

Quiz Application - Project Report

Introduction

This project is a Java-based Quiz Application designed to allow users to register, login, and participate in quizzes. Administrators can manage quizzes, while students can attempt quizzes and view their results. The system ensures that quiz attempts and results are stored in a database for record-keeping and evaluation.

Abstract

The Quiz Application is built to provide a digital platform for conducting quizzes. It allows secure user authentication, quiz management, question storage, and automated evaluation. Students can attempt quizzes, and their answers are recorded in real-time. The system then calculates scores and displays detailed results with correct answers and awarded marks.

Tools Used :

Java (Swing, JDBC) – For application logic and user interface. **MySQL** – For persistent data storage (users, quizzes, attempts). **Maven** – For dependency management. **ReportLab** – For generating PDF reports. **Eclipse** – As the development environment.

Steps Involved in Building the Project :

1. ****Requirement Analysis****: Identified the need for a quiz management system.
2. ****Database Design****: Designed tables for users, quizzes, questions, attempts, and attempt answers.
3. ****Frontend Development****: Created user-friendly Swing forms for login, registration, quiz selection, and quiz-taking.
4. ****Backend Integration****: Used JDBC to connect to MySQL and perform CRUD operations.
5. ****Quiz Logic Implementation****: Implemented random question shuffling, answer storage, and scoring logic.
6. ****Result Module****: Displayed correct answers, user-selected answers, and awarded marks.
7. ****Testing****: Conducted unit and integration testing to ensure reliability.
8. ****Finalization****: Improved UI/UX and fixed database consistency issues.

Conclusion

The Quiz Application successfully integrates a graphical interface with a relational database to deliver a complete quiz management solution. It is robust, scalable, and can be extended with features like analytics dashboards, question categorization, and online deployment. This project demonstrates the practical use of Java Swing and MySQL in building real-world applications.