Global Academy of Technology

(Affiliated to Visvesvaraya Technological University, Belagavi, recognized by Karnataka, Approved by AICTE, New Delhi and NBA Accredited CSE, ECE, EEE, ISE and ME Programs)

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Dept. of Computer Science and Engineering (AI & ML)

Laboratory Manual

Web Technologies

BCI24358D

Name: _____

USN: _____

Semester:_____ Section: _____

Institute Vision

Become a premier institution imparting quality education in engineering and management to meet the changing needs of society.

Institute Mission

M1. Create environment conducive for continuous learning through quality teaching and learning processes supported by modern infrastructure.

M2. Promote Research and Innovation through collaboration with industries.

M3. Inculcate ethical values and environmental consciousness through holistic education programs.

Vision of the Department

To Become a leading hub of excellence in education, research in the field of Computer Science and Engineering providing AI-driven solutions with holistic development for the needs of the Society.

Mission of the Department

M1: To Provide aspiring engineers for industry and academia by offering excellent education in emerging AI techniques.

M2: To equip value-added technical and research-oriented education by satisfying societal needs

M3: To educate with professional integrity values and ethics for the environment awareness.

Department of Computer Science & Engineering (AI&ML)

WEB TECHNOLOGIES

Laboratory Manual

III Semester

Course Code: BCI24358D

Academic Year 2025-26

Version 1.0

W.e.f, September 2025

Prepared BY

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Dept. of CSE(AI&ML)

Global Academy of Technology, Bengaluru–98

(An Autonomous Institution Approved by UGC/AICTE/GOK, Affiliated to VTU, Belagavi, Karnataka)

Department of Computer Science & Engineering (AI&ML)

WEB TECHNOLOGIES

(BCI24358D)

Third Semester, B.E

Name: _____ USN: _____

Section: _____ Branch: _____

GLOBAL ACADEMY OF TECHNOLOGY

(An Autonomous Institute under VTU)
Affiliated to VTU, Accredited by NAAC with 'A' grade

RR Nagar, Bengaluru – 560 098

Department of Computer Science & Engineering (AI&ML)

This is to certify that Mr. / Ms. _____

bearing USN _____ **of the department has satisfactorily completed**

the Experiments in _____ **prescribed by the**

Global Academy of Technology (An Autonomous Institute under VTU), in the laboratory

of this college in the year _____ .

	MAXMARKS	SCORED MARKS
CIE		
IA		
FINAL		

Signature of faculty in charge   **Signature of HoD**

DOCUMENT LOG

Name of the document	Web Technologies Laboratory Manual
Scheme	2024
Current version number and date	Version 1.0 / 01.09.2025
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Approved by	HOD, Dept. of CSE(AI&ML)

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- To equip value-added technical and research-oriented education by satisfying societal needs
- To educate with professional integrity values and ethics for the environment awareness.

PROGRAM EDUCATIONAL OBJECTIVES(PEOs)

- **PEO1:** Design and Develop innovative intelligent systems for the welfare of the Society.
- **PEO2:** Engage in lifelong learning process through higher education and to inculcate innovative ideas in research field.
- **PEO3:** Lead the IT Industry with management and Entrepreneurship skills.

PROGRAM SPECIFIC OUTCOMES(PSOs)

- **PSO1:** To Produce graduates with industry-ready skills with the knowledge of Computer Science & Machine Learning technology based to solve real world problems.
- **PSO2:** Ability to develop many successful applications and designing efficient algorithms for intelligent systems within the realm of artificial intelligence incorporating in data analytics, Natural language processing and Internet of Things.

PROGRAM OUTCOMES (PO's)

PO1: Engineering Knowledge:
Apply knowledge of mathematics, natural science, computing, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to develop to the solution of complex engineering problems.

PO2: Problem Analysis:
Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development (WK1 to WK4).

PO3: Design/Development of Solutions:
Design creative solutions for complex engineering problems and design/develop systems/components/processes to meet identified needs with consideration for the public health and safety, whole-life cost, net zero carbon, culture, society and environment as required (WK5).

PO4: Conduct Investigations of Complex Problems:
Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modelling, analysis & interpretation of data to provide valid conclusions (WK8).

PO5: Engineering Tool Usage:
Create, select, and apply appropriate techniques, resources, and modern engineering & IT tools, including prediction, and modelling recognizing their limitations to solve complex engineering problems (WK2 and WK6).

PO6: The Engineer and The World:
Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment (WK1, WK5, and WK7).

PO7: Ethics:
Apply ethical principles and commit to professional ethics, human values, diversity, and inclusion; adhere to national & international laws (WK9).

PO8: Individual and Collaborative Teamwork:
Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.

PO9: Communication:
Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences.

PO10: Project Management and Finance:
Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.

PO11: Life-Long Learning:
Recognize the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies, and iii) critical thinking in the broadest context of technological change (WK8).

COURSE OUTCOMES

Upon successful completion of this course, students are able to:

CO1	Apply HTML and CSS syntax and semantics to build web pages
CO2	Construct and visually format tables and forms using HTML and CSS
CO3	Build web pages using multicolumn layouts
CO4	Develop client side scripting using JavaScript and the Document Object Model
CO5	Analyse the responsive designs for web pages using Bootstrap

Syllabus

Department: **Computer Science and Engineering (AI & ML)**		
Semester: **III**	Course Code: **BCI24358D**	Contact Hrs /week: **2**
Course Description: **Web Technologies**		No. of Credits:**1** L: T: P: S = **0:0:2:0**
Course Category: **AEC**		Total no. of Hours = **26**
CIE: **50 Marks**	SEE: **50 Marks**	Exam Hours: **02**
Course Pre-requisites: Basic Programming Skills		

Sl. No.	Lab Programs
1	Design a webpage that gives information about travel experience using the following HTML5 Semantic tags- <article>, <aside>, <details>, <figcaption>,<figure>, <footer>, <header>, <main>, <mark>, <section> .
2	Design a clean and organized layout for the webpage using HTML. a.Include a header section with the event title, date, and location. b.Create a navigation bar with links to sections like "About," "Speakers","Agenda," "Registration," and "Contact." c.In the "About" section, provide a brief description of the conference's theme and purpose. d.Design a "Speakers" section that lists at least three keynote speakers with their names, titles, and photos. Note: Use semantic elements to structure this section and apply suitable CSS.
3	Design a simple webpage layout containing text and an image using CSS selectors a. Apply CSS styles to change the font family, size, color, and line height of the text content. b. Use selectors to target specific headings and paragraphs. c. Select the image using an element selector and apply a border with a defined width and color. d. Implement a hover effect that slightly increases the image's size e. Use class selectors to adjust the text alignment and spacing within paragraphs. f. Apply margin and padding to create a balanced layout. g. Apply a background color to the entire layout using an element selector.
4	Develop an HTML table to display the weekly class timetable, spanning Monday through Friday. a. Populate the table with precise class information, including course codes b. Utilize colspan or rowspan to merge cells horizontally or vertically, creating space for breaks or gaps in the schedule. c. Implement distinct background colors for cells to differentiate between different subjects and breaks.
5	Design a student registration form a. Include fields for the student's name, USN, email id, address, radio button for gender and a checkbox for subject preferences (Web, Java, Python). b. option to upload photo and dropdown list for payment method

	c. Include a "Submit" button to process the registration
6	Design multicolumn layout using float element in HTML. a.Create an HTML structure that includes a main content area and a sidebar. b.Use CSS floats to position the main content on the left and the sidebar on the right. c.Populate the main content area with blog articles, including headings, images, and text. d.Populate the sidebar with widgets such as recent posts, categories, and social media links.
7	Write a JavaScript code that displays text "TEXT-GROWING" with increasing font size in the interval of 100ms in RED COLOR, when the font size reaches 50pt it displays "TEXT SHRINKING" in BLUE color. Then the font size decreases to 5pt
8	Create a webpage containing 3 overlapping images using HTML, CSS and JS.Further when the mouse is over any image, it should be on the top and fully displayed.
9	Write a JavaScript to design a simple calculator to perform the following operations: sum, product, difference and quotient.
10	Design a portfolio webpage using bootstrap to showcase your skills and projects a. Design a header section with your name or a logo. b. Use Bootstrap's navbar component to create a simple navigation bar. c. Add a brief introduction about yourself or your work. d. Utilize Bootstrap's typography classes for consistent styling. e. Create a section to list your skills or areas of expertise. f. Use Bootstrap's card component to present each skill. g. Display a grid of project cards, each with a project name, image, and brief description.

Mapping of CO-PO:

POs → COs ↓	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	2	2	2	-	3	-	-	-	-	-	2
CO2	2	2	2	-	3	-	-	-	-	-	2
CO3	2	2	2	-	3	-	-	-	-	-	2
CO4	2	2	2	-	3	-	-	-	-	-	2
CO5	2	2	2	-	3	-	-	-	-	-	2

Low-1: Medium-2: High-3

LAB RUBRICS

Rubrics for Evaluation of Internal Test

Attribute	Max Marks	Good	Satisfactory	Poor
		11-15	**6-10**	**0-5**
Writeup	15	• Completes source code. • No syntax and logical errors. • All possible inputs listed with expected output.	• Completes source code. • Syntax and logical errors exist. • All possible inputs listed with expected output.	• Incomplete source code. • Change of program.
	Max Marks	**51-70**	**26-50**	**1-25**
Execution	70	Able to debug the program and get the right set of outputs.	• Program, executed for only few input cases. • With few errors.	• Program with many errors. • Not executed.
	Max Marks	**11-15**	**6-10**	**0-5**
Viva Voce	15	Answering all questions.	Answering few questions.	Not Able to answer basic questions.

LAB EVALUATION PROCESS

Evaluation of CIE		
S. No	**Activity**	**Marks**
1	Average of Weekly Entries	30
2	Internal Assessment reduced to	20
	Total	**50**

Evaluation of SEE (End of Semester)		
S. No	**Activity**	**Marks**
1	Writeup + Execution + Viva Voce	100
	Total	**100**

Evaluation Sheet

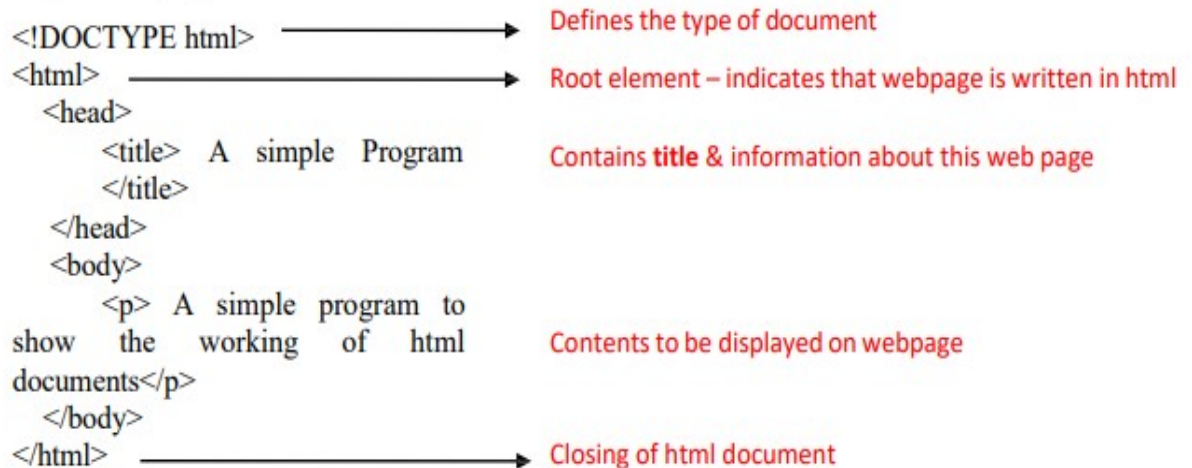| Sl. No	Date	Particulars	Page No.	Marks	Total (20M)	Sign
				W+E+V (5M+10M+5M)		
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Average (Max. 20)						

INTRODUCTION

HTML Documents

• All HTML documents must start with a document type declaration: <!DOCTYPE html>.

• The HTML document itself begins with <html> and ends with </html>.

• The visible part of the HTML document is between <body> and </body>.

• The <!DOCTYPE html> declaration defines this document to be HTML5

• The <html> element is the root element of an HTML page

• The <head> element contains meta information about the document

• The <title> element specifies a title for the document

• The <body> element contains the visible page content

Structure of HTML Documents

A simple html program

```
<!DOCTYPE html>                    Defines the type of document
<html>                             Root element – indicates that webpage is written in html
    <head>
        <title> A  simple  Program   Contains title & information about this web page
        </title>
    </head>
    <body>
        <p> A  simple  program  to
show    the    working    of    html    Contents to be displayed on webpage
documents</p>
    </body>
</html>                            Closing of html document
```

HTML Basic Tags

• <p> : Paragraphs are defined with the <p> tag.

• Headings are defined with the <h1> to <h6> tags. <h1> defines the largest heading. <h6> defines the smallest heading.

•
: The <br> tag is used when you want to end a line, but don't want to start a new paragraph.

• <a> : HTML uses a hyperlink to link to another document on the Web. HTML uses the <a> (anchor) tag to create a link to another document. Text to be displayed.

• : An unordered list starts with the <ul> tag. Each list item starts with the <li> tag.

• :An ordered list starts with the <ol> tag. Each list item starts with the <li> tag.

• <img> : In HTML, images are defined with the <img> tag. <img src="images/logo.jpg" alt="Google logo">

• The <section> element defines a section in a document

• The <article> element specifies independent, self-contained content.

• The <header> element represents a container for introductory content or a set of navigational links.

• The <footer> element defines a footer for a document or section.

• The <nav> element defines a set of navigation links.

• The <aside> element defines some content aside from the content it is placed in (like a sidebar).

• The <figure> tag specifies self-contained content, like illustrations, diagrams, photos, code listings, etc.

• The <figcaption> tag defines a caption for a <figure> element.

HTML Form Input Types

Here are the different input types you can use in HTML:

• <input type="button">

• <input type="checkbox">

• <input type="color">

• <input type="date">

• <input type="datetime-local">

• <input type="email">

• <input type="file">

• <input type="hidden">

• <input type="image">

• <input type="month">

• <input type="number">

• <input type="password">

• <input type="radio">

• <input type="range">

• <input type="reset">

- <input type="search">

- <input type="submit">

- <input type="tel">

- <input type="text">

- <input type="time">

- <input type="url">

- <input type="week">

HTML Table

An HTML table is defined with the <table> tag.Each table row is defined with the <tr> tag. A table header is defined with the <th> tag. By default, table headings are bold and centered. A table data/cell is defined with the <td> tag.

Javascript

Javascript is an is an object-oriented, dynamically typed, scripting language. JavaScript is one of the world's most popular languages, with fewer of the object-oriented features of Java, and runs directly inside the browser, without the need for the JVM. JavaScript is dynamically typed (also called weakly typed) in that variables can be easily (or implicitly) converted from one data type to another. JavaScript is in fact an implementation of a standardized scripting language called ECMAScript.

• In HTML, JavaScript code must be inserted between <script> and </script> tags.

• Scripts can be placed in the <body>, or in the <head> section of an HTML page, or in both.

• Scripts can also be placed in external files, External scripts are practical when the same code is used in many different web pages.JavaScript files have the file extension .js.

• To use an external script, put the name of the script file in the src (source) attribute of

a <script> tag

Ex: <script src="myScript.js"> </script>

LAB PROGRAMS

1.Design a webpage that gives information about travel experience using the following HTML5 Semantic tags- <article>, <aside>, <details>, <figcaption>,<figure>, <footer>, <header>, <main>, <mark>, <section> .

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Kudla Beach Experience</title>
  <style>
    body { font-family: Arial, sans-serif; margin: 0; }
    header, footer { background: rgb(227, 255, 127); text-align: center; padding: 15px; }
    nav a { margin: 0 10px; text-decoration: none; color: black; font-weight: bold; }
    main { padding: 20px; }
    section { margin-bottom: 20px; }
    figure { text-align: center; }
    figcaption { font-style: italic; font-size: small; }
  </style>
</head>
<body>
  <header>
    <h1>My Travel Experience</h1>
    <nav>
      <a href="#about">About</a>
      <a href="#experiences">Experiences</a>
      <a href="#tips">Tips</a>
    </nav>
  </header>
  <main>
    <section id="about">
      <h2>Kudla Beach, Karnataka</h2>
      <article>
```

```
    <p>Kudla Beach, located near Mangalore in Karnataka, is a serene coastal destination
       known for its golden sands, gentle waves, and peaceful sunsets.</p>
    <figure>
       <img src="Kudla Beach.jpg" width="500" height="350" alt="Kudla Beach">
       <figcaption>Relaxing evening at Kudla Beach</figcaption>
    </figure>
   </article>
  </section>
  <section id="experiences">
   <h2>Experiences</h2>
   <article>
     <p>Visitors can enjoy leisurely walks, beachside activities, and fresh seafood
        prepared by local vendors.</p>
     <aside>
       <h3>Highlight</h3>
       <p>Sunset views, calm waters, and the local Mangalorean delicacies make Kudla
Beach special.</p>
     </aside>
   </article>
  </section>
  <section id="tips">
   <h2>Travel Tips</h2>
   <ul>
     <li>Best time to visit: October to March.</li>
     <li>Carry light clothing and sunscreen.</li>
     <li>Try local seafood for an authentic experience.</li>
   </ul>
  </section>
 </main>
 <footer>
  <p>&copy; 2025 Nishchal Narayan S</p>
 </footer>
</body>
</html>
```

Output

My Travel Experience

About   Experiences   Tips

Kudla Beach, Karnataka

Kudla Beach, located near Mangalore in Karnataka, is a serene coastal destination known for its golden sands, gentle waves, and peaceful sunsets.

Relaxing evening at Kudla Beach

Experiences

Visitors can enjoy leisurely walks, beachside activities, and fresh seafood prepared by local vendors.

Highlight

Sunset views, calm waters, and the local Mangalorean delicacies make Kudla Beach special.

Travel Tips

- Best time to visit: October to March.
- Carry light clothing and sunscreen.
- Try local seafood for an authentic experience.

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2.Design a clean and organized layout for the webpage using HTML.
a. Include a header section with the event title, date, and location.
b. Create a navigation bar with links to sections like "About," "Speakers," "Agenda," "Registration," and "Contact."
c. In the "About" section, provide a brief description of the conference's theme and purpose.
d. Design a "Speakers" section that lists at least three keynote speakers with their names, titles, and photos.

```
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

  <title>Conference </title>

  <style>

    body {

      font-family: Arial, sans-serif;

      margin: 0;  padding: 0;

    }

    header {

      background-color: #333; color: #fff;

      text-align: center; padding: 20px ;

    }

    footer{

      background-color: #333;

      color: #fff;

      text-align: center;

    }

    nav {

      background-color: #f4f4f4;

      padding: 10px;

    }

    section {

      padding: 20px;

      margin: 20px 0;

      border-bottom: 1px solid #ccc;
```

```
        }
        div {
         text-align: center;
          margin: 90px;
          display :inline-block;
        }
        div img {
         max-width: 100px;
         border-radius: 50%;
        }
     </style>
   </head>
   <body>
    <header>
      <h1>CSE International Conference 2025</h1>
      <p>Date: October 11-13, 2025</p>
      <p>Location: Bangalore, India</p>
    <nav>
      <a href="#about">About |</a>
       <a href="#speakers">Speakers |</a>
       <a href="#agenda">Agenda |</a>
       <a href="#registration">Registration |</a>
       <a href="#contact">Contact</a>
    </nav>
   </header>

    <main>
     <section id="about">
      <h2>About</h2>
       <p> The conference explores innovations in technology and their impact on
   society.</p>
      </section>
      <section id="speakers">
       <h2>Speakers</h2>
```

```html
<div >
  <img  src="Speaker1.jpg" alt="Speaker 1">
  <h3>Dr Chandramma R</h3>
  <p>HOD CSE (AI&ML)</p>
</div>
<div>
  <img src="Speaker2.jpg" alt="Speaker 2">
  <h3>Dr Girish Rao</h3>
  <p>HOD AI&DS</p>
</div>
<div>
  <img src="Speaker3.jpeg" alt="Speaker 3">
  <h3>Dr Roopa B S</h3>
  <p>HOD AI&ML</p>
</div>
</section>
<!-- Other sections: Agenda, Registration, Contact -->
</main>
<footer>
  <p>&copy; 2025 Conference </p>
</footer>
</body>
</html>
```

Output

About

The conference explores innovations in technology and their impact on society.

Speakers

Dr Chandramma R

HOD CSE (AI&ML)

Dr Girish Rao

HOD AI&DS

Dr Roopa B S

HOD AI&ML

3.Design a simple webpage layout containing text and an image using CSS selectors

a. Apply CSS styles to change the font family, size, color, and line height of the text content.

b. Use selectors to target specific headings and paragraphs.

c. Select the image using an element selector and apply a border with a defined width and color.

d. Implement a hover effect that slightly increases the image's size

e. Use class selectors to adjust the text alignment and spacing within paragraphs.

f. Apply margin and padding to create a balanced layout.

g. Apply a background color to the entire layout using an element selector.

```
<!DOCTYPE html>
<html>
<head>
<title>Simple Webpage Layout</title>
<style>
body {
font-family: "Segoe UI", Arial, sans-serif;
font-size: 16px;
color: #222;
line-height: 1.6;
background-color: #f5f5f5;
margin: 0;
padding: 20px;
}
.container {
background-color: #fff4e6;
border: 1px solid #ddd;
padding: 30px;
margin: 40px auto;
max-width: 800px;
box-shadow: 0 0 8px rgba(0, 0, 0, 0.1);
}
h1 {
```

```
text-align: center;
color: #0056b3;
letter-spacing: 1px;
margin-bottom: 20px;
}
.text {
text-align: justify;
margin-bottom: 15px;
padding: 5px;
}
img {
display: block;
margin: 20px auto;
width: 300px;
height: auto;
border: 3px solid #444;
border-radius: 8px;
transition: transform 0.3s ease-in-out;
}
img:hover {
transform: scale(1.05);
}
</style>
</head>
<body>
<div class="container">
<h1>Introduction to Web Technologies</h1>
<img src="Web" alt="Web Technologies">
<p class="text">
Web technologies form the foundation of the modern Internet. They define how
devices communicate
and interact using markup languages, enabling the creation, design, and delivery of
web content efficiently.
</p>
```

<p class="text">

Core web technologies such as HTML5, CSS3, and JavaScript empower developers

to design interactive,

responsive, and dynamic web applications that connect users globally.

</p>

</div>

</body>

</html>

Output

INTRODUCTION TO WEB TECHNOLOGIES

Web technologies refer to how computers and devices communicate using markup languages. It enables content creation, delivery, and management across the web through HTML.

Web technologists study how systems connect, interact, and use common internet languages (HTML5, CSS3, JavaScript) to share information worldwide.

4. Develop an HTML table to display the weekly class timetable, spanning Monday through Friday.

a. Populate the table with precise class information, including course codes

b. Utilize colspan or rowspan to merge cells horizontally or vertically, creating space for breaks or gaps in the schedule.

c. Implement distinct background colors for cells to differentiate between different subjects and breaks.

```html
<!DOCTYPE html>
<html>
<head>
<title>Time table</title>
</head>
<style>
caption{
    text-align: center;
    font-weight: bold;
    font-size: large;
}
th{
    padding: auto;
}
table,th,td{
        border:solid 1pt black;
        border-collapse: collapse;
        text-align: center;
}
.bgcolor{
    background-color: rgb(153, 207, 128);
}
.class{
    background-color: rgb(222, 233, 161);
}
.activity{
    background-color: rgb(240, 168, 127);
}
```

```html
        </style>
        <body>
          <table>
            <caption>Time Table</caption>
            <tr>
              <th>Day/Time</th>
              <th>8:30-9:30 am</th>
              <th>9:30-10:30 am</th>
              <th>10:30-11:00 am</th>
              <th>11:00-12:00 pm</th>
              <th>12:00-1:00 pm</th>
              <th>1:00-2.00 pm</th>
              <th>2.00-3:00 pm</th>
              <th>3:00-4:00 pm</th>
            </tr>
            <tr>
              <th>MON</th>
              <td>BMATS24301</td>
              <td>BCI24302</td>
              <td rowspan=6 class="bgcolor">S<br>h<br>o<br>r<br>t<br>
B<br>r<br>e<br>a<br>k</td>
              <td>BCI24304</td>
              <td>BCI24303</td>
              <td rowspan=6 class="bgcolor" >L<br>u<br>n<br>c<br>h<br>
B<br>r<br>e<br>a<br>k</td>
              <td colspan="2" class="class">BCI24305</td>
            </tr>
            <tr>
              <th>TUE</th>
              <td>BCI24304</td>
              <td>BCI24306A</td>
              <td colspan="2" class="class">Skill Lab-3</td>
              <td>BCI24303</td>
              <td>BMATS24301</td>
```

```
    </tr>
    <tr>
      <th>WED</th>
      <td colspan="2"class="class" >BCI24358D</td>
      <td>BCI24306A</td>
      <td>BMATS24301</td>
      <td>BCI24304</td>
      <td colspan="1" class="activity">Mentoring</td>
    </tr>
    <tr>
      <th>THU</th>
      <td colspan="2"class="class" > BCI24303 LAB</td>
      <td>BCI24302</td>
      <td>BCI24303</td>
      <td colspan="2"class="class" >BSCK24307</td>
    </tr>
    <tr>
      <th>FRI</th>
      <td>BCI24306A</td>
      <td>BCI24302</td>
      <td colspan="2"class="class" >BCI24302 LAB</td>
      <td colspan="2"class="activity" >NSS/YOGA/PE</td>
    </tr>
    <tr>
      <th>SAT</th>
      <td colspan="2"class="activity" >Student Club Activity</td>
      <td colspan="2"class="activity" >Library</td>
    </tr>
  </table>
  </body>
</html>
```

Output

Time Table

Day/Time	8:30-9:30 am	9:30-10:30 am	10:30-11:00 am	11:00-12:00 pm	12:00-1:00 pm	1:00-2.00 pm	2.00-3:00 pm	3:00-4:00 pm
MON	BMATS24301	BCI24302	S h o r t B r e a k	BCI24304	BCI24303	L u n c h B r e a k	BCI24305	
TUE	BCI24304	BCI24306A		Skill Lab-3			BCI24303	BMATS24301
WED	BCI24358D			BCI24306A	BMATS24301		BCI24304	Mentoring
THU	BCI24303 LAB			BCI24302	BCI24303		BSCK24307	
FRI	BCI24306A	BCI24302		BCI24302 LAB			NSS/YOGA/PE	
SAT	Student Club Activity			Library				

Time Table

Day/Time	8:30-9:30 am	9:30-10:30 am	10:30-11:00 am	11:00-12:00 pm	12:00-1:00 pm	1:00-2.00 pm	2.00-3:00 pm	3:00-4:00 pm
MON	BCI24303 LAB		S h o r t B r e a k	BMATS24301	BCI24304	L u n c h B r e a k	NSS/YOGA/PE	
TUE	BCI24302	BCI24303		BCI24358D			BCI24306A	Mentoring
WED	BCI24304	BCI24303		BCI24302 LAB			BSCK24307	
THU	BCI24306A	BCI24304		Skill LAB			BMATS24301	BCI24302
FRI	BMATS24301	BCI24306A		BCI24305 LAB			BCI24302	BCI24303
SAT	Student Club Activity			Library				

5.Design a student registration form

a. Include fields for the student's name, USN, email id, address, radio button for gender and a checkbox for subject preferences (Web, Java, Python).

b. option to upload photo and dropdown list for payment method

c. Include a "Submit" button to process the registration

```html
<!DOCTYPE html>
<html lang="en">
<head>
 <meta charset="UTF-8">
 <meta name="viewport" content="width=device-width, initial-scale=1.0">
 <title>Student Registration Form</title>
 <style>
  body
  {
  font-family:Arial,sans-serif;
  background:#a11212d2;
  margin:0;
  padding:20px
  }
  #form
  {
  max-width:600px;
  margin:auto;
  background:#eeaaaa;
  padding:20px;
  border-radius:10px;
  box-shadow:0 0 10px rgba(0,0,0,0.1)
  }
  h1
  {
  text-align:center;
  color:#333
  }
```

```
label
{
font-weight:bold;
display:block;
margin:10px 0 5px
}
input,textarea,select
{
width:100%;
padding:8px;
border:1px solid #ccc;
border-radius:5px
}
input[type=radio],input[type=checkbox]{width:auto;margin-right:5px}
.inline
{
display:inline-block;
margin-right:15px
}
input[type=submit]{background:#007BFF;color:#fff;border:none;padding:10px
15px;border-radius:5px;cursor:pointer;margin-top:10px}
input[type=submit]:hover{background:#0056b3}
</style>
</head>
<body>
 <div id="form">
  <h1>Student Subject Registration</h1>
  <form>
   <label>Name:</label>
   <input type="text" required>

   <label>USN:</label>
   <input type="text" required>
```

```
<label>Email:</label>
<input type="email" required>


<label>Address:</label>
<textarea required></textarea>


<label>Gender:</label>
<span class="inline"><input type="radio" name="gender">Male</span>
<span class="inline"><input type="radio" name="gender">Female</span>


<label>Subjects:</label>
<span class="inline"><input type="checkbox">Web</span>
<span class="inline"><input type="checkbox">Java</span>
<span class="inline"><input type="checkbox">Python</span>


<label>Photo:</label>
<input type="file" accept="image/*">


<label>Payment Method:</label>
<select>
  <option>Credit Card</option>
  <option>Debit Card</option>
  <option>PayPal</option>
  <option>Bank Transfer</option>
</select>


<input type="submit" value="Submit">
</form>
</div>
</body>
</html>
```

Output

6.Design multicolumn layout using float element in HTML. Create an HTML structure that includes a main content area and a sidebar. Use CSS floats to position the main content on the left and the sidebar on the right. Populate the main content area with blog articles, including headings, images, and text. Populate the sidebar with widgets such as recent posts, categories, and social media links.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Multicolumn Layout</title>
  <style>
    *{margin:0;padding:0;box-sizing:border-box}
    body
    {
      font-family:Arial, sans-serif;
      line-height:1.6;
      background:#f9f9f9
    }
    header
    {
      text-align:center;
      background:#c5cae9;
      padding:15px
    }
    .container
    {
      display:flex;
      flex-wrap:wrap
    }
    .main-content
    {
      flex:70%;
      padding:20px
```

```css
    }
    .sidebar
    {
      flex:30%;
      background:#e0f7fa;
      padding:20px
    }
    article,aside{
      border:1px solid #ddd;
      border-radius:5px;
      margin-bottom:20px;
      padding:15px;
      background:#fff
    }
    img{
      max-width:100%;
      height:auto;
      border-radius:5px;
      display:block;
      margin:10px auto
    }
    h1,h2,h3
    {
      color:#333
    }
    ul
    {
      margin-left:20px
    }
    @media(max-width:768px){
      .main-content,.sidebar{flex:100%}
    }
  </style>
</head>
```

```html
<body>
 <header>
  <h1>Artificial Intelligence</h1>
 </header>
 <div class="container">
  <main class="main-content">
   <article>
    <h2>About AI</h2>
    <img src="AI Image.jpg" alt="AI Image">
    <p>Artificial Intelligence (AI) is the simulation of human intelligence in machines.
It enables systems to learn, reason, and make decisions. AI is used in speech
recognition, natural language processing, robotics, and recommendation systems.</p>
   </article>
   <article>
    <h2>Applications of AI</h2>
    <img src="AI Applications Image.jpeg" alt="AI Applications">
    <p>AI is applied in healthcare diagnostics, self-driving cars, virtual assistants,
fraud detection, and personalized recommendations. It improves efficiency, reduces
costs, and delivers innovative solutions to real-world problems.</p>
   </article>
  </main>
  <aside class="sidebar">
   <div>
    <h3>Recent Posts</h3>
    <ul>
     <li>AI in Healthcare</li>
     <li>Machine Learning Basics</li>
     <li>Future of Robotics</li>
    </ul>
   </div>
   <div>
    <h3>Categories</h3>
    <ul>
     <li>Deep Learning</li>
     <li>Computer Vision</li>
```
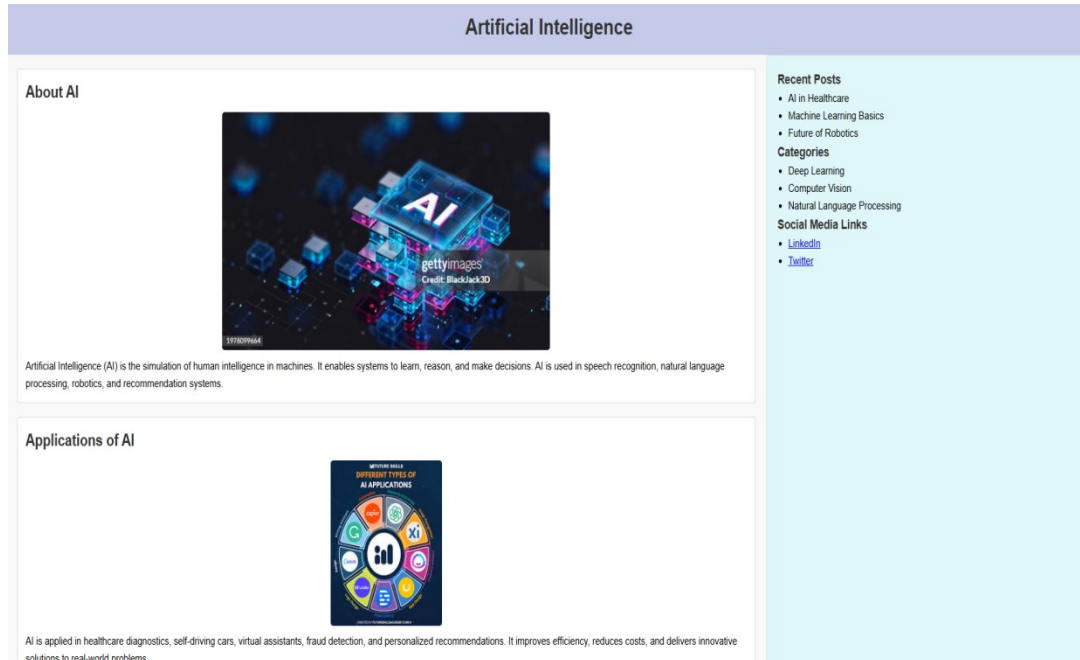
```
       <li>Natural Language Processing</li>
     </ul>
   </div>
   <div>
     <h3>Social Media Links</h3>
     <ul>
       <li><a href="#">LinkedIn</a></li>
       <li><a href="#">Twitter</a></li>
     </ul>
   </div>
  </aside>
 </div>
</body>
</html>
```

Output

7.Write a JavaScript code that displays text "TEXT-GROWING" with increasing font size in the interval of 100ms in RED COLOR, when the font size reaches 50pt it displays "TEXT SHRINKING" in BLUE color. Then the font size decreases to 5pt.

```
<!DOCTYPE HTML>
<html>
<head>
<style>
p {
  position: absolute;
  top: 50%; left: 50%;
  transform: translate(-50%, -50%);
}
</style>
</head>
<body>
<p id="demo"></p>
<script>
let fs=5, ids=document.getElementById("demo");
let grow=setInterval(inTimer,1000), shrink;
function inTimer(){
  ids.innerHTML="TEXT-GROWING";
  ids.style="font-size:"+fs+"px;color:red";
  fs+=5;
  if(fs>=50){clearInterval(grow);shrink=setInterval(deTimer,1000);}
}
function deTimer(){
  fs-=5;
  ids.innerHTML="TEXT SHRINKING";
  ids.style="font-size:"+fs+"px;color:blue";
  if(fs<=5) clearInterval(shrink);
}
</script>
</body>
```
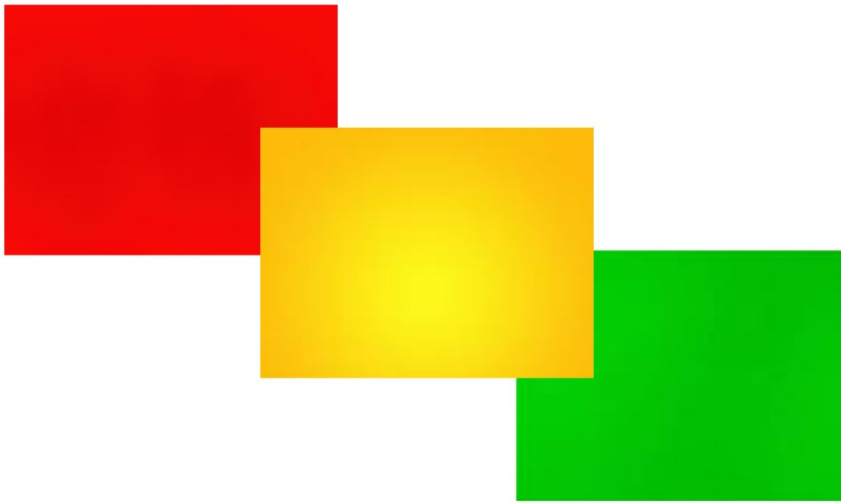
</html>

Output

TEXT-GROWING

TEXT SHRINKING

8.Create a webpage containing 3 overlapping images using HTML, CSS and JS.Further when the mouse is over any image, it should be on the top and fully displayed.
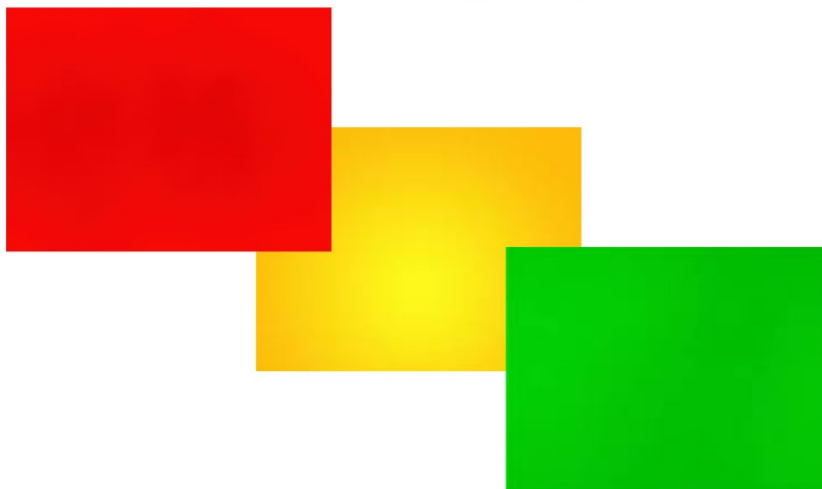
```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<title>Colour Stacking</title>
<style>
  h1{text-align:center}
  .red{position:absolute;left:10%;top:10%;z-index:0}
  .yellow{position:absolute;left:30%;top:30%;z-index:1}
  .green{position:absolute;left:50%;top:50%;z-index:2}
</style>
<script>
  let topIndex=2;
  function moveToTop(pic){pic.style.zIndex=++topIndex;}
</script>
</head>
<body>
<h1>Overlapping Images</h1>
<div>
  <img src="Red image.jpg" class="red" width="400" height="300"
onmouseover="moveToTop(this)">
  <img src="Yellow image.jpeg" class="yellow" width="400" height="300"
onmouseover="moveToTop(this)">
  <img src="Green image.jpeg" class="green" width="400" height="300"
onmouseover="moveToTop(this)">
</div>
</body>
</html>
```
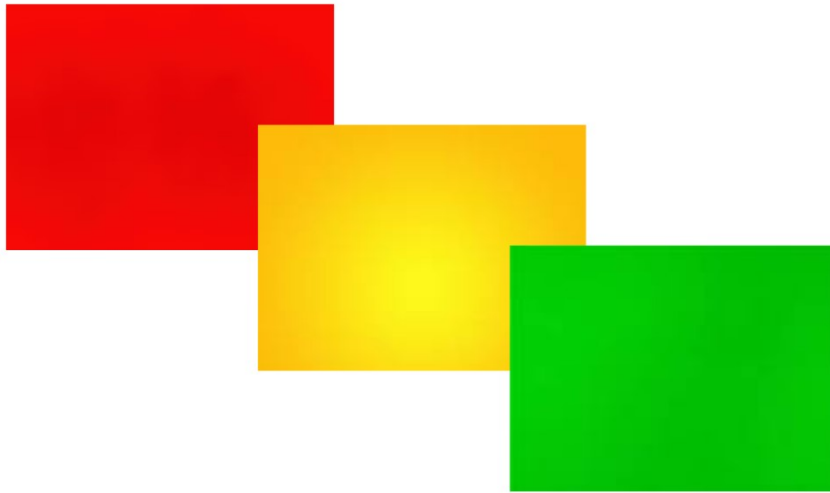
Output

Overlapping Images

Overlapping Images

Overlapping Images

9.Write a JavaScript to design a simple calculator to perform the following operations: sum, product, difference and quotient.

```html
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<title>Simple Calculator</title>
<style>
  table, td, th {
    border: 1px solid black;
    width: 33%;
    text-align: center;
    background: rgb(21, 171, 201);
    border-collapse: collapse;
  }
  table { margin: auto; }
  input { text-align: right; }
</style>
<script>
function calc(op) {
  let v1 = parseFloat(document.getElementById("value1").value);
  let v2 = parseFloat(document.getElementById("value2").value);
  if (isNaN(v1) || isNaN(v2)) {
    alert("Enter valid numbers");
    return;
  }
  if (op=="add") ans.value = v1 + v2;
  else if (op=="sub") ans.value = v1 - v2;
  else if (op=="mul") ans.value = v1 * v2;
  else if (op=="div") ans.value = v1 / v2;
}
function cls() {
  value1.value = "";
```

```
      value2.value = "";

      ans.value = "";

  }

</script>

</head>

<body>

<table>

  <tr>

    <th colspan="4">SIMPLE CALCULATOR</th>

  </tr>

  <tr>

    <td>Value 1</td><td><input type="text" id="value1" value="0"></td>

    <td>Value 2</td><td><input type="text" id="value2" value="0"></td>

  </tr>

  <tr>

    <td><input type="button" value="Add" id="add" onclick="calc(this.id)"></td>

    <td><input type="button" value="Subtract" id="sub" onclick="calc(this.id)"></td>

    <td><input type="button" value="Multiply" id="mul" onclick="calc(this.id)"></td>

    <td><input type="button" value="Divide" id="div" onclick="calc(this.id)"></td>

  </tr>

  <tr>

    <td>Answer:</td><td><input type="text" id="ans" disabled></td>

    <td colspan="2"><input type="button" value="Clear All" onclick="cls()"></td>

  </tr>

</table>

</body>

</html>
```

Output

SIMPLE CALCULATOR			
Value 1	0	Value 2	0
Add	Subtract	Multiply	Divide
Answer:		Clear All	

SIMPLE CALCULATOR			
Value 1	15	Value 2	5
Add	Subtract	Multiply	Divide
Answer:	20	Clear All	

SIMPLE CALCULATOR			
Value 1	15	Value 2	5
Add	Subtract	Multiply	Divide
Answer:	10	Clear All	

SIMPLE CALCULATOR			
Value 1	15	Value 2	5
Add	Subtract	Multiply	Divide
Answer:	75	Clear All	

SIMPLE CALCULATOR			
Value 1	15	Value 2	5
Add	Subtract	Multiply	Divide
Answer:	3	Clear All	

10.Design a portfolio webpage using bootstrap to showcase your skills and projects

a. Design a header section with your name or a logo.

b. Use Bootstrap's navbar component to create a simple navigation bar.

c. Add a brief introduction about yourself or your work.

d. Utilize Bootstrap's typography classes for consistent styling.

e. Create a section to list your skills or areas of expertise.

f. Use Bootstrap's card component to present each skill.

g. Display a grid of project cards, each with a project name, image, and brief description.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Portfolio</title>
  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/css/bootstrap.min.css"
rel="stylesheet">
  <style>
    body{padding-top:60px}
    .intro{margin-bottom:30px}
    .card{margin-bottom:20px}
  </style>
</head>
<body>
  <!-- Navigation bar -->
  <nav class="navbar navbar-expand-lg navbar-dark bg-dark fixed-top">
    <div class="container-fluid">
      <a class="navbar-brand" href="#">Your Name</a>
      <button class="navbar-toggler" type="button" data-bs-toggle="collapse" data-bs-
target="#navbarNav">
        <span class="navbar-toggler-icon"></span>
      </button>
      <div class="collapse navbar-collapse" id="navbarNav">
        <ul class="navbar-nav ms-auto">
          <li class="nav-item"><a class="nav-link active" href="#about">About</a></li>
```

```html
        <li class="nav-item"><a class="nav-link" href="#skills">Skills</a></li>
        <li class="nav-item"><a class="nav-link" href="#projects">Projects</a></li>
      </ul>
    </div>
  </div>
 </nav>
 <header class="text-center py-5">
  <h1>Nishchal Narayan S</h1>
  <p>Web Developer | Designer</p>
 </header>
 <section id="about" class="container">
  <div class="row">
    <div class="col-lg-8 mx-auto intro">
      <h2>About Me</h2>
      <p>I am an enthusiastic Web Developer.</p>
    </div>
  </div>
 </section>
 <section id="skills" class="container">
  <h2 class="text-center">Skills</h2>
  <div class="row">
    <div class="col-lg-4 col-md-6">
     <div class="card">
       <div class="card-body">
         <h5 class="card-title">HTML & CSS</h5>
         <p class="card-text">Building responsive and modern web pages using HTML5
and CSS3.</p>
       </div>
     </div>
    </div>
    <div class="col-lg-4 col-md-6">
     <div class="card">
       <div class="card-body">
         <h5 class="card-title">JavaScript</h5>
```

```
      <p class="card-text">Interactive web features using Vanilla JS and modern
ES6+ techniques.</p>
        </div>
      </div>
    </div>
  </div>
</section>
<section id="projects" class="container">
  <h2 class="text-center">Projects</h2>
  <div class="row">
    <div class="col-lg-4 col-md-6">
      <div class="card">
        <img src="Portfolio Image.jpeg" class="card-img-top" alt="Project Image">
        <div class="card-body">
          <h5 class="card-title">Portfolio Website</h5>
          <p class="card-text">Personal portfolio website showcasing skills and
projects.</p>
        </div>
      </div>
    </div>
    <div class="col-lg-4 col-md-6">
      <div class="card">
        <img src="Portfolio Image 2.jpeg" class="card-img-top" alt="Project Image">
        <div class="card-body">
          <h5 class="card-title">ToDo App</h5>
          <p class="card-text">A JavaScript-based ToDo application to manage daily
tasks.</p>
        </div>
      </div>
    </div>
  </div>
</section>
<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/js/bootstrap.bundle.min.js"></sc
ript>
```
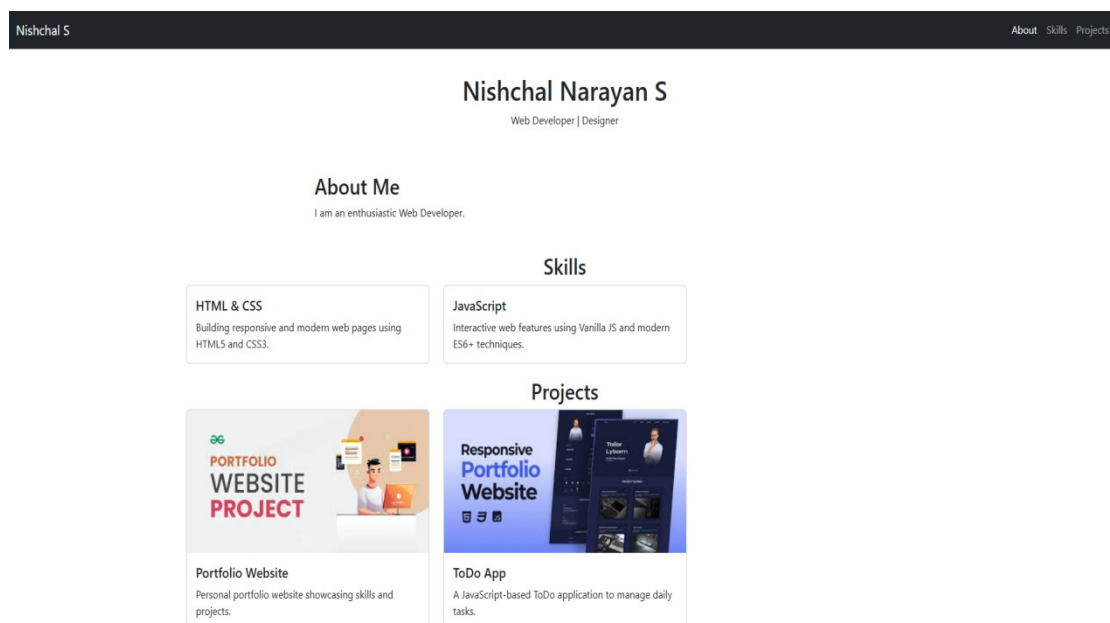
</body>

</html>

Output

Viva

1.What does HTML stand for?

A: HyperText Markup Language, used to structure web pages.

2.What is the difference between \<div\> and \<span\>?

A: \<div\> is a block-level element, \<span\> is an inline element.

3.What is the purpose of the \<header\> and \<footer\> tags?

A: \<header\> defines the top section (like title, logo), \<footer\> defines bottom section (like copyright info).

4.What is the use of \<nav\> tag?

A: It represents navigation links of a webpage.

5.What is the difference between \<section\> and \<article\>?

A: \<section\> is a thematic grouping of content, \<article\> is self-contained content like a blog or news item.

6.What does CSS stand for?

A: Cascading Style Sheets.

7.What is the difference between inline, internal, and external CSS?

A: Inline: style inside tag, Internal: style in \<style\> block, External: linked .css file.

8.What is the difference between id and class selectors?

A: id is unique (used once), class can be used multiple times.

9.What is the difference between relative, absolute, and fixed positioning in CSS?

A: Relative = based on normal position, Absolute = based on nearest positioned parent, Fixed = based on viewport.

10.What is z-index in CSS?

A: It controls the stack order of elements (higher value = on top).

11.What are different input types in HTML forms?

A: Text, password, email, number, radio, checkbox, file, date, submit, etc.

12.Difference between radio and checkbox?

A: Radio = select one option, Checkbox = select multiple options.

13.What is the use of required attribute?

A: Ensures the field must be filled before form submission.

14.What is the purpose of textarea?

A: To enter multiple lines of text.

15.What is the use of <select> and <option>?

A: To create a dropdown list for selecting options.

16.What is the use of rowspan and colspan?

A: rowspan merges cells vertically, colspan merges cells horizontally.

17.What is the difference between <th> and <td>?

A: <th> defines table headers (bold & centered by default), <td> defines normal table data.

18.How do you create a timetable using HTML tables?

A: Use <table>, <tr>, <th>, <td> along with rowspan and colspan.

19.What does border-collapse: collapse; do?

A: It merges adjacent table borders into a single border.

20.Why do we use <caption> in tables?

A: To add a title/heading to the table.

21.What is JavaScript used for?

A: To add interactivity, dynamic content, and logic to webpages.

22.Difference between let, var, and const?

A: let = block-scoped, var = function-scoped, const = cannot be reassigned.

23.What is DOM in JavaScript?

A: Document Object Model, a tree structure of HTML elements.

24.What is getElementById()?

A: A method to access an element by its ID.

25.Difference between == and === in JS?

A: == checks only value, === checks value and data type.

26.How does the growing/shrinking text program work?

A: Uses setInterval() to increase/decrease font size and change color.

27.What is the purpose of clearInterval()?

A: It stops the interval timer from executing further.

28.How do overlapping images come to the front?

A: By increasing z-index dynamically using onmouseover event.

29.What is the role of parseFloat() in calculator program?

A: Converts string input values into floating-point numbers for calculation.

30.What is Bootstrap?

A: A CSS framework used to build responsive, mobile-first websites.