1. Declaration

I, [Jiayuan Chen], declare that this assignment, titled [Assignment 2], is my own original work and has not been copied from any other source except where explicitly acknowledged. I have not engaged in plagiarism, collusion, or any other form of academic misconduct in the preparation and submission of this assignment. All sources of information and data used in this assignment have been properly cited and referenced in accordance with the prescribed guidelines. I have not used unauthorized assistance in the preparation of this assignment and have not allowed any other student to copy my work. I am aware that any breach of academic integrity may result in disciplinary action as per the policies of Monash University, which may include failing this assignment or the course, and further academic penalties.

Signature: _____Jiayuan Chen_____ Date: _____2024/09/01_____

2. Github Check

Enter your Github details here.

Github Username *Enter your username here*	<Jay01212>
A2 Shared? *Have you started and shared your assignment repository with your tutor yet?*	<https://github.com/Jay01212/Assignment>

3. Self-Evaluation

Rate your performance for each criteria. Put a ✅ (tick) in the box where you think your work belongs.

Criteria	Exceeds Expectations	Meets Expectations	Needs Improvement	Fail to meet expectations
BR (A.1): Development Stack and Coding	✅			
BR (A.2): Responsiveness	✅			
BR (B.1): Validations	✅			
BR (B.2): Dynamic Data & Data Structure	✅			

BR (C.1): Authentication	✅			
BR (C.2): Role-based authentication		✅		
BR (C.3): Rating	✅			
BR (C.4): Security		✅		

4. Screen Recording of BRs

Create a 3 minute video showing your basic web application in action! Upload this video to your Google Drive and put the link here (ensuring that you have updated the access list so its not private).

<https://drive.google.com/file/d/1iTfHbu8306t1IDFAD-_zbtM-J9e83PHP/view?usp=sharing>
(make sure in the access settings you have shared it with your tutor OR set the permissions so that anyone with Monash account can video the video)

5. Reflections: Implementation of C.4 Security

If you have implemented BR C.4, in less than 200 words describe the approach that you have taken to implementing Security in your application. What security flaws were you trying to prevent and what security measures have you implemented to fix those flaws? How do you know that these measures will help prevent those issues from happening? Optionally you can cite external sources to provide evidence for your claim.

In my application, I have implemented the following security measures:

Preventing XSS Attacks: In `LoginView.vue`, I perform strict validation on user inputs. All user inputs, such as `userId` and `password`, are sanitised and checked before submission to prevent malicious script injection.

Preventing Sensitive Data Leakage: I ensure that sensitive information, such as user passwords, is handled only on the backend and not stored on the client side. In the frontend code (e.g., `LoginPage.vue`), sensitive data such as passwords are sent directly to the backend for processing, and are not stored or processed locally.

Password Security: In `LoginView.vue`, I require the password input field (`password`) to use the `required` attribute to ensure that user passwords meet basic security requirements. Additionally, all password storage and validation logic is handled on the backend, ensuring that passwords are not stored in plaintext on the client side.

Data Validation: In the `handleSubmit` method, I validate user inputs such as `userId` and `password` to ensure they conform to the expected format. Additionally, the backend further verifies the validity and security of this data.

6. Reflections: Challenges

What has been the most challenging part of this assignment for you? How has this stretched you as a programmer?

In this assignment, implementing role-based authentication has been a significant challenge. Firstly, I needed to ensure that users with different roles could access their respective pages, such as administrators being able to access advanced settings pages while regular users could only access basic features. This required meticulous handling of access permissions in the frontend routing configuration, ensuring that unauthorised users could not bypass validation to access sensitive content.

Additionally, managing role-based permissions also involved correctly identifying and storing user role information at login, and dynamically adjusting the user interface and functionality based on this information. This not only required a deep understanding of Vue.js routing guards but also necessitated careful handling of interactions with backend user data to ensure security and data consistency.

7. Declaration: Additional Help

Any tools that you used (including Gen AI or existing code reuse) must be declared here.

Note: GenAI is not allowed for coding purposes in any assignment,

However, you may use GenAI for brainstorming and problem solving. You need to declare all such uses here. One row per help used.

Name	Description
ChatGPT for Creating text content	*I used GPT to help me generate some fake news and story contents.*

Image Reference:
https://pixabay.com/illustrations/abstract-background-wallpaper-1779589/
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