Project Requirements Specification

Team 4

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Introduction

Background

Rabab Gomaa is a professor of the course CST8914 – Accessible by Design at Algonquin College. CST8914 is part of the program Cloud Development and Operations. The course is designed to teach students about web accessibility via guidelines set out by Web Content Accessibility Guidelines (WCAG) and the Accessibility for Ontarians with Disabilities Act (AODA).

System Request

- **Homepage:**
  - Product Cards: Displaying various products with images and descriptions.
  - Carousel: A rotating banner or slideshow showcasing featured products or promotions.
  - Real Data Form: A form where users can input real data, such as personal information or search queries.
- **Product Page:**
  - Search/Filter: Capability to search for products and filter them based on criteria like category or price.
  - Product Categories: Categorization of products for easy navigation.
  - Alert on Added Item to Shopping Cart: Users receive an alert or notification when they add an item to their shopping cart.
  - Star Ratings: Product ratings displayed to help users make informed decisions.
- **Shopping Cart:**
  - Remove Item: Users can remove items from their shopping cart.
  - Alert on Removal: An alert or confirmation message appears when users remove items.
  - Submit: Proceed to checkout, leading to a thank you message after completing the purchase.
- **User Accounts:**
  - Edit Profile Info: Users have the option to modify their profile information.
  - Upload a Photo: Capability to upload a profile picture.
- **Search Feature:**

  A form where users can input search queries.
- **Real Data Display**

- Loading Accessibility: E.g., from stocks or Facebook feed etc. To make this accessible, the developer needs to communicate to the screen reader user that the content is loading. When it is loaded, the focus is set on the container with the information.
- Infinite Scrolling Accessibility: Infinite scrolling like scrolling Facebook feed should be avoided or activated only at the user's request.

Purpose of the Project

The purpose of this project is to provide cloud learners with a hands-on, practical experience in understanding and addressing web accessibility issues. The project revolves around a shopping website intentionally designed to be inaccessible, challenging the students to identify and document accessibility barriers. The project serves as a valuable educational opportunity for cloud learners.

It allows them to gain a deep understanding of web accessibility principles, which are crucial for creating inclusive digital experiences. By auditing an intentionally inaccessible website, students gain practical experience in recognizing and addressing accessibility issues.

Brief Description of Scope

The scope of the project involves creating a web accessibility project designed for cloud learners. The primary objective is to intentionally make a shopping website inaccessible, allowing students to audit and improve its accessibility. Despite not following accessibility best practices, the site will be fully functional and include the following pages and features. The shopping website, with its various sections, simulates a real-world scenario where students encounter diverse accessibility challenges. It mirrors the complexity of modern web development and the need for accessibility considerations.

Brief Description of the End Users of the Product

The end users of this product (shopping website) are the students (cloud learners). The product is meant to be designed for the purpose of learning, giving the end users a real-life experience through the learning activities to be carried out on the product via auditing.

Description of Process from Interview to Report Submission

After interviewing our client, the team followed these steps to create a comprehensive PRS:

1 **Gather and Document Client Requirements**

1.1 Compiled all information obtained from client interviews, emails, and meetings

1.2 Clearly defined the project's objectives, goals, and constraints

2 **Define Functional Requirements**

2.1 Describe in detail the project’s expected functions and features

2.2 Discussed specific use cases to illustrate how users will interact with the project

3 **Specify Non-Functional Requirements**

3.1 The non-functional requirements discussed relating to accessibility were a key focus on this project

4 **Detail user interfaces**

4.1 Discuss design options for the project

5 **Specify Acceptance Criteria**

5.1 Clearly state how the client will validate that the project meets their requirements

6 **Obtain client Approval**

6.1 share the PRS with the client for their review and approval

6.2 Make any necessary revisions based on client feedback

7 **Finalize PRS**

7.1 Once the client approves the document, ensure that it is complete and accurate

Regular communication and collaboration between the team and the client are essential throughout the process to ensure a successful project outcome.

Completion Date

Dec 8, 2023

Project Scope

Purpose of the Project

Why is the Project Required?

Our client, Rabab Gomaa who teaches web accessibility needs a website that is intentionally made inaccessible, for her students to gain experience via audition of the site:

- **Educational Need:** The project addresses a critical educational need. In an increasingly digital world, it is essential for cloud learners to have a strong understanding of web accessibility principles and practices. By intentionally designing an inaccessible website, the project creates a unique learning opportunity for students to engage with real-world accessibility challenges.
- **Practical Experience:** Theoretical knowledge alone is insufficient in the field of web development and design. Practical experience is crucial for students to become proficient in identifying, addressing, and advocating for web accessibility. The project provides a practical platform for learners to apply their knowledge.
- **Real-World Application:** The project mirrors the challenges faced by web developers and designers in real-world scenarios. It simulates the complexities of modern web development, where accessibility is a fundamental consideration.

Summary of the Client's Problem Statement

This project website is however used to further give examples on what would be expected from the website we are going to develop for her. The project should involve the creation of a shopping website with several sections:

- **Homepage:** This is the first page which greets a user after a successful log in. It is expected to contain features such as the products, navigation options, promotions(ads). Other special features include a carousel which would showcase items and a user cart where items to be purchased can be viewed.
- **Product Categories:** The website is organized into various sections just like every other functional website, providing options to filter within the various products and product categories available on the site.
- **Product Pages:** Dedicated and detailed pages are provided for each product. These pages would be containing prices, images, more descriptions, and customer reviews. Additional features include alerts when an item is added to the shopping cart, a visible shopping cart with the number of items, and star ratings for products.

- **Shopping Cart:** This is a dedicated area which should summarize a user's shopping experience. Here, users can view or remove items which they intended on purchasing, review the contents, and proceed to purchase. Features of the shopping cart include the ability to add items, receive alerts when removing items, and a submission process leading to a thank-you message(toast).
- **User Accounts:** The website includes user registration and login functionality This is the very first page a user who opens the web link would be greeted to. Users should be able to create profiles for personalized experiences (e.g., username and password).

A Brief History of the Current System, Its Users, and What Led to This Project

Rabab Gomaa mentioned from a meeting earlier, that she had a website which she used but it did not meet some of the requirements she needed. She shared her experience with a website that intentionally lacked accessibility features. While showcasing this demonstration, she highlighted how this intentionally inaccessible website served as a valuable educational tool. However, it became apparent that there was a need for a more comprehensive and tailored solution to meet specific requirements and offer a more effective educational experience. This need led to the initiation of the project to develop a purposely inaccessible shopping website, designed to challenge and educate cloud learners in the field of web accessibility.

Users of the Project

Who Will be Using the System?

- **Cloud Learners (Students):** The primary users of the system are the cloud learners, who are students enrolled in Rabab Gomaa's course on web accessibility. They will interact with the intentionally inaccessible shopping website as part of their coursework. These students will engage in website audits to identify and document accessibility issues.
- **Educators and Instructors:** Rabab Gomaa, as the course instructor, will oversee the project and evaluate the assessments submitted by the students. Educators and instructors involved in teaching web accessibility may also use the project as an educational resource and reference material.

In summary, the system built for this project primarily serves as an educational tool for cloud learners and their instructors.

User Work Profile

The user work profile for this project primarily revolves around educational and practical activities related to web accessibility auditing and learning. The major functions of the users, who are cloud learners and educators, can be summarized as follows:

- **Auditing Websites:** Cloud learners are tasked with auditing websites for web accessibility issues. They actively engage with intentionally inaccessible websites to identify and document accessibility barriers.
- **Learning and Skill Development:** Their primary function is to learn about web accessibility principles, practices, and compliance requirements. They aim to develop the skills needed to evaluate and improve website accessibility.

Skill Levels that May be Required to Use the System

- **Basic Computer Literacy:** Students should possess fundamental computer skills, including operating a web browser, navigating websites, and using online tools.
- **Web Browsing Skills:** Proficiency in browsing websites is essential as students will interact with real websites for accessibility audits.

Special Needs Required for the System as You Understand Them

- **Web Accessibility Non-compliance:** The system itself should be designed and developed non-compliant with web accessibility standards, i.e., meet the WCAG 2.1 Guidelines AA Common Failures [1] but not all of them. This allows students to audit and improve its accessibility.

Out of Scope

- **Comprehensive Documentation:** While documentation is crucial, the project may limit initial documentation efforts and focus on product development.
- **Browser Compatibility:** The project may initially focus on ensuring compatibility with major browsers, i.e., Chrome and Firefox and defer addressing less commonly used browsers.
- **An Accessible Version of the Production:** The project does not include developing an accessible version of the site to show the difference between the accessible and non-accessible experience.

Requirements

Functional Requirements

Table 1: Functional Requirements

SWFx	The System Shall
SWF1	Allow the user to register a new account
SWF2	Allow the user to login his account with a valid username and password
SWF3	Allow the logon user to edit his account profile
SWF4	Allow the logon user to upload a photo to his account profile
SWF5	Have a product page with prices, descriptions, images, and customer reviews for each product
SWF6	Have a Product Category Page with organized sections for different types of products (e.g., clothing, etc.)
SWF7	Allow the user to search the products by keywords in the Product Category Page
SWF8	Allow the user to filter the products in the Product Category Page
SWF9	Shows an alert to the user when he adds the product to his shopping cart
SWF10	Have a Shopping Cart that lists all the items the user added previously
SWF11	Allow the user to add an item into his shopping cart
SWF12	Allow the user to add his shopping cart item quantity
SWF13	Allow the user to subtract his shopping cart item quantity
SWF14	Show an alert to the user when he removes an item from his shopping cart
SWF15	Lead the user to a "Thank you" message when he submits the purchase

SWF16	Have a shopping cart icon with the number of items in the user's shopping cart
SWF17	Have a Homepage Navigation Bar that links to other pages
SWF18	Have a Homepage with featured product cards
SWF19	Have a Homepage with featured promotion product cards
SWF20	Have a Homepage with functioning featured product cards carousel
SWF21	Have a Homepage with functioning featured promotion product cards carousel
SWF22	Run in the latest version of Chrome Brower
SWF23	Run in the latest version of Firefox Brower
SWF24	Have errors which meet WCAG 2.1 Guidelines AA Common Failures [1] and intentionality hid in the production to provide students web accessibility learning material

Non-Functional Requirements

Table 2: Non-Functional Requirements

SWNFx	**The System Shall**
SWFN1	Provide a fluid UI that is both appealing and functional
SWNF2	Ensure data security and integrity
SWNF3	Implement error handling
SWNF4	Have a target completion deadline of Dec 8, 2023
SWNF5	Have low website load times

SWNF6	Cover WCAG 2.1 Guidelines AA common failures [1]
SWNF7	Not accessible
SWNF8	Maintainable

Development and Production Environments

The hardware and software needed for the development and production environments are as follows:

Table 3: Development and Production Environments

Hardware	Programming Languages	Operating System	DBMS
Development:			
Processor: Intel Core i5-6300U 2.4GHz or higher Storage: 100 GB SSD or more RAM: 16.0 GB or higher	HTML5 CSS JavaScript jQuery	Windows 10	Not Needed
Production:			
Processor: Intel Core i5-6300U 2.4GHz or higher Storage: 100 GB SSD or more RAM: 16.0 GB or higher	HTML5 CSS JavaScript jQuery	Windows 10	Not Needed

Test Plan

Quality Objective

- Ensure the application under test conforms to functional and non-functional requirements
- Critical bugs/issues are identified and fixed before the production release

Test Methodology

- **Selected Test Methodology:** Iterative
- **Reasons:**
    - **Incremental Development:** It allows for the project to be divided into smaller, manageable parts or iterations. Each iteration focuses on specific functionality or modules. This incremental approach enables the team to work on one part at a time, reducing complexity.
    - **Rapid Feedback Loop:** Feedback from testing is available immediately at the end of each iteration. This fast feedback loop allows for quick identification and resolution of issues, ensuring that problems are addressed promptly.
    - **Early Testing:** Testing is integrated into each iteration. This means that as soon as an iteration is completed, the entire system is tested.

Test Completeness

- **Test Coverage:** 100% test coverage for critical and high-priority features.
- **Critical Defects Resolution:** Confirm that all critical defects identified during testing have been addressed and resolved
- **Functional Requirements:** Verify that the system meets its functional requirements
- **User Acceptance Testing (UAT):** Obtain user acceptance and feedback

Test Environment

CPU: Quad-core CPU or higher

RAM: 16 GB of RAM or more

Storage: 100 GB SSD or more

Conclusions

In an era increasingly reliant on digital technology, this project addresses a pressing educational requirement, ensuring cloud learners gain a profound understanding of web accessibility principles and practices by engaging with intentionally inaccessible websites, offering real-world accessibility challenges.

- **Educational Need:** This project caters to a critical educational need in an increasingly digital world, where cloud learners must grasp web accessibility principles and practices. Creating an intentionally inaccessible website offers students a unique opportunity to engage with real-world accessibility challenges.
- **History and Need:** The project was initiated because the existing website used by Rabab Gomaa did not meet her requirements. It became evident that a more effective and intentionally inaccessible website was needed for educational purposes.
- **Users of the Project:** The primary users of the system are cloud learners (students), enrolled in Rabab Gomaa's web accessibility course. They engage in website audits to identify and document accessibility issues as part of their coursework.
- **User Work Profile:** Cloud learners actively engage with intentionally inaccessible websites to identify and document accessibility barriers.
- **Skill Levels Required:** Understanding of Web Accessibility Concepts: Users should have a basic understanding of web accessibility principles, such as inclusive design, WCAG guidelines, and assistive technologies.
- **Special Needs for the System:** The system should be intentionally designed to be non-compliant with web accessibility standards, such as WCAG. This intentional non-compliance enables students to practice auditing and improving accessibility.

Requirements Approval

The client, Gomaa, Rabab, understands that the Information Communications and Technology – Application Programming (ICT-AP) Department of Algonquin College is not a software development company, and cannot be regarded as being under contract to deliver a finished product. The students are working as a team to complete the project, on which their CST8334 Software Development Project course mark heavily depends. However, the client agrees that the information captured in this document is an accurate reflection of the requirements they wish the students to work towards delivering to the best of their abilities.

The students on team Team 4 pledge that all software provided to the client, Gomaa, Rabab, has been authored by the team or identified with appropriate permission for its use.

The client, Gomaa, Rabab, also understands that the students do not claim to have professional expertise and will not be available after the delivery date, to support the product.

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Name of Client	Signature	Date

Appendices

[1] “WCGA 2.1 Techniques Common Failures,” *w3.org*, 2023. [Online]. Available: https://www.w3.org/WAI/WCAG21/Techniques/#failures [Accessed Oct. 5, 2023].