SMART ETUITION INFORMATION
SOFTWARE REQUIREMENT SPECIFICATION (SRS)

Version 4.0

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GROUP: CS1104D

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Revision History

Date	Version	Description	Author
27 April, 2022	1.0	Started writing overall descriptions	Everyone
28 April, 2022	2.0	Design the chart and data flow diagram	Adib Asyraaf
28 April, 2022	2.1	Start writing external interface requirement and adjust few changes	Khairul Haziq
29 April, 2022	3.0	Designing interface and external interface	Harith Iqbal
30 April, 2022	4.0	Add more functional requirements information and made major changes	Syahril Rumizam

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1. Overall Description

1.1 Product Perspective

There are three user types, which are administrators, tutors, and students. For each of the user types, they have their own process or module that has been set up according to their own needs. The database used will be a MySQL database using XAMPP. All this information, including software and hardware, can be seen in Figure 1 below:

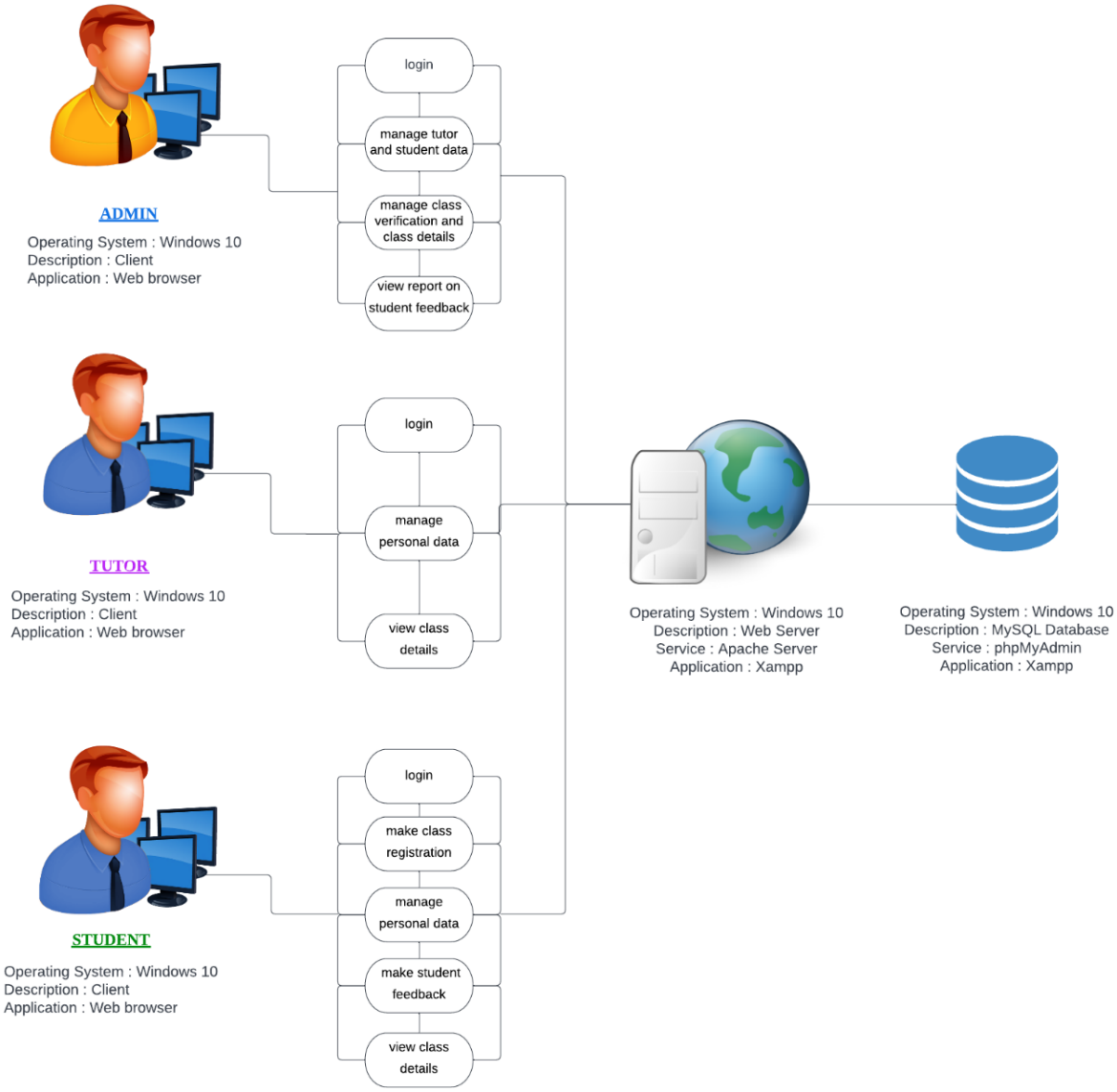

Figure 1: System Major Component

1.2 Product Functions

- A new user (student) needs to register first.
- Admins, tutors, and students need to login before continuing using the system.
- After logging in, they will be directed to the main page of the system.
- Tutors and students can manage their personal data.
- For students, they can register for classes they want, and they are also given a feature to send feedback to the admin.
- Admin will have to check and decide whether to verify or not every class there is in the system.
- Admin can manage all kinds of data in the system, such as, students' data, tutors' data, and classes' data.
- Admin can also look up a record of the feedback sent by students.

Data Flow Diagram

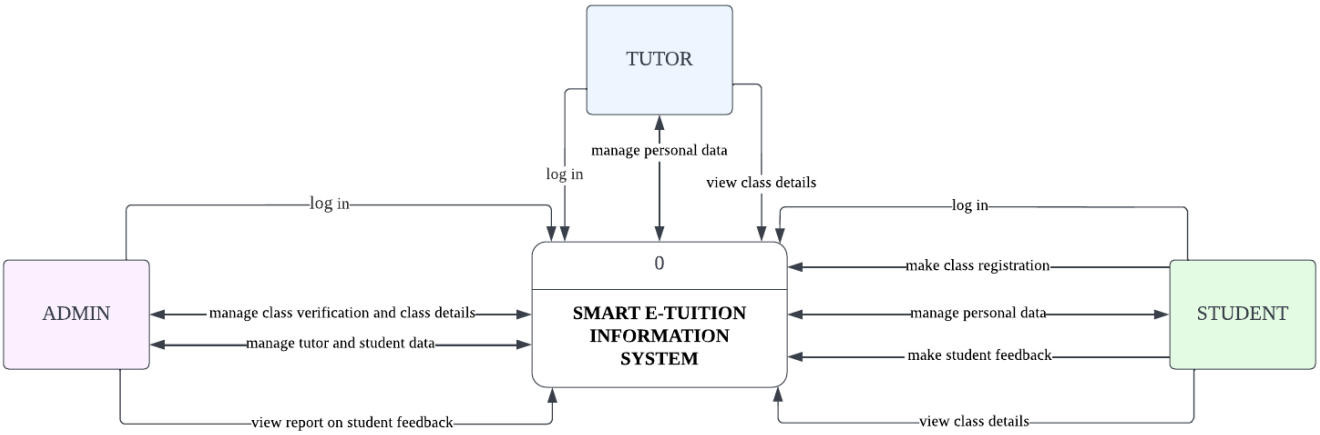

Figure 2: Smart E-Tuition Information System Context Diagram

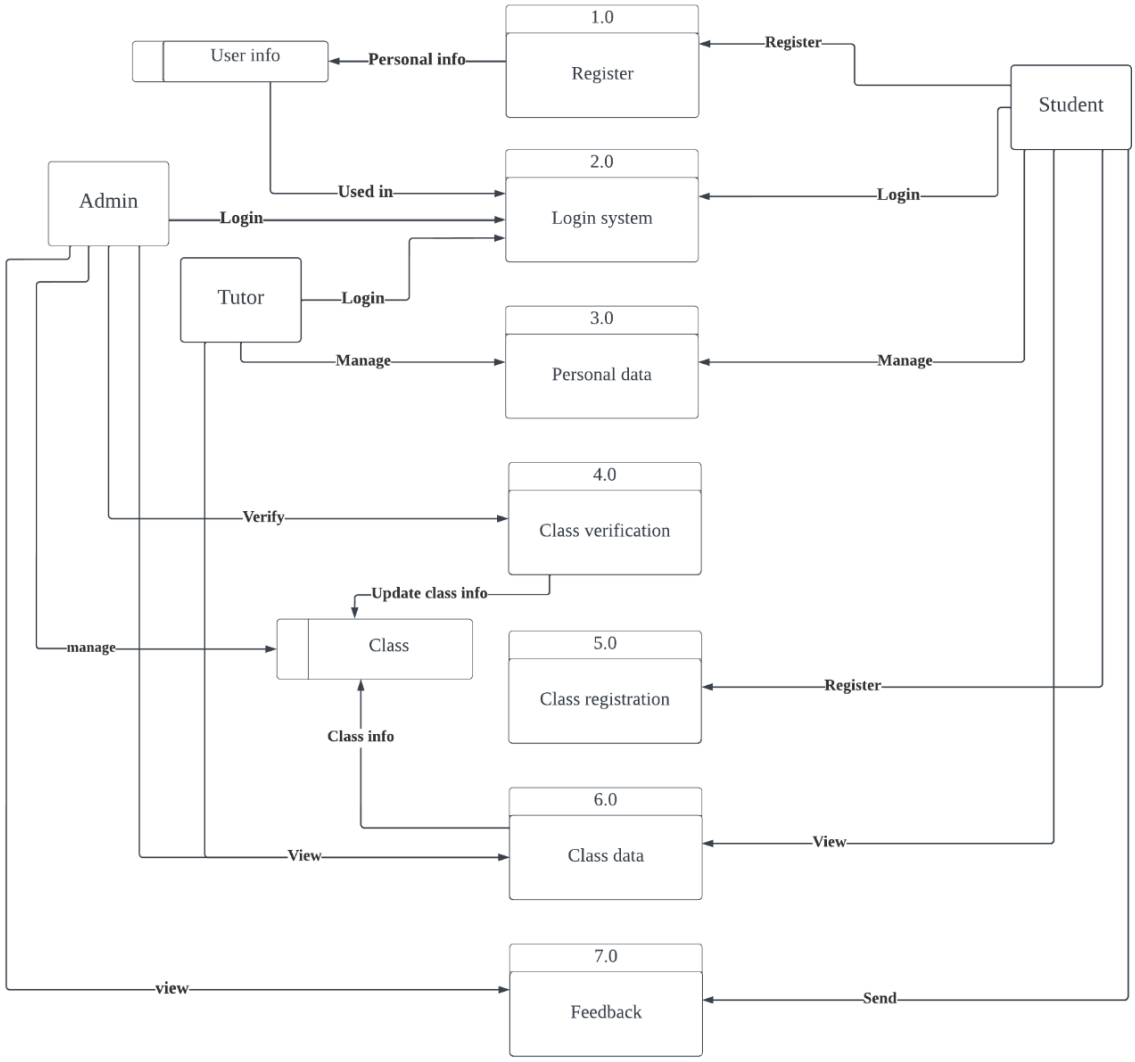

Figure 3: Smart E-Tuition Information System Diagram 0

1.3 User Characteristics

There are a total of three types of users, which are: administrator, tutor, and student. For each of the roles, we have specified their own characteristics in the system as shown below:

TYPE OF USER	DESCRIPTION
Administrator	Login into the system to manage tutor data, manage student data, manage class verification, manage class details, and view reports on student feedback and student class registration. It has the highest privilege level that can access everything.
Tutor	Login into the system to manage your personal data and view class details. Has a low privilege level.
Student	Login into the system to make class registration, view class details, manage personal data and give student feedback. Has a low privilege level.

1.4 Operating Environment

An operating environment is the place where users run application software or programs. Smart E-Tuition Information would be operating in the following environment:

ENVIRONMENT	DESCRIPTION
Device	This software product is compatible with all computers, including desktops and laptops. There is no official minimum for hardware requirements that are needed to operate the system, and users only need to have the required machines.
Operating System	At least one operating system that can access and use the system would include at least Windows Vista or newer, such as Windows 7, 10, or 11.
Application	Browser applications like Google Chrome, Opera, Microsoft Edge, or any browser that users have are required to access the system.
Connection	The system uses the Internet as the network for the system. Every student, tutor, and administrator requires internet access to access the system and can operate according to their own user functions.
Platform	The platform of Windows can be 32-bit or 64-bit. The product works together with XAMPP to run the database, and the system will use an HTTP server.

1.5 General Constraints

General constraints are issues that will limit the options available to the users. For the Smart E-Tuition system, below are the constraints that are needed to make sure the process runs smoothly:

- Every user can only access to their specified role type to login into the system by username and password to access the system.
- The class registration system is accessible only once per year per student.
- All student data information will be displayed in the student dashboard and made available for the student's convenience only after an administrator has verified the student's class registration.
- Tutors can only view their students' information and manage the details of their assigned class.

1.6 References

Wikipedia Contributors. (2022, February 27). *Computer keyboard*. Wikipedia; Wikimedia Foundation. https://en.wikipedia.org/wiki/Computer_keyboard

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2. External Interface Requirements

2.1 User Interfaces

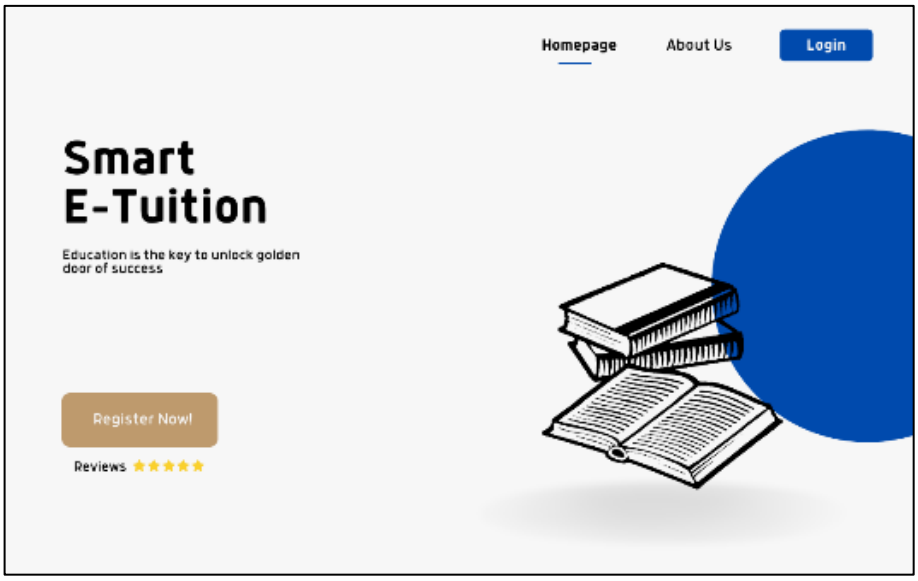

Figure 4: Homepage

This will be the main page as well as the home page for the website. Every user can visit the website and navigate it by clicking on the button provided. When the user clicks on the homepage, it will redirect to the homepage. When clicking on "About Us", the user can view who developed the system for this e-tuition.

When a user clicks on "Login", it will redirect to the login page. When a user clicks on "Register Now", any new user can register and start registering for classes. A simple and direct interface is used for easy navigation through the website. The pages would be in a blue-themed colour.

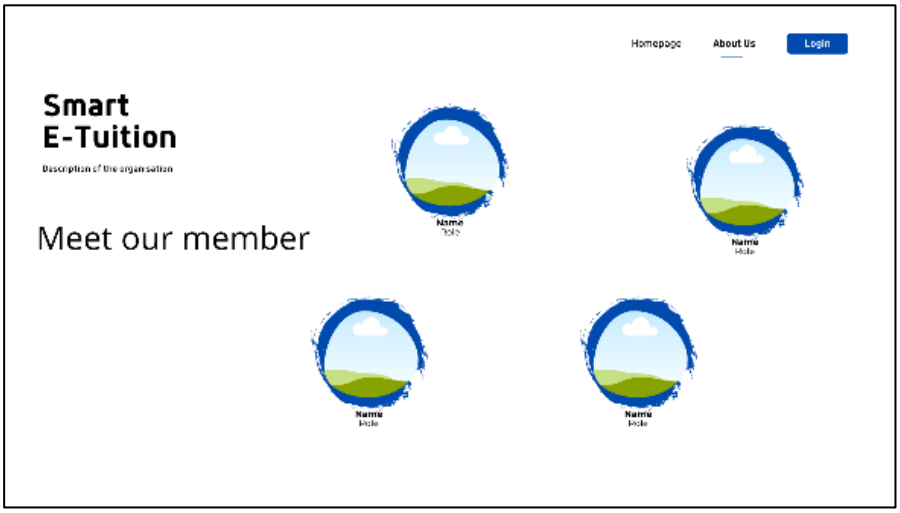

Figure 5: About Us Page

On this about us page, users can view the pictures of our team members as well as our role in developing the system.

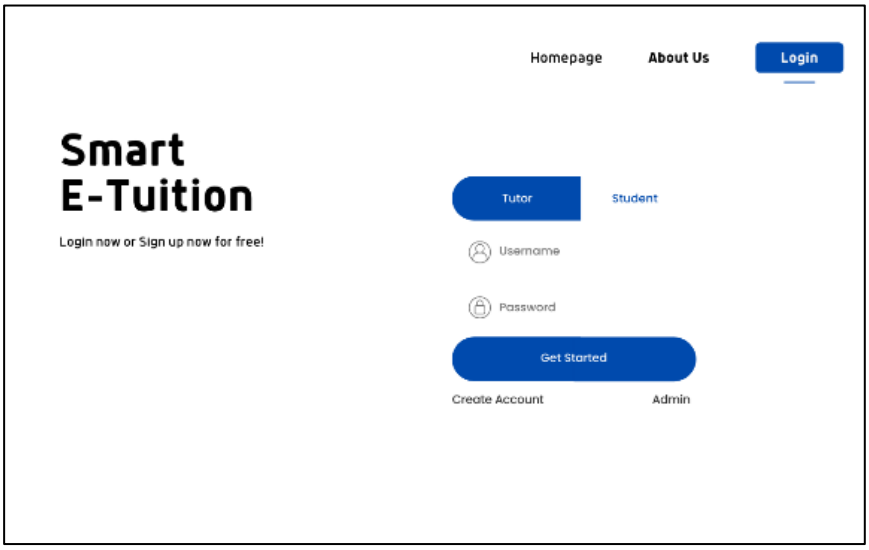

Figure 6: Login Page

On this login page, users can choose their role, which is tutor or student. Then, they can move forward with their username and password for security and press the "get started" button to get into the system. If the user is not yet registered, they can press the "Create Account" button so that they can create a new account and start to register. Admins can get access to their page by pressing the admin button.

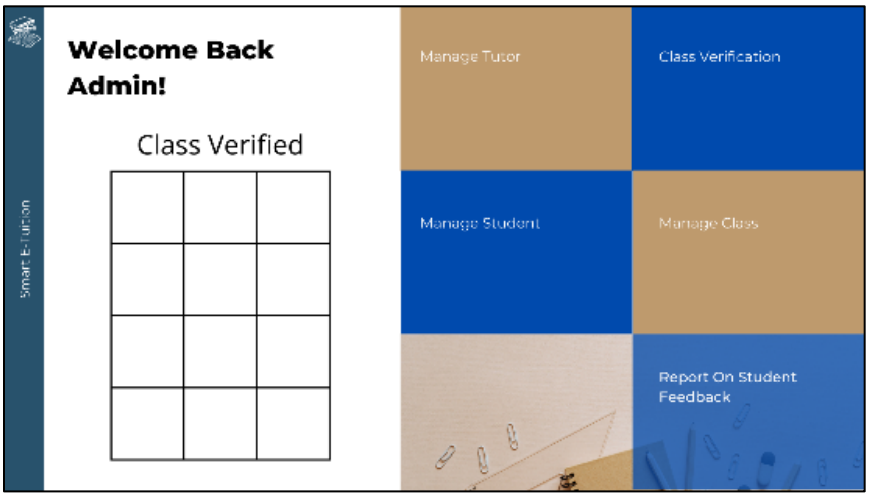

Figure 7: Admin Dashboard

The administrative dashboard have access to the majority of the system. On the left side of the dashboard, administrators can view the verified classes for quick access. Each section can be accessed via the menu on the right, which includes:

- login to the system
- manage tutor details
- manage student details
- manage class details
- manage class approval
- view report on student feedback

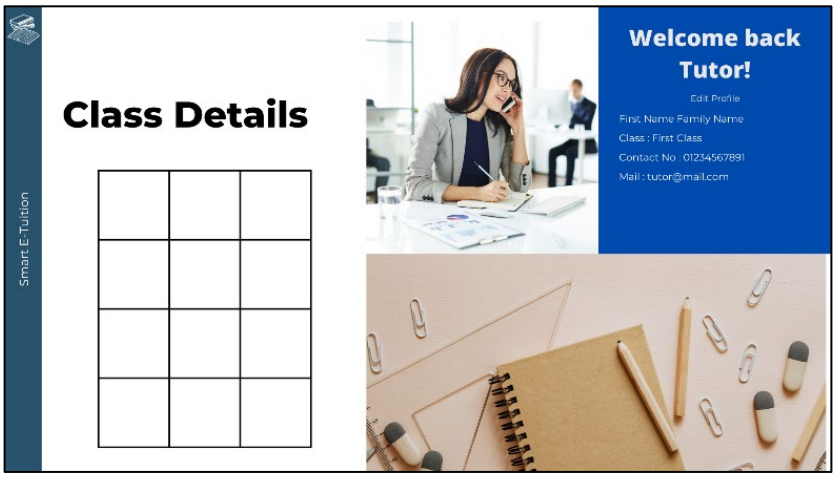

Figure 8: Tutor Dashboard

The dashboard of tutors are quite simplistic because their functionality is limited. They could:

- login to the system
- manage their personal info
- view class details.

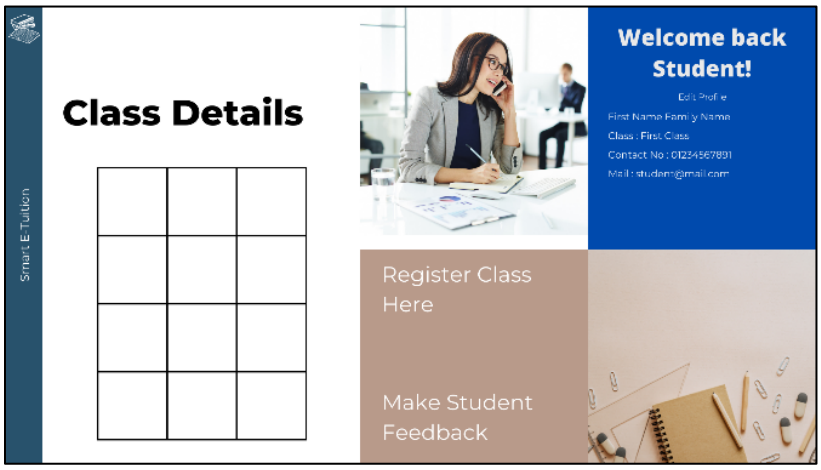

Figure 9: Student Dashboard

Students' dashboard have slightly more functionality than tutors' dashboard. They could:

- login to the system
- manage personal data
- view class details
- register class
- make student feedback

2.2 Hardware Interfaces

Name of Hardware	Description Of Hardware	Purpose Of Hardware
Mouse	A handheld device to point to a specific two-dimensional motion plane on a surface. Usually translates into a display such as a monitor.	To navigate and click buttons on the website for registering and other purposes.
Keyboard	A peripheral device which are modeled after a typewriter. Any key that are registered the same as device will key in the same input into the system.	To enter information such as student data, tutor data, or administrative data

2.3 Software Interfaces

For the user to be able to use the software, the administrator must have a dedicated device, which is a computer, to run database software, which is called XAMPP. XAMPP is an open-source, cross-platform web server solution stack that includes the Apache HTTP Server, MariaDB database, and script interpreters. The most recent and stable XAMPP version is 8.1.5, which was released on April 20, 2022.

By following the requirements that XAMPP needs, the computer operating system must be at least Windows Vista or newer, such as Windows 7, 10, or 11. The Windows platform could either be 32-bit or 64-bit. Moreover, browser software that serves as a user's window and access point to the World Wide Web is crucial to accessing the system. Users can use any browser software, such as Google Chrome and Opera.

2.4 Communications Interfaces

The system will require an Internet connection for the system to keep on synchronising the data from admin to tutors to students. This connection can either be through Wi-Fi 5 and above, Ethernet Local Area Network (LAN) cable, or tethering hotspot. The browsers that are supported by the system will be Google Chrome, Microsoft Edge, and any other web browsers. The purpose of the Internet is to ensure the user can save their information without worrying about their data being stolen. Users' email also needs to be used to send notices and information to the users if needed.

3. Functional Requirements

3.1 System Functional Requirements

USERS/ STAKEHOLDERS	FUNCTION	DESCRIPTION
User	Free sign up for user	A user is able to sign up and create a user account without an intermediary person to validate the registration process.
	Class registration	Users can register for as many classes as they want.
	Feedback process	Users can give feedback on how satisfied or unsatisfied they are with the Smart E-Tuition Information system.
User, Tutor	Check classes' details	Users and tutors can view the details involved with their respective classes.
	Personal data management	Users and tutors can edit, update, and delete their personal data.
Admin	Managements	Admin can manage various data. For example, tutor's data, student's data, class data, and managing class verification.
	View record	Admin can view users' feedback and their classes' registration.
User, Admin, Tutor	Login process	After completing the registration process, users are able to log in to the information system.

4. Other Nonfunctional Requirements

4.1 Performance Requirements

- Every class registration will not take five minutes to be done.
- Feedback may not be responded to, but it will be kept on file for the administrator to act on based on how positive or negative the feedback is.
- The system shall be capable of supporting at least 200 or more users when implemented in a suitable production environment.

4.2 Safety and Security Requirements

- Prepared statements are being used in every SQL query in the code to prevent SQL injection.
- Users must use a strong and complex password and may change their password if needed.
- Users should not insert false or fake information into the system.
- Sensitive information will not be required in registration to avoid being leaked.

Appendix