

ABOUT US

A platform committed to fostering innovation and advancement through Science, Technology, Engineering, and Mathematics. the community is dynamic and interactive space for individual passionate about STEM .



MEET OUR TEAM



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MEET YOUR
INSTRUCTORS



AGRIM



AVIRAL



SAMRIDDHI

HI!





From Code to Creation: A Deep Dive into Frontend Development

Welcome to our web development bootcamp! This journey will cover the essentials of HTML , CSS and Javascript arming you with the skills to create engaging and interactive websites.



DAY 1

*Introduction to HTML:
The Building Blocks of
Web Development*

Setting Up the Environment

- **Installing VS Code:**
 - Download from <https://code.visualstudio.com/>.
- **Essential Extensions:**
 - **Live Server:** For real-time preview of your HTML.
 - **Prettier:** For automatic code formatting.
 - **Vscode-icons:** For icons



Introduction to web development and its importance

What is Web Development?

- **Definition:** Creating and maintaining websites and web applications.
- **Key Components:**
 - **Frontend Development:** Focus on UI/UX.
 - **Backend Development:** Server-side logic and database.
 - **Full-Stack Development:** Combines frontend and backend.

Why is Web Development Important?

- **Global Connectivity:**
 - Bridges geographical gaps.
 - Provides access to information and services.
- **Business Growth:**
 - Critical for brand visibility and sales.
 - Enables e-commerce and digital marketing.
- **Career Opportunities:**
 - High demand for web developers.
 - Freelancing, startups, and corporate roles.

3 Main Pillars of Frontend Development

HTML (Structure)

- The backbone of the web page.
- Defines the structure and content of the page.
- Example: Headings, paragraphs, links, lists, etc.

CSS (Styling)

- Controls the appearance of the web page.
- Adds colors, fonts, layouts, and spacing.
- Example: Background colors, text alignment, borders, etc.

JavaScript (Behavior)

- Adds interactivity to the web page.
- Enables dynamic content, animations, and user interactions.
- Example: Form validation, dropdown menus, sliders, etc.

Introduction to HTML

- **Definition:** HTML (HyperText Markup Language) is the standard language for creating web pages.
- **Role of HTML:**
 - Structures the content on a webpage.
 - Acts as the foundation for CSS (styling) and JavaScript (interactivity).
- **How Browsers Interpret HTML:**
 - HTML is not a programming language; it is a markup language.
 - Browsers read HTML documents and render them as web pages.

Creating your first file

- a. Open VS Code.
- b. Create a new file and save it as `index.html`.
- c. Add this starter code:

```
<!DOCTYPE html>
<html>
  <head>
    <title>My First Webpage</title>
  </head>
  <body>
    <h1>Welcome to HTML!</h1>
  </body>
</html>
```

HTML Structure and Syntax

- **Anatomy of an HTML Document:**
 - `<!DOCTYPE html>`: Declares the document type.
 - `<html>`: Root element.
 - `<head>`: Metadata and links (e.g., `<title>`, `<meta>`).
 - `<body>`: Visible content of the page.

GOAL - 1



About ME!!!

About ME!!!

About ME!!!

About ME!!!

About ME!!!

About ME!!!

Introduction:

I am a student of Data Science at IIT Madras.

I want to become a **frontend developer**.

My top 3 qualities:

1) **Hardworking**

2) *Dedicated*

3) Quick Learner

Just a line.

Just a line.

Just a line.

It seems like this line...
...has been broken...
...and broken again.

Goal-2



Photosynthesis

Process by which plants convert CO_2 to O_2

$$x + x + x = x^3$$

My favorite quote:

“There is nothing either good or bad, but thinking makes it so.”

- William Shakespear, *Hamlet*

<body>

<p>Hello, World!</p>

<body>

No tab

3 tabs

6 tabs

Below is an address

3/678, Sector-A,
New Delhi

To highlight something you can mark it.

Working with Text

- **Formatting Tags:**

``, `<i>`, `<u>`: Bold, italic, underline.

``: Bold text for emphasis.

``: Italicized text for emphasis.

`
`: Line breaks.

`<s>` : Applies strikethrough.

`<blockquote>`: Block quotes for long quotations.

`<code>`: Inline code snippets.

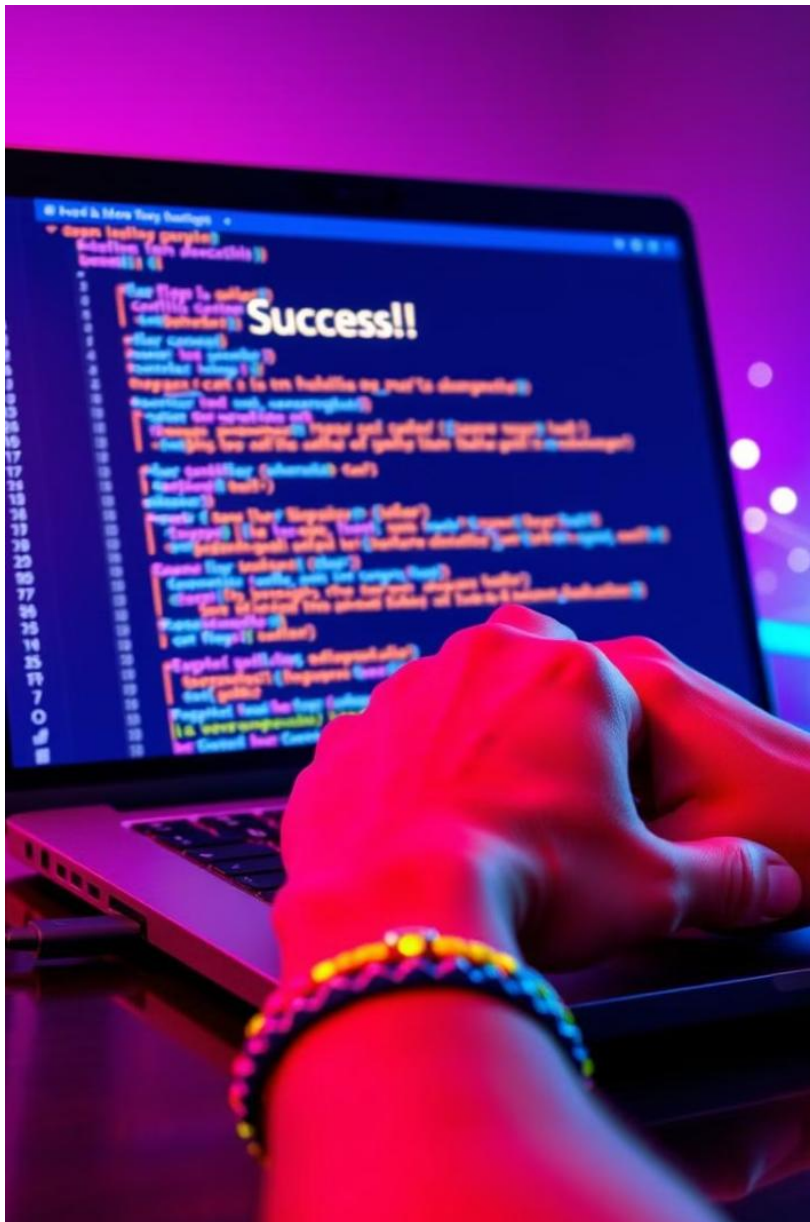
`<hr>`: Horizontal rules for section breaks.

`<pre>`: Preformatted text.

`<sub>`: Makes text subscript.

`<sup>`: Makes text superscript.

`<mark>`: Used to highlight content.



DAY-2

Topics to be covered-

- Meta Tags
- Anchor Tag
- List
- Tables

Activity

- Polls and QnA will be taken regularly.
- You will get a chance to share your screen and code live.

What are Meta Tags?

- Meta tags are snippets of text that provide metadata about a web page.
- They are placed inside the `<head>` section of an HTML document.
- Meta tags help search engines, browsers, and social media platforms understand your page's content.

Common Meta Tags

1. **Charset**
 - Specifies the character encoding.
2. **Viewport**
 - Controls the page's dimensions and scaling on different devices.
3. **Author**
 - Specifies the name of the page's author.
4. **Description**
 - Provides a brief description of the page's content.
5. **Keywords**
 - Lists relevant keywords for the page.

Links

- `<a>`: Anchor tag for links.
- Attributes:
 - `href`: URL to navigate to.
 - `target`: Specifies where to open the link (e.g., `_blank`).
- Example: `Visit Example`

Inline and Block Elements

Block Elements

- **Definition:** Elements that start on a new line and take up the full width of their container.
- Can have margin or paddings.
- Width and height can be set.
- **Examples:**
 - `<div>`: Generic container for block content.
 - `<p>`: Paragraphs.
 - `<h1>` to `<h6>`: Headings.
 - `` and ``: Lists.
 - `<table>`: Tables.
 - `<blockquote>`: Block quotes.

Inline Elements

- **Definition:** Elements that do not start on a new line and only take up as much width as necessary.
- Cannot have margin and paddings.
- Width and height cannot be set
- **Examples:**
 - ``: Inline container.
 - `<a>`: Hyperlinks.
 - ``: Bold text.
 - ``: Italicized text.
 - ``: Images.

Lists

1. **Unordered List:** `` with ``.
 - Type - Circle, Disc, Square (Deprecated)
2. **Ordered List:** `` with ``.
 - reversed
 - start
 - type - a, A, i, I, 1
3. **Description List:** `<dl>` with `<dt>` and `<dd>`.

Tables

Represents tabular data

- Tags: `<table>`, `<tr>`, `<td>`, `<th>`, `<tbody>`, `<thead>`, `<caption>`, `<tfoot>`.
- Attributes: *rowspan*, *colspan*, *scope*

Task - Make the below table

Heading	Students	Details		
	Id	Name	Department	Roll No.
Student List	1	Victor	Computer Science	1234
	2	William	Electronics	2345
	3	Rick	Civil	3456



MINOR ASSIGNMENT 1: Personal Portfolio Webpage

- **Goal:** Create a simple personal portfolio webpage.
- **Components:**
 - Header with your name.
 - A short "About Me" section.
 - A list of hobbies or interests.
 - Contact information (email and links).



DAY-3

Topics to be covered-

- `<div>` tag
- Global Attributes
- Images
- Audio and video
- Semantic HTML
- Forms and Input types

Activity

- Polls and QnA will be taken regularly.
- You will get a chance to share your screen and code live.

Overview of `<div>`

- **Definition:** The `<div>` tag is a block-level container used to group elements together for styling or layout purposes.
- **Purpose:** It serves as a generic container with no inherent meaning, making it versatile for creating sections on a web page.

Global Attributes

What are Global Attributes?

- **Definition:** Attributes that can be applied to any HTML element.
- **Purpose:** Provide additional functionality and customization for elements.

Common Global Attributes

- **class:** Specifies one or more class names for styling.
- **id:** Defines a unique identifier for an element.
- **title:** Additional information displayed as a tooltip.
- **hidden:** Hides the element from the user interface.
- **style:** Inline CSS for an element.

Images

- `` tag.
- Attributes:
 - `src`: Path to the image.
 - `alt`: Alternative text.
 - `width` and `height`: Adjust image dimensions.
- Example: ``
- `<figure>` tag: represents self-contained content, potentially with an optional caption.
- `<figcaption>` tag: gives caption for the `<figure>` tag.

Audio and Video

- `<audio>`: Adds audio
- `<video>`: Adds video
- **Attributes:**
 - `control`: Displaying controls to the user.
 - `autoplay`: Starts playback automatically.
 - `loop`: Replays content automatically.
 - `muted`: Mutes audio by default.

Semantic vs Non-semantic HTML

Semantic HTML

- **Definition:** Elements that clearly describe their meaning in a human- and machine-readable way.
- **Examples:**
 - `<header>`: Defines the header section.
 - `<nav>`: Represents navigation links.
 - `<article>`: Self-contained content.
 - `<section>`: Groups related content.
 - `<footer>`: Defines the footer section.
 - `<aside>`: Side content, like a sidebar.
- **Advantages:**
 - Improved accessibility.
 - Better SEO rankings.
 - Easier to maintain and understand.

Non-Semantic HTML

- **Definition:** Elements that do not have any meaning by themselves.
- **Examples:**
 - `<div>`: Generic container for block content.
 - ``: Generic container for inline content.
- **Limitations:**
 - Less descriptive.
 - Can lead to cluttered and less maintainable code.

Forms and Inputs

What are Forms?

- **Definition:** Used to collect user input and send it to the server.
- **Key Element:** `<form>`

```
<form action="/submit">  
  <label for="name">Name:</label>  
  <input type="text" id="name" name="name">  
  <button type="submit">Submit</button>  
</form>
```


Input Types

- **text**: Single-line text input.
- **password**: Masked input for passwords.
- **email**: Validates email format.
- **number**: Input for numeric values.
- **date**: Input for selecting dates.
- **checkbox**: Select multiple options.
- **radio**: Select one option from a group.
- **file**: Upload files

Key Attributes

- **name**: Identifies the input field.
- **placeholder**: Hint text inside the input.
- **required**: Makes the field mandatory.
- **value**: Predefines the input value.
- **maxlength** and **minlength**: Restrict character count.
- **disabled**: Disables the input.
- **readonly**: Makes input uneditable.

HTML Entities for Displaying Code:

1. `<` - Represents `<` (less-than sign).
2. `>` - Represents `>` (greater-than sign).
3. `&` - Represents `&` (ampersand).
4. `"` - Represents `"` (double quotation mark).
5. `'` - Represents `'` (single quotation mark).
6. `©` - Represents `'` (single quotation mark).

GOT A MESSAGE OR QUERY?



community@stemonef.org



JOIN US NOW!



"STAY TUNED FOR
MORE EXCITING
ANNOUNCEMENTS!"

