Criterion A

Defining the problem

My client is a house dean within my school, His job is to organise and manage students results and actions within the school. The students he manages goes from year 7 to year 12 all within his house. Currently The client is inputting all results manually into an excel sheet and created and organised the table by himself (Client Consultation, 2022). Accessing the data requires the client to wait for the student database to be updated and then moving information, he is also unable to access exact student growth or whole year level growth easily (Client Consultation, 2022). Each year the new students enter the curriculum and Year 12s graduate and leave meaning data is constantly changing and the client voiced his frustrations in seeing a student's growth and whole house statistics. I realised this would work for my IA so I offered to build a website that would manage all student data. After I pushed the idea to my advisor and got permission to continue, I talked to my house dean who accepted my proposition and we scheduled to discuss further and in more detail.

Rationale for solution

We decided that the client only has access to his office laptop setup for this application and the solution I developed will be:

A student grade management website would allow a client to manage student grades, view course information, and assign permission using MySQL, JavaScript and PHP promptly named "Newt-Sec".

The website would allow clients to log in, and view student information. The client will be able to update a MySQL database as he specifically asked to be able to "update a MySQL database by interconnecting an Excel spreadsheet to the database "(Client Consultation, 2022) by interconnecting the excel spreadsheet to the database and then the clients would be able to view and manipulate grades, view course information, and databases. Additionally, the website would provide tools for administrators to manage student information, create user accounts and make notes on students. Finally, as the client explicitly asked ". I would like to have reports that provide an overview of student performance"(Client Consultation, 2022) the website would provide reports and analytics for clients to analyse student performance.

Justification of language

Justification for Programming Languages Used:

- PHP: PHP was chosen as the primary programming language for the client's product due to its suitability for web development and integration with MySQL database. It is a widely-used language for server-side scripting, providing the necessary functionalities to interact with the database, handle form submissions, and generate dynamic web content. PHP's extensive documentation and community support make it a reliable choice for web development projects.

- JavaScript: JavaScript was used extensively for client-side scripting to enhance the interactivity and responsiveness of the web application. It allows for dynamic content manipulation, form validation, and AJAX requests for seamless data retrieval and updating without page reloads.

- HTML/CSS: HTML and CSS were used to structure and style the web pages, respectively. HTML provides the backbone of the web application, defining the page structure and content. CSS is used to apply visual styling, layout, and responsiveness to ensure a consistent and appealing user interface.

- SQL: SQL (Structured Query Language) was utilized to interact with the MySQL database, handling data retrieval, insertion, deletion, and modification. SQL is a standardized language for managing relational databases, making it a suitable choice for storing and retrieving student data efficiently. The ability to perform complex queries and join tables enables the system to generate meaningful insights and reports based on the stored data.

Success criteria

1. Client can access the website and connect to MySQL database

2. Client can view the MySQL table as it is displayed on a html file and changes are shown when data is added.

3. Client can import excel file and add to MySQL database

4. Client does not have double entry data when adding new data

5. Clients' data is secure and encrypted when web files are launched

6. Client can search for student through either ID or name as some students have the same names

7. Client is able to create and add,create,delete and save notes on specific students and is then able to leave and re-acess the saved information.

8. Client can access whole house statistics and data and be shown in a chosen and concise manor based on client's search

9. Client can search for specific student and see all grades and stored data

10. Accurate data display The data displayed on the webpages accurately reflects the data stored in the MySQL database and or excel spreadsheet.