Scripting Languages

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Unit 01

scripting languages → { Bash, NodeJS, Ruby, Python, Perl }

- Scripts and Programs,
- Origin of Scripting,
- Scripting Today,
- Characteristics of Scripting Languages,
- Uses for Scripting Languages,
- Web Scripting,
- the universe of Scripting Languages.

Advantages of scripting languages

1. Easy learning
2. Fast editing
3. Interactivity
4. Functionality

Scripts and Programs

A script is a type of program that is usually interpreted rather than compiled. This means scripts are often executed by another program, whereas the programs can be executed directly by the computer's operating system.

Scripts are often used for automation tasks or adding interactivity to web pages. Programs can be used for wide range of purposes including standalone applications.

Some common example of scripts include Javascript code that runs in a browser or shell scripts that automate the tasks of a computer.

Programs can be written in different programming languages and can range from small utilities to large applications like MS word / Adobe photoshop.

Origin of Scripting Languages

① Scripting Languages were developed in 1980s as a way to automate tasks and simplify programming. 1980 → first scripting language → TCL (Tool Command Language)

② Perl → 1987 by Larry Wall, designed basically for text processing but became famous for web development in 1990s

③ Python (1991)
Ruby (1995)
Javascript (1995) → Netscape "very flexible & adaptable"

④ PHP → originally interpreted but now compiled often.

⑤ HTML (Tim Berners-Lee) in 1993

HTML 2.0 (1995)
HTML 3.2 (1997)
HTML 4.0 (1997) ↓
HTML 5 (2008) → new semantic tags for content structure
→ support for graphics, video, audio

1999 → W3C → XHTML (XML + HTML)

1996 → CSS (cascading style sheets)
→ separate presentation of webpage from its content

Script and Program

- Program
  - can be executed directly by computer's OS
- Script
  - type of program that is interpreted rather than compiled
  - Scripts are often executed by another program

Unit 01

Unit 02

- Introduction: Concept of WWW, Internet and WWW,
- HTTP Protocol:
  - Request and Response,
  - Web browser and
  - Web servers,
- HTML Basic –
- Structure of HTML documents, HTML Elements, Linking in HTML, Anchor Attributes, Image Maps, Meta Information, Layouts, Tables, Audio and Video Support with HTML. Interactive Layout with Frames, FORMS, Form Control.

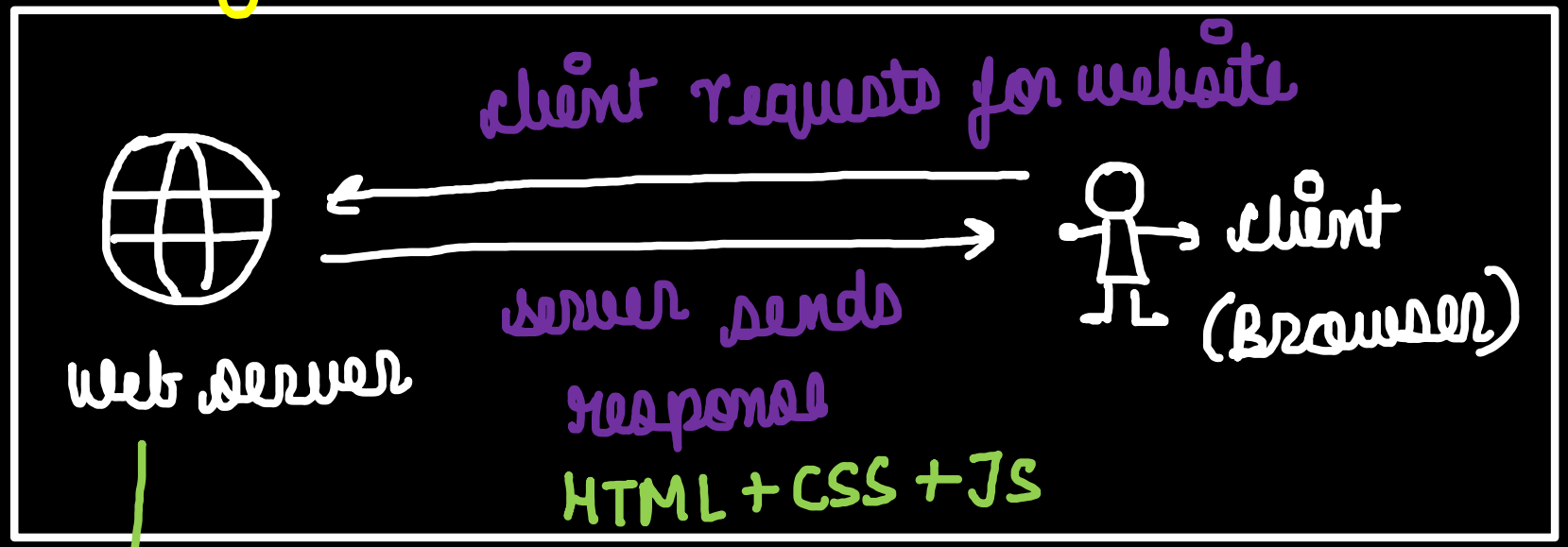
origin and characteristics of scripting languages (bash, ruby, nodejs, python)

" HTML + CSS + JavaScript "

HTML
body

+ CSS
beauty

+ JavaScript
brain



→ Backend
- → php
- → python
- → node JS

HTML (Hypertext Markup Language)

- → standard markup language for giving a static skeleton to web application & websites.
- → It is a well standardized system.

CSS (Cascading Style Sheets)

- → style sheet language that is used to handle the presentation of webpage containing HTML.
- → It makes your websites beautiful and modern looking

Javascript (JS)

- → high level dynamic interpreted programming language.
- → allows client-side scripting to create completely dynamic web applications & websites.

meta tags → SEO optimization

```
<!DOCTYPE html>
<html lang="en">

<!-- head contains all the metatags -->
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Lucky</title>
</head>



<!-- body contains the content of the web page -->
<body>
    Hello Lucky
</body>
</html>
```

meta tags

Internet Explorer

Structure of HTML doc

head

meta tags

```
<!-- head contains all the metatags -->
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <meta name="description" content="This is description">
    <meta name="keywords" content="html, python, web development">
    <!-- <meta name="robots" content="NOINDEX, NOFOLLOW"> -->
    <meta name="robots" content="INDEX, FOLLOW">

    <!-- This is how we include external css -->
    <link rel="stylesheet" href="temp.css">

    <!-- This is how we include external js -->
    <script src="temp.js"></script>

    <title>Lucky</title>
</head>
```

for browser

JS

Emmet ⇒ set of plugins for text editors for fast coding & editing HTML, XML etc

Heading Tag

```
<h1>Hello World</h1>
<h2>Hello World</h2>
<h3>Hello World</h3>
<h4>Hello World</h4>
<h5>Hello World</h5>
<h6>Hello World</h6>
```

Paragraph Tag

```
<p>This is a paragraph</p>
```

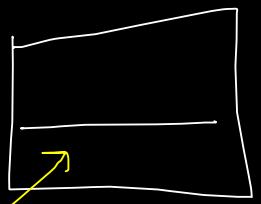
```
<strong>This is strong.</strong>
<em>This is emphasized.</em>
```

(default bold)

(default italics)

 → break , new line

<hr> → horizontal rule



```
<!-- not recommended after HTML5 -->
<b>This is bold.</b>
<i>This is italic.</i>
```

use

use

```
<a href="https://google.com">Go to google</a>
<a href="https://facebook.com">Go to facebook</a>
<a href="https://twitter.com">Go to twitter</a>
<a href="https://amazon.com">Go to amazon</a>

<a href="https://amazon.com" target="_blank">Go to amazon</a>
<a href="tut4.html">tut4</a>

<img src="pp.jpg" alt="Error Loading Image">
```

anchor tag

<a>

internal document

open in new tab

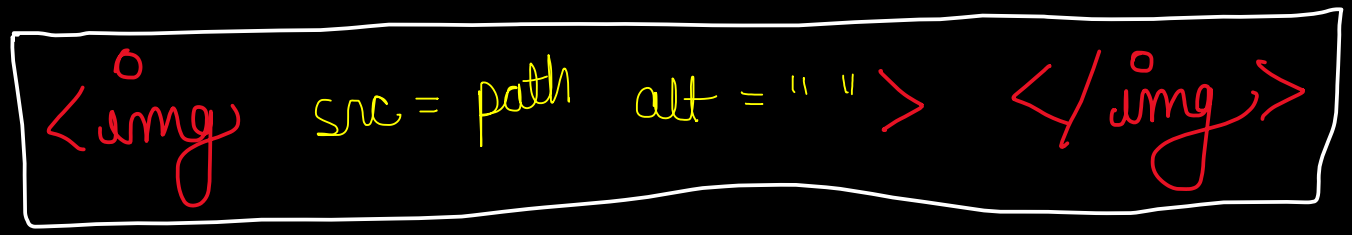
image tag

<img> </img>

path to image (url / uri)

if failed to load image, then show this

image tag



Listas

↳ ordered list & unordered list


```
<ol type = '1'>
    <li> This is first item </li>
</ol>

<ul>
    <li> This is first item </li>
</ul>
```

square , disc , circle

```
<ul type="square">
        <li>This is the first item</li>
        <li>This is the second item</li>
        <ul>
            <li>This is first item of second-item  list</li>
            <li>This is second item of second-item  list</li>
        </ul>

        <li>This is the third item</li>
    </ul>
    <ol type="i">
        <li>This is the first item</li>
        <li>This is the second item</li>
        <li>This is the third item</li>
    </ol>
```

Nested list

I, 1, a, A, i

- This is the first item
- This is the second item
  - This is first item of second-item list
  - This is second item of second-item list
- This is the third item

i. This is the first item
ii. This is the second item
iii. This is the third item

Tables

```
<table>
    <thead></thead>
    <tbody></tbody>
</table>
```

HTML Table

Student Name	Student ID	University Roll No
Deepankar Sharma	20041299	2092014
Sooraj	20041245	2092045

```
<!-- Tables -->
<h3>HTML Table</h3>
<table border="1">
    <thead>
        <tr>
            <th>Student Name</th>
            <th>Student ID</th>
            <th>University Roll No</th>
        </tr>
    </thead>
    <tbody>
        <tr>
            <td>Deepankar Sharma</td>
            <td>20041299</td>
            <td>2092014</td>
        </tr>
        <tr>
            <td>Sooraj</td>
            <td>20041245</td>
            <td>2092045</td>
        </tr>
    </tbody>
</table>
```

Forms


```
<h3>Forms</h3>
    <form action="backend.php">
        <div>
            Name: <input type="text" name="myName">
        </div><br>
        <div>
            Role: <input type="text" name="myRole">
        </div><br>

        <div>
            Email: <input type="email" name="myEmail" id="">
        </div><br>

        <div>
            Date: <input type="date" name="myDate" id="">
        </div><br>

        <div>
            Number: <input type="number" name="" id="">
        </div><br>

        <div>
            Write about yourself: <br>
            <textarea name="" id="" cols="30" rows="5"></textarea>
        </div><br>

        <div>
            Gender: Male<input type="radio" name="" id=""> Female<input type="radio" name="" id="">
             Other<input type="radio" name="" id="">
        </div><br>

        <div>
            Education: 10<input type="checkbox" name="" id="" checked> 12<input type="checkbox" name="" id="">
             Graduation<input type="checkbox" name="" id="">
        </div><br>

        <div>
            <input type="submit" value="submit">
            <input type="reset" value="reset">
        </div><br>
    </form>
```

Favourite TV Show: The Witcher

```
<div>
      <label for="show_id">Favourite TV Show: </label>
      <select name="" id="show_id">
          <option value="1">The Flash</option>
          <option value="2">Arrow</option>
          <option value="3">Peaky Blinders</option>
          <option value="4" selected>The Witcher</option>
      </select>
  </div><br>
```

label & select

Block & Inline Elements

full block

content wrap

<p>

```
<p style="border: 2px solid red;">This is a paragraph</p>
<p style="border: 2px solid blue;">This is a paragraph</p>
```

} Block Element

```
<span style="border: 2px solid blue;">This is a span</span>
<span style="border: 2px solid red;">This is a span</span>
```

} Inline Element

ID and classes

```
<div id="mainbox" class="redBg blackBorder">
    <!-- id (identifier) -->
    This is mainbox
</div>

<!-- Emmet -->
<!-- . is for class and # is for id -->
<span class="redBg"></span>
<!-- span#mainId + <Tab> -->
<span id="mainId"></span>
<!-- div.hello.world.class4 + <Tab> -->
<div class="hello world class4"></div>

<!-- Emmet takes div tag as default -->
<!-- .blackBaground + <Tab> -->
<div class="blackBackground"></div>

<!-- Multiple of the tags -->
<!-- .class1.class2*4 + <Tab> -->
<div class="class1 class2">hello</div>
<div class="class1 class2">hello2</div>
<div class="class1 class2">hello3</div>
<div class="class1 class2">hello4</div>
```

HTML Entities

* Reserved **

```
<div class="container">
        <p>This is a paragraph</p>
    </div>
    <div class="container">

        <p>This is a       paragraph</p>
        <!-- <> -->
        <p>paragraph tag is &lt;p&gt; </p>
        <p>pound is written like this &pound; </p>
        <p>copyright is written like this &copy; </p>
        <p>this is written like this &rarr; </p>
        <p>this is written like this &frac14; </p>
        <p>Empty character is written like this &#8203; </p>
    </div>
```

Non breaking space

This is a paragraph

This is a paragraph

paragraph tag is <p>

pound is written like this £

copyright is written like this ©

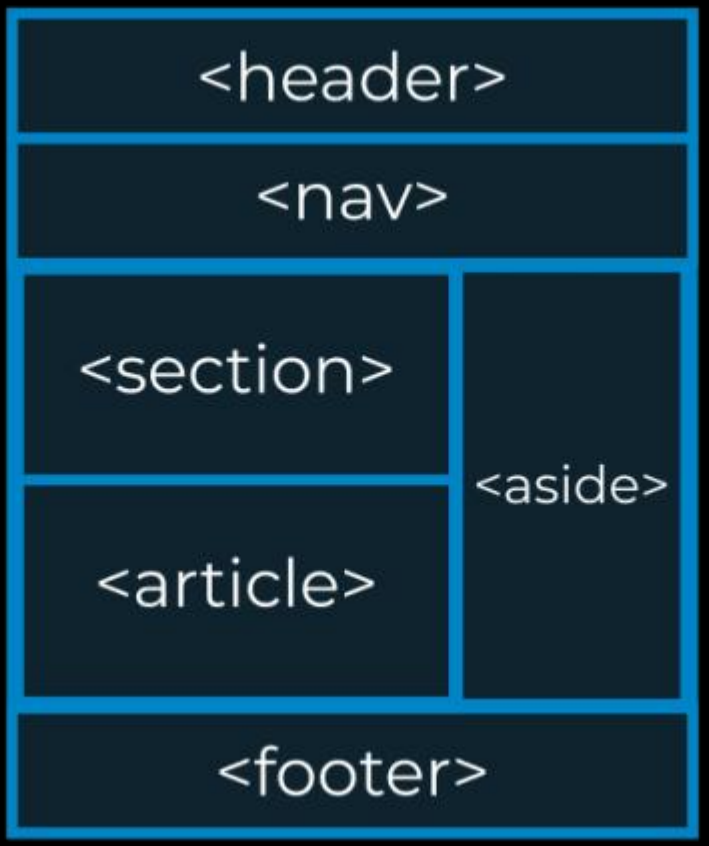
this is written like this →

this is written like this ¼

Empty character is written like this

```
<h3>Semantic tags</h3>
    <details>
        <summary>Details</summary>
        Lorem ipsum dolor sit amet consectetur
adipisicing elit. Reprehenderit, ipsum esse enim
tempore dignissimos vero maiores deleniti a
obcaecati neque maxime adipisci est nostrum, magnam,
sed consequatur quibusdam quasi mollitia. Aut nobis
reiciendis porro consequuntur exercitationem tempore
quod corporis assumenda numquam. Nesciunt explicabo
accusantium sequi, minima laborum saepe illo
accusamus est. Beatae mollitia, alias maxime
voluptate provident dicta quod quae.
    </details>
```

Semantic Tags



Semantic tags

▶ Details

Semantic tags

▼ Details

Lorem ipsum dolor sit amet consectetur adipisicing elit. Reprehenderit, ipsum esse enim tempore dignissimos vero maiores deleniti a obcaecati neque maxime adipisci est nostrum, magnam, sed consequatur quibusdam quasi mollitia. Aut nobis reiciendis porro consequuntur exercitationem tempore quod corporis assumenda numquam. Nesciunt explicabo accusantium sequi, minima laborum saepe illo accusamus est. Beatae mollitia, alias maxime voluptate provident dicta quod quae.

Mid Term

Lists in HTML

```
<body>
    <!-- unordered list -->
    <ul style="list-style-type:square;">
        <li>Coffee</li>
        <li>Tea</li>
        <li>Milk</li>
    </ul>
    <!-- ordered list -->
    <ol>
        <li>Coffee</li>
        <li>Tea</li>
        <li>Milk</li>
    </ol>

    <!-- description list -->
    <dl>
        <dt>Coffee</dt>
        <dd>- black hot drink</dd>
        <dt>Milk</dt>
        <dd>- white cold drink</dd>
    </dl>
</body>
```

table in HTML

```
<table border=1 align="centre">

    <tr>
        <td> </td>
    </tr>

</table>
```

Hyper Link

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
</head>
<body bgcolor="lightblue">
    <a href="https://github.com/ideepankarsharma2003">This is my github
profile</a>
</body>
</html>
```

```
<body>
        <form action="" method="post">
         <label for="username">Username:</label>
         <input type="text" id="username" name="username" required><br><br>

         <label for="email">Email:</label>
         <input type="email" id="email" name="email" required><br><br>

         <label for="password">Password:</label>
         <input type="password" id="password" name="password" required><br><br>

         <label for="confirm_password">Confirm Password:</label>
         <input type="password" id="confirm_password" name="confirm_password" required><br><br>

         <label for="gender">Gender:</label>
         <input type="radio" id="male" name="gender" value="male" required>
         <label for="male">Male</label>
         <input type="radio" id="female" name="gender" value="female" required>
         <label for="female">Female</label>
         <input type="radio" id="other" name="gender" value="other" required>
         <label for="other">Other</label><br><br>
             <input type="submit" value="Register">
    </form>
</body>
```

Unit 03

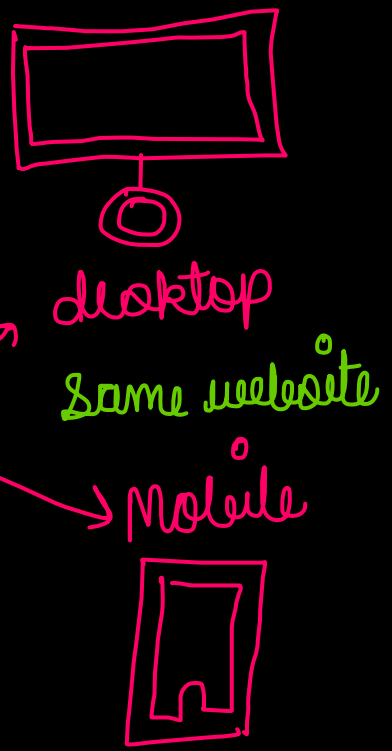
- CSS:
- Introduction,
- Benefits of CSS,
- types of CSS,
- Selector and types,
- text formatting properties,
- Box Model concept,
- CSS Border,
- margin properties, Positioning, color properties, Classes in CSS, concept of lds pseudo classes.

What is CSS?

→ used to handle presentation of web page containing HTML

→ makes our websites beautiful & mordern looking.

1. CSS gives style to raw HTML
2. CSS stands for "Cascading Style Sheets"
3. CSS is used to give style to our web pages
4. CSS is used to make websites responsive.
5. HTML is used to structure a website
6. CSS takes responsibility of design



Syntax

selector — property — value

paragraph tag ← p { color : blue ; }

where — this — set this value

selector

- .class name
- # id name
- tag name

paragraph with class intro

header tag

header , p . intro { background-color : red ; border-radius : 3 px ; }

group of selectors

Declaration Block

3 ways to add CSS to the MARKUP

 ...

↓ HTML code

① Inline CSS CSS is added to the elements directly using style attribute.

② Internal CSS CSS is kept inside the head tags in <style> tags

③ External CSS CSS is kept separately inside a .CSS style sheet.

→ ① create a separate .CSS file
② include that in the markup

```
p{
    color: aqua;
    background: blue;
}
```

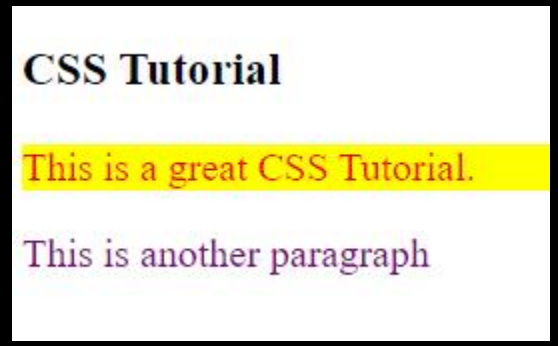
```
<link rel="stylesheet" href="tut13.css">
```

Adding CSS to HTML: Inline & Internal

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>CSS Tutorial</title>
    <style>
        p{
            color: purple;
        }
    </style>
</head>
<body>
    <h3>CSS Tutorial</h3>
    <p style="color:red;background-color: yellow;">This is a great CSS Tutorial.</p>
    <p>This is another paragraph</p>
</body>
</html>
```

Internal CSS

Inline CSS



Adding CSS to HTML:External

tut13.css

```css
p{
    color: aqua;
    background: blue;
}
```

link

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>CSS Tutorial</title>
    <!-- <style>
        p{
            color: purple !important;
            /* !important-> wants to take precedence otherwise the inline CSS will take precedence */
            background-color: black;
        }
    </style> -->
    <link rel="stylesheet" href="tut13.css">
</head>
<body>
    <h3>CSS Tutorial</h3>
    <!-- <p style="color:red;background-color: yellow;">This is a great CSS Tutorial.</p> -->
    <p>This is another paragraph</p>
</body>
</html>
```

Unit 03

Unit 03

Unit 03