



Project Report

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Course Title: Pervasive Computing and Mobile Application Lab

Course Code: CSE335

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Title: QuizApp using Flutter

Objective:

The primary objective of this lab project is to develop a mobile quiz application that allows users to test their knowledge across various subjects through multiple-choice questions. The app aims to provide an interactive and engaging way for users to learn and assess their knowledge.

Motivation:

The motivation behind creating this quiz app stems from the need to provide an accessible and enjoyable learning tool. Mobile applications are a powerful medium to reach a wide audience, and a quiz app can make learning fun and interactive. This project also serves as a practical exercise to apply and enhance skills in mobile app development, covering essential aspects such as UI design, user interaction, and backend integration.

Key Features:

1. User Authentication: Users can sign up and log in using their email and password.
2. Quiz Categories: Various categories of quizzes are available for users to choose from.
3. Multiple-Choice Questions: Each quiz consists of multiple-choice questions with one correct answer.
4. Score Tracking: Users' scores are tracked and displayed at the end of each quiz.
5. Real-time Database: Integration with Firebase for storing user data and quiz questions.
6. Responsive Design: The app is designed to be responsive and work on various mobile devices.

Project Components:

- Button: Used for navigation, starting quizzes, and submitting answers.
- Listener: Event listeners are implemented to handle user interactions such as button clicks.
- Intent: Used for navigating between different screens of the app.

- Spinner: Used for selecting quiz categories.
- Firebase: Utilized for user authentication and real-time database to store quiz questions and user scores.

Challenges:

1. Integration with Firebase: Setting up and integrating Firebase for authentication and database management was challenging and required careful configuration and testing.
2. User Interface Design: Ensuring a user-friendly and intuitive design required multiple iterations and user feedback.
3. State Management: Managing the state of the application, especially during quiz progression and score tracking, was complex and needed efficient handling.
4. Responsive Layouts: Making sure the app looks good and functions well on different screen sizes and orientations.

Conclusion:

The development of the QuizApp provided valuable insights into mobile application development, from designing user interfaces to integrating backend services like Firebase. Despite the challenges faced, the project successfully met its objectives, resulting in a functional and interactive quiz application. This project not only enhanced technical skills but also emphasized the importance of user experience and responsive design in mobile applications.