Project report

Introduction: Description of DB (Problem statement)

This project implements a test management system. The test management system is used by teachers and students of an educational institution to conduct timed tests. The teacher creates questions and stores them in the system along with their answers for the different courses. The system maintains this collection of questions as a question bank and allows the teacher to create tests from these questions. These tests only contain 10 multiple choice questions which are selected by the teacher. The students can take one test at a time and the system grades the test. The students and teachers can view the grades scored in the different tests.

The test management system is implemented as a java application along with an MS SQL server database. The java application provides the user interface for the teachers and students to interact with the test management system. The database stores information about the teachers, and students, their courses, questions, tests and grades. The database uses stored procedures providing the relevant information to the java application and trigger to grade a student test. We experimented with the query execution time by indexing the most frequently used table, users.

Working of the application

The test management system has two types of users-teachers and students. Both types of users need to first login to the system by providing their username, password and role type (teacher or student). The system verifies the user credentials using a stored procedure. On successful login, the user has to select the course of interest. The information about courses taught by a teacher and courses taken by a student is maintained in a different system like the course registration system and our test management system imports this data from it. Using the course information, the system displays the different courses available to the user. The user selects the course of interest.

For teachers, the system allows them to add or modify questions, create tests and view all student grades for each test. The teacher can add a new question to the question bank of the selected course. This question should have 4 answer choices and the correct choice must also be mentioned. The question is stored in the database and each question is assigned a unique identifier called questionId. To modify an existing question, the teacher must choose the question to be modified

Front –end, how to use the application, screen shots.

Login, choose course, set of actions depend on the role. Teacher can add /modify qtestions, create tests, view grades. Student can take test or view grades.

Teachers & students

Teachers add/modify questions & create tests.

Students take tests and view grades

DB schema

Schema diagram and explain the tables & their columns, primary keys, foreign keys

3NF

Topics implemented

Triggers: 1

Stored procedures: 11

Index:1

Conclusion