URL → Locator
URI → Indicator

Protocols

1) IP

Internet Programming

→ development of software application that are accessed over the internet.

→ Programming languages used to create dynamic, interactive and user-friendly web-applications.

Basic

1) **Client Server Architecture:-**

   client:- The user's device (browser) that requests data or services.

   Server:- The backend system that processes requests and sends the appropriate response back to the client.

2) **Web Technologies:-**

   HTML:- (HyperText Markup Language):

   The standard language for creating webpages.
   It defines the structure of a webpage using elements like headings, paragraphs, links, images etc.

   CSS (Cascading Style Sheets):

   used for styling the HTML elements, controlling the layout, colors, fonts, and overall look and feel of a webpage.

Javascript - A programming language used to create interactive effects within web browser. It allows dynamic content changes from validation, animation and handling events like clicks our key presses.

3.) Webservers and Databases:-

- Web Servers- Software (like Apache or Nginx) that handles requests from clients. Servers web pages, and manages resources.

- Databases- Stores data that the web application can retrive, update, and manage. Common database include MySQL, PostgreSQL, and MongoDB.

4) Protocols:-

- HTTP|HTTPS(Hypertext Transfer Protocol|secures: the protocol used to for transmiting data between the client and server over the web.

- TCP|IP(Transmission Control Protocol| Internet protocol) The underlying protocol that ensures reliable communica over the internet.

5) Backend Programming:-

→ Involves server-side programming, where the logic for handling request, database operation, and business logic is implemented.

Scenario 1) Simple personal webpage.

1)
```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset = "UTF-8">
  <title>personal page</title>
<head>
  <h1>Your Name</h1>
  <p> This is a brief bio about yourself.</p>
  <a href = "https://www.yourfavoritewebsite.com">
      Visit my favourite Website</a>.
  </body>
  </html>
```

output:- Your Name

This is a brief bio about yourself

Visit my favourite website.

2) Image as a Clickable link.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset = "UTF-8">
    <title> Image Fink</title>
<head>
<body>
  <a
href = https://www.targetwebsite.com";
    <img src = "path/to/image.jpg"
  alt = "Description of image">
    </a>
  </body>
  </html>
```

output:

image

3) Navigation Bar with Unordered list.

```html
<!DOCTYPE html>
<html lang = "en">
<head>
    <meta charset = "UTF=8">
    <title>Navigation Bar</title>
</head>
<body>
    <ul>
        <li><a href="home.html">home</a><li>
        <li><a href= about.html"> about </a><li>
        <li><a href = "contact.html">contact</a><li>
    </ul>
<body>
</html>.
```

4) Student Grades Table

```html
<!DOCTYPE html>
<html lang = "en">
<head>
    <meta charset = "UTF=8">
    <title> Student Grades </title>
</head>
<body>
    <table border = "1">
    <tr>
        <th> ID </th>
        <th> Name </th>
        <th> Grade </th>
    </tr>
    <tr>
        <td> 101 < /td>
        <td> JohnDoe </td>
```

```
        <td> B </td>
    < ltr>
    </table>
    </body>
    </html>
```

output:

ID	Name	Grade
101	JohnDoe	A
102	JaneSmith	B

5.) Product Information Table with merged cells.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF=8">
    <title> Product Table </title>
</head>
<body>

    <table border = "1">
    <tr>
    <th colspan = "2"> Product
Name </th>
    <th> Price </th>
    <th> Quantity </th>
    </tr>
    <tr>
    <td colspan = "2"> Product A </td>
    <td> $ 100 </td>
    <td = 50 </td>
    </tr>
    </table>
    </html>
```

output:-

Product Name		Price	Quantity
Product A		$ 100	50

6) Employee by Department Table with Row span.

```html
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset = "UTF=8">
    <title> Employee = Table </title>
  </head>
  <body>
  <table border = "1">
  <tr>
    < th rowspan = "2" >Department </th>
      <th>Employee Name </th>
  </tr>
  <tr >
      <td rowspan = "2" >marketing </td>
      <td> Jane smith </td>
  </tr>
  <tr >
      <td> Alice Johnson < /td>
  </tr>
  </table>
  </body>
</html>
```

Output:-

Department	Employee Name
	John Doe
Marketing	Jane Smith
	Alice Johnson.

2) Frames with Navigation and content Areas.

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>Frame layout</title>
</head>
<frameset cols="20%,80%">
    <frame src="Navigation.html" name="left">
    <frame src="content.html"
name="main">
</frameset>
</html>
```

3) Frames with Document and Foot

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>Frame layout</title>
</head>
<frameset rows="75% 25%">
    <frame src="document.html",
name="top">
    <frame src="footer.html"
name="bottom">
</frameset>
</html>
```

Three-column Frameset:

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>Three section layout</title>
</head>
<frameset cols = "200%, 200">
    <frame src = "left.html" nam = "left">
    <frame src = "centre.html"
name = "center">
    <frame src = "sign.html"
name = "right">
</frameset>
</html>
```