SQL Server Project Requirements

- **<u>Project Title:</u>**
  - Examination System Database.

- **<u>System requirements:</u>**
  - System should provide a question pool, so instructors can pick an exam from it.
  - Questions type may be Multiple choice, True & false or text questions.
  - For multiple choice and true & false questions the system should store the correct answer and check the student answer and store his result.
  - For the text question system should store the best accepted answer and use text functions and regular expressions to check student answer and display result to the instructor show him valid answers and not valid answers to review them and enter the marks manually .
  - System should store course information (Course name, description, Max degree, Min Degree,...)
    , instructors information, and students information, each instructor can teach one or more courses, and each course may be taught by one instructor in each class (Instructor may be changed for another class in another year).
  - Instructor can edit (add, Update and delete) the question pool in his course only.
  - Training Manager (One of the instructors) can edit (add, Update and delete) instructors and courses and instructors for each course.
  - Training manager can add and edit: Branches, tracks in each department, and add new intake.
  - Training manager can add students, and define their personal data, intake, branch, and track.
  - Training manager, Instructors, Students should have a login account to access the system.
  - Instructor can make Exam (For his course only) by selecting the number of questions of each type, the system selects the questions randomly, or he can select them manually from the question pool. And he must put a degree for each question on the exam, and total degrees must not exceed the course Max Degree (One course may have more than one exam).
  - For each exam, we should know type (exam or corrective), intake, branch, track, course, start time, End time, total time and allowance options.
  - System should store each exam which is defined by year, Course, instructor.
  - Instructors can select students that can do specific exams, and define Exam date, start time and end time. Students can see the exam and do it only on the specified time.
  - System should store students' answers for the exam and calculate the correct answers, and calculate the final result for the student in

this course.

   o Insert test data in all tables and test your system.

● Technical requirements:

   o Implement your database in files and files groups according to data size and your estimation.

   o Choose the right data type for each column, and use naming conventions in naming of all objects.

   o Implement Indexes for your database to get best performance for your DB.

   o Use constraints and triggers to make sure of data integrity and users' access.

   o Use procedures and functions to do all system tasks, and views to show any results, so system users do not need to write any query to do any task, and only use created objects.

   o Make Different options for the users to search and display results with different criteria.

   o Four accounts are needed for the system, one admin account that performs admin tasks only, account for training manager, account for instructors and account for students.

   o Each account can deal and work with his related tasks only and cannot access others' tasks and objects.

   o The system should make a daily backup, and snapshots of the database.

● Project Deliveries:

   o System Requirement sheet.

   o System ERD (Image or Word format).

   o Database Files.

   o SQL Server solution that has a script file for each team member containing queries and code he has done, and one script file for all database structure, objects and data.

   o Text file containing name and brief description for all objects in DB (Views, Proc, Functions,Triggers,…...).

   o Test sheets that contain test queries, its result and comment.

● IMPORTANT NOTES:

   o **Course Evaluation Criteria:**
- *Lab Assignments:*   40%
- *Project:*   60%

   o Each group must have a team leader.

   o Project tasks should be assigned equally to each member.

   o Each member should be aware of all project progress and tasks.

   o Each group members must have a meeting every day with each other to discuss project progress and each member explains his own progress and his tasks technically, and problems that he faced and new benefits and knowledge that he gained