

Experiment 1

Title

Use developer tools to modify a website, and build a web page using basic HTML tags.

Aim

To understand how websites are structured using developer tools, and to build a simple static website using basic HTML tags like headings, lists, tables, forms, images, and links.

Software

Code Editor ([VSCode](#)/[Notepad++](#))
Web Browser ([Firefox](#)/[Chrome](#))

Theory

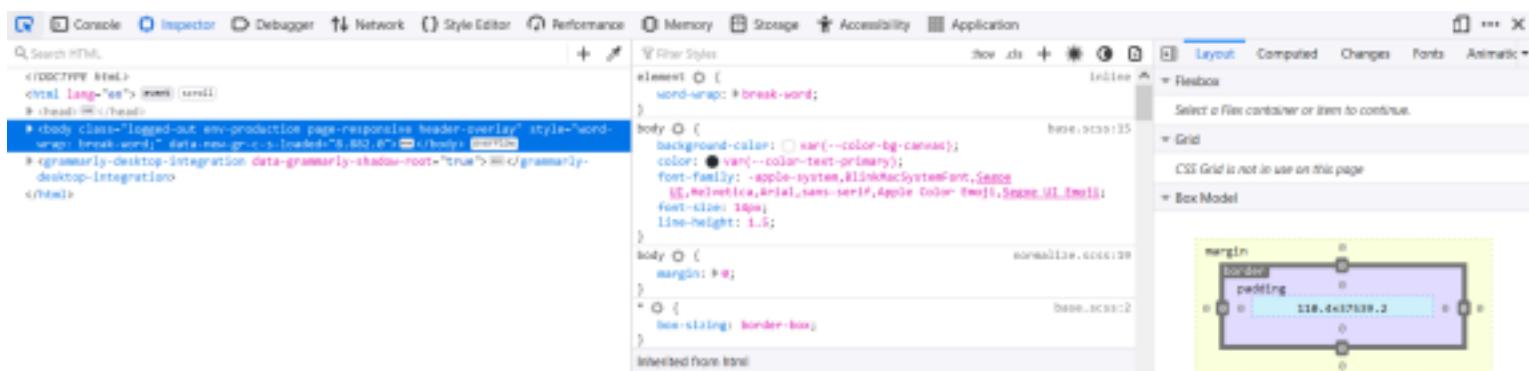
Developer Tools are a set of web authoring and debugging tools built directly into modern web browsers (like Chrome, Firefox, and Edge). They allow you to look "under the hood" of any website to see the code that is rendering the page.

Opening dev tools:

- Right-click any element on a webpage and select Inspect.
- Keyboard Shortcut: F12 or Ctrl+Shift+I (Windows/Linux) / Cmd+Option+I (Mac).

Key Panels:

Elements (Inspector): This is the most critical tab for HTML. It shows the live HTML structure of the page. You can edit text, delete elements, or modify CSS styles in real-time to test changes.



I can

Network: Shows all the files (images, scripts, CSS) being loaded by the page and how long they take to load.

Status	Method	Domain	File	Initiator	Type	Transferred	Size	0 ms	5.12
302	GET	https://developer.mozilla.org/	/	document	html	7.34 KB	28.9...	160 ms	
200	GET	https://developer.mozilla.org/	/en-US/	document	html	8.90 KB	28.9...	15 ms	
200	GET	https://developer.mozilla.org/	ZillaSlab-Boldsubset.0beac26b.woff2	font	octet-stream	33.87 KB (raw)	33.2...	16 ms	
204	POST	https://www.bootstrapcdn.com/	xs.aspx	URKBjuAgKq...	plain	10.27 KB	0 B	109 ms	
204	POST	https://www.bootstrapcdn.com/	xs.aspx	URKBjuAgKq...	plain	3.55 KB	0 B	109 ms	
200	GET	https://developer.mozilla.org/	main.f9e86cd5.chunk.css	stylesheet	css	10.41 KB	52.0...	0 ms	
200	GET	https://developer.mozilla.org/	runtime-main.ef8b3670.js	script	js	2.43 KB	3.92...	15 ms	
200	GET	https://developer.mozilla.org/	4.7bcc0d08.chunk.js	script	js	51.77 KB	166...	15 ms	
200	GET	https://developer.mozilla.org/	main.79bfdc27.chunk.js	script	js	18.15 KB	61.7...	15 ms	
200	GET	https://cdn.speee.com/	lux.js?id=108906238	script	js	6.62 KB (raw)	17.3...	544 ms	
304	GET	https://developer.mozilla.org/	gajs	script	js	cached	1.64...	16 ms	
GET	GET	https://developer.mozilla.org/	ZillaSlab-Regularsubset.ce3a756d.woff2	font	octet-stream	33.02 KB (raw)	33.0...	0 ms	
19 requests		432.28 KB / 194.58 KB transferred		Finish: 2.58 s		DOMContentLoaded: 887 ms		load: 2.24 s	

When a browser loads a web page, it translates the HTML text file into a structure called the **DOM (Document Object Model)**.

- Tree Structure: The DOM is organized like an upside-down tree. The top is the "Root," and elements branch out from there.
- Nodes: Every part of the document (the element itself, the text inside it, and its attributes) is a "node" in this tree.
- Parent/Child/Sibling:
 - Parent: An element that contains other elements (e.g., a `` list is the parent).
 - Child: An element inside another (e.g., an `` list item is the child).
 - Sibling: Elements that share the same parent.

The DOM allows programming languages like JavaScript to easily find, change,

add, or delete HTML elements dynamically.

HTML (HyperText Markup Language) uses "tags" to tell the browser how to display content. A standard element looks like this:

<tagname>Content goes here</tagname>

Here are the most common categories of tags:

1. Basic Document structure

Tag	Description
<!DOCTYPE html>	Tells the browser this is an HTML5 document.
<html>	The root element of the page.
<head>	Contains metadata (info about the page) like the title and CSS links.
<title>	Sets the title shown in the browser tab.
<body>	Contains all the visible content (text, images, links, etc.).

2. Text formatting: Tags used to structure and style text.

Tag	Description
<h1> to <h6>	Headings. <h1> is the most important, <h6> is the least.
<p>	Defines a paragraph.
 	Inserts a single line break (no closing tag).
<hr>	Defines a thematic change (horizontal rule/line).
	Defines important text (displays as bold).
	Defines emphasized text (displays as italic).

	Bold text (without semantic importance).
-----	--

<i>	Italic text (without semantic importance).
<mark>	Highlights text (usually yellow background).
<small>	Makes text smaller.

3. Links and Images

Tag	Description	Important Attributes
<a>	Defines a hyperlink.	href="URL" (destination)
	Embeds an image.	src="path" (image source), alt="text" (text if image fails), width, height

4. Lists

Tag	Description
	Unordered List (Bullet points)
	Ordered List (Numbered: 1, 2, 3...)
	List Item. Goes inside or

5. Tables

Tag	Description
<table>	The container for the table.
<tr>	Table Row. Start a new row.
<th>	Table Header. A header cell (bold & centered by default).
<td>	Table Data. A standard cell containing data.
<thead>	Groups the header content.
<tbody>	Groups the body content.

6. Forms

Tag	Description
<form>	Container for the form.
<input>	The most versatile form element. Depends on type attribute.
<label>	Defines a label for an input element (improves accessibility).
<textarea>	A multi-line text input field.
<button>	A clickable button.

Common <input> Types:

- **type="text"**: Single-line text box.
- **type="radio"**: Select ONE option from a group.
- **type="checkbox"**: Select ZERO or MORE options.
- **type="submit"**: A button to submit the form data.

7. Common attributes

Attributes provide extra information about elements. They always go in the **opening tag**.

- **class**: Specifies one or more class names (used by CSS and JavaScript).
- **id**: Specifies a unique id for an element.
- **style**: Used to add inline CSS styles (e.g., `style="color:red;"`). •
- lang**: Declares the language of the page (e.g., `<html lang="en">`). •
- title**: Adds a tooltip when you hover over the elements.

Tasks

1. Delete the logo of a website and replace it with another image using the Inspector. Try to modify the website as much as possible. Include the before/after screenshots of the website in your submission.

Before -

The screenshot shows a light green header with the text "Hello, What Do You Want To Learn?". Below it is a search bar containing "Must Do SDE Sheet Pract". A dark green button labeled "90% Refund on Courses" is visible. The main content area features a "THREE 90 CHALLENGE" section with three steps: "Step 1 Complete payment for any course", "Step 2 Complete 90% of the course within 90 days", and "Step 3 Claim your 90% refund of the course fee". To the right is a blue box with a person pointing upwards and the text "Enroll & Earn Your Money Back".

After -

The screenshot shows a light green header with the text "Welcome To Codex...". Below it is a search bar containing "Search courses:". A dark blue button labeled "Join Now" is visible. The main content area features a large circular graphic with the text "90 Day's Challenge" and the instruction "Complete payment → Finish 90% course → Get refund". Below this is a section titled "Need help with Industry Insights?" with the subtext "Connect with trusted experts, anytime. Get real answers, real guidance, in real time." Three circular profile pictures of people are shown, each with a speech bubble containing a quote: "Hi Everyone, hope you all are doing great. Here is a thought for the day!", "On-campus Interview Experience for SDE", and "Web3 is trending because it's changing the internet as we ...".

2. Create an HTML file and start building a simple website containing

paragraphs, lists, forms, and tables. Design it in such a way that it can be used for your personal website

```
<!DOCTYPE html>
<html>
<head>
    <title>My Portfolio</title>
</head>
<body>
    <h1>My Personal Portfolio</h1>
    <h2>About Me</h2>
    <p>Hello! My name is Sneha Pillai. I am a 2nd year Computer Engineering student.</p>
    <p>I am currently learning web development.</p>
    <p>I enjoy solving problems and building projects that help me learn new technologies.</p>
    <hr>
    <h2>My Skills</h2>
    <h3>Programming Languages:</h3>
    <ul>
        <li>C Programming</li>
        <li>Java</li>
        <li>Python</li>
        <li>HTML</li>
    </ul>
    <h3>What I'm Learning:</h3>
    <ol>
        <li>Web Programming</li>
        <li>Data Structures</li>
        <li>Database Management</li>
        <li>JavaScript</li>
    </ol>
    <hr>
    <h2>My Projects</h2>
    <table border="1">
        <tr>
            <th>Project Name</th>
            <th>Language</th>
            <th>Year</th>
        </tr>
        <tr>
            <td>Calculator</td>
            <td>C++</td>
            <td>1st Year</td>
        </tr>
        <tr>
            <td>Student ID Card Generator</td>
            <td>Python</td>
            <td>2nd Year</td>
        </tr>
        <tr>
            <td>Personal Website</td>
            <td>HTML</td>
            <td>2nd Year</td>
        </tr>
    </table>
    <hr>
    <h2>Contact Me</h2>
    <form>
        <label>Your Name:</label><br>
        <input type="text" name="name"><br><br>
        <label>Your Email:</label><br>
        <input type="email" name="email"><br><br>
        <label>Message:</label><br>
        <textarea name="message" rows="4" cols="50"></textarea><br><br>
        <input type="submit" value="Send Message">
    </form>
    <hr>
    <h2>My Education</h2>
    <p><b>College:</b> Pillai University</p>
    <p><b>Course:</b> Computer Engineering</p>
    <p><b>Year:</b> 2nd Year</p>
    <hr>
    <p><i>Thank you for visiting my portfolio!</i></p>
</body>
</html>
```

My Personal Portfolio

About Me

Hello! My name is Sneha Pillai. I am a 2nd year Computer Engineering student.

I am currently learning web development.

I enjoy solving problems and building projects that help me learn new technologies.

My Skills

Programming Languages:

- C Programming
- Java
- Python
- HTML

What I'm Learning:

1. Web Programming
2. Data Structures
3. Database Management
4. JavaScript

My Projects

Project Name	Language	Year
Calculator	C++	1st Year
Student ID Card Generator	Python	2nd Year
Personal Website	HTML	2nd Year

Contact Me

Your Name:

Your Email:

Message:

My Education

College:Pillai University

Course: Computer Engineering

Year: 2nd Year

Thank you for visiting my portfolio!

3. Add a navigation bar

- a. To link different pages like “About”, “Projects” to “Home” page
- b. To link different Sections of a single page

```

<!DOCTYPE html>
<html>
<head>
    <title>My Portfolio</title>
</head>
<body>
    <h2>Navigation Menu</h2>
    <p>
        <a href="#">Home</a> | 
        <a href="#">About</a> | 
        <a href="#">Skills</a> | 
        <a href="#">Projects</a> | 
        <a href="#">Contact</a>
    </p>
    <hr>
    <div id="home">
        <h1>Welcome to My Portfolio</h1>
        <p>Hello! My name is Sneha, I am a 2nd year Computer Engineering student.</p>
        <p>This website contains information about my skills, projects, and education.</p>
    </div>
    <hr>
    <div id="about">
        <h2>About Me</h2>
        <p>I am a 2nd year Computer Engineering student at Pillai University.</p>
        <p>I am learning web development .</p>
        <p>I enjoy solving problems and building projects.</p>
        <h3>My Interests:</h3>
        <ul>
            <li>Web Development</li>
            <li>Problem Solving</li>
            <li>Software Development</li>
        </ul>
    </div>
    <hr>
    <div id="skills">
        <h2>My Skills</h2>
        <h3>Programming Languages:</h3>
        <ul>
            <li>C Programming</li>
            <li>Java</li>
            <li>Python</li>
            <li>HTML</li>
        </ul>
        <h3>Currently Learning:</h3>
        <ul>
            <li>Web Development</li>
            <li>Operating Systems</li>
            <li>JavaScript</li>
        </ul>
    </div>
    <hr>
    <div id="projects">
        <h2>My Projects</h2>
        <table border="1">
            <tr>
                <th>Project Name</th>
                <th>Language</th>
                <th>Year</th>
            </tr>
            <tr>
                <td>Calculator</td>
                <td>C++</td>
                <td>1st Year</td>
            </tr>
            <tr>
                <td>Student Record System</td>
                <td>Python</td>
                <td>2nd Year</td>
            </tr>
            <tr>
                <td>Personal Website</td>
                <td>HTML</td>
                <td>2nd Year</td>
            </tr>
        </table>
    </div>
    <hr>
    <div id="contact">
        <h2>Contact Me</h2>
        <form>
            <label>Your Name:</label><br>
            <input type="text" name="name"><br><br>
            <label>Your Email:</label><br>
            <input type="email" name="email"><br><br>
            <label>Message:</label><br>
            <textarea name="message" rows="4" cols="50"></textarea><br><br>
            <input type="submit" value="Send Message">
        </form>
        <p><b>Email:</b> sneha@gmail.com</p>
        <p><b>College:</b> Pillai University</p>
    </div>
    <hr>
    <p><i>Thank you for visiting my portfolio!</i></p>
    <p><a href="#">Back to Top</a></p>
</body>
</html>

```

Navigation Menu

[Home](#) | [About](#) | [Skills](#) | [Projects](#) | [Contact](#)

Welcome to My Portfolio

Hello! My name is Sneha. I am a 2nd year Computer Engineering student.

This website contains information about my skills, projects, and education.

About Me

I am a 2nd year Computer Engineering student at Pillai University.

I am learning web development .

I enjoy solving problems and building projects.

My Interests:

- Web Development
- Problem Solving
- Software Development

My Skills

Programming Languages:

- C Programming
- Java
- Python
- HTML

Currently Learning:

1. Web Development
2. Operating Systems
3. JavaScript

My Projects

Project Name	Language	Year
Calculator	C++	1st Year
Student Record System	Python	2nd Year
Personal Website	HTML	2nd Year

Contact Me

Your Name:

Your Email:

Message:

Email: sneha@gmail.com

College: Pillai University

Thank you for visiting my portfolio!

[Back to Top](#)

Conclusion

We have successfully used developer tools to deconstruct websites and understand their structure and have demonstrated this using basic HTML tags to build a website.