

Project Instructions

- You are required to work in groups of no more than 5 students.
- Students are required to submit a working program, along with database files, and a documentation for the project.
- A working database will share with students, which will assist in them creating their own database.
- Students are required to record their projects and attach a link to the video where the project is illustrated.
- Plagiarism (Copying another students' work will result in all groups that are found to have plagiarised to get a zero and sent for disciplinary).

All Projects need to:

- Be developed using the 3-tier architecture.
- Be fully tested for any errors.
- Make use of version control, such as Team Foundation Server, or Azure.
- NB: No primary key, or foreign keys should be hardcoded into input fields (i.e. using textboxes for foreign keys).

Scenario

Students studying programming have been struggling to find errors to solutions specifically to the programs they develop. You have been tasked to assist these students by developing an application for consolidating student errors and solutions for the students. In doing this, you are required to develop a Windows Forms Application for storing error and solutions for programming students called The Error Application. You are required to store the information in a database called the ErrorDB. Various roles will be assigned in this application, which includes an administrator, a lecturer, and a student. The roles for the application are as follows:

Administrator:

- Is responsible for managing lecturer and students' information in the system.
- Is responsible for managing programming modules in the system.
- Assigning students to programming modules are they are registered for.

Lecturer:

- Is responsible for adding various topics for their modules.
- Is responsible for adding solutions for errors that their students upload.

Student:

- Is responsible for adding errors to the system.
- Should be able to search for errors for the modules they are assigned to.
- The minimum requirements of the system are as follows:
- From the minimum requirements of the system, there will be data that will be collected from the users of the system, which will be used for generating reports for the system.

The minimum report that should be provided by your system are:

1. Manage Student's Year of Study (Add, Select, Update, and Delete)
 - Information required in the Year of study table is the YearID, and the YearDescription.
2. Manage Modules (Add, Select, Update, and Delete)
 - Information that needs to be stored for a module is (ModuleID, ModuleDescription, and the YearID)
3. Manage Topics (Add, Select, Update, and Delete)
 - Information such as TopicID, TopicDescription, and an ErrorID should be stored.
4. Assign Topics to modules (Add, Select, Update, and Delete)
 - Information required when assigning topics to modules is ModuleTopicID, ModuleID, and the TopicID
5. Manage Errors (Add, Select, Update, and Delete)
 - The information required for an error is the ErrorID, ErrorDescription, StudentID, and the ProgLanguageID.
6. Manage Solutions (Add, Select, Update, and Delete)
 - Information required for a solution is a SolutionID, SolutionDescription, and a LecturerID.
7. Assign a solution to an error (Add, Select, Update, and Delete)
 - Information required for assigning a solution to an error is the ErrorSolutionID, ErrorID, SolutionID, and the SolutionDate
8. Manage Programming Languages (Add, Select, Update, and Delete)
 - Information required for a programming language is: ProgLanguageID, and the ProgLanguageDescription.
9. Manage Users (Lecturers, Administrators, and Students) (Add, Select, Update, and Delete)
 - Information required for a User is a UserID, FirstName, LastName, Email, Password, and a RoleID.
10. Manage Roles (Add, Select)
 - Information required for a role is a RoleID, and a RoleDescription.

You are allowed to add more functionality to the system which you deem necessary, however, that can only be done once the minimum requirements for the system have been met.

From the minimum requirements of the system, there will be information that will be collected from the users of the system, which will be used for generating reports in the system. Reports will count more marks than the requirements of the system, therefore, students are required to pay more attention when working with these reports.

Below is a list of minimum reports that all student systems should include:

- List Records of User (Lecturers, Students, and Administrators)
- Allow displaying information of a specific user.
- Allow displaying errors or solutions that either a lecturer or student has posted in the system.
- View between dates when an error or a solution was uploaded to the system.
- Allow a user to see which programming language has the most questions.
- Allow a user to determine which programming language has the least answered questions.
- Users should be able to see whether an error occurred in different programming languages.
- Allow a user to view topics for specific modules.
- Allow a user to view errors for specific topics.
- Viewing errors for a specific programming language.

Since these reports are a minimum, students with extra reports will be given extra marks.

