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1. Declaration

I, Lau Yiu HO, declare that this assignment, titled A2: Basic Web App, 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: ___Lau You HO_____ Date: _____01-09-2024_____

2. Github Check

Enter your Github details here.

Github Username *Enter your username here*	suey147
A2 Shared? *Have you started and shared your assignment repository with your tutor yet?*	*https://github.com/suey147/FIT5032-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/1Z20IO4kG_Bmu7WSHVPBhwQv6ho37mt5-/view?usp=sharing

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 implementing BR C.4, I prioritized input validation and sanitization to mitigate common security vulnerabilities such as Cross-Site Scripting (XSS) and injection attacks.

Input is validated both on the client side for immediate feedback and on the server side to enforce security. Client-side validation enhances user experience, while server-side validation prevents maliciously altered requests. For example, fields like email addresses, usernames, or article content are checked for format validity using JavaScript before submission. However, this is not a security measure on its own, as client-side validation can be bypassed by disabling JavaScript or manipulating the request. All inputs are re-validated after submission. The server uses strict validation rules to ensure the integrity of the data. For example, inputs are checked for length, format, and content type. This protects the backend from malicious data injection, which can occur if a user manipulates input data after bypassing client-side validation.

When adding new articles to the database, we need to be careful about cross-site scripting. XSS attacks occur when malicious scripts are injected into web pages viewed by other users. DOMPurify is a trusted tool in preventing Cross-Site Scripting (XSS) attacks. It ensures that these scripts are removed or neutralized before the browser renders the content, preventing attackers from executing scripts that could steal sensitive information, manipulate the DOM, or redirect users to phishing websites.

6. Reflections: Challenges

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

The most challenging thing in this assignment has been time management due to my sickness, which left me with limited time to explore the technical parts in depth. It made it harder to maintain a balance between understanding the business requirements and finding and implementing a technical solution.

Also, it has been a challenge for me to understand all of the business requirements. Whereas it was understandable that the requirements needed to be strictly followed, the way of securely implementing Vue.js dynamic data handling and authentication of users was beyond my knowledge. The business requirements were pretty simple, but once dynamic data rendering and secure user authentication come in, things might get a bit more complicated. That is to say, I struggled most in trying to implement a balance between the use of Vue.js to update the front end and ensure authentications securely. I also implement a server using node js to handle server-side functionality such as for storing data in Firebase. However, after researching, it was better to have serverless and implement in vue so I wasted time on implementing server.

The project really stretched me as a programmer because I had to find some way to handle real-time data and make authentication for the users secure with vue. Therefore, it is really important to decide and design the stack and structure before the actual implementations.

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	I used ChatGPT to brainstorm the logo and colour palate that is suitable for the website.
LogoAI.com	I used LogoAI to create the logo for the website.