SVKM's NMIMS
Mukesh Patel School of Technology Management & Engineering (Shirpur Campus)
Computer Science Department (BTech CS Semester-III)
Web Programming
Lab Manual

PART A

(Part A: TO BE REFERRED BY STUDENTS)

Experiment No. 04

A.1 AIM:

Design of static website with HTML5 and CSS tags.

A.2 Pre requisite:

Basic Knowledge of CSS and HTML tags.

A.3 Outcome:

After successful completion of this experiment students will be able to:

1. Design pages in HTML
2. Perform all formatting of text and images in HTML
3. Apply styling technique Using Inline CSS
4. Apply styling technique Using Internal CSS
5. Apply various styling techniques Using External CSS.

A.4 Theory:

Its good practice to follow following html format: -

```
<!DOCTYPE html>
<html lang="en-us">
<head>

  <meta charset="utf-8">
  <title> Title</title>
</head>
<body>
→your code will go here…
</body>
</html>
```

Video:-

Video element <video>

- Video tag uses a src attribute or embedded <source>
- Common attributes
    - height, width
    - autoplay
    - loop
    - controls
- Text inside <video>..</video> is displayed if browser cannot support tag

Audio: -

- Audio tag uses a src attribute to link to audio file, typically .mp3 or .wav
- Common attributes
    - autoplay, controls, loop
    - buffered
    - muted
    - volume

HTML Formatting: -

- `<b>` - Bold text
- `<strong>` - Important text
- `<i>` - Italic text
- `<em>` - Emphasized text
- `<mark>` - Marked text
- <big> - Bigger text → not supported by html-5
- `<small>` - Smaller text
- `<del>` - ~~Deleted text~~
- `<ins>` - Inserted text
- `<sub>` - Subscript text T_1
- `<sup>` - Superscript text T^2

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Web Programming
Lab Manual

Non Semantic Tag(HTML-4): -

- The tag defines a division or a section in an HTML document.
- The tag is used as a container for HTML elements
- Any sort of content can be put inside the tag!

- A element which is used to color a part of a text
- The tag is an inline container used to mark up a part of a text, or a part of a document.

 is a block-level element and is an inline element

 and are non-sematic tag

 and <sapn> Tells nothing about its content

Few New Elements in HTML-5

<header>

- The <header> element represents a container for introductory content or a set of navigational links.
- A <header> element typically contains:
  - one or more heading elements (<h1> - <h6>)
  - logo or icon
  - authorship information
- You can have several <header> elements in one HTML document.
- However, <header> cannot be placed within a <footer>, <address> or another <header> element.

<nav>

- The <nav> tag defines a set of navigation links.
- Notice that NOT all links of a document should be inside a <nav> element.
- The <nav> element is intended only for major block of navigation links.

<section>

- The <section> element defines a section in a document.
- According to W3C's HTML documentation: "A section is a thematic grouping of content, typically with a heading."

<article>

- The <article> tag specifies independent, self-contained content.
- An article should make sense on its own and it should be possible to distribute it independently from the rest of the site.
- Potential sources for the <article> element:
    - Forum post
    - Blog post
    - News story

<aside>

- The `<aside>` tag defines some content aside from the content it is placed in.
- The aside content should be indirectly related to the surrounding content.
- The `<aside>` content is often placed as a sidebar in a document.

<figure > & <fgcaption>

- Use a <figure> element to mark up a photo in a document
- <figcaption> element to define a caption for the photo:

<footer>

- The <footer> tag defines a footer for a document or section.
- A <footer> element typically contains:
    - authorship information
    - copyright information
    - contact information
    - sitemap
    - back to top links
    - related documents
- You can have several <footer> elements in one document.

<main>

- The <main> tag specifies the main content of a document.
- The content inside the <main> element should be unique to the document.
- There must not be more than one <main> element in a document. The <main> element must NOT be a descendant of an <article>, <aside>, <footer>, <header>, or <nav> element.

<mark> Text </mark> → Highlights the text in yellow

<time>

- The <time> tag defines a specific time (or datetime).

Example:-

<time>10:00</time> to <time>21:00</time>

<time datetime="2020-07-18 10:50">

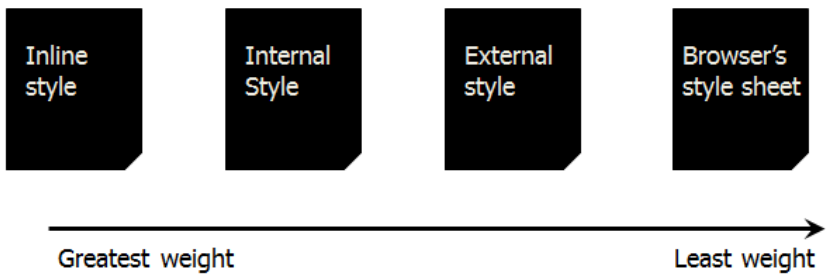
<details> and <summary>

- The <details> tag specifies additional details that the user can open and close on demand.
- The <summary> tag defines a visible heading for the <details> element. The heading can be clicked to view/hide the details.
- The <details> tag is often used to create an interactive widget that the user can open and close. By default, the widget is closed. When open, it expands, and displays the content within.
- The <summary> element should be the first child element of the <details> element.

Reference: - https://www.w3schools.com

Cascading Multiple Sheets:

- You can use multiple sheets to define the style of your document
- Internal styles will override external styles, if they are duplicated



Multiple Properties:-

- You can specify multiple properties to a single selector. Properties must be separated by a semicolon.
- Example:-
    - P { text-align: left; color: red }`

Basic CSS Syntax:

To make properties more readable, put each on a separate line.

```
p { text-align: center;

    color: navy;

    font-family: arial

    }
```

Groping Selectors:-

- Selectors can be grouped so that a common property can be specified
- Example:-

```
h1,h2,h3,h4,h5,h6

{ color: red }
```

Descendants:-

- Selectors can be descendants [combine]
- Example:-

```
P B { color: red }
```

- In this example, only those <B> elements within a <P> element would be yellow
    - This would be yellow
- This would not be yellow

Common Selectors

Example	Classification	Explanation
h1	Type Selector	Selects an element by its type
.tagline	Class Selector	Selects an element by the class attribute value, which may be reused multiple times per page
#intro	ID Selector	Selects an element by the ID attribute value, which is unique and to only be used once per page

Class Selectors

- *Class* selectors allow us to select an element based on the element's class attribute value.
- Class selectors are a little more specific than type selectors, as they select a particular group of elements rather than all elements of one type.
- Class selectors allow us to apply the same styles to different elements at once by using the same class attribute value across multiple elements.
- Within CSS, classes are denoted by a leading period, ., followed by the class attribute value.
- Example: -
    - Here the class selector will select any element containing the class attribute value of awesome, including both division and paragraph elements.

CSS

```
.awesome { ... }
```

HTML

```
<div class="awesome">...</div>
<p class="awesome">...</p>
```

ID Selectors

- *ID* selectors are even more precise than class selectors, as they target only one unique element at a time.

- Just as class selectors use an element's `class` attribute value as the selector, ID selectors use an element's `id` attribute value as a selector.
- Regardless of which type of element they appear on, `id` attribute values can only be used once per page. If used they should be reserved for significant elements.
- Within CSS, ID selectors are denoted by a leading hash sign, `#`, followed by the `id` attribute value.
- Example:-
    - Here the ID selector will only select the element containing the `id` attribute value of `shayhowe`.

CSS

```
#shayhowe { ... }
```

HTML

```
<div id="shayhowe">...</div>
```

List of Background Properties:-

- background
- background-color
- background-image
- background-repeat
- background-attachment
- background-position

Commonly used Text Properties:-

- color
- direction
- text-align
- text-decoration

- text-indent

Some Font Properties:-

- font-style
- font-variant
- font-weight
- font-size/line-height
- font-family

Border Properties:-

- You can specify the width, style, color, thickness and on which sides the border appears
- Border-style→ dotted, dashed, solid, double etc/
- Border-width→ thin, medium,thick
- Border-top-width
- Border-top

Margin Properties:-

- margin
- margin-top
- margin-right
- margin-bottom
- margin-left

Tasks

1. **Design simple HTML page to display, your Name, SAP ID, Roll No, Program, Branch and Year. It should include some audio video as well.**

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Computer Science Department (BTech CS Semester-III)

Web Programming

Lab Manual

Apply Styling for font, colour properties using following CSS.

a. Apply styling technique Using Inline CSS

b. Apply styling technique Using Internal CSS

c. Apply various styling techniques Using External CSS.

d. Importing Styles.

2. Apply styling to HTML code implemented in EXPT-3 (your CV) using external CSS…
Apply styling to following.

- Apply Styling for Following to Normal Text…
  - Background Properties.
  - Text Properties.
  - Font Properties.
  - Margin Properties.
  - Grouping of Selector.
  - Descendants.
- Apply Styling for following
  - Lists…
    - list-style-type
    - Styling Lists with Colors
  - Table Property:
    - The table should be styled using at least four properties
    - The table headings should have a border, background color, and at least one other property.
    - Style the table so that the text in the first column is left-aligned and the text in the other two columns is centered
    - The table elements < td > should be styled using at least four properties

3. Challenge: - Apply styling to HTML code implemented in EXPT-3(your CV) using external CSS… & display it in following form with attractive look…

<Header> Logo Program Your Name Objective
Nav Version-1 of CV, Version-2 of CV, Vesion-3 of CV

Aside Education Table	Main Technical Skills Table(Expt-1)	Aside Key Projects
<footer> Technical Presentation Technical Work experience		

4. The CSS code (of question 2 or 3) should be validated at w3c validator
http://www.css-validator.org

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Computer Science Department (BTech CS Semester-III)

Web Programming

Lab Manual

PART B

(PART B: TO BE COMPLETED BY STUDENTS)

(Students must submit the soft copy as per following segments within two hours of the practical. The soft copy must be uploaded on the Blackboard or emailed to the concerned lab in charge faculties at the end of the practical in case the there is no Black board access available)

Roll No. : E258	Name: Kundan S. Patil
Class : B Tech CS	Batch : A-3
Date of Experiment :28/01/2025	Date/Time of Submission :29/01/2025
Grade :	

B.1 Code:

Q1)

```
70  <body>
71      <div class="container">
72          <h1>Student Information</h1>
73          <div class="info">
74              <p style="color: #ffdd57; font-weight: bold;">Name: Kundan S. Patil</p>
75              <p>SAP ID: 70552300060</p>
76              <p>Roll No: E258</p>
77              <p>Program: B.Tech</p>
78              <p>Branch: Computer Science</p>
79              <p>Year: 2nd</p>
80          </div>
81          <div class="media">
82              <h2>Audio</h2>
83              <audio controls style="border-radius: 25px;">
84                  <source src="./sample.wav" type="audio/mpeg">
85                  Your browser does not support the audio element.
86              </audio>
87              <h2>Video</h2>
88              <video controls>
89                  <source src="./sample.webm" type="video/mp4">
90                  Your browser does not support the video element.
91              </video>
92          </div>
93      </div>
94  </body>
95  </html>
```

```
        .info {
            background: rgba(255, 255, 255, 0.2);
            padding: 20px;
            border-radius: 10px;
            margin-bottom: 20px;
            text-align: left;
            padding-left: 20px;
            padding-right: 20px;
        }
        .info p {
            font-size: 1.2em;
            margin: 15px 0;
            color: #fff;
            font-weight: 500;
        }
        .media {
            margin-top: 30px;
        }
        .media h2 {
            font-size: 1.8em;
            margin-bottom: 15px;
            color: #fff;
            text-shadow: 2px 2px 4px rgba(0, 0, 0, 0.3);
        }
        audio, video {
            width: 100%;
            max-width: 400px;
            border-radius: 10px;
            box-shadow: 0 4px 8px rgba(0, 0, 0, 0.2);
        }
    </style>
</head>
```

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Mukesh Patel School of Technology Management & Engineering (Shirpur Campus)

Computer Science Department (BTech CS Semester-III)

Web Programming

Lab Manual

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Student Information</title>
    <link rel="stylesheet" href="styles.css">
    <link href="https://fonts.googleapis.com/css2?family=Montserrat:wght@400;600&family=Roboto:wght@300;400;500&display=swap" rel="stylesheet">
    <style>
        body {
            font-family: 'Montserrat', sans-serif;
            background: linear-gradient(135deg, #667eea, #764ba2);
            color: #fff;
            margin: 0;
            padding: 0;
            display: flex;
            justify-content: center;
            align-items: center;
            min-height: 100vh;
        }
        .container {
            background: rgba(255, 255, 255, 0.1);
            backdrop-filter: blur(10px);
            border-radius: 15px;
            padding: 30px;
            box-shadow: 0 8px 32px rgba(0, 0, 0, 0.2);
            max-width: 600px;
            width: 100%;
            text-align: center;
            animation: fadeIn 1.5s ease-in-out;
        }
        h1 {
            font-size: 2.5em;
            margin-bottom: 20px;
            color: #fff;
            text-shadow: 2px 2px 4px rgba(0, 0, 0, 0.3);
        }
```

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Mukesh Patel School of Technology Management & Engineering (Shirpur Campus)

Computer Science Department (BTech CS Semester-III)

Web Programming

Lab Manual

Q2)

```css
body {
    background-color: #f4f4f9;
    font-family: 'Poppins', sans-serif;
    margin: 0;
    padding: 0;
    color: #333;
}

Comment Code
.main {
    width: 70%;
    margin: 40px auto;
    padding: 30px;
    background: white;
    box-shadow: 0px 4px 15px rgba(0, 0, 0, 0.1);
    border-radius: 10px;
}

Comment Code
h3 {
    color: #292929;
    font-size: 1.5em;
    font-weight: 600;
    margin-bottom: 15px;
    border-bottom: 2px solid #ddd;
    padding-bottom: 5px;
}

Comment Code
td a {
    text-decoration: none;
    color: #007bff;
    font-size: 1.1em;
    font-weight: bold;
    padding: 5px 10px;
    transition: 0.3s;
}
```

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Mukesh Patel School of Technology Management & Engineering (Shirpur Campus)

Computer Science Department (BTech CS Semester-III)

Web Programming

Lab Manual

```
td a:hover {
    color: #ff6600;
    background-color: rgba(255, 102, 0, 0.1);
    border-radius: 5px;
}

Comment Code | Comment Code
ul, ol {
    margin-left: 20px;
    padding-left: 20px;
}

Comment Code
ul {
    list-style-type: disc;
    color: #555;
}

Comment Code
ol {
    list-style-type: decimal;
    color: #555;
}

Comment Code | Comment Code
ul li, ol li {
    font-size: 1.1em;
    margin-bottom: 8px;
}

Comment Code
table {
    width: 100%;
    border-collapse: collapse;
    margin: 20px 0;
    background: #fff;
    border-radius: 8px;
    overflow: hidden;
```

```
68  }
69
    Comment Code
70  th {
71      background-color: #292929;
72      color: white;
73      text-align: left;
74      font-size: 1.2em;
75      padding: 12px;
76  }
77
    Comment Code
78  td {
79      font-size: 1.1em;
80      color: #444;
81      padding: 12px;
82      border-bottom: 1px solid #ddd;
83      text-align: left;
84  }
85
    Comment Code
86  tr:nth-child(even) {
87      background-color: #f9f9f9;
88  }
89
    Comment Code
90  tr:hover {
91      background-color: #f2f2f2;
92      transition: 0.3s;
93  }
94
    Comment Code | Comment Code
95  th, td {
96      padding: 15px;
97  }
98
```

```
98   td img {
99       height: 50px;
100  }
101
     Comment Code
102  td {
103      vertical-align: middle;
104  }
105
```

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Mukesh Patel School of Technology Management & Engineering (Shirpur Campus)

Computer Science Department (BTech CS Semester-III)

Web Programming

Lab Manual

Q3)

```
            </table>
        </div>

        <div class="aside">
            <h3>Key Projects</h3>
            <table>
                <tr>
                    <th>Title</th>
                    <th>Platform</th>
                </tr>
                <tr>
                    <td>Project 1</td>
                    <td>Python</td>
                </tr>
                <tr>
                    <td>Project 2</td>
                    <td>Java</td>
                </tr>
            </table>
        </div>

    </div>

    <div class="footer">
        <h3>Technical Presentation & Work Experience</h3>
        <p>Program 1, Program 2</p>
        <p>Internship 1, Internship 2</p>
    </div>

</body>
</html>
```

```
                <tr>
                    <td>XII</td>
                    <td>VJC</td>
                </tr>
                <tr>
                    <td>X</td>
                    <td>ARP</td>
                </tr>
            </table>
        </div>

        <div class="main">
            <h3>Technical Skills</h3>
            <table>
                <tr>
                    <th>Domain</th>
                    <th>Details</th>
                </tr>
                <tr>
                    <td>Languages</td>
                    <td>C, C++, Java, Python, R</td>
                </tr>
                <tr>
                    <td>Web Design</td>
                    <td>HTML, CSS</td>
                </tr>
                <tr>
                    <td>Database</td>
                    <td>MySQL, Oracle</td>
                </tr>
                <tr>
                    <td>Operating Systems</td>
                    <td>Windows, Linux, Ubuntu</td>
                </tr>
```

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>My CV</title>
    <link rel="stylesheet" href="style.css">
</head>
<body>

    <div class="header">
        <img src="Picture1.png" alt="NMIMS Logo">
        <h1>B.Tech Computer Science</h1>
        <h2>Kundan S. Patil</h2>
        <p>Objective: To apply my knowledge and skills in a challenging environment.</p>
    </div>

    <div class="navbar">
        <a href="cv_version1.html">Version 1</a>
        <a href="cv_version2.html">Version 2</a>
        <a href="cv_version3.html">Version 3</a>
    </div>

    <div class="main-container">

        <div class="aside">
            <h3>Education</h3>
            <table>
                <tr>
                    <th>Degree</th>
                    <th>Institute</th>
                </tr>
                <tr>
                    <td>B.Tech</td>
                    <td>MPSTME</td>
                </tr>
                <tr>
                    <td>XII</td>
```

B.2 Output

Q1)

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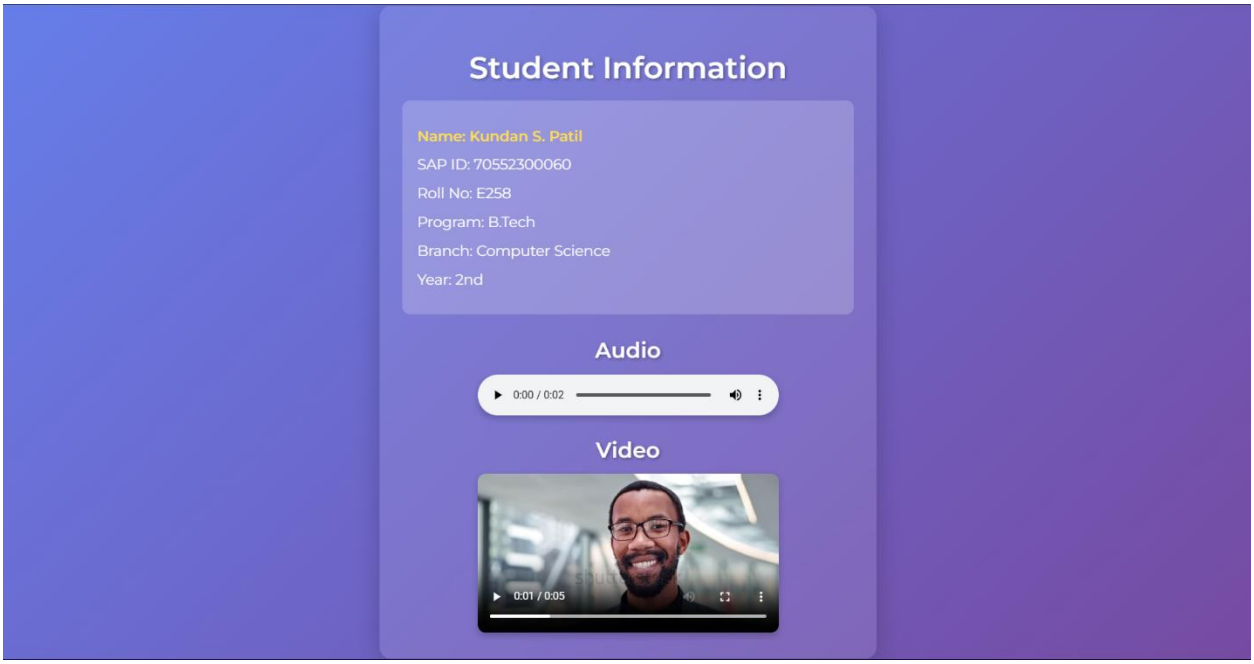
Mukesh Patel School of Technology Management & Engineering (Shirpur Campus)

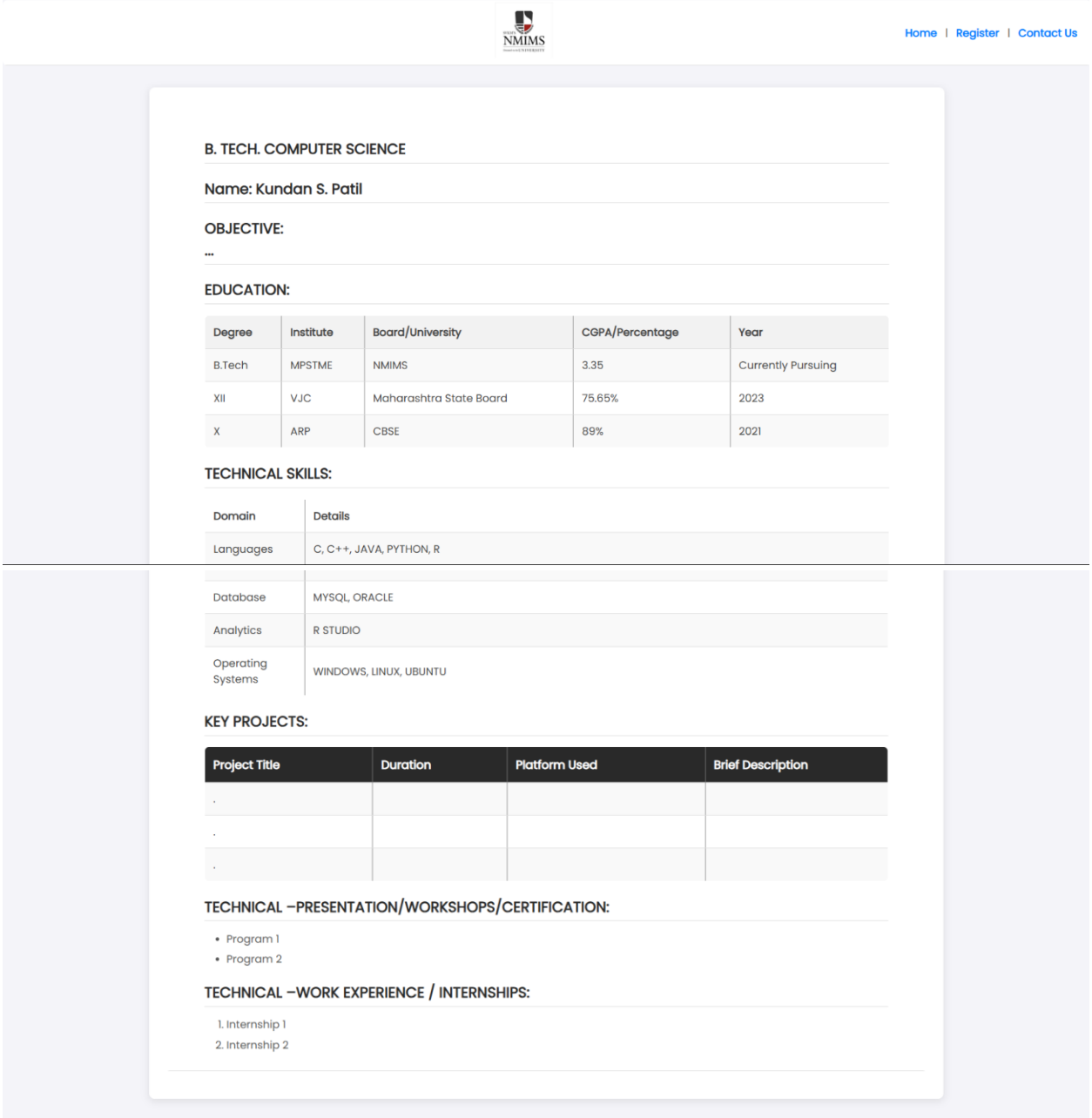
Computer Science Department (BTech CS Semester-III)

Web Programming

Lab Manual



Q2)



Home | Register | Contact Us

B. TECH. COMPUTER SCIENCE

Name: Kundan S. Patil

OBJECTIVE:

...

EDUCATION:

Degree	Institute	Board/University	CGPA/Percentage	Year
B.Tech	MPSTME	NMIMS	3.35	Currently Pursuing
XII	VJC	Maharashtra State Board	75.65%	2023
X	ARP	CBSE	89%	2021

TECHNICAL SKILLS:

Domain	Details
Languages	C, C++, JAVA, PYTHON, R
Database	MYSQL, ORACLE
Analytics	R STUDIO
Operating Systems	WINDOWS, LINUX, UBUNTU

KEY PROJECTS:

Project Title	Duration	Platform Used	Brief Description
.			
.			
.			

TECHNICAL –PRESENTATION/WORKSHOPS/CERTIFICATION:

- Program 1
- Program 2

TECHNICAL –WORK EXPERIENCE / INTERNSHIPS:

1. Internship 1
2. Internship 2

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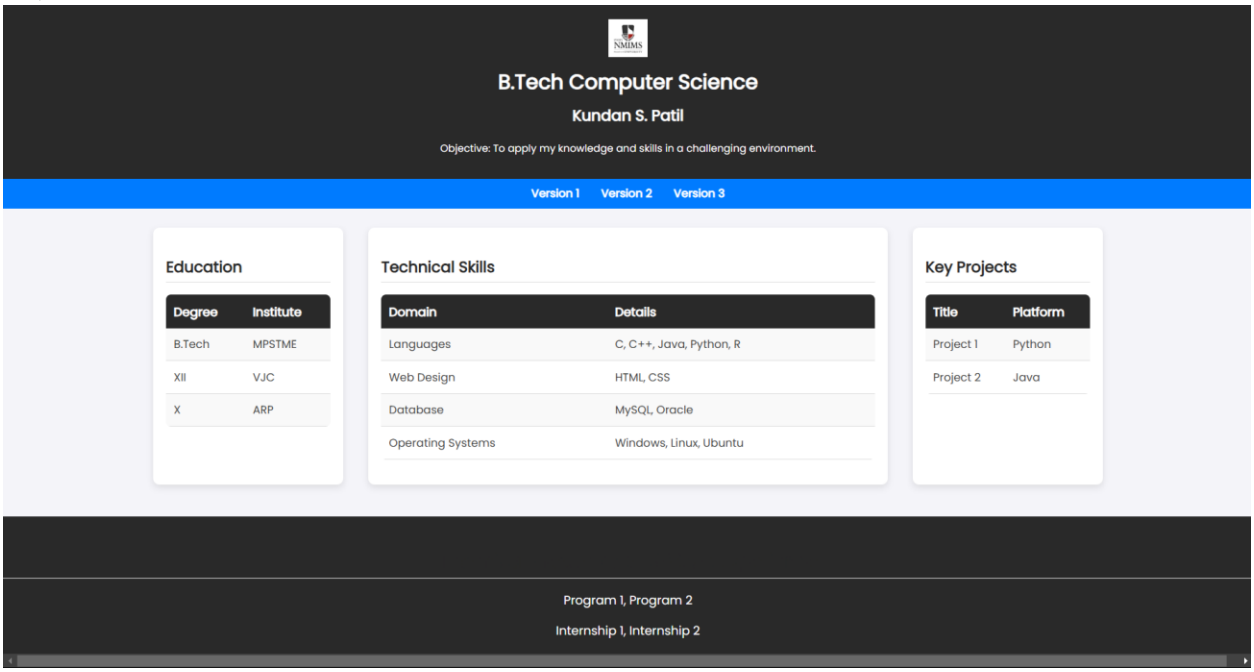
Mukesh Patel School of Technology Management & Engineering (Shirpur Campus)
Computer Science Department (BTech CS Semester-III)
Web Programming
Lab Manual

Q3)



B.3 Conclusion:

After successfully completing this experiment, I have learned to:

1. Design web pages using **HTML5** and structure content effectively.
2. Format text and images using **various HTML tags**.
3. Apply **Inline CSS** to style specific elements within the HTML document.
4. Use **Internal CSS** to define styles within the <style> tag in the <head> section.
5. Implement **External CSS** by linking an external stylesheet for better reusability and separation of concerns.

B.3 Observations and Learning:

- **HTML Structure** – Understood the importance of semantic HTML elements such as <header>, <nav>, <section>, <article>, <footer>, and their roles in page layout.
- **CSS Styling Techniques** – Explored different ways to apply CSS (Inline, Internal, and External) and their impact on maintainability and scalability.
- **Selectors and Properties** – Learned about different CSS selectors like **Type, Class, ID, Descendant, and Grouping selectors** to style elements efficiently.

- **Text and Font Styling** – Experimented with properties like color, text-align, font-size, and font-family to enhance readability.
- **Box Model** – Understood the concept of **Margins, Borders, Padding**, and how they affect element positioning.

B.4 Question of Curiosity

(To be answered by student based on the practical performed and learning/observations)

1. What is CSS? What are its type??

   CSS (Cascading Style Sheets) is a stylesheet language used to define the presentation and layout of HTML documents. It allows developers to style elements with colors, fonts, spacing, positioning, and animations.

   Types of CSS:

   1. **Inline CSS** – Applied directly to an HTML element using the style attribute.
   2. **Internal CSS** – Defined within a <style> tag in the <head> section of an HTML document.
   3. **External CSS** – Defined in a separate .css file and linked to the HTML document using the <link> tag.
   4. **Imported CSS** – Styles can also be imported inside another CSS file using the @import rule.

2. Validator output??

   Input code to validator: -

```css
body {
    background-color: #f4f4f9;
    font-family: 'Poppins', sans-serif;
    margin: 0;
    padding: 0;
    color: #333;
    display: flex;
    flex-direction: column;
    align-items: center;
}

.header {
    width: 100%;
    display: flex;
    flex-direction: column;
    align-items: center;
    padding: 20px;
    background-color: #292929;
    color: white;
    text-align: center;
}

.header img {
    height: 60px;
    margin-bottom: 10px;
}

.header h1, .header h2 {
    margin: 5px 0;
    font-weight: 600;
}

.navbar {
    width: 100%;
    background: #007bff;
    text-align: center;
    padding: 10px 0;
}

.navbar a {
    color: white;
    font-size: 1.1em;
    text-decoration: none;
    margin: 0 15px;
    font-weight: bold;
    transition: 0.3s;
}

.navbar a:hover {
    color: #ffcc00;
}

.main-container {
    width: 80%;
    display: flex;
    justify-content: space-between;
    margin: 30px 0;
}

.aside {
    width: 20%;
    background: white;
    padding: 20px;
    margin-left: 40px;
    margin-right: 40px;
    box-shadow: 0px 4px 10px rgba(0, 0, 0, 0.1);
    border-radius: 10px;
}

.main {
    width: 60%;
    background: white;
    padding: 20px;
    box-shadow: 0px 4px 10px rgba(0, 0, 0, 0.1);
    border-radius: 10px;
}

h3 {
    color: #292929;
    font-size: 1.5em;
    font-weight: 600;
```

Output of validator: -

SVKM's NMIMS

Mukesh Patel School of Technology Management & Engineering (Shirpur Campus)

Computer Science Department (BTech CS Semester-III)

Web Programming

Lab Manual

W3C CSS Validator results for TextArea (CSS level 2.1)

Sorry! We found the following errors (16)

URI : TextArea		
7	body	Value Error : display flex is not a display value : flex flex
8	body	Property flex-direction doesn't exist : column column
9	body	Property align-items doesn't exist : center center
14	.header	Value Error : display flex is not a display value : flex flex
15	.header	Property flex-direction doesn't exist : column column
16	.header	Property align-items doesn't exist : center center
46	.navbar a	Property transition doesn't exist : 0.3s 0.3s
55	.main-container	Value Error : display flex is not a display value : flex flex
56	.main-container	Property justify-content doesn't exist : space-between space-between
66	.aside	Property box-shadow doesn't exist in CSS level 2.1 but exists in : 0 4px 10px rgba(0,0,0,0.1) 0 4px 10px rgba(0,0,0,0.1)
67	.aside	Property border-radius doesn't exist in CSS level 2.1 but exists in : 10px 10px
74	.main	Property box-shadow doesn't exist in CSS level 2.1 but exists in : 0 4px 10px rgba(0,0,0,0.1) 0 4px 10px rgba(0,0,0,0.1)
75	.main	Property border-radius doesn't exist in CSS level 2.1 but exists in : 10px 10px
92	table	Property border-radius doesn't exist in CSS level 2.1 but exists in : 8px 8px
112		Unknown pseudo-element or pseudo-class :nth-child
118	tr:hover	Property transition doesn't exist : 0.3s 0.3s

Warnings (6)

URI : TextArea		
41		Same colors for color and background-color in two contexts .main and .navbar a
41		Same colors for color and background-color in two contexts .aside and .navbar a
41		Same colors for color and background-color in two contexts table and .navbar a
79		Same colors for color and background-color in two contexts .footer and h3
79		Same colors for color and background-color in two contexts th and h3
79		Same colors for color and background-color in two contexts .header and h3