CS363L - Database System (Pr)

Mini Project

Instructors: Sahar Waqar, Samyan Qayyum Wahla

Graduate Assistants: Rao Nasir, M. Junaid Zafar

Teaching Assistants: Ahmad Shahid, Misha Zaheer

Instructions:

- The project is supposed to be completed by each student as the part of mid term lab exam.
- Any type of plagiarism will be STRICTLY taken and may lead to serious penalties in the course
- Database is provided with the project with the name of ProjectB. Restore the same database for connectivity with the frontend.
- Project should be managed on **GitHub** from day one and should be committed on daily basis or after each chunk of activities.
- You are NOT allowed to use Entity Framework for connectivity of database, queries should be written to retrieve and manipulate data.
- Submission of project will be taken on eduko. Submission should NOT include the binary files.
- Any change in the schema of database is NOT allowed.

Grading Criteria:

Project will be evaluated based on the following parameters

- Completion of project features
- Ability to provide professional and easy to use UI/UX
- Connectivity of database
- Exception handling and readable errors for the user
- Responsive UI
- Maintainable, readable and modular code
- Reports in PDF format in professional style
- Ability to provide more features and reports based on the provided database

Case Study

Department of Computer Science UET Lahore follows the Outcome Based Education where each subject is mapped with multiple CLOs. For the Lab work, these CLOs are further mapped to multiple rubrics. Rubrics are the rules that measure the students at different levels in particular component of an assessment. Example of rubrics for object oriented programming are as follow:

Criteria	Sub-criteria	Exceptional	Good	Fair	Unsatisfactory
Level		4	3	2	1
CLO 2: Implement abstraction and encapsulation to develop reusable classes for objects of real world problems	**Design** Program should be properly decomposed in reusable components. That either be functions , classes or files or or any other paradigm as per the course requirement	Functionalities are divided properly in coherent and cohesive components	Functionalities are divided into proper coherent units but the are either redundant or lack cohesion	Code is divided into modules but no consideration is put into reusability and cohesion of the modules	No such division of responsibility is visible in the code structure
	Execution Code is correct, the required programming techniques are implemented accurately according to rules of language.	No Errors, programs compiles and executes perfectly and efficiently	Program does compiles but could have been coded in more efficient way	Program does not compiles have minor errors due to missing semicolons or mis-alignments or missing brackets or any such issue	Program does not compile or interpret due to lack of syntax knowledge
	Testing Program executes and all scenarios are tested with no logical errors	All test cases are clear for functionalities and their boundary conditions	All test cases are clear for functionalities but might show erroneous behaviour on boundary conditions	Majority of the test cases are clear, but there might be few failed ones	Majority test cases are failed

Each student is being evaluated against rubrics in each assessment. For example, Lab1 has three components/Questions with 10 total marks and these questions are mapped with the rubrics as follow:

Component	Rubric	Component Marks
Question 1	Design	3
Question 2	Execution	4
Question 3	Testing	3

Now the student X is evaluated against assessment and student will be assigned with the rubric level. Based on the rubric level, obtained marks will be automatically calculated according to following formula.

$$ObtainedMarks = \frac{ObtainedRubricLevel}{MaxRubricLevel} \times Component\ Marks$$

Component	Rubric	Component Marks	Student Rubric Level	Obtained Marks (Automatically calculated)
Question 1	Design	3	2	1.5
Question 2	Execution	4	3	3
Question 3	Testing	2	3	1.5

Currently, the above process is being managed manually.

You are supposed to streamline the above process and develop desktop application(Windows Form Application using C#) that will be operated by the teacher to manage data at one place. Following features will be implemented in the application.

- Manage Students
- Manage CLOs
- Manage Rubrics
- Manage Assessments
- Manage Rubric Levels
- Mark the evaluations against a student

And any other feature that can be helpful for the management of evaluations.

Instructor also requires multiple reports in pdf form that may include.

- CLO wise class result
- Assessment wise class result

And any other reports that you can help the committee to streamline the process.

Note: Database scripts are available at http://bit.ly/ProjectBDb

Database Design