**Lab Exercise 3- Implementing WCAG 2.1 Understandable Features in a Web Page**

**Objective**

Ensure content is readable and behavior is predictable so that users — including those with cognitive disabilities — can easily understand and interact with your website.

**Pre-requisites**

* Basic HTML and CSS knowledge.
* Familiarity with metadata, HTML attributes (lang, aria-\*, etc.).
* Access to browser developer tools and accessibility checkers.

**Part 1: Readable Language (3.1.1 – Language of Page, 3.1.2 – Language of Parts)**

**Goal**

Specify the language of the page and any foreign text so screen readers and translation tools can correctly pronounce and interpret the content.

**Steps**

1. **Set the page language** using the lang attribute in the <html> tag.

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<title>Welcome Page</title>

</head>

<body>

<h1>Welcome to Our Service Portal</h1>

<p>We're glad you're here.</p>

</body>

</html>

1. **Specify language of parts** if foreign phrases are included:

<p>This is a popular Italian phrase: <span lang="it">La dolce vita</span>.</p>

**Explanation**

* lang="en" helps screen readers pronounce content correctly.
* Foreign words must be wrapped in <span lang="xx"> for correct pronunciation and translation.
* Improves usability for screen reader users and supports auto-translation.

**Test**

* Use a screen reader (e.g., NVDA, VoiceOver) to verify correct pronunciation of multilingual text.
* Use WAVE or Lighthouse to confirm language tags are detected.

**Part 2: Predictability (3.2.1 – On Focus, 3.2.3 – Consistent Navigation, 3.2.4 – Consistent Identification)**

**Goal**

Ensure that website behavior is consistent and predictable to reduce user confusion.

**A. On Focus (3.2.1)**

Avoid triggering unexpected actions (like page redirects or popups) when an element receives focus.

**Bad Example (Don’t do this):**

<select onchange="window.location.href=this.value;">

<option>Select a page</option>

<option value="about.html">About Us</option>

<option value="contact.html">Contact</option>

</select>

**Good Example:**

<form action="go.html">

<label for="pages">Select a page:</label>

<select id="pages" name="pages">

<option value="about.html">About Us</option>

<option value="contact.html">Contact</option>

</select>

<button type="submit">Go</button>

</form>

**Explanation**

* Avoid automatic actions just by focusing on an element.
* Require explicit user interaction (e.g., button click).

**B. Consistent Navigation (3.2.3)**

Ensure repeated navigational elements appear in the same relative order on every page.

<!-- Navigation bar used on multiple pages -->

<nav>

<ul>

<li><a href="home.html">Home</a></li>

<li><a href="services.html">Services</a></li>

<li><a href="contact.html">Contact</a></li>

</ul>

</nav>

* **Tip**: Reuse navigation templates using server-side includes or frameworks to maintain consistency.

**C. Consistent Identification (3.2.4)**

Interactive components that serve the same purpose must be labeled consistently across the site.

<!-- On page 1 -->

<button type="submit">Search</button>

<!-- On page 2 -->

<button type="submit">Search</button>

* Do **not** label the same action differently on different pages (e.g., “Find” on one and “Search” on another for the same function).

**Use Case Scenario**

**Use Case**: A university website is used by students with cognitive and language disabilities. Predictable behavior and readable language are essential for successful interaction.

**Implementation**:

* The main navigation remains consistent across all sections.
* Course search buttons are labeled “Search” consistently.
* Language tags are used for course titles in other languages.
* No automatic redirects or behavior on field focus.

**Outcome**:

* Better accessibility scores.
* Fewer user complaints.
* Compliance with WCAG 2.1 Level AA.

**Accessibility Testing Checklist (Understandable)**

| **Feature** | **Test Description** | **Status** |
| --- | --- | --- |
| lang Attribute Present | Check for <html lang="en"> or relevant language | ✅ |
| Foreign Phrases Tagged | Use <span lang="xx"> for different language phrases | ✅ |
| No Action on Focus | Elements don’t change pages or context on focus alone | ✅ |
| Consistent Navigation | Menu and links are in the same order on every page | ✅ |
| Consistent Identification | Same elements labeled identically across pages | ✅ |

**Conclusion**

This lab reinforces the **Understandable** principle by helping developers ensure that their content:

* Uses proper **language tagging** for screen readers,
* Maintains **predictable interactions**,
* Preserves **consistency** across pages and elements.

Following these steps helps reduce user confusion and increases the site’s accessibility for all users, especially those with **cognitive, learning, or language processing disabilities**.