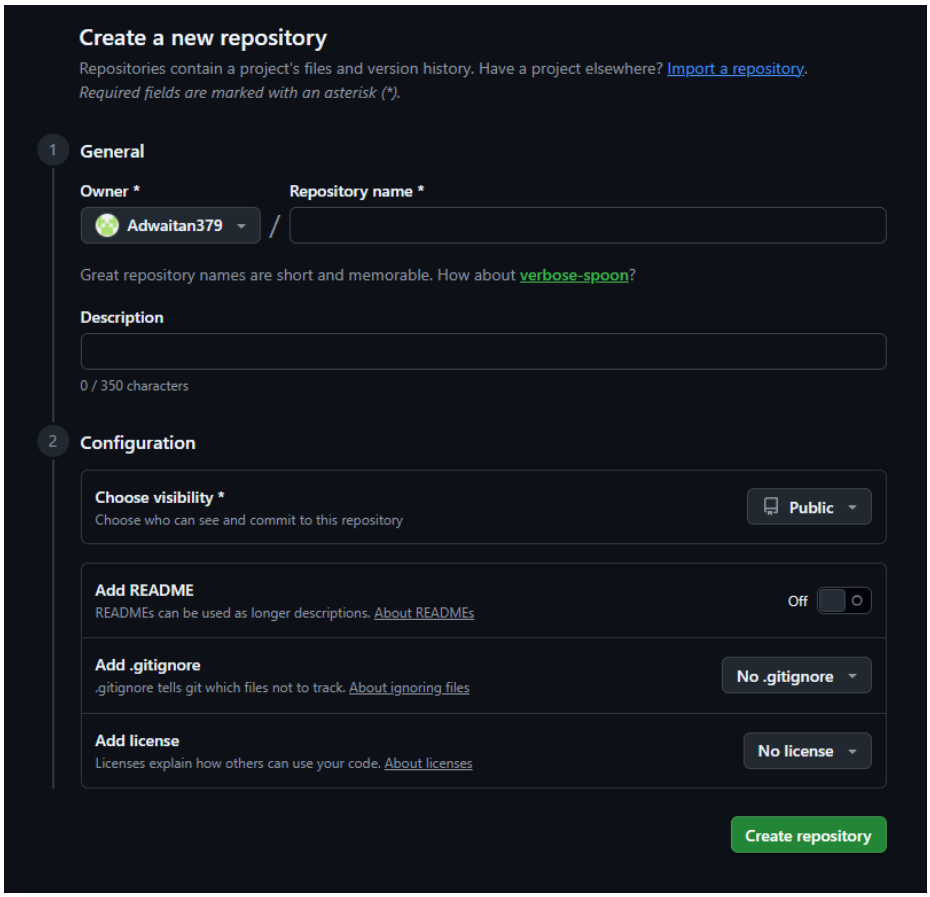
AIM: create a github account and repository.

PROCEDURE:

- Creating git account.

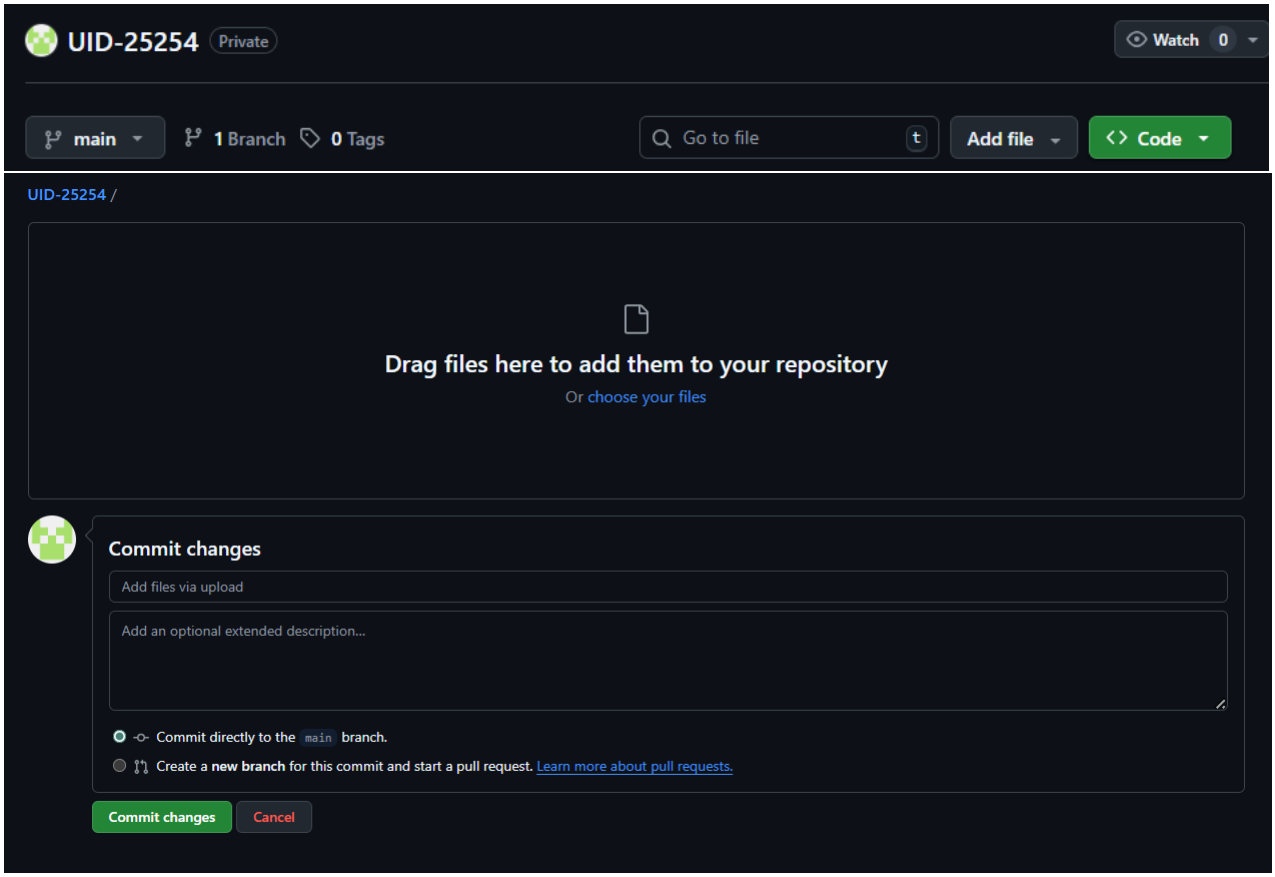


- Creating a repository

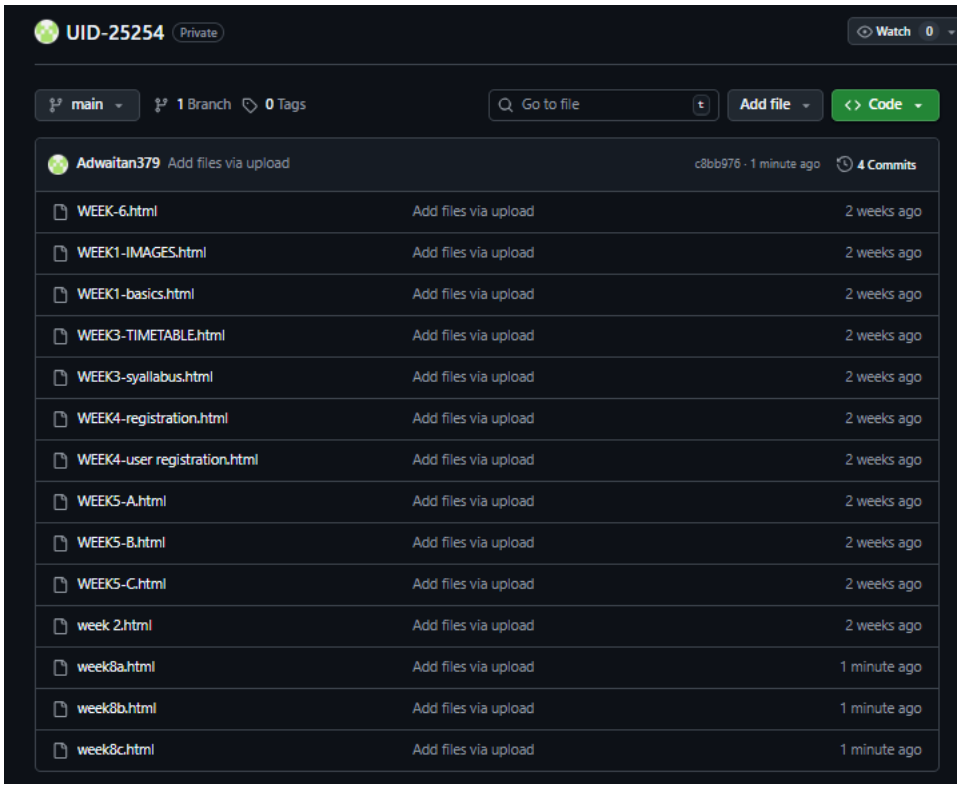


- In choose visibility we can create public and private.

- Public: can be seen by others without your permission.
- Private: can be seen your repository with your permission.
- **A**dding files into repository:



- Repository after uploading files:



WEEK-8

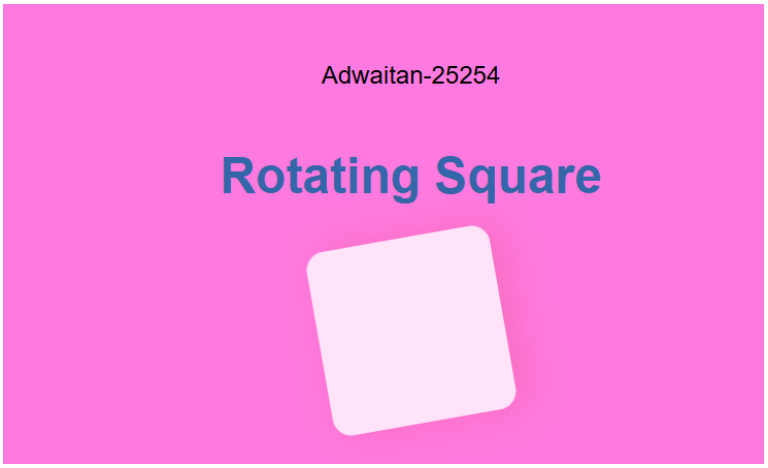
8.A) Aim: create a web page that displays a square that continuously rotates 360 using css animation

Program :

```
<!DOCTYPE html>
<html>
<head>
<title>Rotating Square</title>
<style>
body {
margin: 0;
height: 100vh;
display: flex;
flex-direction: column;
justify-content: flex-start;
align-items: center;
background-color: #ff7ae0;
font-family: Arial, sans-serif;
padding-top: 50px;
}
.square {
width: 120px;
height: 120px;
background: #ffffffcc;
border-radius: 12px;
box-shadow: 0 8px 25px rgba(216, 55, 55, 0.2);
animation: rotate 3s linear infinite;
}
@keyframes rotate {
from {
```

```
transform: rotate(0deg);
}
to {
transform: rotate(360deg);
}
}
</style>
</head>
<body>
<p>Adwaitan-25254</p>
<h1 style="color: #3467a9;">Rotating Square</h1>
<div class="square"></div>
</body>
</html>
```

OUTPUT:



8.B)Aim: create a ball that moves up and down continuously using css animation

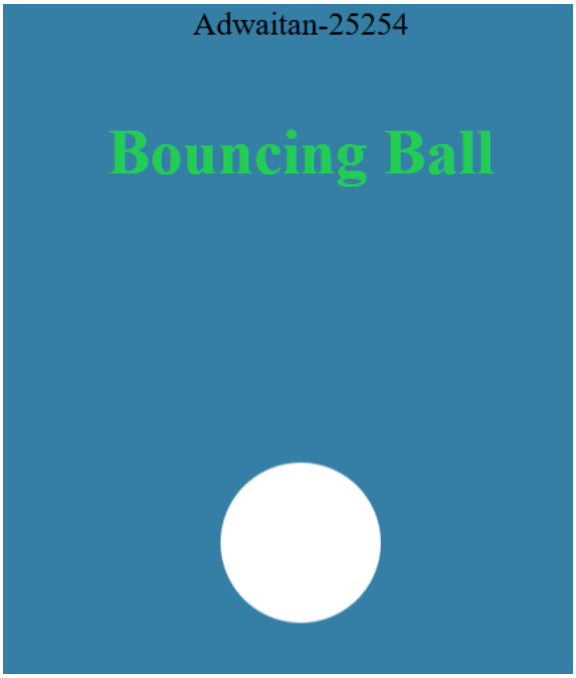
Program:

```
<!DOCTYPE html>
<html>
<head>
<title>Bouncing Ball</title>
<style>
```

```
body {
margin: 0;
height: 100vh;
display: flex;
flex-direction: column;
align-items: center;
justify-content: flex-start;
background: #357ea5;
}
h1 {
margin-top: 20px;
color: #22ce52;
}
.ball {
width: 80px;
height: 80px;
background: #ffffff;
border-radius: 50%;
margin-top: 120px;
animation: bounce 1.5s ease-in-out infinite;
}
@keyframes bounce {
0% {
transform: translateY(0);
}
50% {
transform: translateY(-120px);
}
100% {
```

```
transform: translateY(0);
}
}
</style>
</head>
<body>
<p>Adwaitan-25254</p>
<h1>Bouncing Ball</h1>
<div class="ball"></div>
</body>
</html>
```

OUTPUT:



8.C) Aim: create a circle that moves horizontally and rotates At the same time

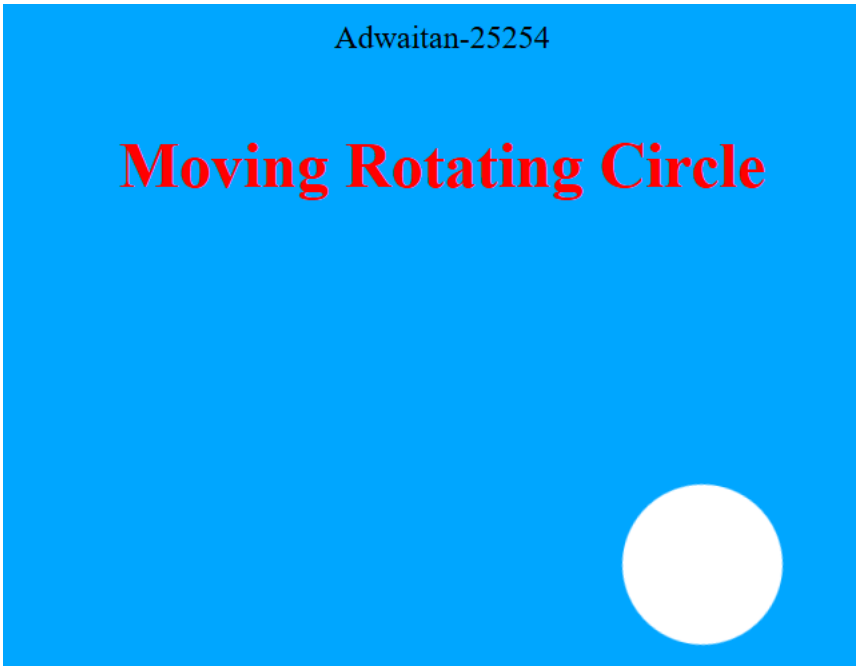
Program:

```
<!DOCTYPE html>
<html lang="en">
<head>
<title>Moving Rotating Circle</title>
```

```
<style>
body {
margin: 0;
height: 100vh;
display: flex;
flex-direction: column;
align-items: center;
justify-content: flex-start;
background: #00a6ff;
overflow: hidden;
}
h1 {
margin-top: 20px;
color: #ff0000;
}
.circle {
width: 80px;
height: 80px;
background: #ffffff;
border-radius: 50%;
margin-top: 120px;
animation: moveRotate 3s linear infinite;
}
@keyframes moveRotate {
0% {
transform: translateX(-150px) rotate(0deg);
}
50% {
transform: translateX(150px) rotate(180deg);
```

```
}
100% {
transform: translateX(-150px) rotate(360deg);
}
}
</style>
</head>
<body>
<p>Adwaitan-25254</p>
<h1>Moving Rotating Circle</h1>
<div class="circle"></div>
</body>
</html>
```

OUTPUT:



Explanation:

- @keyframes:we use @keyframes for animation from starting to end transformation. We used animation shorthand property for these things to mention the animations preferences and use keyframes for mentioning the positions of the animation and used style attribute and some value properties for look and we used internal css in it.

WEEK-10

AIM: create a web page using html, css, java script based on the given conditions:
a. create a button for each program, based on the button clicked the corresponding program has to be executed and should display the output.
b. the logic for each button includes finding an even number , odd number, prime or not, factorial, amstrong or not.
c. use appropriate designs to display the output.

Program:

```
<!DOCTYPE html>
<html>
<head>
  <title>NUMBERS CHECKER</title>
  <style>
    body {
      font-family: sans-serif;
      background-color: #f0f0f0;
      text-align: center;
      margin: 20px;
    }
    .header-info {
      color: gray;
    }
    .div-container {
      display: flex;
      flex-wrap: wrap;
      justify-content: center;
      gap: 10px;
      margin-bottom: 20px;
    }
    .div-item {
      background-color: white;
      border: 2px solid #ccc;
      padding: 15px;
      min-width: 120px;
      flex: 1;
      border-radius: 15px;
    }
    .div-item a {
      text-decoration: none;
      color: blue;
      font-weight: bold;
      display: block;
    }
    iframe {
```

```
            border: 2px solid #333;
            background-color: white;
            border-radius: 15px;
            width: 50%;
            height: 300px;
            display: block;
            margin: 0 auto;
        }
    </style>
</head>
<body>
    <p class="header-info">Adwaitan-25254</p>
    <h1>NUMBERS CHECKER</h1>
    <hr>
    <div class="div-container">
        <div class="div-item" style="border-color: #ff5722;">
            <a href="even.html" target="homepage">EVEN</a>
        </div>
        <div class="div-item" style="border-color: #4caf50;">
            <a href="prime.html" target="homepage">PRIME</a>
        </div>
        <div class="div-item" style="border-color: #2196f3;">
            <a href="factorial.html" target="homepage">FACTORIAL</a>
        </div>
        <div class="div-item" style="border-color: #9c27b0;">
            <a href="amstromg.html" target="homepage">ARMSTRONG</a>
        </div>
    </div>
    <iframe name="homepage" src="about:blank"></iframe>
</body>
</html>
<!DOCTYPE html>
<html>
<head>
    <title>Even or Odd Checker</title>
    <style>
        body {
            font-family: sans-serif;
            text-align: center;
            padding-top: 40px;
            background-color: white;
        }
        h2 {
            margin-bottom: 20px;
```

```
        }
        input {
            display: block;
            margin: 10px auto;
            padding: 10px;
            width: 200px;
            border-radius: 5px;
            border: 1px solid #ccc;
        }
        button {
            display: block;
            margin: 10px auto;
            padding: 10px 20px;
            background-color: #9c27b0;
            color: white;
            border: none;
            border-radius: 5px;
            cursor: pointer;
        }
        #result {
            margin-top: 30px;
            font-size: 1.5rem;
            font-weight: bold;
            color: #333;
        }
    </style>
</head>
<body>
    <h2>It is a Even or Odd?</h2>
    <input type="number" id="num" placeholder="Enter a number">
    <button onclick="check()">Check Number</button>
    <div id="result"></div>
    <script>
        function check() {
            let a = document.getElementById("num").value;
            if (a === "") {
                document.getElementById("result").innerHTML = "type a number first!";
                return;
            }
            if (a % 2 == 0) {
                document.getElementById("result").innerHTML = a + " is an Even Number!";
            } else {
                document.getElementById("result").innerHTML = a + " is an Odd Number!";
            }
```

```
        }
    </script>
</body>
</html>
<!DOCTYPE html>
<html>
<head>
    <title>PRIME CHECKER</title>
    <style>
        body {
            font-family: sans-serif;
            text-align: center;
            padding-top: 40px;
            background-color: white;
        }
        h2 {
            margin-bottom: 20px;
        }
        input {
            display: block;
            margin: 10px auto;
            padding: 10px;
            width: 200px;
            border-radius: 5px;
            border: 1px solid #ccc;
        }
        button {
            display: block;
            margin: 10px auto;
            padding: 10px 20px;
            background-color: #4caf50;
            color: white;
            border: none;
            border-radius: 5px;
            cursor: pointer;
        }
        #result {
            margin-top: 30px;
            font-size: 1.5rem;
            font-weight: bold;
            color: #333;
        }
    </style>
</head>
```

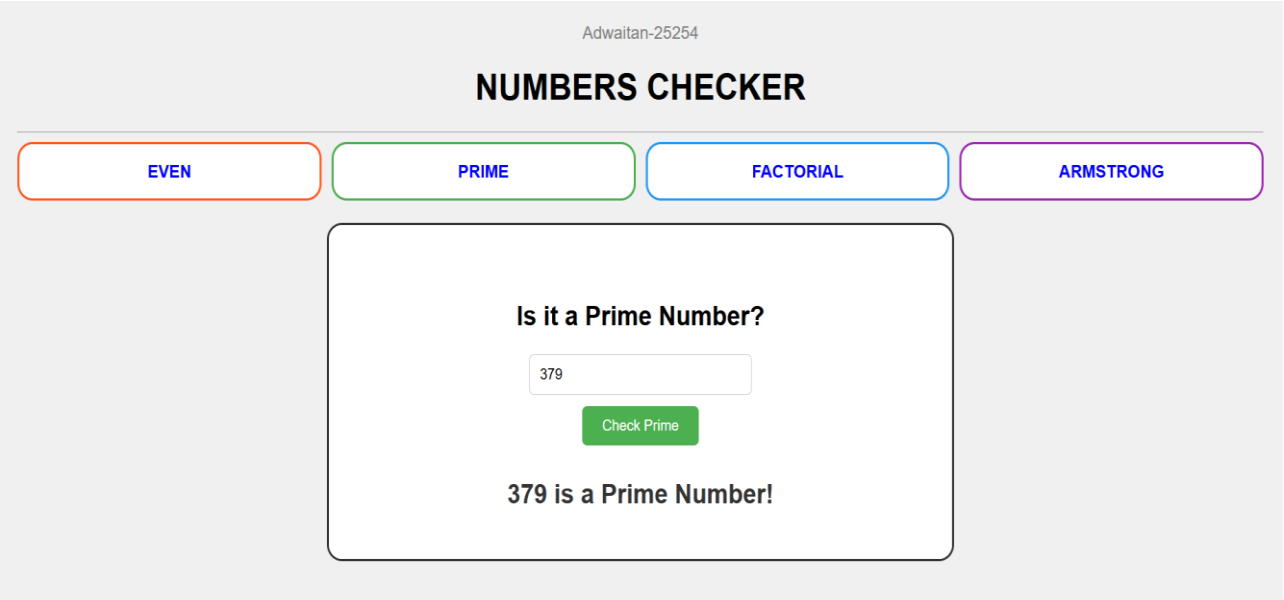
```
<body>
  <h2>Is it a Prime Number?</h2>
  <input type="number" id="num" placeholder="Enter a number">
  <button onclick="check()">Check Prime</button>
  <div id="result"></div>
  <script>
  function check() {
    let n = document.getElementById("num").value;
    let count = 0;

    if (n === "") {
      document.getElementById("result").innerHTML = "Please enter a number!";
      return;
    }
    for (let i = 1; i <= n; i++) {
      if (n % i == 0) {
        count++;
      }
    }
    if (count == 2) {
      document.getElementById("result").innerHTML = n + " is a Prime Number!";
    } else {
      document.getElementById("result").innerHTML = n + " is Not a Prime Number.";
    }
  }
  </script>
</body>
</html>
<!DOCTYPE html>
<html>
<head>
  <title>Factorial Finder</title>
  <style>
    body {
      font-family: sans-serif;
      text-align: center;
      padding-top: 40px;
      background-color: white;
    }
    h2 {
      margin-bottom: 20px;
    }
    input {
      display: block;
```

```
            margin: 10px auto;
            padding: 10px;
            width: 200px;
            border-radius: 5px;
            border: 1px solid #ccc;
        }
        button {
            display: block;
            margin: 10px auto;
            padding: 10px 20px;
            background-color: #2196f3;
            color: white;
            border: none;
            border-radius: 5px;
            cursor: pointer;
        }
        #result {
            margin-top: 30px;
            font-size: 1.5rem;
            font-weight: bold;
            color: #333;
        }
    </style>
</head>
<body>
    <h2>Factorial Finder</h2>
    <input type="number" id="num" placeholder="Enter a number">
    <button onclick="check()">Calculate</button>
    <div id="result"></div>
    <script>
    function check() {
        let n = document.getElementById("num").value;
        let k = 1;
        if (n === "") {
            document.getElementById("result").innerHTML = "Please enter a number first.";
            return;
        }
        for (let i = 1; i <= n; i++) {
            k = k * i;
        }
        document.getElementById("result").innerHTML = "Factorial of " + n + " is " + k;
    }
    </script>
</body>
```

```
</html>
<!DOCTYPE html>
<html>
<head>
  <title>Armstrong Checker</title>
  <style>
    body {
      font-family: sans-serif;
      text-align: center;
      padding-top: 40px;
      background-color: white;
    }
    h2 {
      margin-bottom: 20px;
    }
    input {
      display: block;
      margin: 10px auto;
      padding: 10px;
      width: 200px;
      border-radius: 5px;
      border: 1px solid #ccc;
    }
    button {
      display: block;
      margin: 10px auto;
      padding: 10px 20px;
      background-color: #9c27b0;
      color: white;
      border: none;
      border-radius: 5px;
      cursor: pointer;
    }
    #result {
      margin-top: 30px;
      font-size: 1.5rem;
      font-weight: bold;
      color: #333;
    }
  </style>
</head>
<body>
  <h2>Armstrong Number Checker!</h2>
  <input type="number" id="num" placeholder="Enter a number">
```

```
    <button onclick="check()">Check Number</button>
    <div id="result"></div>
    <script>
    function check() {
      let n = document.getElementById("num").value;
      if (n === "") {
        document.getElementById("result").innerHTML = "Enter a number first!";
        return;
      }
      let k = Number(n);
      let temp = k;
      let s = 0;
      while (temp > 0) {
        let r = temp % 10;
        s = s + (r * r * r);
        temp = Math.floor(temp / 10);
      }
      if (s == k) {
        document.getElementById("result").innerHTML = k + " is an Armstrong Number!";
      } else {
        document.getElementById("result").innerHTML = k + " is Not an Armstrong Number.";
      }
    }
    </script>
  </body>
  </html>
```

OUTPUT:



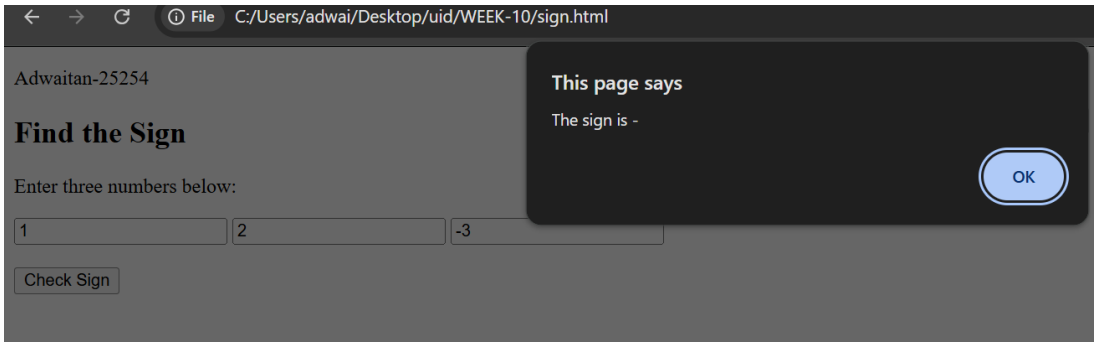
WEEK-10

1. **AIM:** Write a javascript conditional statement to find the sign of product of three numbers using functions. Display an alert box with the specific sign.

   PROGRAM:

```
<!DOCTYPE html>
<html>
<head>
  <title>Math Sign Checker</title>
</head>
<body>
  <p>Adwaitan-25254</p>
  <h2>Find the Sign</h2>
  <p>Enter three numbers below:</p>
  <input type="number" id="n1" placeholder="First number">
  <input type="number" id="n2" placeholder="Second number">
  <input type="number" id="n3" placeholder="Third number">
  <br><br>
  <button onclick="checkResult()">Check Sign</button>
  <script>
    function checkResult() {
      const a = parseFloat(document.getElementById('n1').value);
      const b = parseFloat(document.getElementById('n2').value);
      const c = parseFloat(document.getElementById('n3').value);
      findProductSign(a, b, c);
    }
    function findProductSign(num1, num2, num3) {
      if (isNaN(num1) || isNaN(num2) || isNaN(num3)) {
        alert("Please enter three numbers first!");
        return;
      }
      const product = num1 * num2 * num3;
      if (product > 0) {
        alert("The sign is +");
      } else if (product < 0) {
        alert("The sign is -");
      } else {
        alert("The product is 0");
      }
    }
  </script>
</body>
</html>
```

OUTPUT:



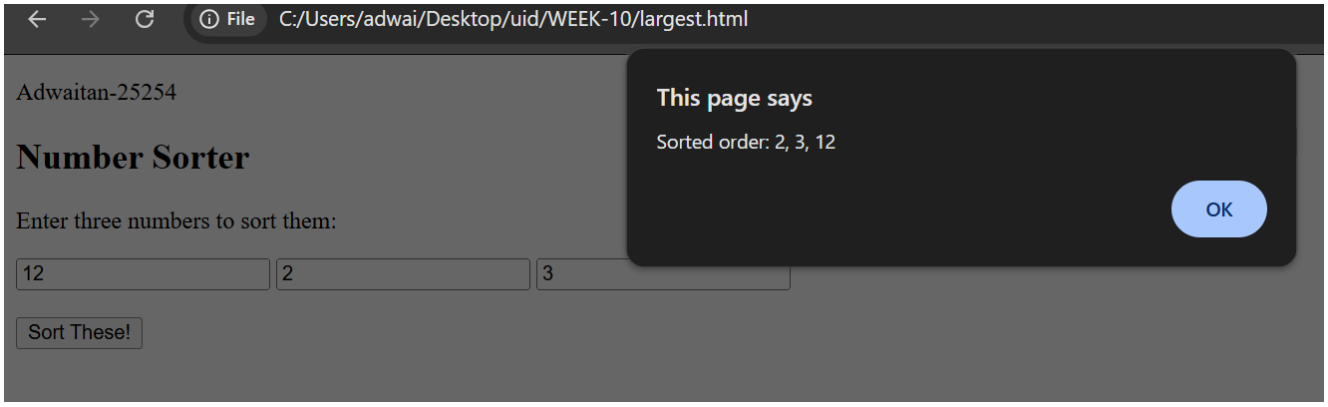
2. **AIM:** Write a javascript conditional statement to sort three numbers using functions. Display an alert box to show the result.

PROGRAM:

```
<!DOCTYPE html>
<html>
<head>
  <title>Sort My Numbers</title>
</head>
<body>
  <p>Adwaitan-25254</p>
  <h2>Number Sorter</h2>
  <p>Enter three numbers to sort them:</p>
  <input type="number" id="num1" placeholder="First number">
  <input type="number" id="num2" placeholder="Second number">
  <input type="number" id="num3" placeholder="Third number">
  <br><br>
  <button onclick="getAndSort()">Sort These!</button>
  <script>
    function getAndSort() {
      let n1 = parseFloat(document.getElementById('num1').value);
      let n2 = parseFloat(document.getElementById('num2').value);
      let n3 = parseFloat(document.getElementById('num3').value);

      // 2. Check if all boxes have numbers
      if (isNaN(n1) || isNaN(n2) || isNaN(n3)) {
        alert("Please fill in all three boxes!");
        return;
      }
      sortThree(n1, n2, n3);
    }
    function sortThree(a, b, c) {
      let temp;
      if (a > b) { temp = a; a = b; b = temp; }
      if (b > c) { temp = b; b = c; c = temp; }
```

```
        if (a > b) { temp = a; a = b; b = temp; }
        alert("Sorted order: " + a + ", " + b + ", " + c);
      }
    </script>
  </body>
  </html>
```

OUTPUT:



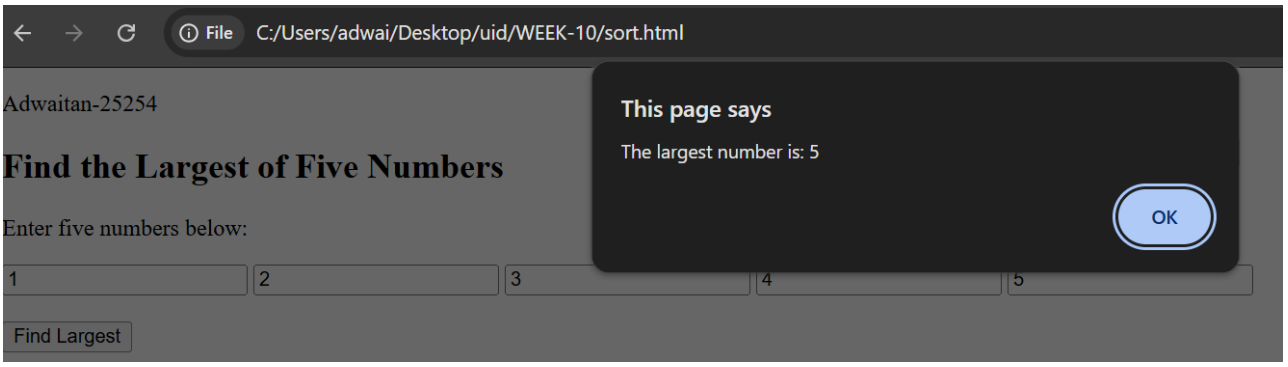
3. **AIM:** Write a javascript conditional statement to find the largest of five numbers using functions and onclick event. Display an alert box to show the result.

PROGRAM:

```
<!DOCTYPE html>
<html>
<head>
  <title>Find the Largest Number</title>
</head>
<body>
  <p>Adwaitan-25254</p>
  <h2>Find the Largest of Five Numbers</h2>
  <p>Enter five numbers below:</p>
  <input type="number" id="n1" placeholder="Num 1">
  <input type="number" id="n2" placeholder="Num 2">
  <input type="number" id="n3" placeholder="Num 3">
  <input type="number" id="n4" placeholder="Num 4">
  <input type="number" id="n5" placeholder="Num 5">
  <br><br>
  <button onclick="calculateLargest()">Find Largest</button>
  <script>
    function calculateLargest() {
      // Get all five values from the inputs
      const a = parseFloat(document.getElementById('n1').value);
      const b = parseFloat(document.getElementById('n2').value);
      const c = parseFloat(document.getElementById('n3').value);
```

```
        const d = parseFloat(document.getElementById('n4').value);
        const e = parseFloat(document.getElementById('n5').value);
        if (isNaN(a) || isNaN(b) || isNaN(c) || isNaN(d) || isNaN(e)) {
            alert("Please enter all five numbers!");
            return;
        }
        findMax(a, b, c, d, e);
    }
    function findMax(v1, v2, v3, v4, v5) {
        let largest = v1;
        if (v2 > largest) {
            largest = v2;
        }
        if (v3 > largest) {
            largest = v3;
        }
        if (v4 > largest) {
            largest = v4;
        }
        if (v5 > largest) {
            largest = v5;
        }
        alert("The largest number is: " + largest);
    }
  </script>
</body>
</html>
```

OUTPUT:



4.AIM : Write a JavaScript for loop that will iterate from 0 to 15.For each iteration, it will check if the current number is odd or even, and display a message to the screen.

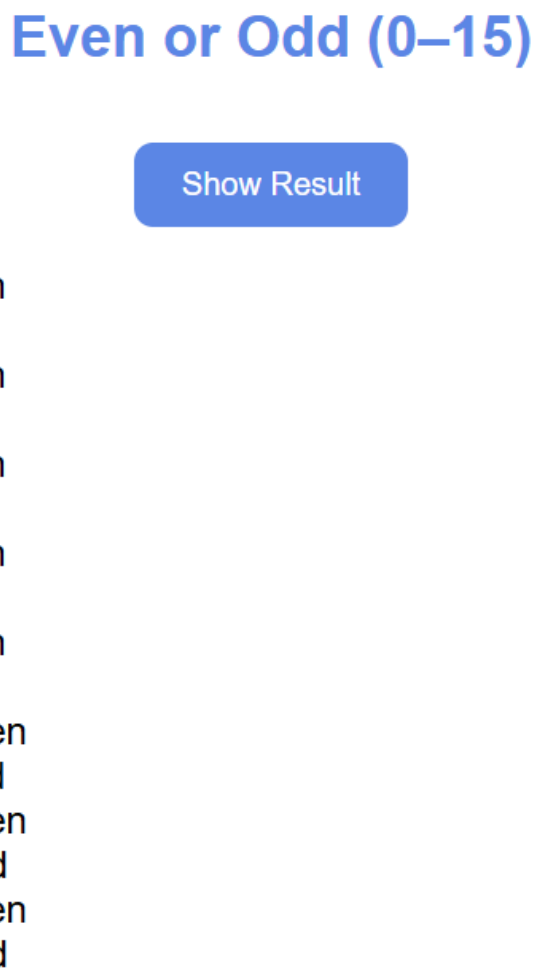
PROGRAM:

```html
<!DOCTYPE html>
<html>
<head>
  <title>Even or Odd (0 to 15)</title>
  <style>
    body {
      font-family: Arial;
      background: linear-gradient(135deg, #36d1dc, #5b86e5);
      display: flex;
      justify-content: center;
      align-items: center;
      height: 100vh;
      margin: 0;
    }
    .container {
      background: white;
      padding: 30px;
      border-radius: 15px;
      text-align: center;
      box-shadow: 0 10px 25px rgba(0,0,0,0.3);
      width: 350px;
    }
    h2 {
      color: #5b86e5;
    }
    button {
      padding: 10px 20px;
      border: none;
      border-radius: 8px;
```

```
        background: #5b86e5;
        color: white;
        cursor: pointer;
        margin-top: 10px;
    }
    button:hover {
        background: #3f6fd1;
    }
    #output {
        margin-top: 15px;
        text-align: left;
        font-size: 16px;
    }
  </style>
  <script>
    function checkNumbers() {
        let text = "";
        for (let i = 0; i <= 15; i++) {
            if (i % 2 == 0) {
                text += i + " is even<br>";
            } else {
                text += i + " is odd<br>";
            }
        }
        document.getElementById("output").innerHTML = text;
    }
  </script>
</head>
<body>
```

```
<div class="container">
   <h2>Even or Odd (0–15)</h2>
   <button onclick="checkNumbers()">Show Result</button>
   <div id="output"></div>
</div>
</body>
</html>
```

OUTPUT:



EXPLANATION OF TAGS:

<!DOCTYPE html>: Tells the browser that this is an HTML5 document.

<html>: The root element that wraps all the content of the page.

<head>: Contains "meta-information" about the page (like the title or styles) that isn't displayed directly on the screen.

<title>: Sets the text shown in the browser's tab or window title bar.

<body>: Contains all the visible content (text, buttons, inputs, etc.) that the user interacts with.

<h1> to <h6>: Headings of different sizes. <h2> is a sub-heading.

<p>: Defines a paragraph of text.

: Inserts a single line break.

: A container used to group elements together, usually to apply CSS styling (like in your "Even or Odd" example).

<style>: Allows you to write CSS code inside your HTML to change colors, fonts, layout, and spacing.

<input type="number">: Creates a box where the user can type numeric data. The id attribute is crucial because it acts like a label for the script to "find" and grab the data later.

<button>: Creates a clickable button. The onclick attribute connects the button to a specific JavaScript function that should run when the user clicks it.

<script>: This is where you write the JavaScript logic. This is the "brain" of your code, where you perform calculations, check conditions (like if/else), and create loops (like for) to make the page interactive.

WEEK-11

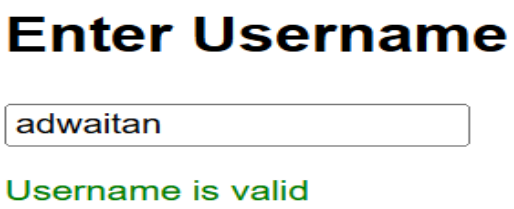
1.AIM: A website requires users to enter a username. The system should display a message while typing if the username is less than 5 characters.

PROGRAM:

```
<!DOCTYPE html>
<html>
<head>
  <title>Username Validation</title>
  <style>
    body {
      font-family: Arial;
      margin: 30px;
    }
    #message {
      color: red;
      font-size: 14px;
    }
  </style>
</head>
<body>
  <h2>Enter Username</h2>
  <input type="text" id="username" placeholder="Enter username">
  <p id="message"></p>
  <script>
    let usernameInput = document.getElementById("username");
    let message = document.getElementById("message");
    usernameInput.addEventListener("input", function() {
      let value = usernameInput.value;
      if (value.length < 5) {
```

```
            message.textContent = "Username must be at least 5 characters";
        } else {
            message.textContent = "Username is valid";
            message.style.color = "green";
        }
        if (value.length === 0) {
            message.textContent = "";
        }
    });
  </script>
</body>
</html>
```

OUTPUT:



2.AIM: A registration form should validate email format before submission. If invalid, the form should not be submitted.

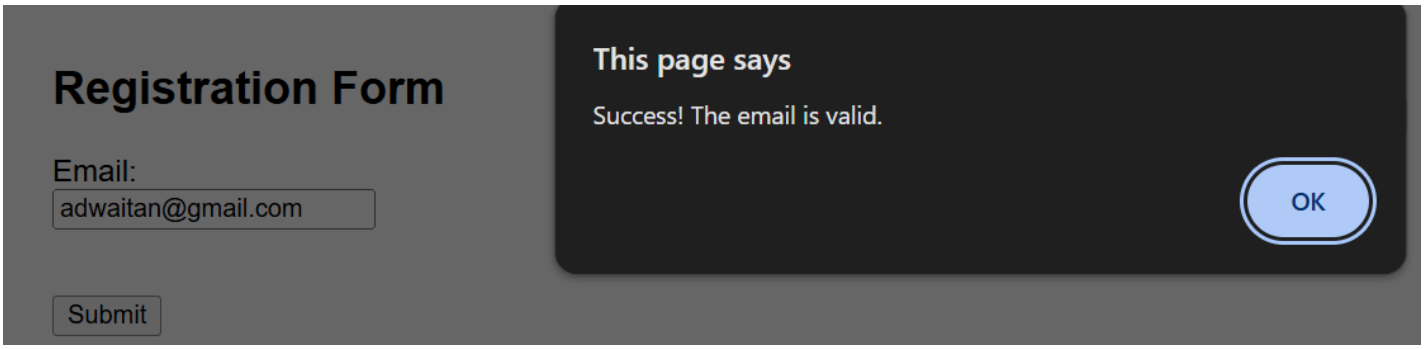
PROGRAM:

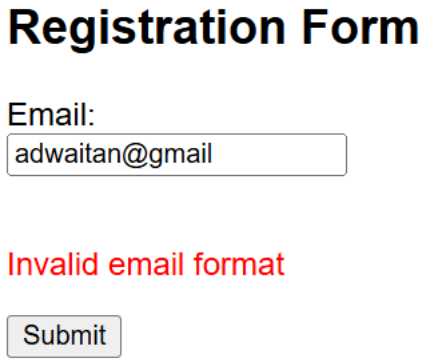
```
<!DOCTYPE html>
<html>
<head>
  <title>Email Validation</title>
  <style>
```

```
    body { font-family: Arial; margin: 30px; }
    #error { color: red; }
  </style>
</head>
<body>
  <h2>Registration Form</h2>
  <form id="regForm">
    <label>Email:</label><br>
    <input type="text" id="email" placeholder="example@mail.com"><br><br>
    <p id="error"></p>
    <button type="submit">Submit</button>
  </form>
  <script>
    document.getElementById("regForm").addEventListener("submit", function(event) {
      let email = document.getElementById("email").value;
      let error = document.getElementById("error");
      let pattern = /^[^ ]+@[^ ]+\.[a-z]{2,3}$/;
      if (!pattern.test(email)) {
        // Prevent the form from submitting if invalid
        event.preventDefault();
        error.textContent = "Invalid email format";
      } else {
        event.preventDefault();
        error.textContent = "";
        alert("Success! The email is valid.");
      }
    });
  </script>
</body>
```

```
</html>
```

OUTPUT:





3.AIM: A system should check password strength while typing and display whether it is weak or strong.

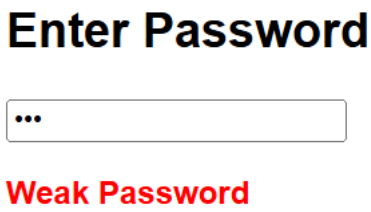
PROGRAM:

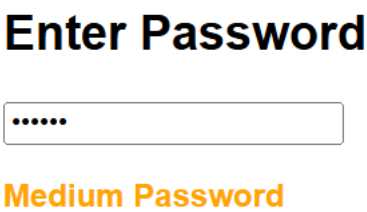
```
<!DOCTYPE html>
<html>
<head>
  <title>Password Strength Checker</title>
  <style>
    body {
      font-family: Arial;
      margin: 30px;
    }
    #strength {
      font-weight: bold;
    }
```

```
  </style>
</head>
<body>
  <h2>Enter Password</h2>
  <input type="password" id="password" placeholder="Enter password">
  <p id="strength"></p>
  <script>
    let passwordInput = document.getElementById("password");
    let strengthText = document.getElementById("strength");
    passwordInput.addEventListener("input", function() {
      let password = passwordInput.value;
      let hasUpper = /[A-Z]/.test(password);
      let hasLower = /[a-z]/.test(password);
      let hasNumber = /[0-9]/.test(password);
      let hasSpecial = /[!@#$%^&*]/.test(password);
      if (password.length < 6) {
        strengthText.textContent = "Weak Password";
        strengthText.style.color = "red";
      }
      else if (hasUpper && hasLower && hasNumber && hasSpecial) {
        strengthText.textContent = "Strong Password";
        strengthText.style.color = "green";
      }
      else {
        strengthText.textContent = "Medium Password";
        strengthText.style.color = "orange";
      }
      if (password.length === 0) {
        strengthText.textContent = "";
```

```
        }
      });
  </script>
</body>
</html>
```

OUTPUT:





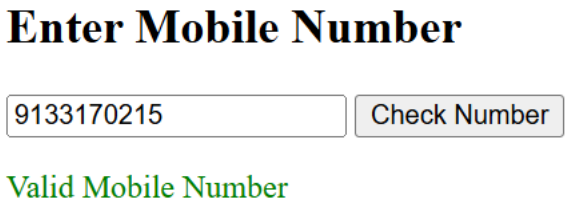
4.AIM: A form should validate a mobile number when the user leaves the input field. The number must be exactly 10 digits.

Program:

```
<!DOCTYPE html>
<html>
<head>
  <title>Mobile Validation</title>
</head>
<body>
  <h2>Enter Mobile Number</h2>

  <input type="text" id="mobile" placeholder="Enter 10 digits">

  <button onclick="checkMobile()">Check Number</button>
```

```
  <p id="msg"></p>

  <script>
    function checkMobile() {
      // 1. Get the value from the input box
      let number = document.getElementById("mobile").value;
      let message = document.getElementById("msg");

      // 2. Define the rule: ^ means start, \d{10} means 10 digits, $ means end
      let pattern = /^\d{10}$/;

      // 3. Test the input against the rule
      if (pattern.test(number)) {
        message.innerText = "Valid Mobile Number";
        message.style.color = "green";
      } else {
        message.innerText = "Invalid Mobile Number. Please enter exactly 10 digits.";
        message.style.color = "red";
      }
    }
  </script>
</body>
</html>
```

OUTPUT:



5.AIM: Design an HTML page, such that the registration form must validate:

Name (not empty)

Email (valid format)

Password (minimum 6 characters)

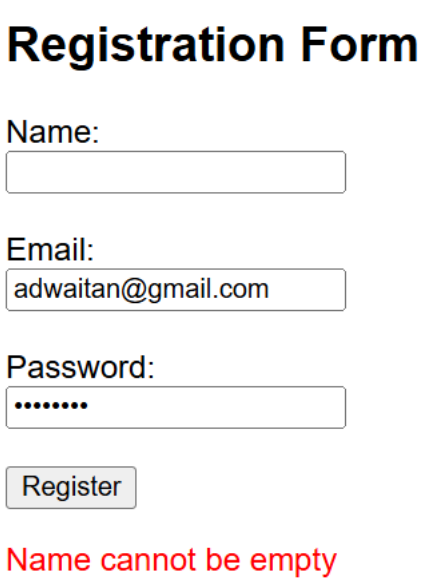
PROGRAM:

```
<!DOCTYPE html>
<html>
<head>
   <title>Registration Form</title>
   <style>
      body {
         font-family: Arial;
      }
      .error {
         color: red;
      }
      .success {
         color: green;
      }
   </style>
</head>
<body>
<h2>Registration Form</h2>
<form id="myForm">
   Name: <br>
   <input type="text" id="name"><br><br>
```

```
  Email: <br>
  <input type="text" id="email"><br><br>
  Password: <br>
  <input type="password" id="password"><br><br>
  <button type="submit">Register</button>
</form>
<p id="message"></p>
<script>
document.getElementById("myForm").addEventListener("submit", function(event) {
  let name = document.getElementById("name").value.trim();
  let email = document.getElementById("email").value.trim();
  let password = document.getElementById("password").value.trim();
  let message = document.getElementById("message");
  let emailPattern = /^[^\s@]+@[^\s@]+\.[^\s@]+$/;
  if (name === "") {
    event.preventDefault();
    message.innerHTML = "Name cannot be empty";
    message.className = "error";
  }
  else if (!emailPattern.test(email)) {
    event.preventDefault();
    message.innerHTML = "Enter a valid email";
    message.className = "error";
  }
  else if (password.length < 6) {
    event.preventDefault();
```

```
        message.innerHTML = "Password must be at least 6 characters";
        message.className = "error";
    }
    else {
        message.innerHTML = "Form submitted successfully!";
        message.className = "success";
    }
});
</script>
</body>
</html>
```

OUTPUT:



Registration Form

Name:
adwaitan

Email:
adwaitan@.com

Password:
••••••••

Register

Enter a valid email

Registration Form

Name:
adwaitan

Email:
adwaitan@gmail.com

Password:
•••

Register

Password must be at least 6 characters

EXPLAINATION OF TAGS:

<form>: The container for user input. It groups inputs and buttons together. When you use the submit event, it tells the browser to process everything inside this container.

<input>: The primary tool for data entry.

- type="text": Standard text.
- type="password": Masks the characters for security.

event.preventDefault(): This is critical. By default, forms try to refresh the page and send data to a server when submitted. This command **stops that reload**, allowing your JavaScript to check the data first.

addEventListener("input", ...) vs "submit":

- "input": Checks the data *while* the user is typing (real-time validation).
- "submit": Checks the data only *when* the user clicks the button.

WEEK-12

AIM: Steps to install Electron website.

Procedure:

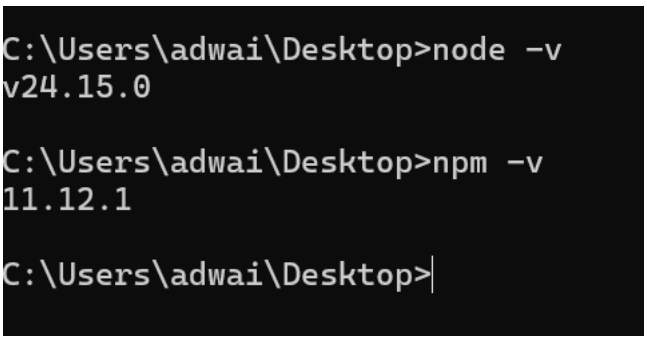
Step 1: Go to the web browser and download node.js.

Step 2: After installing the Node.js, complete the setup process.

Step 3: After installing node.js, Open the command prompt and navigate to the folder where your project is located.

Step 4: And give the prompt “node –v” and also "npm –v".

Step 5: If you get the versions then it is successfully installed.



Step 6: Now open PowerShell as Administrator and give the prompt "Set-ExecutionPolicy RemoteSigned".

This command allows local PowerShell scripts to run securely.

And press Y.

```
Select Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\windows\system32> Set-ExecutionPolicy RemoteSigned

Execution Policy Change
The execution policy helps protect you from scripts that you do not trust. Changing the execution policy might expose
you to the security risks described in the about_Execution_Policies help topic at
https:/go.microsoft.com/fwlink/?LinkID=135170. Do you want to change the execution policy?
[Y] Yes  [A] Yes to All  [N] No  [L] No to All  [S] Suspend  [?] Help (default is "N"): Y
PS C:\windows\system32> Get-ExecutionPolicy
RemoteSigned
PS C:\windows\system32>
```

Create Project Folder :

Command:

Bash

```bash
mkdir electron-app
cd electron-app
```

Step 7: Create a new folder for the Electron project using mkdir.

Step 8: Move into the project folder using cd. This helps keep all project files organized.

Step 9: Initialize Node Project:

Command:

Bash

```bash
npm init -y
```

The above command creates the package.json file.

This file stores:

1.Project name

2.Version

3. Main entry file

4. Scripts

5. Dependencies

Without package.json file, npm cannot manage project properly.

Step 10: Install Electron:

Command:

Bash

```bash
npm install electron --save-dev
```

- Downloads Electron package
- Saves it in node_modules
- Adds it to devDependencies
- --save-dev→Because Electron is needed during development.

Step 11: Configure package.json:

Add:

JSON

```json
{
  "main": "main.js",
  "scripts": {
    "start": "electron ."
  }
}
```

Main→Tells Electron which file starts the application.

Start→Defines command used when we run:

Bash

```bash
npm start
```

Electron → This command runs Electron in the current project folder.

Create Main Application Files:

Required Files:

```
main.js
index.html
style.css
renderer.js
```

Step 12: main.js→Controls app lifecycle and creates windows

Step 13: index.html→User interface

Step 14: style.css→Design and layout

Step 15: renderer.js→Handles user interaction Write main.js

• Imports Electron modules

• Creates application window

• Loads UI

```
package.json   main.js   index.html   style.
main.js > ...
const { app, BrowserWindow } = require('electron');

function createWindow() {
  const win = new BrowserWindow({
    width: 800,
    height: 600
  });

  win.loadFile('index.html');
}

app.whenReady().then(createWindow);
```

Run Application:

Command:

```bash
npm start
```