WEB DEVELOPMENT

HTML And CSS SESSION 2

ABSTRACT

HTML (the Hypertext Mark-up Language) and CSS (Cascading Style Sheets) are two of the core technologies for building Web pages. HTML provides the structure of the page, CSS the (visual and aural) layout, for a variety of devices. Along with graphics and scripting, HTML and CSS are the basis of building Web pages and Web Applications.

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HTML (the Hypertext Mark-up Language) and CSS (Cascading Style Sheets) are two of the core technologies for building Web pages. HTML provides the *structure* of the page, CSS the (visual and aural) *layout,* for a variety of devices. Along with graphics and scripting, HTML and CSS are the basis of building Web pages and Web Applications.

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INTRODUCTION TO WEB DEVELOPEMNT:

Introduction to Internet:- A global computer network providing a variety of information and communication facilities, consisting of interconnected networks using standardized communication protocols. "the guide is also available on the Internet"

The Internet is the global system of interconnected computer networks that use theInternetprotocol suite (TCP/IP) to link devices worldwide. It is a network of networks that consists of private, public, academic, business, and government networks of local to global scope, linked by a broad array of electronic, wireless, and optical networking technologies. The Internet carries a vast range of information resources and services.

History of Internet

This marvelous tool has quite a history that holds its roots in the cold war scenario. A need was realized to connect the top universities of the United States so that they can share allthe research data without having too much of a time lag. This attempt was a result of Advanced Research Projects Agency (ARPA) which was formed at the end of 1950s just after the Russians had climbed the space era with the launch of Sputnik. After the ARPA got success in 1969, it didn‘t take the experts long to understand that how much potential can this interconnection tool have. In 1971 Ray Tomlinson made a system to send electronic mail. This was a big step in the making as this opened gateways for remote computer accessing i.e.telnet.

During all this time, rigorous paper work was being done in all the elite research institutions. From giving every computer an address to setting out the rules, everything was getting penned down. 1973 saw the preparations for the vital TCP/IP and Ethernet services. At the end of 1970s, Usenet groups had surfaced up. By the time the 80s had started, IBM came up with its PC based on Intel 8088 processor which was widely used by students and universities forit solved the purpose of easy computing. By 1982, the Defense Agencies made the TCP/IP compulsory and the term ‒internet‖ was coined. The domain name services arrived in the year 1984 which is also the time around which various internet based marked their debut. A worm, or a rust the computers, attacked in 1988 and disabled over 10% of the computer systems all over the world. While most of the researchers regarded it as an opportunity to enhance computing as itwas still in its juvenile phase, quite a number of computer companies became interested in dissecting the cores of the malware which resulted to the formation Computer EmergencyRescue Team (CERT). Soon after the world got over with the computer worm, World Wide Webcame into existence. Discovered by Tim Berners-Lee, World Wide Web was seen as a service to connect documents in websites using hyperlinks.

World Wide Web

The World Wide Web (abbreviated WWW or the Web) is an information space where documents and other web resources are identified by Uniform Resource Locators (URLs), interlinked by hypertext links, and can be accessed via the Internet. English scientist TimBerners-Lee invented the World Wide Web in 1989. He wrote the first web browser computerprogram in 1990 while employed at CERN in Switzerland. The Web browser was released outside CERN in 1991, first to other research institutions starting in January 1991 and tothe general public on the Internet in August 1991.

The World Wide Web has been central to the development of the Information Age and is the primary tool billions of people use to interact on the Internet. Web pages are primarily text

documents formatted and annotated with Hypertext Markup Language (HTML). In addition to formatted text, web pages may contain images, video, audio, and software components that are rendered in the user's web browser as coherent pages of multimedia content.

Embedded hyperlinks permit users to navigate between web pages. Multiple web pages with a common theme, a common domain name, or both, make up a website. Website content can largely be provided by the publisher, or interactively where users contribute content or the content depends upon the users or their actions. Websites may be mostly informative, primarily for entertainment, or largely for commercial, governmental, or non-governmental organizational purposes

WWW is another example of client/server computing. Each time a link is followed, the client is requesting a document (or graphic or sound file) from a server (also called a Web server) that's part of the World Wide Web that "serves" up the document. The server uses a protocol called HTTP or Hyper Text Transport Protocol. The standard for creating hypertext documents for the WWW is Hyper Text Markup Language or HTML. HTML essentially codes plain text documents so they can be viewed on the Web.

Uniform Resource Locators, or URLs: A Uniform Resource Locator, or URL is the address of a document found on the WWW. Browser interprets the information in the URL in order to connect to the proper Internet server and to retrieve your desired document. Each time a click on a hyperlink in a WWW document instructs browser to find the URL that's embedded within the hyperlink.

The elements in a URL: **Protocol://server's address/filename**

Hypertext protocol:

http://www.aucegypt.eduFile Transfer

Protocol: ftp://ftp.dartmouth.eduTelnet

Protocol: telnet://pac.carl.org

News Protocol: news:alt.rock-n-roll.stones

What are Domains? Domains divide World Wide Web sites into categories based on the nature of their owner, and they form part of a site's address, or uniform resource locator (URL). Common top-level domainsare:

.com—commercial enterprises	.mil—military site
org—organization site (non-profits, etc.)	int—organizations established by international treaty
.net—network	.biz—commercial and personal
.edu—educational site (universities, schools, etc.)	.info—commercial and personal
.gov—government organizations	.name—personal sites

Additional three-letter, four-letter, and longer top-level domains are frequently added. Each country linked to the Web has a two-letter top-level domain, for example .fr is France, .ie isIreland.

MIME (Multi-Purpose Internet Mail Extensions):- MIME is an extension of the original Internet e-mail protocol that lets people use the protocol to exchange different kinds of data files on the Internet: audio, video, images, application programs, and other kinds, as well as the ASCII text handled in the original protocol, the Simple Mail Transport Protocol (SMTP). In 1991, Nathan Borenstein of Bellcore proposed to the IETF that SMTP be extended so that Internet. Hypertext Transport Protocol:

HTTP means HyperText Transfer Protocol. HTTP is the underlying protocol used by the World Wide Web and this protocol defines how messages are formatted and transmitted, and what actions Web servers and browsers should take in response to various commands.
For example, when you enter a URL in your browser, this actually sends an HTTP command to the Web server directing it to fetch and transmit the requested Web page. The other mainstandard that controls how the World Wide Web works is HTML, which covers how Web pages are formatted anddisplayed.

HTTP is called a stateless protocol because each command is executed independently, without any knowledge of the commands that came before it. This is the main reason that it is difficult to implement Web sites that react intelligently to user input.

HTTPS: A similar abbreviation, HTTPS means Hyper Text Transfer Protocol Secure. Basically, it is the secure version of HTTP. Communications between the browser and website are encrypted by Transport Layer Security (TLS), or its predecessor, Secure Sockets Layer (SSL).

The Web Programmer‟sToolbox:

- **HTML** - a *markup*language
  - To describe the general form and layout ofdocuments
    - HTML is **not** a programming language - it cannot beused describe **computations**.
  - An HTML document is a mix of **content** and **controls**
    - Controls are **tags** and their**attributes**
      - Tags often delimit content and specify something about howthecontent should be arranged in thedocument
        For example, Write a paragraph here is an *element*.

        - Attributes provide additional information about the content of a tagFor example, <font color ="Red"/>
- Plugins
    - Integrated into tools like word processors, effectively converting themtoWYSIWYG HTMLeditors
- Filters
    - Convert documents in other formats toHTML
- Advantages of both filters and plug-ins:
    - Existing documents produced with other tools can be converted to HTMLdocuments
    - Use a tool you already know to produceHTML
- Disadvantages of both filters andplug-ins:
    - HTML output of both is not perfect - must be finetuned
    - HTML may benon-standard
    - You have two versions of the document, which are difficult tosynchronize
- XML
    - A meta-markup language (a language for defining markuplanguage)
    - Used to create a new markup language for a particular purpose orarea
    - Because the tags are designed for a specific area, they can bemeaningful
- JavaScript
    - A client-side HTML-embedded scriptinglanguage
    - Provides a way to access elements of HTML documents and dynamicallychange them
- Flash
    - A system for building and displaying text, graphics, sound, interactivity,and animation(movies)
    - Twoparts:
        1. Authoringenvironment
        2. Player

    Supports both motion and shape animation

PHP

A server-side scripting language
Great for form processing and database access through the Web

Ajax

Asynchronous JavaScript + XML

- No new technologies orlanguages

Much faster for Web applications that have extensive user/server interactions
Uses asynchronous requests to the server
Requests and receives small parts of documents, resulting in much faster responses

Java Web Software

Servlets – server-side Java classes

JavaServer Pages (JSP) – a Java-based approach to server-side scriptingJavaServer Faces – adds an event-driven interface model on JSP

ASP.NET

HTML:

HTML is the building block for web pages. HTML is a format that tells a computer how to display a web page. The documents themselves are plain text files with special "tags" or codes that a web browser uses to interpret and display information on your computer screen.

- HTML stands for Hyper Text MarkupLanguage
- An HTML file is a text file containing small markuptags
- The markup tags tell the Web browser how to display thepage
- An HTML file must have an htm or html fileextension.

HTML Tags:- HTML tags are used to mark-up HTML elements .HTML tags are surrounded by the two characters < and >. The surrounding characters are called angle brackets. HTML tags normally come in pairs like **and** The first tag in a pair is the start tag, the second tag is the end tag . The text between the start and end tags is the element content . HTML tags are not case sensitive, <B>**means the same as<b>.**

The most important tags in HTML are tags that define headings, paragraphs and line breaks.

Tag	Description
<!DOCTYPE...>	This tag defines the document type and HTML version.
<html>	This tag encloses the complete HTML document and mainly comprises of document header which is represented by <head>...</head> and document body which is represented by <body>...</body> tags.
<head>	This tag represents the document's header which can keep other HTML tags like <title>, <link> etc.
<title>	The <title> tag is used inside the <head> tag to mention the document title.
<body>	This tag represents the document's body which keeps other HTML tags like <h1>, , <p> etc.
<p>	This tag represents a paragraph.
<h1> to <h6>	Defines header 1 to header 6
 	Inserts a single line break
<hr>	Defines a horizontal rule
<!-->	Defines a comment

HEADINGS:

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

<h1> This is a Heading</h1>

```
<h2>This is a heading</h2>
<h3>This is a heading</h3>
<h4>This is a heading</h4>
<h5>This is a heading</h5>
<h6>This is a heading</h6>
```

Paragraph:

Paragraphs are defined with the tag. Think of a paragraph as a block of text. You can use thealign attribute with a paragraph tag as well.

```
<p align="left">This is a paragraph</p>
<p align="center">this is another paragraph</p>
```

Note: You must indicate paragraphs with elements. A browser ignores any indentations or blank lines in the source text. Without elements, the documentbecomes

Line Breaks:-

The
 tag is used when you want to start a new line, but don't want to start a new paragraph. The
 tag forces a line break wherever you place it. It is similar to single spacing in a document.

This Code	output
This is a para graph with line breaks	This is a para graph with line breaks

Horizontal Rule The element is used for horizontal rules that act as dividers between sectionslike this:

The horizontal rule does not have a closing tag. It takes attributes such as align and width

Code	Output
<hr width="50%" align="center">	

Sample html program

```
<!DOCTYPE html>
<html>
        <head>
                <title>This is document title
                </title>
         </head>
          <body>

                <h1>This is a heading</h1>
                <p>Document contentgoeshere .....</p>
         </body>
</html>
```

Lists:-HTML offers web authors three ways for specifying lists of information.All lists must contain one or more list elements. Lists are of three types

HTML Unordered Lists: An unordered list is a collection of related items that have no specialorder or sequence. This list is created by using HTML <ul> tag. Each item in the list is markedwith a bullet.

Example:

```
<!DOCTYPE html>
<html>
    <head>
        <title>HTML Unordered List</title>
    </head>
    <body>
        <ul>  <li>Beetroot</li>
              <li>Ginger</li><li>Potato</li>
              <li>Radish</li>
        </ul>
    </body>
</html>
```

HTML Definition Lists:- HTML and XHTML supports a list style which is called definition lists where entries are listed like in a dictionary or encyclopedia. The definition list is the idealway to present a glossary, list of terms, or other name/value list. Definition List makes use of following three tags.

1). <dl> - Defines the start of the list2). <dt> - A term
3). <dd> - Termdefinition
4). </dl> - Defines the end of thelist

HTML tables:

The HTML tables allow web authors to arrange data like text, images, links, other tables, etc. into rows and columns of cells. The HTML tables are created using the **<table>**tag inwhich the **<tr>**tag is used to create table rows and **<td>**tag is used to create data cells

```
<!DOCTYPE html>
<html>
<head>
```

```
<title>HTML Tables</title>
</head>
<body>
                    <table border="1">
                        <tr>
                            <td>Row 1, Column 1</td><td>Row 1, Column 2</td>
            </tr>
            <tr><td>Row 2, Column 1</td><td>Row 2, Column 2</td>
            </tr>
        </table>
</body>
```

Table Heading: Table heading can be defined using **<th>**tag. This tag will be put to replace <td> tag, which is used to represent actual data cell. Normally you will put your top row as tableheading as shown below, otherwise you can use <th> element in any row.

Tables Backgrounds: set table background using one of the following two ways: 1)bgcolor attribute - You can set background color for whole table or just for one cell.
background attribute - You can set background image for whole table or just for one cell. Youcan also set border color also using bordercolorattribute

```
<!DOCTYPE html>
<html>
<head>
<title>HTML Tables</title></head>
<body>
        <table border="1"bordercolor="red" bgcolor="yellow">
            <tr><th>Name</th>
             <th>Salary</th></tr>
                <td>Jayapal    </td><td>50,000.00</td>
            </tr>
            <tr><td>Ravi</td><td>45,000.00</td>
            </tr>
        </table>
```

```
</body>

</html>
```

Insert Image:

insert any image in the web page by using **<img>**tag.
<img align="left|right|middle|top|bottom">

```
<!DOCTYPE html>

<html>

        <head>

                <title>Using Image in Webpage</title>

        </head>

        <body><p>Simple Image Insert</p>

                <img src="test.png" alt="Test Image" />

        </body>

</html>
```

HTML FORMS:

HTML Forms are required to collect some data from the site visitor. For example, during user registration you would like to collect information such as name, email address, credit card, etc. A form will take input from the site visitor and then will post it to a back-end application such as CGI, ASP Script or PHP script etc. The back-end application will perform required processing on the passed data based on defined business logic inside the application. There are various form elements available like text fields, text area fields, drop-down menus, radio buttons,checkboxes, etc.

SYNTAX:

<form action="Script URL" method="GET|POST"> form elements like input, text area etc. </form>

<form> Tag Attributes

Attribute	*Values*
Accept	A comma-separated list of content types that the handler's server will accept
accept-charset	A comma-separated list of character sets the form data may be in
Enctype	The content type the form data is in
Name	The name of the form (deprecated, use the `id` attribute instead)
Target	Where to open the handler URL (deprecated)

There are different types of form controls that you can use to collect data using HTML form:

- Text InputControls
- Checkboxes Controls
- Radio BoxControls
- Select BoxControls
- File Selectboxes
- Hidden Controls
- ClickableButtons

Submit and ResetButton

Text Input Controls:-

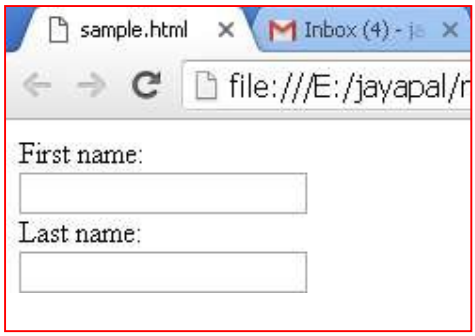
There are three types of text input used on forms:

1) **Single-line text input controls -** This control is used for items that require only oneline of user input, such as search boxes or names. They are created usingHTML **<input>**tag.

<input type="text">defines a one-line input field for **text input**:

Example:

```
<form>
  Firstname:<br>
  <input
  type="text"name="firstname"><br>
  Lastname:<br>
```



2) **Password input controls -** This is also a single-line text input but it masks the character assoon as a user enters it. They are also created using HTML <input>tag.

3) **Multi-line text input controls -** This is used when the user is required to give details that may belongerthanasinglesentence.Multi-lineinputcontrolsarecreatedusing HTML <textarea> tag.

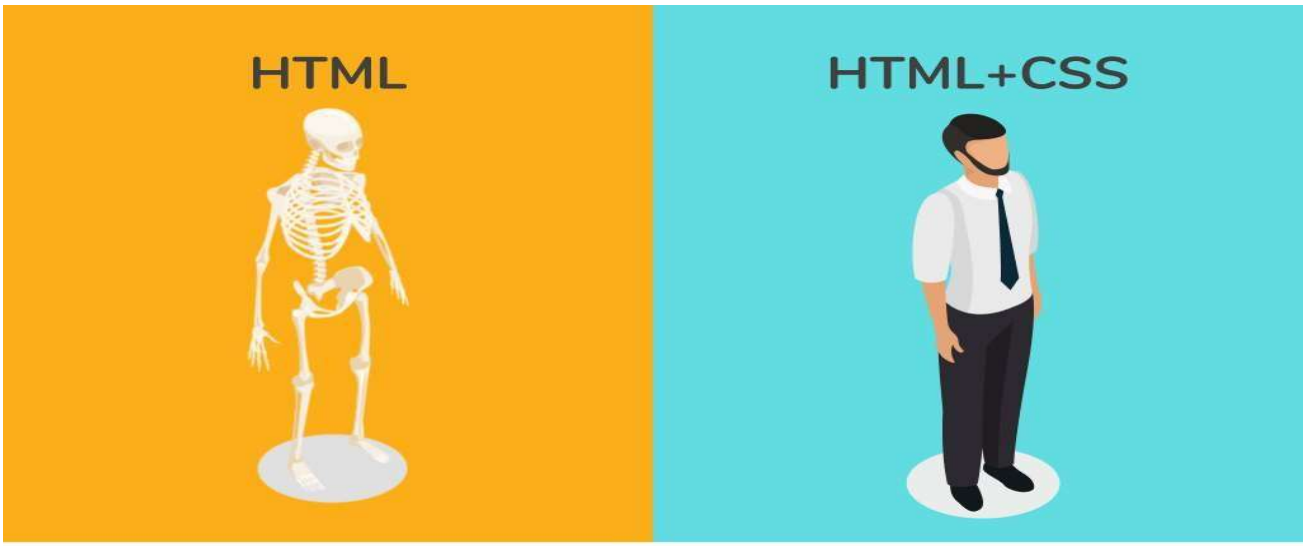
```
<!DOCTYPE html>

<html>

   <head>

            <title>Multiple-Line Input Control</title>

   </head>

   <body>

    <form> Description: <br />
```

```
        <textarea rows="5" cols="50" name="description"> Enter description here... </textarea>
    </form>
  </body>
</html>
```

Checkboxes Controls:-

Checkboxes are used when more than one option is required to be selected. They are alsocreated using HTML <input> tag but type attribute is set to checkbox

```
<!DOCTYPE html>
<html><head><title>Checkbox  Control</title></head>
 <body>
        <form>
                <input type="checkbox" name="C++" value="on"> C++
                <br>
                <input type="checkbox" name="C#" value="on"> C#
                <br>
                <input type="checkbox" name="JAVA" value="on"> JAVA
            </form>
    </body></html>
```



CSS:

CSS stands for Cascading Style Sheets-**Dynamic web pages**

CSS describes **how HTML-Static web pages elements are to be displayed on screen, paper, or in other media**.CSS **saves a lot of work**. It can control the layout of multiple web pages all at once.

CSS can be added to HTML elements in 3 ways:

- **Inline** - by using the style attribute in HTMLelements
- **Internal** - by using a <style> element in the <head>section
- **External** - by using an external CSSfile

Inline CSS

An inline CSS is used to apply a unique style to a single HTML element.An inline CSS uses the style attribute of an HTML element.

This example sets the text color of the <h1> element to blue:

```
<h1 style="color:blue;">This is a Blue Heading</h1>
```

Internal CSS:

An internal CSS is used to define a style for a single HTML page. An internalCSS is defined in the <head> section of an HTML page, within a <style> element:

```
<html>
    <head>
    <style>
    body {background-color:
    powderblue;}h1 {color: blue;}
    p    {color:red;}
    </style>
    </head>
<body>
<h1>This is aheading</h1>
<p>This is aparagraph.</p>
</body>
</html>
```


External CSS:-

An external style sheet is used to define the style for many HTML pages. **With an external stylesheet, you can change the look of an entire web site, by changing one file!** To use an external style sheet, add a link to it in the <head> section of the HTML page<html>

```
<head>
  <link rel="stylesheet" href="styles.css">
</head>
```

```
    <body>
        <h1>This is aheading</h1>
        <p>This is aparagraph.</p>
    </body>
</html>
```

An external style sheet can be written in any text editor. The file must not contain any HTML code, and must be saved with **a .css extension**.

CSS Fonts: The CSS **color** property defines the text color to be used.

The CSS **font-family** property defines the font to be used. The CSS

```
<html>
<head>
<style>
h1 {
   color: blue;
   font-family: verdana;
   font-size: 300%;
}
p{
   color: red;
   font-family: courier;
   font-size: 160%;
}
```

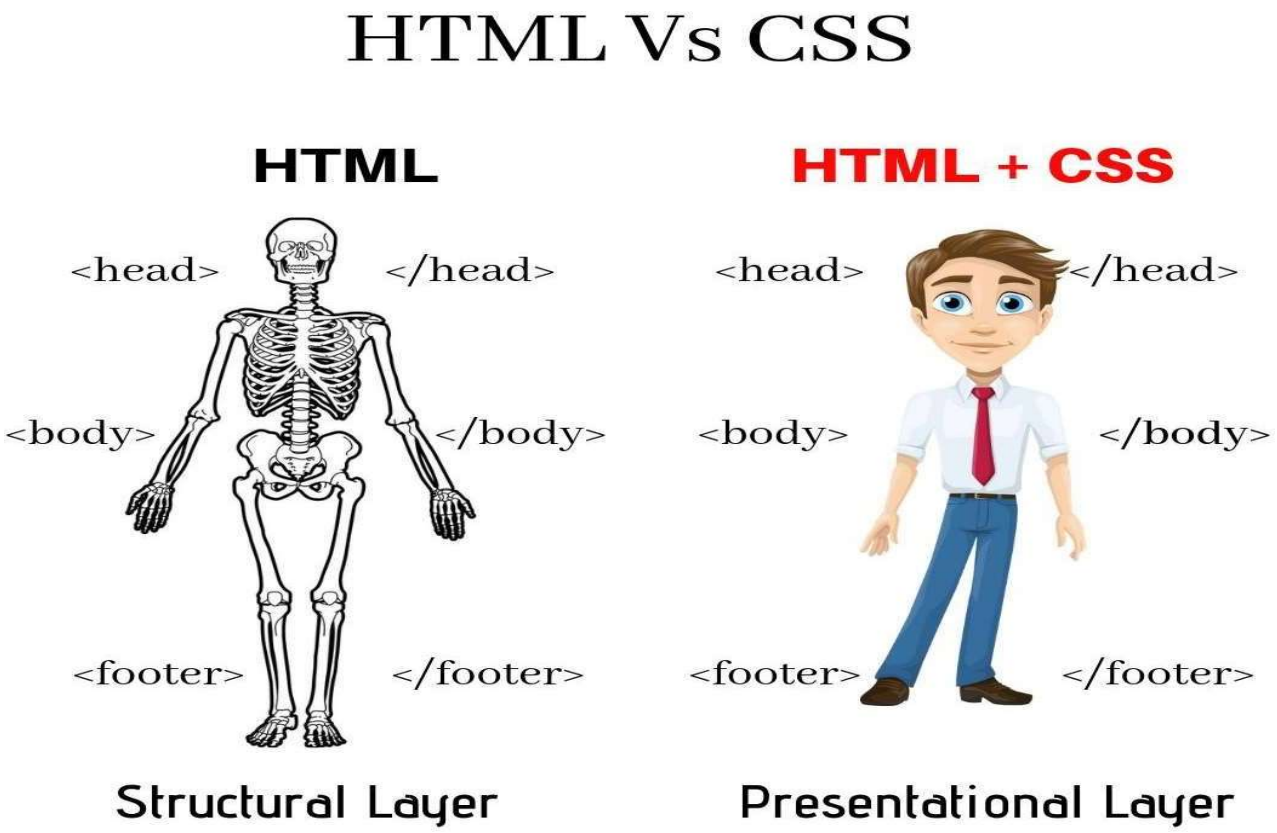
font-size property defines the text size to be used.

CSS Border: The CSS border property defines a border around an HTML element.

CSS Padding: The CSS padding property defines a padding (space) between the text and theborder.

CSS Margin: The CSS margi

```
<html><head>
<style>h
1 {
   color: blue;
   font-family: verdana;
   font-size: 300%; }
p {
   color: red; font-size: 160%; border: 2px solid powderblue; padding: 30px; margin: 50px; }
</style>
```



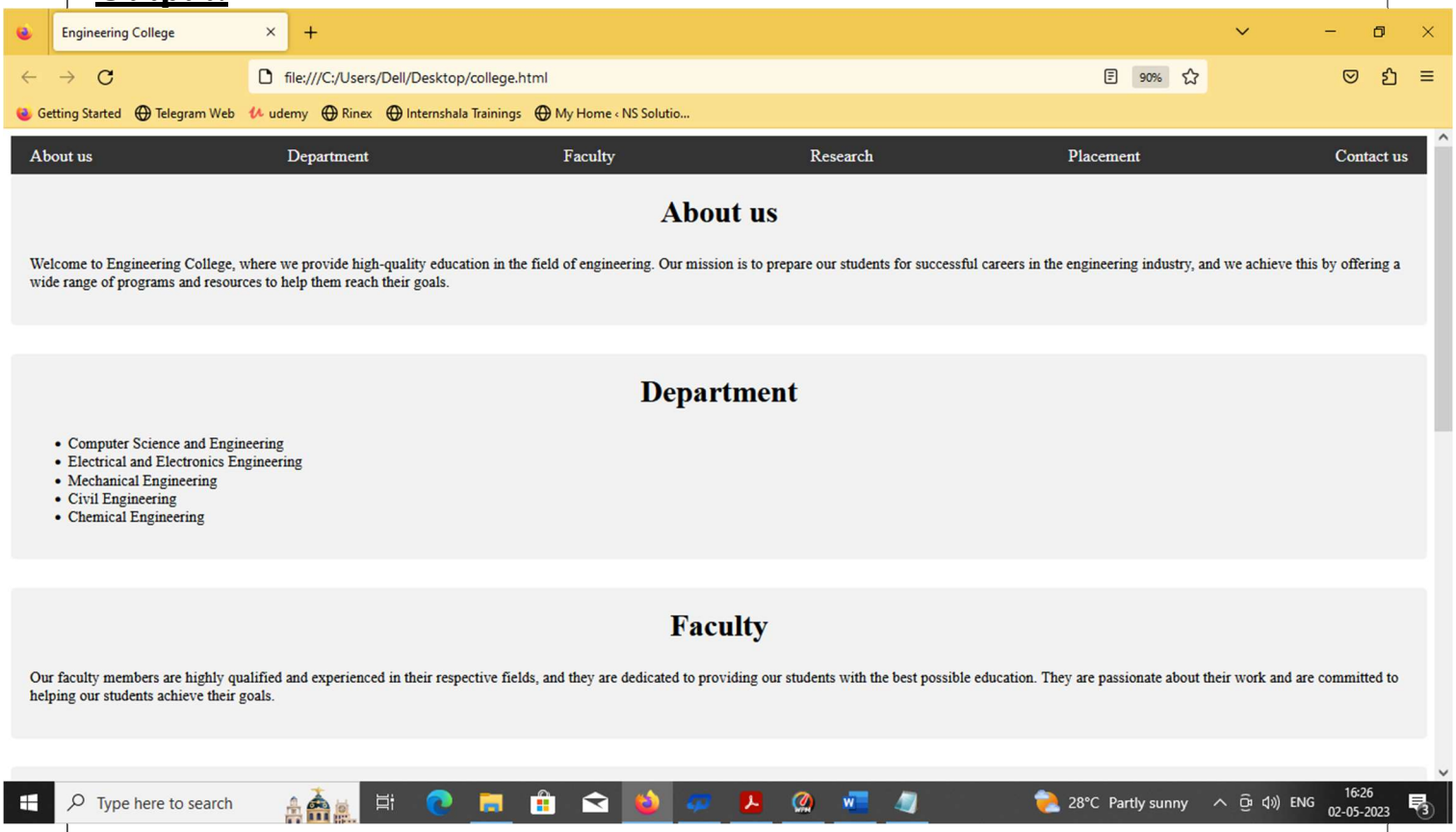
SOURCE CODE:

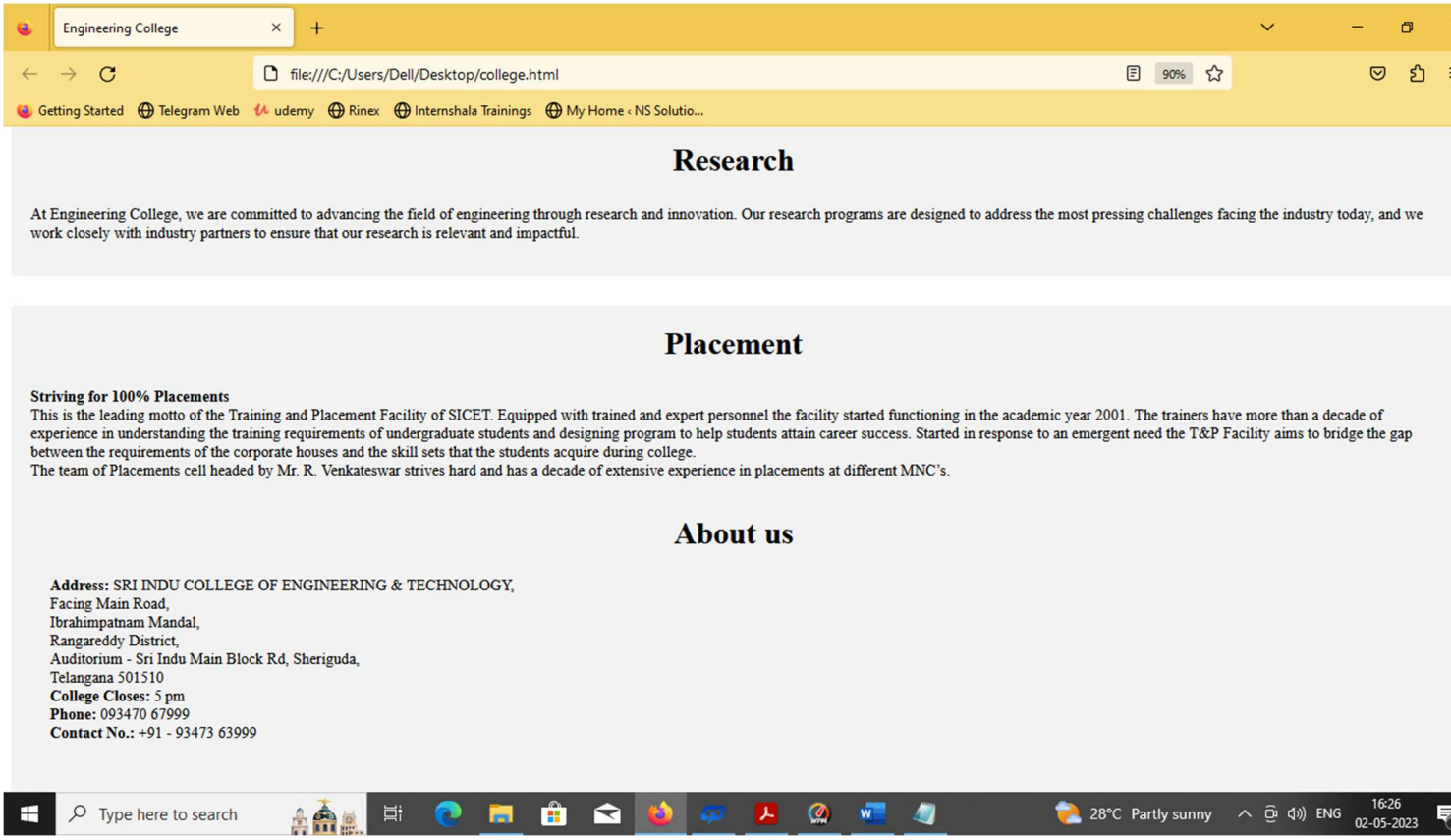
```
<!DOCTYPE html>
<html>
  <head>
    <title>Engineering College</title>
    <style>
<body>{
 background-image:
url('https://emango.s3.amazonaws.com/media/cache/ed/65/ed656e5000495fb9a435a02317fa42
ba.jpg');
}

      /* Styles for the main sections */
      .section {

        padding: 20px;
        margin-bottom: 30px;
        background-color: #f2f2f2;
        border-radius: 5px;
      }
      .section h2 {
        margin-top: 0;
        font-size: 32px;
        text-align: center;
      }

      /* Styles for the navigation bar */
      .navbar {
        display: flex;
        justify-content: space-between;
        align-items: center;
        background-color: #333;
        color: #fff;
    padding: 10px;
      }
      .navbar a {
        color: #fff;
        text-decoration: none;
        margin: 0 10px;
        font-size: 18px;
      }
      .navbar a:hover {
        text-decoration: underline;
      }

      /* Styles for the footer */
      .footer {
        background-color: #333;
        color: #fff;
        padding: 20px;
        text-align: center;
      }
      .footer a {
        color: #fff;
```

```
        text-decoration: none;
        margin: 0 10px;
        font-size: 16px;
      }
      .footer a:hover {
        text-decoration: underline;
      }
</body>
    </style>
  </head>
  <body>
    <!-- Navigation bar -->
    <div class="navbar">
      <a href="#">About us</a>
      <a href="#">Department</a>
      <a href="#">Faculty</a>
      <a href="#">Research</a>
      <a href="#">Placement</a>
      <a href="#">Contact us</a>
    </div>

    <!-- About us section -->
    <div class="section">
      <h2>About us</h2>
      <p>Welcome to Engineering College, where we provide high-quality education in the field of engineering. Our mission is to prepare our students for successful careers in the engineering industry, and we achieve this by offering a wide range of programs and resources to help them reach their goals.</p>
    </div>

    <!-- Department section -->
    <div class="section">
      <h2>Department</h2>
      <ul>
        <li>Computer Science and Engineering</li>
        <li>Electrical and Electronics Engineering</li>
        <li>Mechanical Engineering</li>
        <li>Civil Engineering</li>
        <li>Chemical Engineering</li>
      </ul>
    </div>

    <!-- Faculty section -->
    <div class="section">
      <h2>Faculty</h2>
      <p>Our faculty members are highly qualified and experienced in their respective fields, and they are dedicated to providing our students with the best possible education. They are passionate about their work and are committed to helping our students achieve their goals.</p>
    </div>

    <!-- Research section -->
    <div class="section">
      <h2>Research</h2>
      <p>At Engineering College, we are committed to advancing the field of engineering through research and innovation. Our research programs are designed to address the most pressing challenges facing the industry today, and we work closely with industry partners to ensure that our research is relevant and impactful.</p>
    </div>
```

```
    <!-- Placement section -->
    <div class="section">
      <h2>Placement</h2>
      <p><strong>Striving for 100% Placements</strong> <br>

This is the leading motto of the Training and Placement Facility of SICET. Equipped with
trained and expert personnel the facility started functioning in the academic year 2001. The
trainers have more than a decade of experience in understanding the training requirements of
undergraduate students and designing program to help students attain career success. Started
in response to an emergent need the T&P Facility aims to bridge the gap between the
requirements of the corporate houses and the skill sets that the students acquire during
college.<br>

The team of Placements cell headed by Mr. R. Venkateswar strives hard and has a decade of
extensive experience in placements at different MNC's.</p>
<div/>
<!-- Contact Details section -->
    <div class="section">
      <h2>About us</h2>
      <p> <strong> Address:</strong>  SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY,<br>
Facing Main Road,<br> Ibrahimpatnam Mandal,<br> Rangareddy District,<br> Auditorium - Sri
Indu Main Block Rd, Sheriguda,<br> Telangana 501510<br>
<strong>College Closes:</strong> 5 pm<br>
<strong>Phone:</strong> 093470 67999 <br>
<strong>Contact No.:</strong> +91 - 93473 63999
</p>
    </div>
</body>
</html>
```

Output:





Conclusion:

In today's Web development, a good page design is essential. A bad design will lead to the loss of visitors and that can lead to a loss of business. In general, a good page layout has to satisfy the basic elements of a good page design.