

DAY-2 Hands-On Activities – Keerthivasan R

Problem 1

Assessment Goal: Validate understanding of links and form elements.

Hands-on Tasks:

1. Create two HTML pages and link them using navigation links
2. Add a navigation bar with Home and Contact links
3. Create a registration form with:
 - o Name
 - o Email
 - o Password
 - o Gender (radio buttons)
 - o Course selection (dropdown)
4. Use required and placeholder attributes

Expected Outcome:

A multi-page website with working navigation and a basic form.

CODE :

Index.html

```
<!DOCTYPE html>
<!-- Declares HTML5 document -->

<html lang="en">
<!-- Root element of webpage, language set to English -->

<head>
    <!-- Contains metadata (not visible on page) -->

    <meta charset="UTF-8">
    <!-- Allows special characters like ₹, emojis, etc -->

    <title>Home Page</title>
    <!-- Title shown in browser tab -->
</head>

<body>
    <!-- Visible content starts here -->

    <nav>
        <!-- Navigation section used for page links -->

        <a href="index.html">Home</a>
        <!-- Anchor tag used to link to another page -->

        |

        <a href="contact.html">Contact</a>
        <!-- Link to contact page -->
    </nav>
</body>
</html>
```

```

</nav>

<main>
    <!-- Main content of the page -->

    <h1>Welcome to Our Website</h1>
    <!-- Main heading -->

    <p>This is the home page of our multi-page website.</p>
    <!-- Paragraph describing page -->
</main>

</body>

</html>

```

Contact.html :

```

<!DOCTYPE html>
<!-- Declares HTML5 document -->

<html lang="en">
<!-- Root element, language set to English -->

<head>
    <meta charset="UTF-8">
    <!-- Supports special characters -->

    <title>Contact / Registration</title>
    <!-- Title shown in browser tab -->
</head>

<body>

    <!-- Navigation section for page links -->
    <nav>
        <a href="index.html">Home</a> |
        <!-- Anchor tag creates hyperlink to Home page -->

        <a href="contact.html">Contact</a>
        <!-- Link to current Contact page -->
    </nav>

    <h1>Registration Form</h1>
    <!-- Main heading -->

    <!-- Form element collects user input -->
    <form action="#" method="post" onsubmit="return validateForm()" novalidate>
        <!--
            action="#" → prevents form from submitting to server
            method="post" → sends data securely
            onsubmit → calls JavaScript validation function
            novalidate → disables default browser validation
        -->

```

```
<fieldset>
    <!-- Groups related form elements -->

    <legend>Student Registration Form</legend>
    <!-- Title for fieldset -->

    <!-- Name Input -->
    <label for="name">Name:</label><br>
    <!-- Label improves accessibility -->

    <input type="text" id="name" name="name" placeholder="Enter your full name"
required>
    <!--
        type="text" → text input
        placeholder → hint text
        required → mandatory field
    -->
    <br><br>

    <!-- Email Input -->
    <label for="email">Email:</label><br>
    <input type="email" id="email" name="email" placeholder="Enter your email
address" required>
    <!-- type="email" validates email format -->
    <br><br>

    <!-- Password Input -->
    <label for="password">Password:</label><br>
    <input type="password" id="password" name="password" placeholder="Create a
strong password" required
        minlength="6">
    <!-- minlength ensures at least 6 characters -->
    <br><br>

    <!-- Gender Radio Buttons -->
    <label>Gender:</label><br>

    <input type="radio" id="male" name="gender" value="Male" required>
    <label for="male">Male</label>

    <input type="radio" id="female" name="gender" value="Female">
    <label for="female">Female</label>

    <input type="radio" id="other" name="gender" value="Other">
    <label for="other">Other</label>
    <!-- Same name groups radio buttons -->
    <br><br>

    <!-- Course Dropdown -->
    <label for="course">Select Course:</label><br>
    <select id="course" name="course" required>
        <!-- Dropdown selection -->

        <option value="">-- Select Course --</option>
```

```
<option value="Java">Java</option>
<option value="Python">Python</option>
<option value="Web Development">Web Development</option>
<option value="Data Science">Data Science</option>
</select>
<br><br>


<input type="submit" value="Register">
<!-- Triggers form submission --&gt;

&lt;/fieldset&gt;

&lt;/form&gt;

<!-- JavaScript Validation --&gt;
&lt;script&gt;
    function validateForm() {

        // Select the form
        const form = document.querySelector("form");

        // Check built-in HTML validation
        if (form.checkValidity()) {

            // Get name value
            const name = document.getElementById("name").value;

            alert("Successfully registered, " + name + "!");

            return false;
            // Prevents page reload

        } else {

            alert("Please fill all required fields correctly.");
            return false;
        }
    }
&lt;/script&gt;

&lt;/body&gt;

&lt;/html&gt;</pre>
```

OUTPUT :

index.html :

[Home](#) | [Contact](#)

Welcome to Our Website

This is the home page of our multi-page website.

contact.html :

[Home](#) | [Contact](#)

Registration Form

Student Registration Form

Name:

Email:

Password:

Gender:

Male Female Other

Select Course:

Problem 2: Simple Website Navigation System (Level-1)

Scenario

A small coaching institute wants a basic static website with multiple pages so students can easily navigate between sections like Home, Courses, and Contact.

❖ Requirements

- Create 3 HTML pages:
 - index.html (Home)
 - courses.html
 - contact.html
- Use:
 - <nav> element to create a navigation menu
 - <a> anchor tags for navigation
- Navigation menu should appear on all pages
- Use relative paths to link pages
- Include at least:
 - One internal anchor link (#section)
 - One external link (e.g., institute's social media)

🛠️ Technical Constraints

- Only HTML5
- No CSS or JavaScript
- Navigation must be semantic (<nav>)

Learning Outcome

You should be able to:

- Use <nav> and <a> elements
- Understand relative paths
- Build a simple multi-page navigation structure
- Users should move seamlessly between pages
- Code should be readable and well-indented
- Navigation links should work correctly

CODE :

Index.html :

```
<!DOCTYPE html>
<!-- Declares HTML5 document type -->

<html lang="en">
<!-- Root element of the webpage -->

<head>
  <meta charset="UTF-8">
  <!-- Supports special characters -->

  <title>ABC Coaching Institute - Home</title>
  <!-- Title displayed in browser tab -->
</head>

<body>

  <!-- Navigation Section -->
  <nav>
    <!-- Used to group navigation links -->

    <a href="index.html">Home</a> |
    <!-- Anchor tag used to link to Home page -->

    <a href="courses.html">Courses</a> |
    <!-- Link to Courses page -->

    <a href="contact.html">Contact</a> |
    <!-- Link to Contact page -->

    <a href="#about">About Section</a>
    <!-- Internal link that jumps to section with id="about" -->
  </nav>
```

```

<main>
    <!-- Main content of the page -->

    <h1>Welcome to ABC Coaching Institute</h1>
    <!-- Main heading -->

    <p>
        We provide quality education for students preparing for competitive exams.
    </p>

    <!-- Internal Anchor Section -->
    <h2 id="about">About Our Institute</h2>
    <!-- id attribute allows internal navigation -->

    <p>
        ABC Coaching Institute has been helping students achieve their dreams
        with experienced faculty and structured learning programs.
    </p>

    <!-- External Link Example -->
    <p>
        Follow us on
        <a href="https://www.instagram.com" target="_blank" rel="noopener noreferrer">
            Instagram
        </a>
        <!--
            target="_blank" → Opens link in new tab
            rel="noopener noreferrer" → Security best practice
            -->
    </p>

    </main>

</body>

</html>

```

Contact.html :

```

<!DOCTYPE html>
<!-- Declares HTML5 document -->

<html lang="en">
<!-- Root element of webpage -->

<head>
    <meta charset="UTF-8">
    <!-- Supports special characters -->

    <title>ABC Coaching Institute - Contact</title>
    <!-- Title shown in browser tab -->
</head>

```

```
<body>

    <!-- Navigation Menu -->
    <nav>
        <!-- Used to group navigation links -->

        <a href="index.html">Home</a> |
        <!-- Link to Home page -->

        <a href="courses.html">Courses</a> |
        <!-- Link to Courses page -->

        <a href="contact.html">Contact</a> |
        <!-- Link to current page -->

        <a href="#location">Our Location</a> |
        <!-- Internal link that jumps to id="location" -->

        <a href="https://www.youtube.com" target="_blank" rel="noopener noreferrer">
            YouTube
        </a>
        <!--
            External link
            target="_blank" → opens in new tab
            rel="noopener noreferrer" → security best practice
        -->
    </nav>

    <hr>
    <!-- Horizontal line to separate navigation -->

    <header>
        <!-- Intro section of this page -->
        <h1>Contact Us</h1>
    </header>

    <main>
        <!-- Main content area -->

        <section id="location">
            <!-- Section with id used for internal navigation -->
            <h2>Institute Address</h2>

            <address>
                <!-- address tag used for contact/location info -->
                ABC Coaching Institute,<br>
                2nd Floor, Knowledge Plaza,<br>
                Chennai, Tamil Nadu.
            </address>
        </section>

        <section>
            <!-- Contact details section -->
            <h2>Contact Details</h2>
            <p>Email: info@abccoaching.com</p>
        </section>
    </main>

```

```

        <p>Phone: +91 9876543210</p>
    </section>
</main>

<footer>
    <!-- Footer section -->
    <p>We are happy to help you!</p>
</footer>

</body>

</html>

```

Courses.html :

```

<!DOCTYPE html>
<!-- Declares HTML5 document -->

<html lang="en">
<!-- Root element of webpage -->

<head>
    <meta charset="UTF-8">
    <!-- Supports special characters -->

    <title>ABC Coaching Institute - Courses</title>
    <!-- Title shown in browser tab -->
</head>

<body>

    <!-- Navigation Menu -->
    <nav>
        <!-- Container for navigation links -->

        <a href="index.html">Home</a> |
        <!-- Link to Home page -->

        <a href="courses.html">Courses</a> |
        <!-- Link to current page -->

        <a href="contact.html">Contact</a> |
        <!-- Link to Contact page -->

        <a href="#programming">Programming Courses</a> |
        <!-- Internal link to section with id="programming" -->

        <a href="https://www.facebook.com" target="_blank" rel="noopener noreferrer">
            Facebook
        </a>
        <!--
            External link
            target="_blank" → Opens in new tab
            rel="noopener noreferrer" → Security best practice
        -->
    </nav>

```

```

    -->
</nav>

<hr>
<!-- Horizontal line for separation --&gt;

&lt;header&gt;
    &lt;!-- Page header --&gt;
    &lt;h1&gt;Our Courses&lt;/h1&gt;
&lt;/header&gt;

&lt;main&gt;
    &lt;!-- Main content section --&gt;

    &lt;section id="programming"&gt;
        &lt;!-- Section with id for internal navigation --&gt;

        &lt;h2&gt;Programming Courses&lt;/h2&gt;

        &lt;ul&gt;
            &lt;!-- Unordered list for course offerings --&gt;
            &lt;li&gt;Java Full Stack&lt;/li&gt;
            &lt;li&gt;Python Programming&lt;/li&gt;
            &lt;li&gt;Web Development (HTML, CSS, JS)&lt;/li&gt;
        &lt;/ul&gt;
    &lt;/section&gt;

    &lt;section&gt;
        &lt;h2&gt;Duration&lt;/h2&gt;
        &lt;p&gt;All courses range between 3 to 6 months.&lt;/p&gt;
    &lt;/section&gt;

&lt;/main&gt;

&lt;footer&gt;
    &lt;!-- Footer section --&gt;
    &lt;p&gt;Contact us for more details.&lt;/p&gt;
&lt;/footer&gt;

&lt;/body&gt;

&lt;/html&gt;
</pre>

```

OUTPUT : index.html

[Home](#) | [Courses](#) | [Contact](#) | [About Section](#)

Welcome to ABC Coaching Institute

We provide quality education for students preparing for competitive exams.

About Our Institute

ABC Coaching Institute has been helping students achieve their dreams with experienced faculty and structured learning programs.

Follow us on [Instagram](#)

contact.html

[Home](#) | [Courses](#) | [Contact](#) | [Our Location](#) | [YouTube](#)

Contact Us

Institute Address

*ABC Coaching Institute,
2nd Floor, Knowledge Plaza,
Chennai, Tamil Nadu.*

Contact Details

Email: info@abccoaching.com

Phone: +91 9876543210

We are happy to help you!

Courses.html :

[Home](#) | [Courses](#) | [Contact](#) | [Programming Courses](#) | [Facebook](#)

Our Courses

Programming Courses

- Java Full Stack
- Python Programming
- Web Development (HTML, CSS, JS)

Duration

All courses range between 3 to 6 months.

Contact us for more details.

Problem 3: Student Registration Form with Input Types (Level-1)

Scenario

An institute wants a basic student registration form with built-in validation to reduce incorrect submissions.

Requirements

Create an HTML webpage that includes:

Create a form with following input types:

- text (Name)
- email
- tel
- number (Age)
- date

Use **HTML5 built-in validation**:

- required
- min, max
- pattern (for phone number)

Add submit button

Technical Constraints

- HTML5 only
- No JavaScript validation
- Use proper <label> tags

Learning Outcome

You will be able to:

- Use advanced input types
- Apply built-in HTML5 validation
- Improve form usability without JavaScript
- Browser should show validation errors automatically
- Inputs should restrict invalid values
- Form should be user-friendly

CODE:

```
<!DOCTYPE html>
<!-- Declares HTML5 document -->

<html lang="en">
<!-- Root element with English language -->

<head>
    <meta charset="UTF-8">
    <!-- Supports special characters -->

    <title>Student Registration Form</title>
    <!-- Title displayed in browser tab -->
</head>

<body>

    <h1>Student Registration Form</h1>
    <!-- Main heading -->

    <form action="#" method="post" onsubmit="return validateForm()" novalidate>
        <!--
            action="#" → No backend submission
            method="post" → Secure method for sending data
            onsubmit → Calls JavaScript function
            novalidate → Disables default browser popup validation
        -->

        <fieldset>
            <!-- Groups related form fields -->

            <legend>Register Your Details</legend>
            <!-- Title for grouped fields -->

            <!-- Full Name -->
            <label for="name">Full Name:</label><br>
            <!-- Label improves accessibility -->

            <input type="text" id="name" name="name" placeholder="Enter your full name"
required>
```

```
<!-- required makes it mandatory -->
<br><br>

<!-- Email -->
<label for="email">Email Address:</label><br>

<input type="email" id="email" name="email" placeholder="example@email.com"
required>
<!-- type="email" validates email format -->
<br><br>

<!-- Phone -->
<label for="phone">Phone Number:</label><br>

<input type="tel" id="phone" name="phone" placeholder="9876543210"
pattern="[0-9]{10}"
title="Enter a 10-digit phone number" required>
<!--
pattern → Regex validation
[0-9]{10} → Exactly 10 digits
title → Error message shown on invalid input
-->
<br><br>

<!-- Age -->
<label for="age">Age:</label><br>

<input type="number" id="age" name="age" min="17" max="60" required>
<!-- min and max restrict numeric range -->
<br><br>

<!-- Date of Birth -->
<label for="dob">Date of Birth:</label><br>

<input type="date" id="dob" name="dob" required>
<!-- Provides calendar date picker -->
<br><br>

<!-- Submit Button -->
<input type="submit" value="Register">
<!-- Triggers form submission -->

</fieldset>

</form>

<!-- JavaScript Validation -->
<script>
function validateForm() {

    const form = document.querySelector("form");

    // Checks built-in HTML5 validation
    if (form.checkValidity()) {
```

```

        const name = document.getElementById("name").value;

        alert("Form successfully submitted, " + name + "!");

        return false; // Prevent page reload

    } else {

        alert("Please fill all required fields correctly.");
        return false;
    }
}

</script>

</body>

</html>

```

OUTPUT:

Student Registration Form

Register Your Details

Full Name:

Email Address:

Phone Number:

Age:

Date of Birth:

Problem 4: Multi-Page Website with Breadcrumb Navigation (Level-2)

Scenario

A training portal website has multiple levels of pages and users often get confused about where they are. The company wants breadcrumbs for better navigation.

📌 Requirements

Pages:

- Home
- Courses
- Web Development
- HTML Course

Implement:

- <nav> for main menu
- Breadcrumb navigation using anchor tags
Example:
Home > Courses > Web Development > HTML

Use:

- **Hierarchical linking**
- **Relative paths**

Breadcrumb should update based on page hierarchy

Technical Constraints

- HTML5 only
- No CSS frameworks
- Semantic elements preferred

Learning Outcome

Learners should be able to:

- Breadcrumbs must reflect correct page structure
- Navigation must work without broken links
- Clear hierarchy in folder structure
- Design hierarchical navigation
- Implement breadcrumbs
- Understand real-world website structure

CODE:

Index.html /home:

```
<!DOCTYPE html>
<!-- Declares HTML5 document -->

<html lang="en">
<!-- Root element with language set to English -->

<head>
    <meta charset="UTF-8">
    <!-- Supports special characters -->

    <title>Training Portal - Home</title>
    <!-- Title shown in browser tab -->
</head>
```

```

<body>

    <!-- Main Navigation -->
    <nav>
        <!-- Navigation menu for main pages -->

        <a href="index.html">Home</a> |
        <!-- Link to home page -->

        <a href="courses/index.html">Courses</a>
        <!-- Link to courses page inside 'courses' folder -->
    </nav>

    <hr>

    <!-- Breadcrumb Navigation -->
    <nav aria-label="breadcrumb">
        <!-- Breadcrumb helps users understand current page location -->

        <p>Home</p>
        <!-- Since this is the home page, only "Home" is shown -->
    </nav>

    <main>
        <!-- Main content area -->

        <h1>Welcome to Training Portal</h1>
        <!-- Main heading -->

        <p>Explore our professional training programs.</p>
        <!-- Description paragraph -->
    </main>

</body>

</html>

```

Index.html – course/:

```

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

    <head>
        <meta charset="UTF-8">
        <title>Courses</title>
    </head>

    <body>

        <!-- Main Navigation -->
        <nav>
            <a href="..../index.html">Home</a> |
            <a href="index.html">Courses</a>
        </nav>

```

```

<!-- Breadcrumb -->
<nav>
    <a href="../index.html">Home</a> > Courses
</nav>

<h1>Our Courses</h1>
<ul>
    <li>
        <a href="web-development/index.html">
            Web Development
        </a>
    </li>
</ul>

</body>

</html>

```

Index.html – web Devlopement/ :

```

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

<head>
    <meta charset="UTF-8">
    <title>Web Development</title>
</head>

<body>

    <!-- Main Navigation -->
    <nav>
        <a href="../../index.html">Home</a> |
        <a href="../index.html">Courses</a>
    </nav>

    <!-- Breadcrumb -->
    <nav>
        <a href="../../index.html">Home</a> >
        <a href="../index.html">Courses</a> >
        Web Development
    </nav>

    <h1>Web Development Program</h1>

    <ul>
        <li>
            <a href="html-course.html">HTML Course</a>
        </li>
    </ul>

</body>

```

```
</html>
```

Course.html :

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

<head>
    <meta charset="UTF-8">
    <title>HTML Course</title>
</head>

<body>

    <!-- Main Navigation -->
    <nav>
        <a href="../../index.html">Home</a> |
        <a href="../../index.html">Courses</a>
    </nav>

    <!-- Breadcrumb -->
    <nav>
        <a href="../../index.html">Home</a> >
        <a href="../../index.html">Courses</a> >
        <a href="index.html">Web Development</a> >
        HTML Course
    </nav>

    <h1>HTML Course</h1>

    <p>
        Learn the fundamentals of HTML5 including structure,
        forms, tables, and semantic elements.
    </p>

</body>

</html>
```

Output :

index.html/home :

[Home](#) | [Courses](#)

Home

Welcome to Training Portal

Explore our professional training programs.

index.html/course :

[Home](#) | [Courses](#)
[Home](#) > Courses

Our Courses

- [Web Development](#)

index.html/webDev:

[Home](#) | [Courses](#)
[Home](#) > [Courses](#) > Web Development

Web Development Program

- [HTML Course](#)

Course.html :

[Home](#) | [Courses](#)

[Home](#) > [Courses](#) > [Web Development](#) > HTML Course

HTML Course

Learn the fundamentals of HTML5 including structure, forms, tables, and semantic elements.

Problem 5: Course Enrollment Form with Advanced HTML Elements

Scenario

An online learning platform wants to enhance user experience by showing course progress, skill levels, and suggested inputs while filling the form.

Requirements

Create an enrollment form using:

- <datalist> for course suggestions
- <progress> to show enrollment completion
- <meter> to indicate skill level (Beginner–Advanced)

Include modern input types:

- email
- range
- number

Use built-in validation

Technical Constraints

- HTML5 only
- No JavaScript or CSS
- Must use semantic elements

Learning Outcome

You will be able to:

- Use advanced HTML5 elements
- Enhance form UX without JavaScript
- Understand real-time data representation in HTML

Browser should display:

- Dropdown suggestions via <datalist>
- Progress bar updates (static value)
- Meter shows skill level visually

Clean and structured form layout

CODE:

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

<head>
    <meta charset="UTF-8">
    <title>Course Enrollment</title>
</head>

<body>

    <header>
        <h1>Online Learning Portal</h1>
        <p>Enroll in Your Desired Course</p>
    </header>

    <main>

        <form action="#" method="post">

            <fieldset>
                <legend>Student Enrollment Details</legend>

                <!-- Full Name -->
                <label for="name">Full Name:</label><br>
                <input type="text" id="name" name="name" placeholder="Enter your full name" required>
                <br><br>

                <!-- Email -->
                <label for="email">Email Address:</label><br>
                <input type="email" id="email" name="email" placeholder="example@email.com" required>
                <br><br>

                <!-- Phone with pattern validation -->
                <label for="phone">Phone Number:</label><br>
                <input type="tel" id="phone" name="phone" placeholder="9876543210" pattern="[0-9]{10}" title="Enter a valid 10-digit phone number" required>
                <br><br>

                <!-- Course Selection using datalist -->
```

```
<label for="course">Choose Course:</label><br>
<input list="course-list" id="course" name="course" placeholder="Start
typing..." required>

<datalist id="course-list">
    <option value="HTML Fundamentals">
    <option value="CSS Advanced">
    <option value="JavaScript Basics">
    <option value="Java Programming">
    <option value="Python Development">
    <option value="Full Stack Web Development">
</datalist>
<br><br>

<!-- Age -->
<label for="age">Age:</label><br>
<input type="number" id="age" name="age" min="16" max="60" required>
<br><br>

<!-- Skill Level Range -->
<label for="skill">Skill Level (1 - Beginner, 10 - Expert):</label><br>
<input type="range" id="skill" name="skill" min="1" max="10" value="5">
<br><br>

<!-- Visual Skill Meter -->
<label>Skill Level Indicator:</label><br>
<meter min="1" max="10" low="3" high="8" optimum="9" value="5">
</meter>
<br><br>

<!-- Enrollment Progress -->
<label>Form Completion Status:</label><br>
<progress value="80" max="100"></progress>
<br><br>

<!-- Submit -->
<input type="submit" value="Enroll Now" onclick="show()">

</fieldset>

</form>

</main>

<footer>
    <p>&copy; 2026 Online Learning Portal</p>
</footer>

<script>
    function show() {
        const form = document.querySelector("form");
        if (form.checkValidity()) {
```

```

        const name = document.getElementById("name").value;

        alert("Successfully registered, " + name + "!");
        return false; // prevents page reload

    } else {

        alert("Please fill all required fields correctly.");
        return false;

    }
}

</script>
</body>

</html>

```

Output :

Online Learning Portal

Enroll in Your Desired Course

Student Enrollment Details

Full Name:

Email Address:

Phone Number:

Choose Course:

Age:

Skill Level (1 - Beginner, 10 - Expert):

Skill Level Indicator:



Form Completion Status:



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