**A picture containing text

Description automatically generatedFinal Year Project Allocation System**

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GitHub Repository:

<https://github.com/mhjaved123/EnterprisePro>

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# **Functions**

1. Log-in system (that redirects based on user ID)
2. Log out
3. Student specific view
4. Supervisor specific view
5. Module coordinator specific view
6. Module coordinator privileges (add, update, delete students/supervisors/projects directly on page)

# **Use Cases**

1. **ACTORS**
2. Students
3. Staff member (module coordinator)
4. Staff member (Project Supervisor)
5. **Student Actions**
6. Project selection
7. View dissertation projects
8. **Project Supervisor**
9. Add project
10. Modify projects
11. Supervise and provide dissertation projects
12. View students allocated to courses.

**Module coordinator**

1. Add new student
2. Update student details
3. Add new supervisors
4. Update supervisors’ details
5. Automatic allocation of projects

# **DESCRIPTION OF USE CASES**

**Student actions**

Student’s page will be very straightforward. They will be able to login and view the dissertations available to them and select the projects they would like to work on.

**Project selection:** each student will have a list of projects available to them which they are able to view. They can see a description of the project and some of the requirements involved. After a look over the different projects, they will be allowed to choose the one which they wish to attempt.

**View dissertation project:** this will be very similar to the project selection where each student is given a list of dissertations to choose from. There will be a description and requirements for each dissertation and students will be able to select the one that they would like.

**Project supervisor**

The project supervisor will also have a login which they will need to enter to access their page. They can access more features as they need to add and view data which students cannot have access to. For example, student and project details.

**Add projects:** the different projects that the students will be able to view and choose need to be added. The project supervisor will have the list of the project that need to be inserted. Therefore, they can inset the project into the correct field of the software.

**Modify projects:** once the projects have been added, changed can be made if needed. For example, if the maximum number of students have chosen a specific project, the supervisor can lock the project so no other student can choose it. Also, if additional information needs to be added or any other changed are needed, the supervisor can modify the projects.

**Supervise and provide dissertation projects:** once students have selected which project they would like, it is up to the supervisor to hand out the projects. They will also be able to respond if the students have any questions or queries regarding the projects.

**View students allocated to courses:** the students that have chosen and been allocated a project will have that information stored in their account of the software. The project will be able to view each student to see which project they have been allocated but can also view projects to see all students on that certain project.

**Module coordinator**

For the module coordinator, the process to access the software is the same, they need a login. Once their login has been entered, they can access the different features that are available to them. It is very similar to the project supervisor in terms of modifying projects however they also have access to students and supervisors’ details.

**Add new student:** the students that will be using the software to choose their projects will need to be added. The module coordinator will have all the details for each of the students. Therefore, they can add, change and remove students into the field of the software applicable for inserting students.

**Update student details:** once the students and their details have been added, they can still be changed or removed if necessary. For example, if a student has decided to take a gap year or some details have changed and need to be modified, the module coordinator is able to make these changes by accessing the update feature on the software.

**Add new supervisors’ details:** similar to adding the students, the module coordinator will need to add all the project supervisors for each project. There is a slight difference as the supervisor will only need to be added to the projects that they are assigned to.

**Update supervisors’ details:** once thesupervisors have been added, their details can be modified if needed to. For example, if their contact information has changed, the module coordinator will need to update their details so that the right information is provided.

**Automatic allocation of projects:** once students have selected which projects they would like, the software will automatically allocate the project to the student based on what they have chosen. Majority of the outcome will what the student has chosen, however due to certain circumstances, such as the maximum number of students has been allocated to one project, projects may be different to what the student has chosen.

### **Class Diagram**

Diagram

Description automatically generated

# **Uml Diagram**

**Diagram

Description automatically generated**

# 

# **Description of Data and Interfaces Design In Correlation to Functions**

## Summary of available features and functions in our project:

Login System

Logout System

Login Session maintained over all pages

Login redirects based on user type (if student credentials inserted, user is taken to student page, and so on)

Student specific page

Supervisor specific page

Module coordinator specific page

Students can view their own individual details and allocated project

Students able to change their allocated project

Supervisors able to view their own individual details

Supervisors able to view their allocated students for the year

Module coordinator able to view and add/update/delete student records

Module coordinator able to view and add/update/delete supervisor records

Module coordinator able to view and add/update/delete project records

When a new student/supervisor is added, a new user account is automatically made for them

When a student/supervisor is deleted, their user account will automatically be deleted

**In-depth guide to how our project works:**

**Login Page:** The login page is the very first page the user will see when attempting to access the website. The design is very minimalistic and smooth and features the project title, our group name and a simple, easy to use login form. To ensure accessibility, the colour of the ‘login’ button changes when hovered over

The user is asked to provide their unique userID, username and password. The userID is used to create a login session, so that the user can only see their own details (name, project, etc.) and will not be able to see anyone else’s details. This function was designed to keep users’ information private and secure. When the correct information has been provided and the login button is clicked, the user is redirected to their page based on their user type (i.e. students will be redirected to students page, supervisors will be redirected to supervisors page).

If the details entered are incorrect, the user will not be allowed access and the page will refresh. All fields are required and if left empty, the page will not allow access and an alert will pop up.

**Student page:** Students can view two pages: the student ‘Home’ page and the ‘Choose Project’ page. The design of these pages features the project name, our group name, an interactive navigation bar that, to provide accessibility, changes colours of the buttons when hovered over and interactive database tables.

Students are presented with the ‘Home’ page at first, with a greeting welcoming the user. On the ‘Home’ page, the student can view their own personal details, as well as their allocated project and supervisor. To keep information private, the student is not able to view other user’s details or update and delete them.

By clicking on the ‘Choose Project’ button on the navigation bar, the student is taken to the ‘Choose Project’ page where they will be able to see a list of all available projects. After viewing all the projects, the student can select a project from the list and update their own by clicking the ‘Update’ button. The page refreshes and a confirmation message pops up on screen, showing that the change was made.

When the student is finished, they can click on the ‘Logout’ button in the navigation bar to safely log out.

**Supervisor Page:** Supervisors are also able to access two pages: the supervisor ‘Home’ page and the ‘View Allocated Students’ page. The design of these pages features the project name, our group name, an interactive navigation bar that, to provide accessibility, changes colours of the buttons when hovered over and interactive database tables.

Supervisors are presented with the ‘Home’ page at first, with a greeting welcoming the user. On the ‘Home’ page, the supervisor can view their own personal details, as well as the project they manage. To keep information private, the supervisor is not able to view other user’s details or update and delete them.

By clicking on the ‘View Allocated Students’ button on the navigation bar, the supervisor is taken to the ‘View Allocated Students’ page where they will be able to see a list of all of the students that they manage. From the list they can see the student’s studentID, first name, last name and their allocated project.

When the supervisor is finished, they can click on the ‘Logout’ button in the navigation bar to safely log out.

**Module Coordinator Page:** Module Coordinators are able to access three pages: the ‘Students’ page, the ‘Supervisors’ page and the ‘Projects’ page. The design of these pages features the project name, our group name, an interactive navigation bar that, to provide accessibility, changes colours of the buttons when hovered over, interactive database tables and forms to add or update information.

Module coordinators are first presented with the ‘Students’ page, with a greeting welcoming the user. On this page, they are able to view every student’s detail (studentID, name, allocated project, supervisor). The module coordinator can add a new student by completing the form at the top of the page. When the ‘Add Student’ button is clicked, the page refreshes, the changes are made, and a confirmation message is displayed on screen. When adding a new student, a user account is automatically created for that student.

Module coordinators can also update a student’s details by clicking the ‘Update button’ for that specific student in the database table. The form at the tops of the page changes from an ‘Add New Student’ form to ‘Update Student Information’. When the fields are entered and the ‘Update’ button is clicked, the page refreshes, the changes are made and a confirmation message is displayed on screen. Students can also be deleted by clicking the ‘Delete’ button for that specific student in the database table. The page refreshes, the changes are made and a confirmation message is displayed on screen. When deleting a student’s records, their user account is also automatically deleted.

The above applies also for supervisors in the ‘Supervisors’ page and projects in the ‘Projects’ page.

When the module coordinator is finished, they can click on the ‘Logout’ button in the navigation bar to safely log out.

All fields in the ‘Add Student’ and ‘Update Student Information’ are required, and if not filled, the page will not update. The ‘Add’, ‘Update’ and ‘Delete’ buttons change colour when hovered over

Coherent description of requirements, specifications and functions

**Requirements**

System Requirements

User Requirements

* System must be able to do automatic allocation of final year project to students

Project Requirements must include functional and non functional requirements for system

Functional Requirements

* User should be able to login to system using their unique username and password
* There must be 3 types of users for system( Students, Supervisors and Module Coordinators).
* System must allow students to view all projects and let them select one
* System should send the student name and student ID with their chosen project to module coordinator so they can upload them on the system
* System must allow supervisors to view all students allocated to them for the academic year
* System must allow supervisors and module coordinators to add new projects to system
* System must allow supervisors and module coordinators to edit the projects
* System must allow supervisors and module coordinators to delete any of their projects
* System must allow module coordinators to add new students to the database or update the details of existing students or to delete the record of students
* System must allow module coordinators to add new supervisors to the database or update the details of existing supervisors or to delete the record of supervisors
* System must allow module coordinator to allocate students to supervisors.

Non Functional Requirements:

* The system should be easy for all users to use and understand
* The system should be available at all times so that uses can use it at any time of day
* The system should be economical and cost effective to run over its lifetime and also should be open to any modifications required to it in the feature
* There should be a minimum limit of users allowed to perform several functions on the system at any one time without degrading the performance of the system
* The system should have less than 5 seconds of response time whenever a user performs a function
* System must handle data of all users appropriately including any confidential information
* The password of all users should be encrypted
* All bugs should be eliminated to have greater reliability

Software Requirements:

* HTML
* PHP
* CSS
* SQL

Constraints

* There is no limit for the same project to be chosen so there may be many students with the same project which will be a problem

# **Legal, Social, Ethical, Security, Professional Issues of the Project, Risk and Economic Aspects, Environment Awareness**

## **Legal issues**

The idea is to create a fair and simple way for final year projects to be assigned to students. Due to this, the student’s personal data, such as their name and course they are studying, will be needed. This raises one legal issue which is covered by GDPR (General Data Protection Regulation) as it is dealing with personal data. It must be secured so that the information can not be leaked or accessed. Another legal issue that could arise is to do with the FYP itself. If a product is being created for the university of external client, certain documents may need to be signed by the student. For example, if the project will be in used, an intellectual property rights document may need to be signed. Also, a NDA may need to be signed so that the student does not claim the work that they are creating for someone else. FYP is considered the biggest part of a student study at university. Therefore, it is important that the projects are allocated fairly and unbiasedly. Due to this, a software which randomly allocated projects to students is a good way to eliminate any unfair treatment.

## **Social Issues**

One social issue of the FYP project is that if mistakes are made and the students’ data becomes compromised, those students could be negatively affected by having their personal information become exposed to others. Data such as their name, age, the university they attend and their course of study could be things they wish to keep private and by having it leak, it could be detrimental to them.

Another social issue is that confidentiality of the project can be broken quite easily. If one person mentions any details about the project (i.e. the purpose/design of the software, student information), the sponsor would not be pleased and could potentially sue our team. Therefore, to solve this issue, we have agreed that the best course of action would be for each member of the group to sign an NDA, barring us from speaking about the project with anyone that is not involved in it.

## **Ethical issues**

Key ethical concerns regarding school databases are privacy and consent, confidential information should not be presented in a public database, therefore present data within the database should be consented with the students. Autonomy is an ethical issue those participating should have the right to refuse specific data being upheld. Fidelity and veracity concerns is an ethical issue that should be looked over true information should only be presented and with respect and good integrity. A school database will hold a lot of information about students and other participants, therefore ethical rights need to be a concern to avoid further issues concerning trust and respect. ​

## **Security Issues**

There are many security issues when it comes to creating and monitoring a database. Some of which include insider issues, this means a person within the organization having an ill intent and uses the database for a bad intent, for example leaking personal information. Human error is an issue to look out for, weak passwords and password sharing make your database vulnerable to be exploited. Other security issues are DDoS attacks, which hackers use to crash a server. Hacking into databases through software or language used to create it, for example SQL strings into database queries. Malware is also an issue; people use it to spy on and manipulate your database once they have a hold of your computer or server.​

## 

## **Professional Issues**

Professional issues refer to being professional overall, doing what's right. This can be following the rules of lsepi. An example is obeying to the principals of GDPR, staying socially friendly by not isolating people in the database because of sexism or racism, being ethical by respecting privacy and obeying participants consent. Work within professional guidance by following these practices

## **Risk and Economy Awareness**

There are many risks you need to consider when creating a database, one huge risk is databases will consist with a lot of personal information that should be remained as classified and it’s a must that it remains that way. There are too many security issues that can cause for the information to be exposed for instance hacking into a database, insider issues and human error with bad passwords. Economy considerations consist of having an active server to host the database, this includes paying for the server itself and paying for maintenance bills such that would be electrical costs as well as labor costs, you need to have a dedicated team updating and monitoring the database. Databases need to stay active that way they can be updated automatically for instance when someone signs up onto a website their record is immediately saved. The issue with this is it results in a lot of power being used 24/7 therefore environmental factors will take place. It is preferred if an organization would use renewable energy for power to reduce environmental damage to avoiding pollution. ​

# **Appendix**

**GitHub Repository:**

Link to GitHub: <https://github.com/mhjaved123/EnterprisePro>

**Project Code**

Link to GitHub: <https://github.com/mhjaved123/EnterprisePro/tree/main/DemoT06>

**Review and Planning Slides**

Link to GitHub: <https://github.com/mhjaved123/EnterprisePro/blob/main/PlanningT06.pptx>

**Team Horizon Work Journey**

Link to GitHub

<https://github.com/mhjaved123/EnterprisePro/blob/main/Team%20Horizon%20work%20JOURNEY.xlsx>

**Meeting minutes**

Link to GitHub: <https://github.com/mhjaved123/EnterprisePro/tree/main/Meeting%20minutes>

**Signed NDAs:**

Link to GitHub: <https://github.com/mhjaved123/EnterprisePro/tree/main/Signed%20NDAs>