Lab Assignment

Introduction

Microsoft Windows comes with built-in assistive technologies to help people with impairments use computers more productively. To help these assistive technologies reach their full potential, many websites and applications are not made. We learned about the common accessibility features in this course and got some practice utilizing them for everyday tasks (web-based and standalone).

On-Screen Keyboard

For people who are limited to utilizing switches or pointing devices as their only means of computer access, the on-screen keyboard serves as a usable alternative. The program can be located in either the Accessibility or the "Ease of Access" settings, according on your operating system.

Discussion - On-Screen Keyboard

The challenges that each situation presented were different. Typing was laborious and slow in the first scenario. The hover over keys mode was significantly slower and more precise in the second situation. The third scenario's scan through keys mode was the hardest to master since it called for a lot of timing and patience. Using a mouse or other pointing device to type is made possible for individuals with physical limitations thanks to the on-screen keyboard's benefits. When compared to a real keyboard, it can be inefficient and sluggish. Allowing for modification of the keyboard layout and key size is one recommendation for enhancement.

Magnifier

The purpose of the Magnifier application is to help those who have low vision. It is located under Ease of Access (Magnifier) or Accessibility (Zoom).

Discussion - Magnifier

Every scenario had challenges, most of which had to do with navigation. Using the magnifier to browse the screen was difficult, especially at high magnification levels. One benefit of the magnifier is that it makes it easier for people with limited vision to read text and see images. It can, however, be confusing and make navigating challenging. Allowing for greater customisation of the magnification level and area is one recommendation for improvement.

Speech to Text

A straightforward text-to-speech program that functions similarly to a screen reader is called Narrator (Windows) or Voiceover (Apple). In Windows, it may be found under the Ease of Access settings menu, and in iOS, under the Accessibility menu.

Discussion - Speech to Text

There were discrepancies between the Narrator's and the user's reading order of the menu items. It may not necessarily correspond to the visible order on the screen since the Narrator reads the elements in the code's order of appearance.

Web Accessibility

A set of accessibility rules and standards are developed by the Web Accessibility Initiative. The Essential Components of Web Accessibility should serve as the foundation for your minimal concerns as a developer.

Website Accessibility Components

Three web accessibility features were added to the website: a text resize widget, a colorblind mode, and alt texts for images.

Here is the code to implement three aspects of web accessibility: font size changes, color changes for color blindness, and alt texts for images.

1. Alt Texts:

Explanation: For people who might not be able to see images, alt text offers a written description of the visuals. It aids visually impaired people by having screen readers explain the image's content.

```
<!DOCTYPE html><html lang="en"><head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Accessible Website</title></head><body>
    <!-- Image with Alt Text -->
    <img src="img1.jpg" alt="ALT Tet images accessibility"></body></html>
```

2. Font Size Changing Options:

Explanation: Users can change the font size on a website to suit their own tastes, which makes it easier for people with vision impairments or other reading challenges to read.

```
C: > Users > user > Pictures > Lab Assignment > index.html > html
<!DOCTYPE html><html lang="en"><head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Accessible Website</title>
    <style>
        body {
            font-size: 16px; /* Default font size */
        }
    </style></head><body>
    <!-- Font Size Changing Buttons -->
    <button onclick="increaseFontSize()">Increase Font Size</button>
    <button onclick="decreaseFontSize()">Decrease Font Size</button>
    <p>This is a sample text</p>

    <script>
        function increaseFontSize() {
            document.body.style.fontSize = '20px'; // Increase font size to 20px
        }

        function decreaseFontSize() {
            document.body.style.fontSize = '12px'; // Decrease font size to 12px
        }
    </script></body></html>
```

3. Color Change Options for Color Blindness:

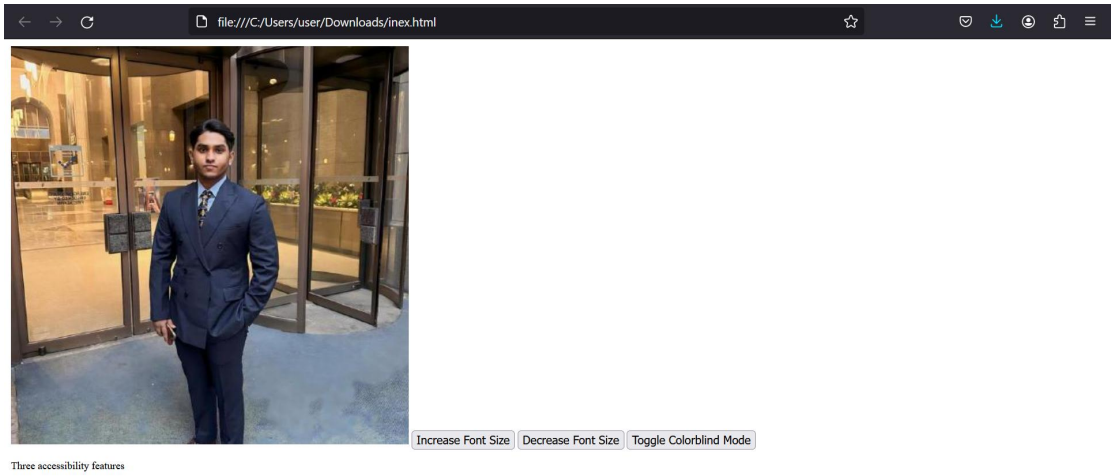
Explanation: Color-blind users can discern between alternate color schemes with the use of color change choices. It guarantees that all users, regardless of their color vision impairments, can still access and understand the content on the website.

```html
<!DOCTYPE html><html lang="en"><head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Accessible Website</title>
    <style>
        /* Default Color Scheme */
        body {
            background-color: white;
            color: black;
        }

        /* Color Scheme for Color Blindness */
        body.colorblind {
            background-color: #F0F4F8; /* Light blue background */
            color: #4A5568; /* Dark gray text */
        }
    </style></head><body>
    <!-- Color Blind Mode Button -->
    <button onclick="toggleColorblind()">Toggle Colorblind Mode</button>
    <p>This is a sample text</p>

    <script>
        function toggleColorblind() {
            document.body.classList.toggle('colorblind'); // Toggle colorblind class
        }
    </script></body></html>
```

Output



Conclusion

An essential component of web design and development is accessibility. We can design websites that are more inclusive and useful for all users if we take accessibility into account from the outset.