Assignment 1- Client-side design and development: Part A and Part D

Maryam Akhtar

Student ID: 239528371

Part A: Technical Design Documentation:

This document contains:

1. **Scope and User Description:**

This is a sample web-based system for Wear View Academy to allow its' staff to report IT issues to the IT department.

The main user for this part of the system will be the teacher and they can carry out a range of different functions while using the system. The functions that can be carried out have bene determined based on the scenario provided for this task. This document will suggest a system design that is easily accessible, effective, user-friendly, and efficient.

Actor	Functions
Teacher	Access portal Create ticket. Submit ticket

Table 1.0 User functions summary

2. **System Requirements**

To fully visualize the layout, design and features required to interact with this system, requirements must be attributed to understand the capabilities. The requirements listed will initiate technical design, development, and implementation for the developers.

A system has functional and non-functional requirements. Functional requirements are focused features set by the scope and the non-functional requirements how the system will do what it is supposed to do.

2.1 Functional Requirements

2.1.1 Teacher (customer)

2.1.1.1 As a teacher, create and submit ticket types.

2.2 Non-functional Requirements

2.2.1 Security

The teacher who submits the ticket has an account to access the web-based system and be authorized users with username and password to access the system.

2.2.2 Performance

Tickets created should follow a workflow and update with status changes for users to track in real-time.

2.2.3 Availability

This system should be responsive for users who use a desktop and mobile web-based system. It should work on a range of web browsers (Chrome, Internet Explorer & Mozilla Firefox).

2.2.4 User friendly

User interface where the teacher can create tickets and submit tickets seamlessly.

3. **<u>Use case: As a teacher, create and submit ticket types.</u>**

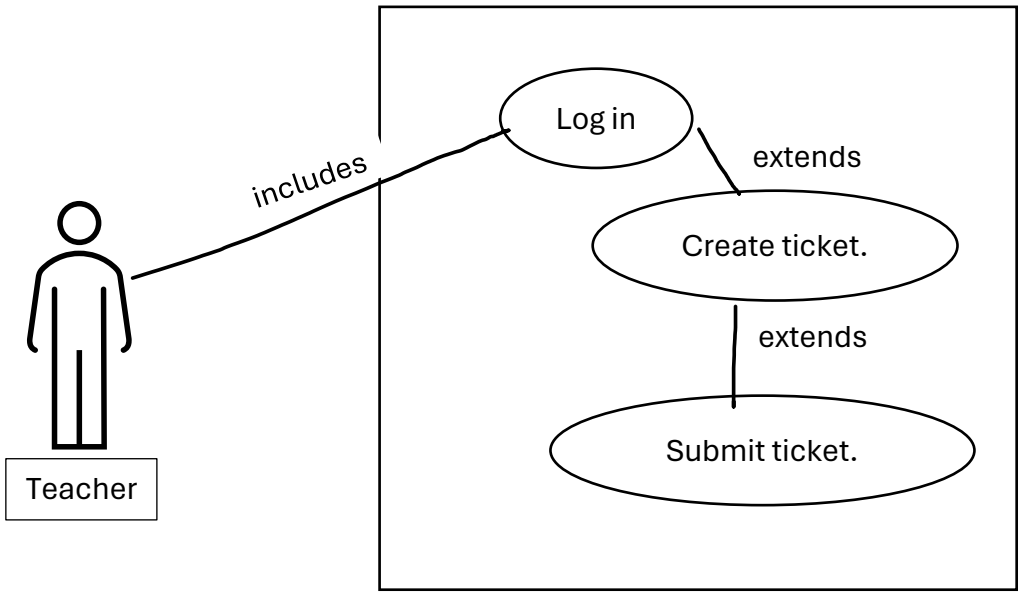


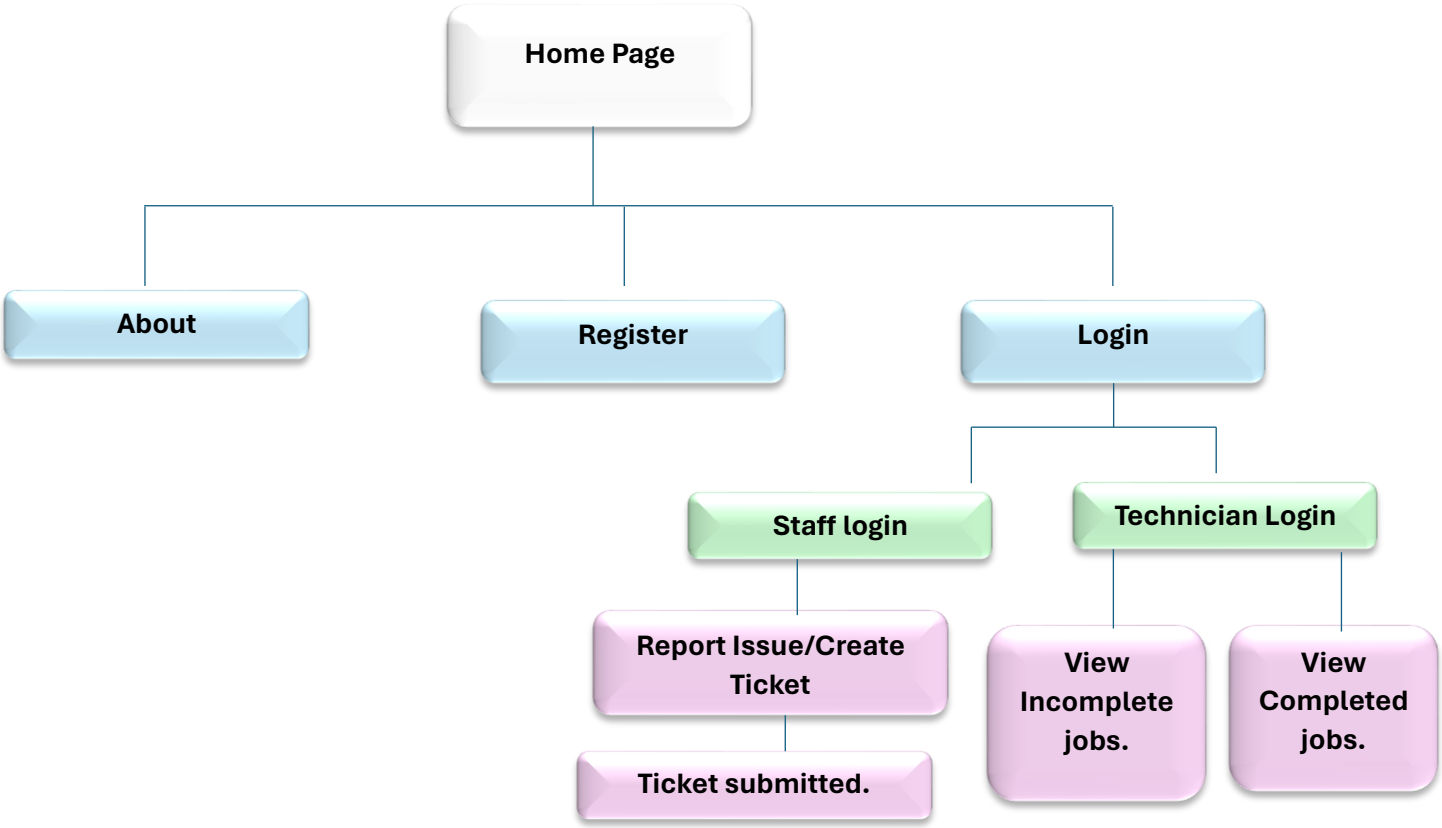
Figure 1.1 use-case for teacher

The actor using the web-based system is the teacher, the functions include logging in followed by extending to create and submit tickets as shown in Figure 1.1.

4. Activity diagram – Website hierarchy diagram

4.1 Website hierarchy diagram –

Website structure:



Navigation flow:

Users start at the **Home page.** They proceed to Login based on their role (Staff or Technician).

After logging in, they access role-specific pages (e.g., Report Issue Form/Create ticket for Staff, View complete or incomplete Jobs for Technicians). Each page provides specific actions related to reporting issues (Staff) or managing tasks (Technicians). The structure ensures clear paths for users to perform their respective tasks efficiently within the IT support system.

4.2 Website hierarchy diagram – As a teacher, create and submit ticket types.

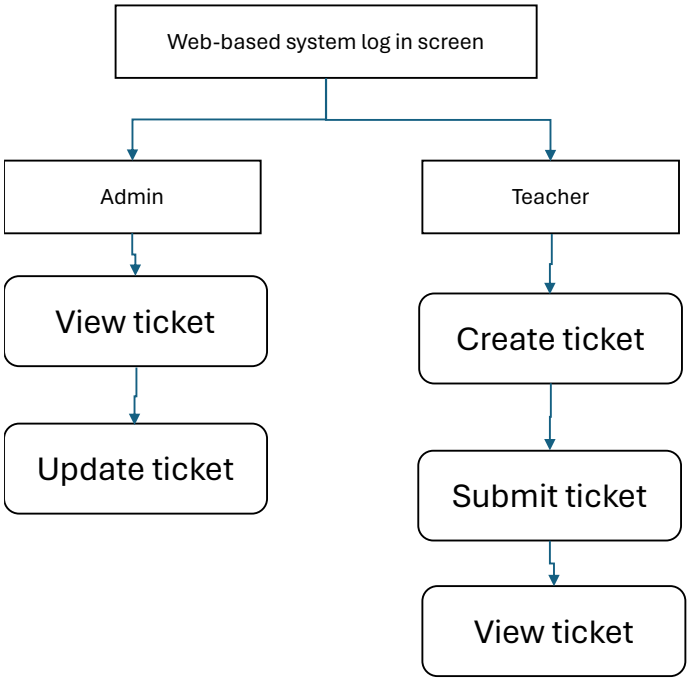
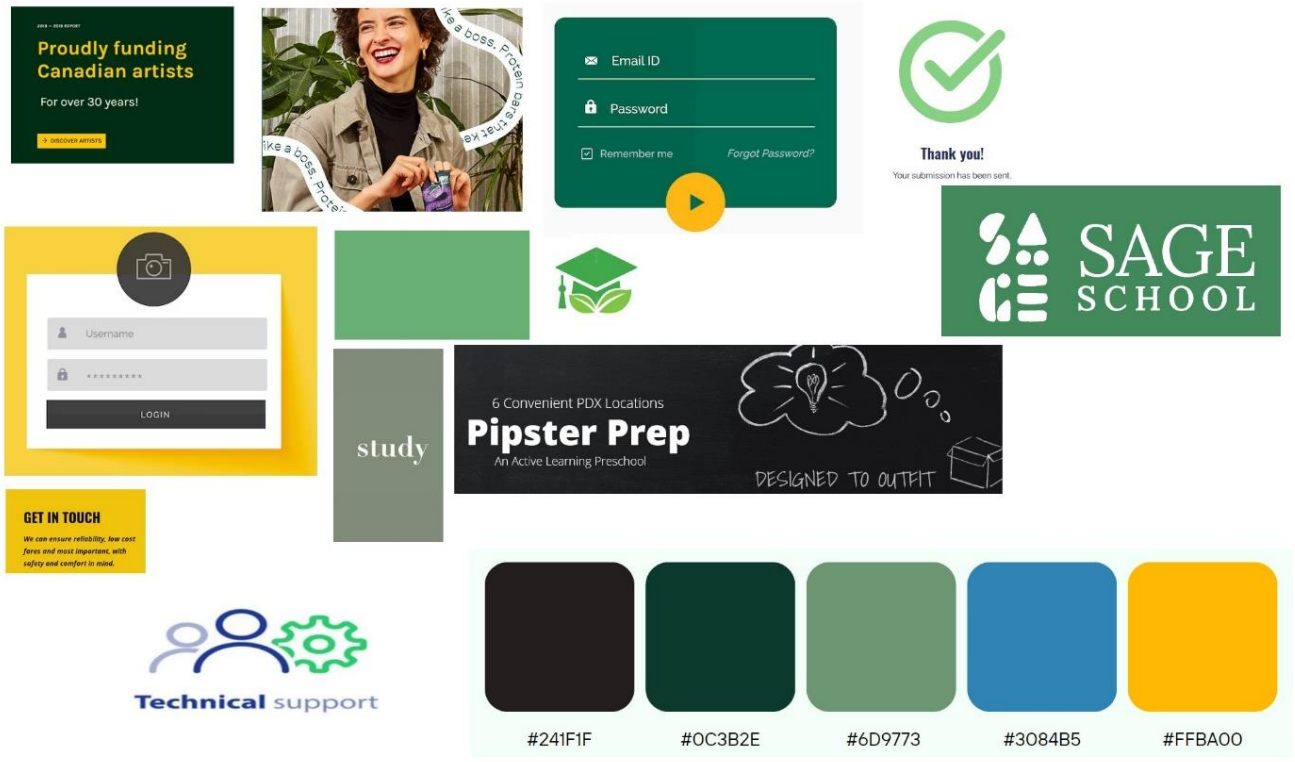


Figure 1.2: Hierarchy Diagram for Admin & Teacher.

5. Prototype – Mood board diagram

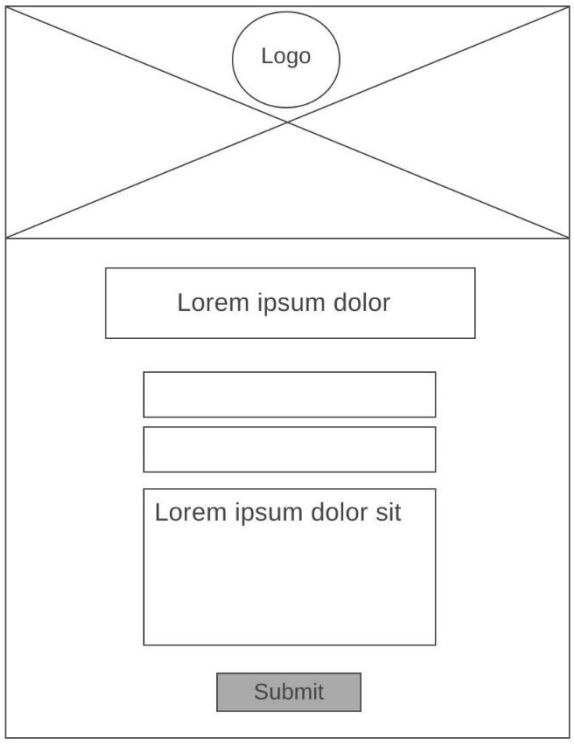
5.1 Mood board diagram for web-based system for Wear View Academy.



6. Prototype – Low-fidelity & high-fidelity wireframe

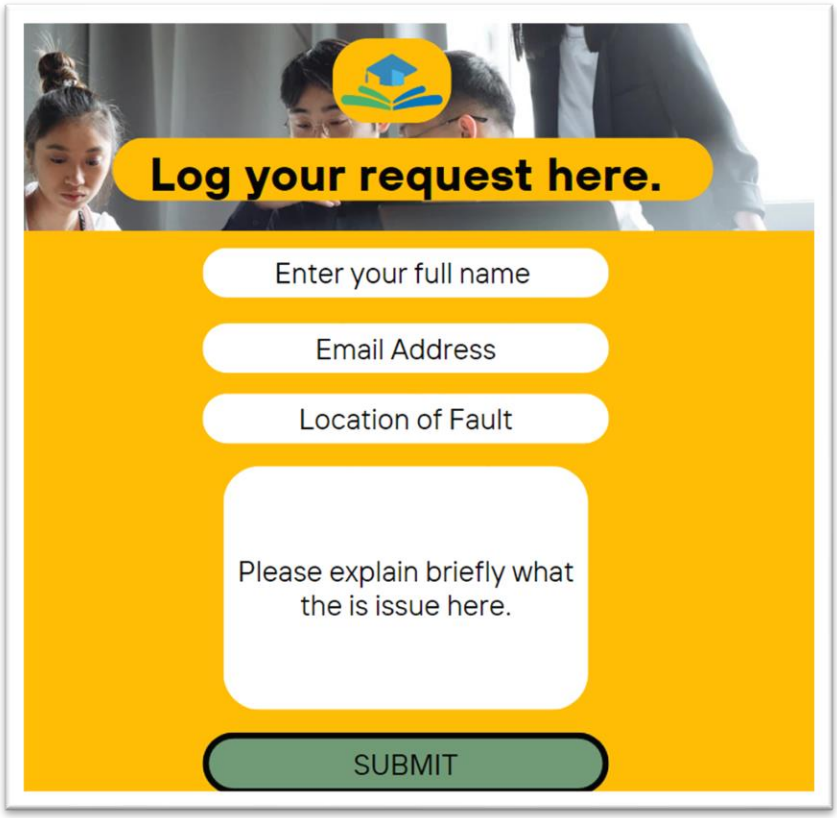
6.1 As a teacher, create and submit ticket types.

Low Fidelity Wireframe:



6.2 As a teacher, create and submit ticket types.

High fidelity wireframe:



7. Evaluation:

The process of designing this prototype of a web-based IT system for Wear View Academy required extensive consideration of usability, the functionality and visual appearance personalised to an educational setting (Tubin, D. 2007). The design chosen is a user-centred design which prioritises usability and accessibility. This is important for a diverse user base including teachers and technicians. There are clear navigation paths for ease of use. For example, the website structure starts with a simple login process that leads the user to the specific page - the technician to the managing tasks page and staff to the reporting issues page.

The chosen colour palette incorporates a calm and professional tone which is suitable for a school. Shades of green and yellow were chosen to promote a sense of calmness and reliability, aligning with the school's environment. This choice of colour also enhances readability and contributes to a cohesive visual identity. Moreover, the font used for the heading and body-text is used to ensure clarity and maintains a modern look. Having clear and consistent typography allows the system to have an overall professional look.

The low fidelity wireframe focuses on the essential elements and layout without distracting details. It is an outline of the basic structure and flow of actions which ensures a straightforward user journey. This approach helps in validating the overall functionality early in the design process.

In contrast, the high-fidelity wireframe polishes the user interface with detailed UI elements and interactions. It integrates the chosen colour palette and typography to create a visually appealing interface. This design enhances user engagement and usability by providing clear visual cues and feedback, such as validation messages and confirmation prompts.

The hierarchical diagram illustrates a clear structure with logical navigation paths. This organization ensures that users can easily access relevant sections based on their roles—staff reporting issues or technicians managing tasks. Clear labelling and a clear sequence of flow from login to task completion streamlines user interactions, reducing cognitive load and potential confusion.

Part D: Critical Evaluation

This IT request form is designed specifically for Wear View Academy. When designing a webpage for a school, it is essential to consider ease of use, accessibility for all users, and a clean, intuitive interface to accommodate varying levels of technical proficiency among staff (Tubin, D. 2007). The IT form prototype that has been designed effectively achieves its' main function which is allowing users to submit IT service requests through a well-structured form. This form incorporates the essential fields, such as name, email address, location, and a description to ensure the input request is comprehensive. The JavaScript validation increases usability by prompting the user to fill out all the required fields and validates the email format using regular expressions. Having this validation reduces errors in submission and improves the integrity of data before users submit the request (Gautam, R. 2024). However, although the client-side validation is strong for user feedback, including a server-sider validation would mean an additional layer of security and data consistency would be added to ensure that all request submissions also meet the backend requirements.

The webpage structure diagram includes a section for IT technicians to view and manage submitted tickets/requests. While this current prototype does not include this feature, the design of the website structure specifies how it should function, allowing the IT technician to view incomplete jobs, mark them as complete and manage the workload efficiently.

In terms of visuals, the webpage has a professional appearance with a logo, reinforcing the brand identity. The webpage has a clean, minimalistic design with a green colour for the header and submit button. The CSS styling such as the boxes, borders, and padding adds to having a polished interface that aligns with typical design standards for IT request forms. The layout chosen is clear with labels and well-sized input fields (with the description field being extendable), ensuring that the user has easy navigation. Despite this, improving visual cues such as the field icons, or having a progress indicator could further enhance and improve user engagement and guide the user through the form-filling process more effectively. In addition, completing an accessibility audit to ensure that the colour contrast is sufficient for users with visual impairments would further enhance inclusivity.

Adopting responsive design principles has enhanced user experience on the webpage and accommodates various devices and screen sizes seamlessly. Having CSS media queries adjust the layout and styling appropriately, enabling usability on desktops, tablets, and mobile devices. However, although the form is responsive, having more interactive elements such as auto-suggestions for location entries could enrich user experience even more (Kaluvakuri, S. and Vadiyala, V. 2016). Providing visual feedback during the form submission, such as progress bars would reassure users of the submission process, especially for longer forms. Addressing these small aspects can contribute to a smoother and more engaging user experience.

In relation to scalability and maintenance, this webpage has a modular code structure that separates the HTML, CSS, and JavaScript files. Having this enables easier updates and the reuse of code, thus any future improvements that need to be made can be done so without disrupting the whole code base (Kaluvakuri, S. and Vadiyala, V. 2016). Another benefit of this is having an improved website performance because it allows browsers to cache the files separately, hence reducing the time for loading the webpage (Gautam, R. 2024). With

regards to future enhancements when looking forward, exploring front-end frameworks such as React for form validation can further streamline development and enhance performance. Ensuring the webpage has cross-browser compatibility by testing across different browsers and devices is important to maintain consistency in functionality and a good user experience. Being initiative-taking in addressing specific improvements and inconsistences reduces any issues related to compatibility and ensures user satisfaction is high throughout.

In conclusion, whilst the current implementation of the IT request form webpage does meet the functional requirements for functionality and design, there are still some significant opportunities for improvement. I would like to include an image behind the logo to make the design look better. Future development should focus on enhancing user feedback mechanisms, improving the accessibility features, integrating backend functionality for data handling, and having automated notifications, as well as refining the design element based on user feedback. By continuously refining and improving these aspects, the webpage can evolve into a more robust and user-centric tool, that effectively supports IT service management and ensures a positive and inclusive user experience.

References:

Tubin, D. (2007) *Designing a school website: Contents, Structure, and responsiveness.*, *Research Gate*. Available at: https://www.researchgate.net/publication/234763787_Designing_a_School_Website_Contents_Structure_and_Responsiveness (Accessed: 20 May 2024).

Gautam, R. (2024) *JavaScript validation: An overview of client-side validation*, *Learnsic*. Available at: https://learnsic.com/blog/javascript-validation-an-overview-of-client-side-validation (Accessed: 21 May 2024).

Kaluvakuri, S. and Vadiyala, V. (2016) *Harnessing the potential of CSS: An exhaustive reference for web styling*, *Research Gate*. Available at: https://www.researchgate.net/publication/376984494_Harnessing_the_Potential_of_CSS_An_Exhaustive_Reference_for_Web_Styling (Accessed: 22 May 2024).