**Student Name:**

**Student ID:**

**Unit Code:** COM710

**Unit Title:** Web Technologies

Table of Contents

[Introduction 3](#_Toc97380463)

[Evidence that website meets the website’s requirements 3](#_Toc97380464)

[Proof that the website conforms to W3C standards 7](#_Toc97380465)

[Legal and Ethical Considerations 8](#_Toc97380466)

[Accessibility 8](#_Toc97380467)

[Legal Considerations 9](#_Toc97380468)

[Security Consideration 9](#_Toc97380469)

[Version Control 9](#_Toc97380470)

# Introduction

A dynamic website mainly consists of a front and back end. The two sides are essential in ensuring that the website handles user requests appropriately and facilitates data transmission from the database. The primary languages used in developing such websites are HTML, CSS, and JavaScript for the front-end and NodeJS for the server-side depending on the database type and the nature of the back-end. The following is documentation highlighting the procedures, techniques, and guidelines used to develop a website for Solent Technology Conference. The website’s function is to display information about the conference and help users view and manipulate speakers to present their research at the event. The website front-side uses EJS for templating, with basic HTML used to display the various elements. Additionally, the website can be locally accessed as it is served at 127.0.0.1:5000.

# Evidence that website meets the website’s requirements

The website views use hypertext markup language (HTML) tags and a cascading styling sheet to display the layouts. The HTML tags in the website are for creating the structure of the website, while the custom styling sheet is used to enhance the appearance of the website by adding styles such as color, typography, images, and transitions to the website. EJS is used for templating the views. Additionally, NodeJS is used for the server-side scripting of the website. Express is used as the object-relational mapper for the website and routing purposes. The website makes use of SQLite as its database as specified. The database contains a table containing details about the speakers to present at the event. The database schema contains a speakers table which contains five columns, namely, ID, name, title, about, and workplace.

The ID column is the primary key that uniquely identifies the speakers; the name column specifies the speakers’ name, while the title, about, and workplace columns identify the speaker’s research title, a description of the speaker, and where the speaker works, respectively. There are various routes linked to certain views that help users to manipulate the speakers’ table. The database functions are all serialized to ensure that they occur in the correct order as specified. The user can create, retrieve, update, and delete speakers’ information using certain views, following which the database is updated, and the user redirected appropriately. The various CRUD operations are made possible by the application programming interface (API) written in the index.js file in the project’s root. As mentioned, express is used extensively in the back-end to facilitate routing as specified in the API endpoints. The following are screenshots of the various pages in the website as specified and a code snippet confirming requirements adherence.

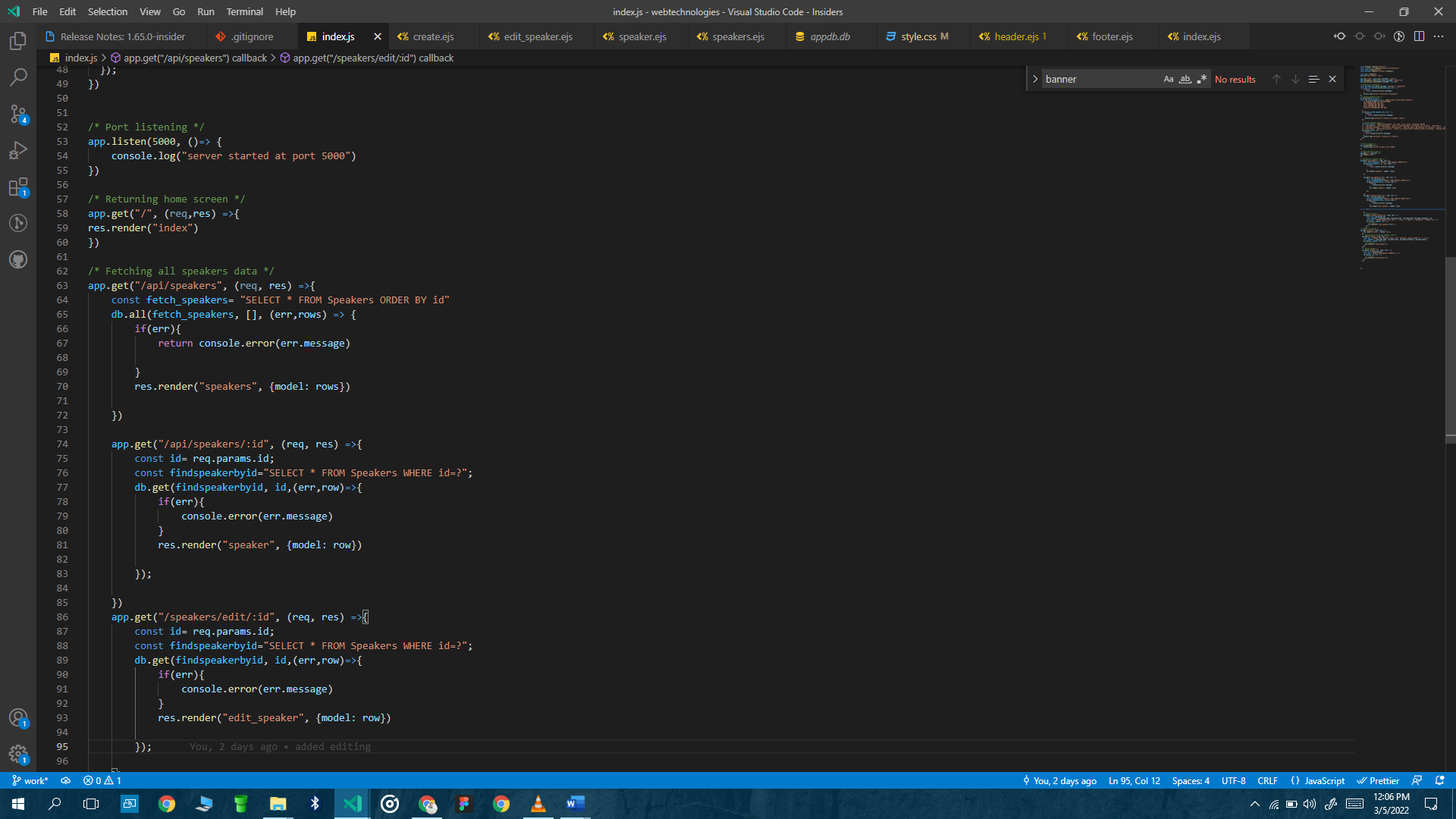


Figure 1 Code snippet

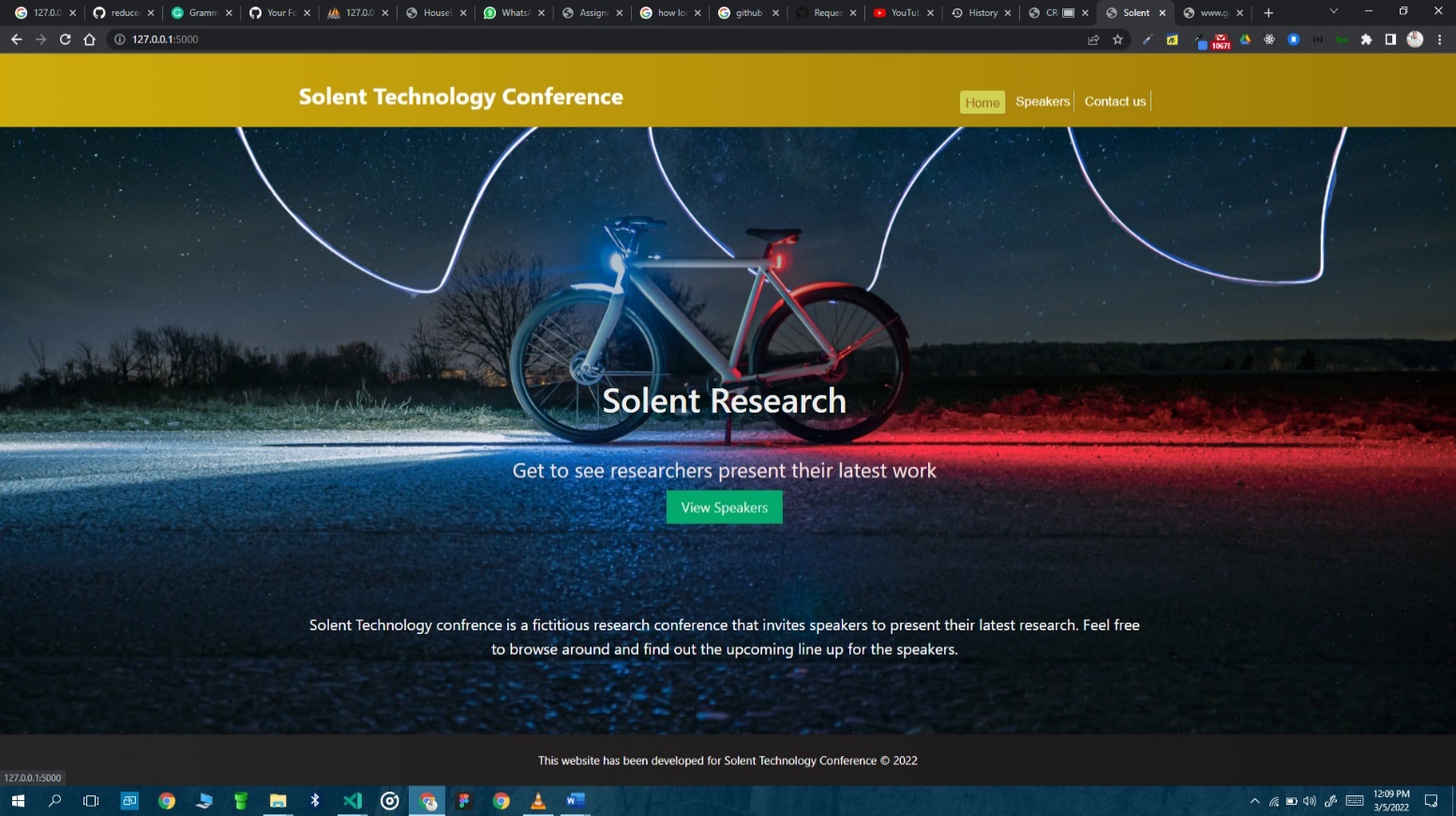


Figure 2 Website's home page

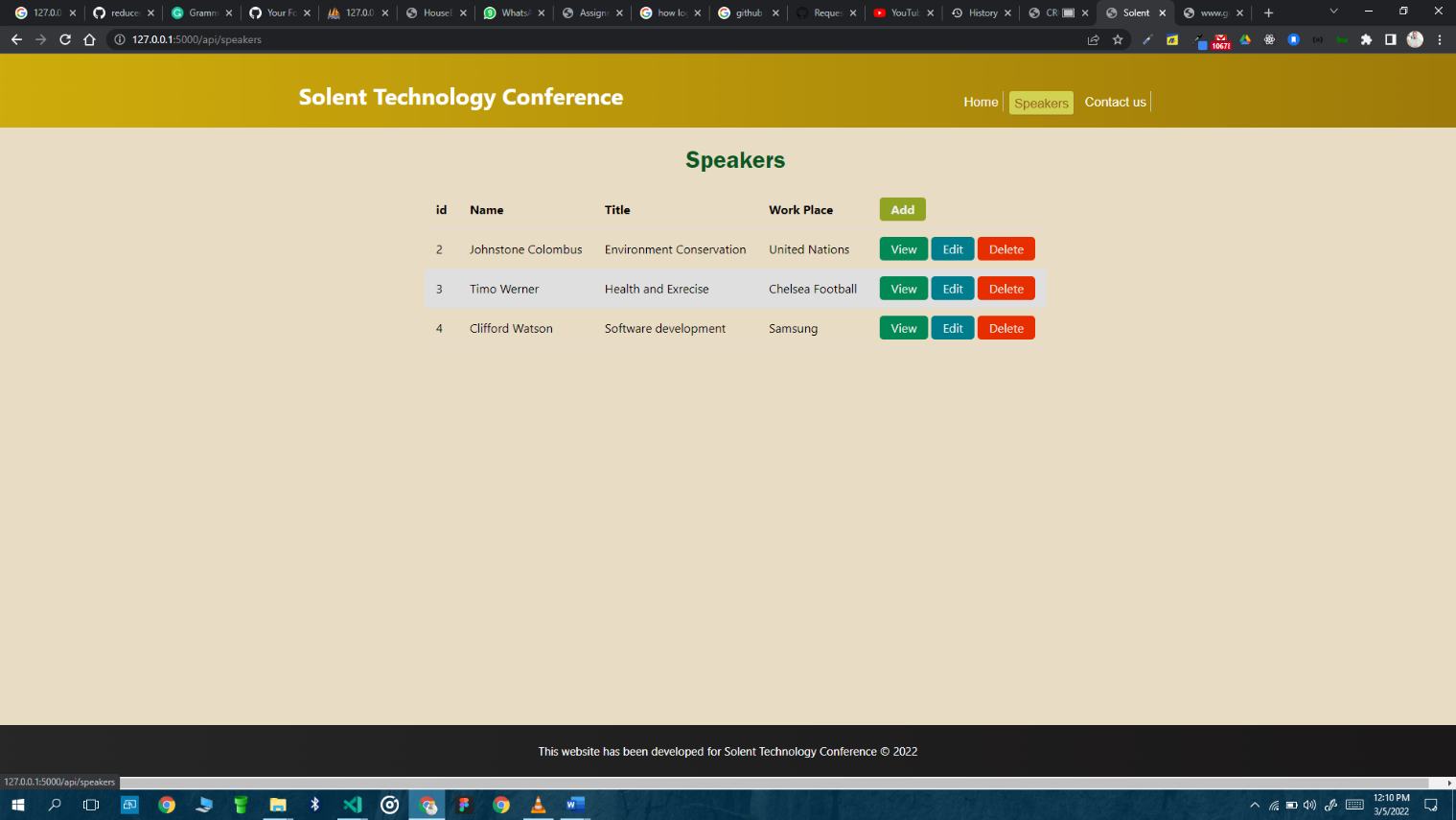


Figure 3 All speakers screen

This screen above represents the GET speakers/ route where a list of all available speakers is displayed on a table.

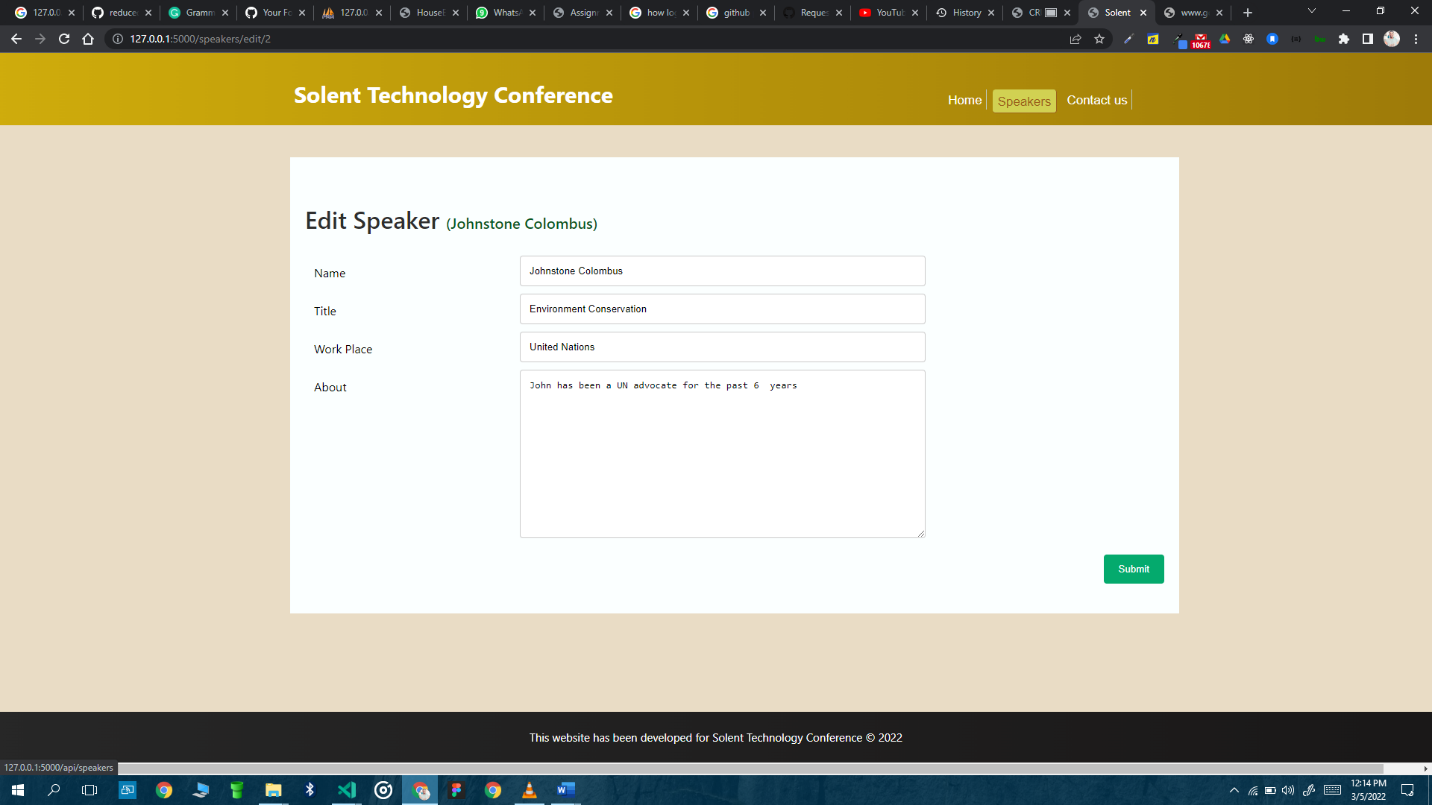


Figure 4 Edit speaker screen

This page represents the Get speakers/:id route, where one can view the details about the speaker.

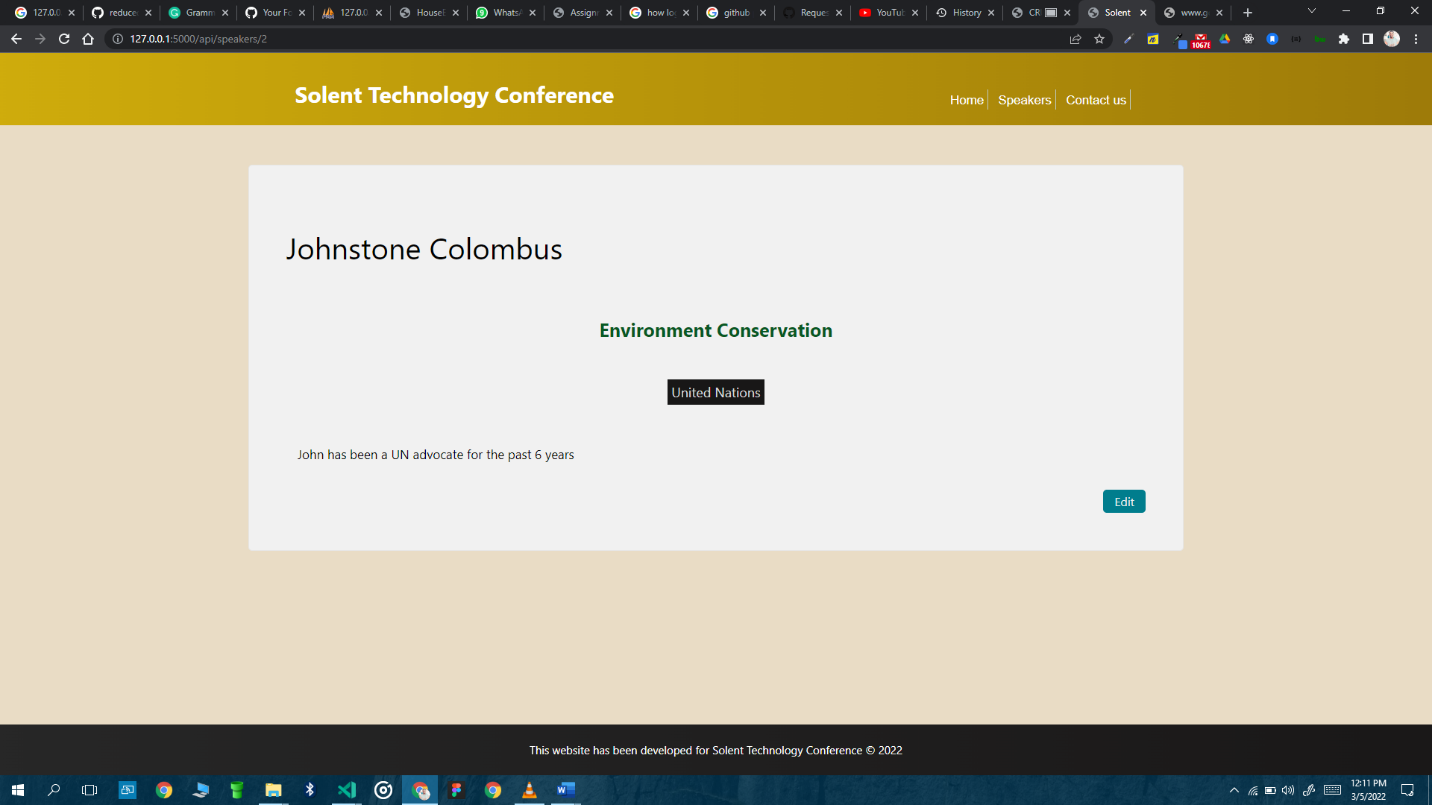


Figure 5 View speaker screen

The above screen represents the edit screen of the /speakers/edit/:id route, where a user can update the records of a speaker.

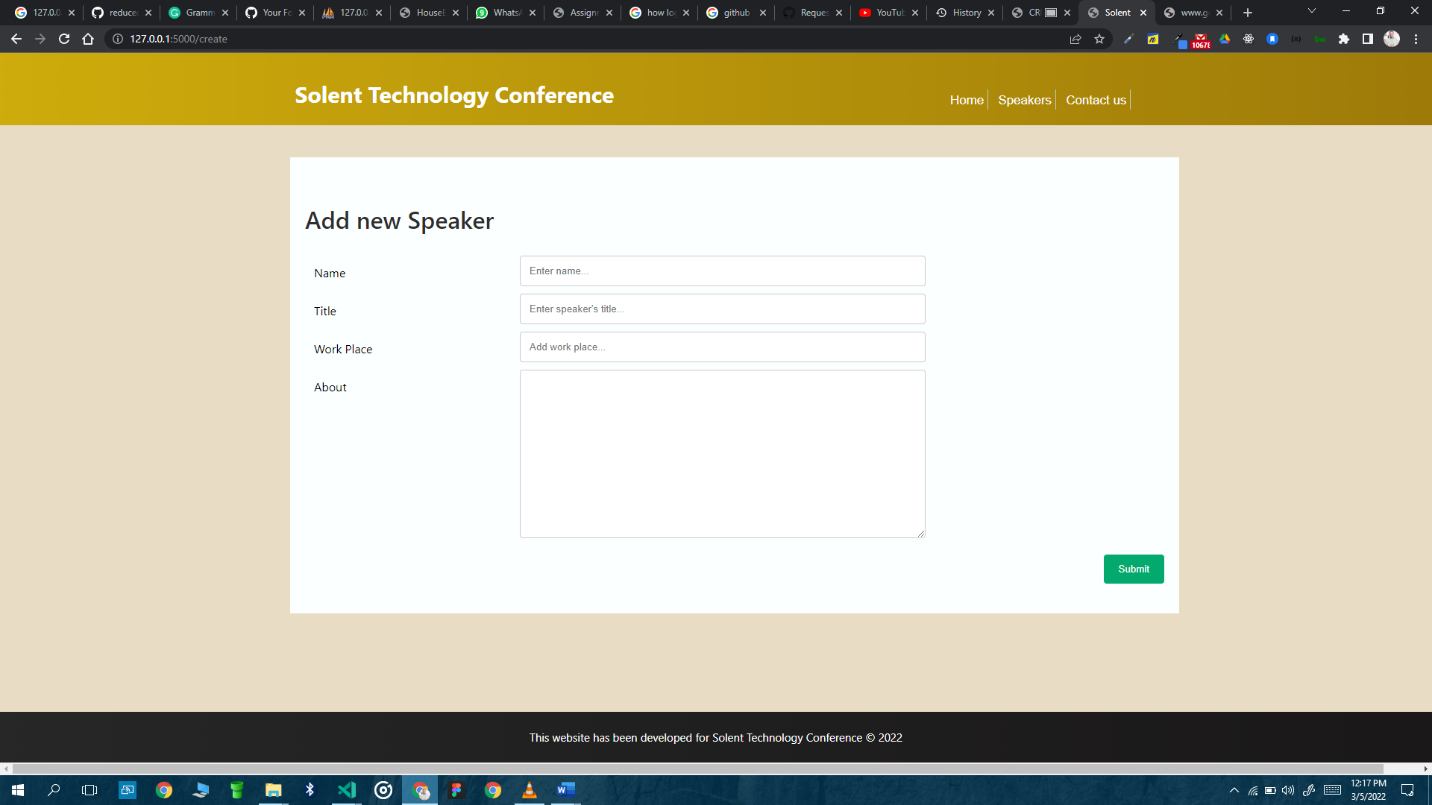


Figure 6 Add new speaker screen

The above screen shows the add new screen with a form to aid in adding a new speaker.

# Proof that the website conforms to W3C standards

The worldwide web consortium dubbed W3C is a community of members and organizations globally aimed at standardizing web design practices to promote consistency and accessibility despite the location and physical capabilities. The standards and guidelines proposed by W3C are good, and it is advised that web developers follow them as they detail best practices. The Solent Technology Conference website has employed the proposed guidelines of web application development to ensure the website is accessible to all devices and people globally.

The website used cascading style sheets that describe how different elements are to appear on different devices by using media queries. Therefore, the website is responsive and can provide the same functionality in desktop screens, tablets, and mobile devices. Additionally, the website uses Html 5, which is highly recommended by the world wide web consortium, thus promoting uniformity in web development. Additionally, the website uses a combination of fonts to ensure fallback fonts depending on the user’s device, internet connectivity, and available fonts in the users’ browsers. This guideline ensures that the website is displayed on each users’ device as specified by the developer. The following font families have been used for all text elements in the website.

font-family: ‘Segoe UI’, Tahoma, Geneva, Verdana, sans-serif;

Moreover, the website has ensured that there is a separation of concerns by having the styling sheets linked from an external file instead of inline styling as mentioned in the W3C standards. This separation of concerns ensures that it is easy to maintain the website, share styling sheet code among multiple views, and ensure that different pages are tailored to different environments. Additionally, the website uses asynchronous programming for server-side scripting, which allows for non-blocking during the execution of requests as proposed in the W3C standards. The website also considers mobile users in its design with pages such as home and speakers screen designed mobile-first. Due to above-mentioned factors, it can be established that the Solent Technology Conference website conforms to the W3C standards. Failure to follow these standards brings about a website that is not accessible well by all users using different devices and browsers, creating a challenge for users, therefore chasing away possible users or customers.

# Legal and Ethical Considerations

## Accessibility

The Solent Technology website is designed to allow accessibility to anybody despite their location, device, and internet connectivity. Accessibility ensures inclusiveness in access to a website to all persons despite their challenges physically or technologically, for instance, bandwidth. The website ensures this through a number of ways; for instance, each page contains proper heading tags to help ensure there is a context in every page and that users can know exactly where they are on the website and what is expected of them. Additionally, the color used on the website is user-friendly. The website uses warm colors to bring about a welcoming and joyful feeling to its users.

In addition, the forms used in the website are user-friendly and are designed for accessibility. The forms use labels and placeholders to help users fill them with ease. Moreover, the forms are designed with consistency in mind. The submit buttons are placed on the bottom right of each form to enable users to easily learn and gain familiarity with the website. Besides the forms, the website also uses distinct links that are within the context of the conference and are descriptive.

Moreover, the website uses large enough fonts that are easily readable for any user group. The typography of texts and headings contrasts nicely with the website’s color scheme to allow users to read without struggle or glare. In addition, the fonts used are available in most browsers eliminating the need to download the fonts in case of poor internet connection. The website also makes use of contrasting buttons to help every user easily understand the meaning of each button. For instance, the delete buttons have a red background to indicate danger, and the add button has a green background for success. This color-coding helps every user, including the not-so-computer literate, understand their meaning.

## Legal Considerations

The Solent Technology Conference website has ensured that it adheres to legal requirements on the internet. For instance, the website does not use images subject to copyright or licensed images from the internet. The website does not use any unique name or symbol that another entity has trademarked. Additionally, the website does not make use of any names belonging to real people, as stated in the requirements to avoid defamation. There is no page linked to another trademarked website illegally. Moreover, the website does not use any cookies that illegally check users’ activity on the site since the site is currently hosted locally. However, if it were to go live, cookies would be carefully set, and permission to allow them asked before use.

## Security Consideration

The website does not require any authentication since presently available information is available publicly to all users. Therefore, the website has no authorization and authentication checks. The various requests used in the website are HTTP; however, when the website is live, they will be switched to HTTPS to ensure more secure encryption during data transmission. Additionally, the form fields contain validation to ensure there is no malicious code injection. The forms are also equipped with means to prevent cross-site request forgery.

# Version Control

The version control tool used to develop the project was GitHub. I made various commits and pull requests while working on the project. I used two branches, one being the main branch and the working branch which I used to pull requests and merge changes to the main branch. Below is a screenshot of a push to GitHub using git.