Final Report – Niagara Museum Project

Cosc 4p02

The Niagara Museum project is an online web application for museum visitors to quickly obtain details about the exhibits and where they are located. The COSC4P02 Museum Map's design was inspired by the existing aesthetic decisions made by the museums in Niagara on the Lake. The purpose of the app is to make it simpler for visitors to museums to organise their trips, choose which exhibitions they want to see, and possibly even reserve private showings. As a public-facing institution, the application is made to comply with accessibility standards and meet the current design preferences of the Niagara on the Lake museums. Due to the fact that it will be a public institution, the application is created to compliment the current design choices made by the Niagara on the Lake museums while also complying with accessibility regulations.

Several crucial features offered by Museum Map improve the user experience and make it simpler for them to organise their trip to the museum. Some of the website's main features are search functionality, Exhibit information, Bookmarking exhibits, and user authentication. The name of the exhibition, a brief description, and its location in the museum are all included in the exhibit material, which visitors can access to learn more about the displays. This allows visitors to organise their trip and choose the exhibits they want to view. Search functionality that allows users to search feature that enables them to look up certain exhibitions by name. The process of finding exhibitions that fascinate visitors is made simpler by this and be more convenient. In addition to this, other functionalities such as user authentication that let users sign up for accounts and log in to the website. Moreover, they can access their saved exhibits from any device using this, and it also saves their preferences for subsequent visits. The website is also responsive, meaning, it will be operated on different operating system such as smart phones, laptops, etc. All in all, these websites include a number of crucial features that make it simpler for guests to access and plan their visit information. These features improve the user experience and turn the website into a useful tool for people visiting museums.

Firebase is used to connect the front end and back end and to have a live database that refreshes the data displayed promptly. For applications that require real-time data synchronisation, Firebase is the best option because it offers a live database that can be updated without the need for manual refresh. This makes it ideal for applications that require real-time data syncing. For this project, it was further used for user authentication, allowing users to create accounts and access the programme. The front end and back end of the application were connected by the team using Firebase's JavaScript SDK. Using a selection of libraries and tools made available by the Firebase JavaScript SDK, the development team then used their web apps to interface with Firebase services. The SDK includes libraries for Firebase Authentication, Firebase Storage, Firebase Realtime Database, and other functionalities. The team used Firebase Realtime Database to record details about the exhibitions, such as their names, descriptions, and locations. When a user enters a page, the website's front end asks for data to display from the Firebase Realtime Database. Since the data is returned in real-time, any updates require no manual refreshing because they are immediately displayed on the website. For user authentication, the team used Firebase Authentication in addition to Firebase Realtime Database. The Firebase Authentication service stores user data when they register for an account or log in to an application. On subsequent visits to the website, the user can be authenticated using this information.

The Niagara on the Lake museums previous design decisions were taken into consideration when developing the Museum Map web application, along with simplicity, usability, and consistency. The layout is neat and posh, with a white background, black text, and blue accents. Each page of the application has readable typefaces that are constantly used, making it simple to read. A list of exhibits is located underneath the search box on the application's website. Users can browse the list of exhibits or conduct a name-based search to locate a particular display, giving them two alternatives for locating the exhibits that interest them. A card with the name, a brief description, and an image serves as a representation of each display. A page with more specific information on the exhibit, including its location, can be accessed by clicking on one of the exhibit cards in the reader. The webpage for the application features a search bar and an exhibits list at the top, respectively. To find the exhibits that interest them, users can either browse the list of exhibits or conduct a name-based search each exhibition has a card containing the title, an image, and a succinct description. A webpage with more detailed information on the exhibit, including where it is in the museum, will be shown when a visitor clicks on one of the exhibit cards.

The website's development team put a lot of effort into making sure that all users, including those with impairments, could access it. The website's main accessibility features are high contrast, alt text images where visually impaired people can understand the images content, labeling and responsive. The team made a concerted effort to make sure that the website is accessible to all users, including those with disability, and users will find it simple to navigate and obtain the information they need thanks to the clean, minimalist design.

The team had to overcome several obstacles when creating the Museum Map. Getting the Firebase database to work with the application was one of the biggest obstacles. The development team had to guarantee that the application could instantly retrieve and display data from the database. To make sure the application was operating as planned, this required thorough testing. Making sure the application run to accessibility standards was another difficulty. To make sure that it was usable by everyone, the team had to carefully test the user cases that were build during user requirements. To confirm that the application complied with accessibility rules, comprehensive testing using a variety of assistive technologies was required. The development team tested the functionalities and test cases manually that were considered again from the user requirements.

Overall, the software was created to be compliant with accessibility standards and to reflect the current design preferences of the Niagara on the Lake museums. Users can register for an account and log into the application due to the use of Firebase for user authentication and data storage. The team had to integrate Firebase with the application and make sure it complied with accessibility standards, among other difficulties, during developing the program. In conclusion, the COSC4P02 Museum Map is a great illustration of a web application that benefits users and complies with accessibility standards. Future iterations of the project could include more elements to improve the experience, such interactive maps, accessibility standards, more data and user friendly.