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200
1822 - 2022

HTML Evaluation

Man Geni Addysg Uwch yng Nghymru
Where Higher Education Began in Wales

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Task 2: Report

6.a Research & Describe Usability, Accessibility, and Search Engine Optimization

Usability:

You need to:

- 1. Define more about design, layout and clarity**
- 2. Explain its role in web development** (why it matters when building a site).
- 3. Support each term with a peer-reviewed research study** (from IEEE/ACM etc.).
- 4. Summarise the study and key findings.**

Ask AI: *'I want a research paper that proves that good usability improves website engagement'.*

'Give me a peer-reviewed journal article that shows the impact of usability on user retention in websites'.

Tags/Element

- Clear headings
- Navigation
- Group Content
- Consistent layout
- Responsive design

Accessibility:

You need to:

1. ensure websites are usable by people with disabilities (e.g., vision impairments, cognitive challenges).
2. **Explain its Role in Web Dev:** Makes web content inclusive and legally compliant (e.g., WCAG 2.1 principles).
3. **Look for Example Study**
4. **Summarise the study**
5. **Key Findings:**

- **Web Content Accessibility Guidelines.**

It's an international standard created by the **World Wide Web Consortium (W3C)** to make **websites and digital content accessible to everyone**, especially people with disabilities.

[W3C Accessibility Standards Overview](#) | [Web Accessibility Initiative \(WAI\)](#) | [W3C](#)

Accessibility (WCAG 2.1 Principles)

Core **WCAG accessibility principles** used when designing websites and digital systems.

- Perceivable
- Operable
- Understandable
- Robust

Perceivable

Content must be presented in ways that people can **sense** (see, hear, or touch).

Examples:

- Provide **alt text** for images (for screen readers).
- Add **captions** to videos.
- Use **high-contrast colours** for text.

Meaning: Users must be able to *notice* and *receive* the information.

```
<video controls>  
  <source src="lecture.mp4"  
type="video/mp4">  
  <track kind="captions"  
src="lecture-captions.vtt"  
srclang="en" label="English">  
</video>
```

```

```

Operable

Users must be able to **control** and **navigate** the interface.

Examples:

- All content should be accessible using a **keyboard** (not just a mouse).
- Provide enough time to read/move through content.
- Avoid design elements that can trigger seizures (e.g., flashing content).

Meaning: Users must be able to *do* things on your site.

```
<a href="#services" tabindex="0">Go to Services</a>
```

Understandable

Users should be able to **understand** the content and how the interface works.

Examples:

- Use **simple and consistent navigation**.
- Provide **clear instructions** and error messages.
- Avoid overly complex language.

Meaning: Users must be able to *follow* and *comprehend* what's happening.

Consistent navigation (same order on every page)

```
<nav>
  <ul>
    <li><a href="home.html">Home</a></li>
    <li><a href="courses.html">Courses</a></li>
    <li><a href="contact.html">Contact</a></li>
  </ul>
</nav>
```

Users learn the pattern easily.

Robust

Content must work reliably across **different devices, browsers, and assistive technologies**.

Examples:

- Use **clean HTML** that screen readers can interpret.
- Ensure compatibility with future technologies.
- Avoid code errors that break accessibility tools.

Meaning: Your system should be technically **strong** and compatible.

```
<header>
  <h1>Student Dashboard</h1>
</header>

<main>
  <article>
    <h2>Upcoming
Assignments</h2>
    <p>Deadline: Friday</p>
  </article>
</main>
```

```
<p>This is <strong>important</p></strong>
```

3. Accessibility Evaluation

Use the **WCAG 2.1** principles:

a. Perceivable:

- Added **alt text** to all images.
- Used contrast checker to confirm text is readable (passed minimum contrast ratio).

b. Operable:

- All links and buttons are usable with keyboard also (tabbing works).

c. Understandable:

- Consistent navigation and layout across all pages.
- Forms have clear labels and instructions.

d. Robust:

- Tested on multiple browsers and assistive tools like screen readers.
- Run **WAVE** and **axe** browser extensions to detect issues.

Search Engine Optimisation (SEO)

You need to:

1. **Ensure it** involves techniques to improve a website's visibility on search engines.
2. **Explain it's role in Web Development**
3. **Review Example Study**
4. **Summarise**
5. **Identify Key Findings:**

Example Study:

Title: “Impact of SEO Techniques on Website Ranking”

Key Insight: Structured data, strategic keyword placement, and meta tags led to **up to 40% improvement in ranking**.

Key Findings:

- On-page SEO is especially important for new websites without backlinks.
- Optimizing titles, headings, and content can boost visibility quickly

Before SEO

```
<title>Home</title>
```

```
<h1>Welcome!</h1>
```

```
<p>Check out our website for tips.</p>
```

After SEO

```
<title>Healthy Smoothie Recipes for Energy & Weight  
Loss</title>
```

```
<h1>Top 10 Healthy Smoothie Recipes</h1>
```

```
<p>Discover easy, delicious smoothie recipes to boost your  
energy and support weight loss. Includes fruit, veggie,  
and protein-packed options.</p>
```

Now,

- Title contains target keywords: “Healthy Smoothie Recipes,” “Energy,” “Weight Loss”
- Heading is specific and descriptive
- Content uses relevant keywords naturally

Search Engine Optimisation (SEO) – On-Page Techniques

Tags / Attributes:

- Title
- Meta Description
- Image Alt text
- Headings
- Semantic HTML
- Internal links

6 b. Evaluate Your Completed Website

- 1. Usefulness (Usability and Utility)**
- 2. Search Engine Optimisation (SEO)**
- 3. Accessibility**

Web Accessibility Initiative (WAI)

- W3C driven:
- <https://www.w3.org/WAI/>
- <https://www.w3.org/WAI/standards-guidelines/wcag/>

Nielsen Normal Group articles:

- Why Does a Design Look Good?
- <https://www.nngroup.com/articles/why-does-design-look-good/>