HTML

- hypertext markup language

- used to designing the web ui

- invented by sir Tim Bernerse Lee on a NextStep Workstation

- **markup language**

  - which is made up of

    - tag

      - word enclosed by < and >

      - also known as element

      - e.g.

        - <p>: paragraph
        - <table>: table

      - used as an instruction to perform some operation

      - types

        - opening
          - used to start an instruction
          - also known as starting tag
          - e.g.
            - <p>
        - closing
          - used to end the instruction
          - also known as ending tag
          - e.g.
            - </p>
        - empty
          - tag without having any data
          - e.g.
            - <p></p>
          - shorthand
            -
        - root
          - which starts and ends the document
          - e.g.
            - in html, the <html> is the root tag`

    - attribute

      - more information about the tag

- attributes are optional
- if used then attribute must be used in the name = value format
    - e.g.
        - <input type="text" >
        - where
            - input is a tag
            - type is an attribute
            - text is the value for attribute type
- for html5 attributes
    - if attribute name and value is same then one can use the shorthand attribute
    - e.g.
        - <input required="required">
        - <input required>
- every html tag has following attributes
    - **id**: used to identify the tag uniquely
    - **name**:
        - used to add the name for a tag
        - used while submitting the form
    - **style**:
        - used to inline style to a tag
    - **class**:
        - used to add css class to a tag

- data

    - also known as content
    - information enclosed by opening and closing tags
    - e.g.
        - <p>This is my paragraph</p>
        - where
            - <p>: starting tag
            - this is my paragraph: data
            - </p>: closing tag

- is not a programming language

dev environment

- editor: Visual Studio Code
    - extensions
        - html snippets (https://marketplace.visualstudio.com/items?itemName=abusaidm.html-snippets)
        - html boilerplate (https://marketplace.visualstudio.com/items?itemName=sidthesloth.html5-boilerplate)
        -

html tags

- comment

  - ignored while rendering the html
  - used to write single or multi line comments
  - e.g.
    - <!-- this is the head section -->
    - <!--
      this is the comment 1
      this is the comment 2
      this is the comment 3
      this is the comment 4
      -->

- **head section**

  - contains the meta data of the page
  - the tags are not meant to display any output
  - tags
    - **title**: used to change the tab title
    - **style**: used to add internal CSS code
    - **script**: used to add javascript code
    - **meta**: used to add meta (extra) information
    - **link**: used to link external documents
    - **base**: used for setting the base url for the website

- **body section**

  - **text tags**

    - heading tags

      - used to add headings
      - block tags
      - types
        - h1:

          - ```
            <h1>this is heading 1 </h1>
            ```

        - h2

          - ```
            <h2>this is heading 2 </h2>
            ```

        - h3

          - ```
            <h3>this is heading 3 </h3>
            ```

        - h4

          - ```
            <h4>this is heading 4 </h4>
            ```

        - h5

- - - `<h5>this is heading 5 </h5>`
    - h6
      - `<h6>this is heading 6 </h6>`
- paragraph
  - used to add a pragraph
  - a block tag
  - `<p>this is para </p>`
- div
  - divsion used to group the contents
  - can be also used for grouping the tags
  - adds new line character after finishing the data
  - a block tag
  - `<div>this is div 1</div>`
- span
  - used to add textual information
  - does not add new line character after finishing the data
  - an inline tag
  - `<span>this is a span</span>`

- **formatting tags**
  - bold
    - used to make the content bold
    - `<div><b>India</b> is my country.</div>`
      `<div><strong>India</strong> is my country.</div>`
  - italic
    - used to make the content italic
    - `<div><i>India</i> is my country.</div>`
  - underline
    - used to make the cotent underline
    - `<div><u>India</u> is my country.</div>`
  - strike
    - used to make the content strike through

- - - `<div><strike>China</strike> is spreading Covid-19.</div>`
  - monospaced
    - used to create a monospaced content
    - `<div><tt>China</tt> is spreading Covid-19.</div>`
  - superscript
    - used to add the content above the line
    - `<div>x<sup>2</sup><div>`
  - subscript
    - used to add the content below the line
    - `<div>x<sub>2</sub><div>`
  - pre
    - used to add pre-formatted text
    - e.g.

      `<pre>`

      this is already formatted text

      `</pre>`
  - marquee
    - used to show the moving text
    - e.g.
- **lists**
  - ordered
    - used to create an ordered list
    - types
      - 1: latin numbers
      - A: upper case letter
      - a: lower case letter
      - I: upper case roman numbers
      - i: lower case roman numbers
    - e.g.

      ```
      <ol type="1">
      <li>this is list item 1</li>
      <li>this is list item 2</li>
      <li>this is list item 3</li>
      </ol>
      ```

- unordered
  - used to create unordered list
  - types
    - disc: filled circle
    - circle: empty circle
    - square: square
  - e.g.

    ```
    <ul type="disc">
    <li>this is list item 1</li>
    <li>this is list item 2</li>
    <li>this is list item 3</li>
    </ul>
    ```

- definition
  - used to add the definitions along with the information about them
  - dt: definition term
  - dd: definition definition
  - e.g.

    ```
    <dl>
    <dt>HTML</dt>
    <dd>Hyper Text Markup Language<dd>
    </dl>
    ```

- **resources**

  - images
    - used to render images in the web page
    - e.g.

      ```
      <img src="cat.1.jpg">
      ```

  - audio
    - used to play audio
    - e.g.

      ```
      <audio src="audio.mp3">
      ```

  - video
    - used to play video files
    - e.g.

      ```
      <video src="movie.mov">
      ```

- **table**

- **anchor**

- **white space**

- br
  - used to add a line break
  - e.g.

    ```
    <br>
    <br/>
    ```

- hr
  - used to add line break with a horizontal rular
  - e.g.

    ```
    <hr>
    <hr/>
    ```

-
  - used to add a space
  - e.g.

    ```
     
    ```

- **form tags**
  - used for getting input values from user
  - tags
    - input
      - used to get single line input from user
      - types
        - **text**: get textual (characters + numbers) input from user
        - **date**: get date input from user (browser may show a calendar control to select the date)
        - **time**: get time input from user
        - **number**: get only number input from user
        - **submit**
          - converts the input tag to a button
          - used to send the information filled by user to the server
        - **reset**:
          - converts the input tag to a button
          - resets every tag inside the form
        - **button**
          - converts the input tag to a button
          - used to perform an action locally (form will not be submitted or reset)
        - **radio**
          - used to get one of the options from user
        - **checkbox**
          - used to get mulitple options from user
        - **file**:

- used to select a file
- **password**:
    - used to accept password from user
    - masks the characters (displays * instead of real characters)
- **tel**:
    - used to get telephone number input from user
- **email**:
    - used to get email address from user
- attributes
    - **readonly**: makes the input readonly
    - **required**: user must enter the value in the input tag
    - **placeholder**: shows a hint to the user
    - **maxlength**: used to limit the number of characters entered by user
    - **value**: used to show the tag's title
    - **checked**:
        - use to select an option by default
        - only used along with radio and checkbox
    - **accept**:
        - used to allow certain type of files
        - used only with type = file
- textarea
    - used to get multi-line input from user
- select
    - used to get one or more options from the given list of options