

- Overview
- Roles and Responsibilities
 - 1. Admin
 - 2. User
- Detailed Functional Requirements
 - 1. Admin Features
 - 2. User Features
- Workflow
 - User Workflow:
- Technical Requirements
- Non-Functional Requirements

Overview

The quiz application allows administrators to manage the platform and users to register, log in, and participate in quizzes. It provides functionality for quiz management, quiz-taking, and result tracking.

Roles and Responsibilities

1. Admin

- **Bulk MCQ Upload (CSV):**
 - Ability to upload a CSV file containing multiple-choice questions (MCQs).
 - Validate the format and content of the uploaded file.
 - Store the MCQs in the database categorized by quiz type.
 - **Manage Users (CRUD):**
 - Create, read, update, and delete user profiles.
 - Assign roles (e.g., Admin or User).
 - Deactivate or reactivate user accounts.
 - **Generate Quiz Results:**
 - View a summary of all user performances by quiz type.
 - Generate individual user result reports.
 - Export results as CSV or PDF.
-

2. User

- **Register:**
 - Sign up with basic details (Name, Email, Password).
 - Receive email verification (optional).
 - **Login:**
 - Authenticate using email and password.
 - Maintain session with a token-based authentication system.
 - **Quiz Type Selection:**
 - Browse available quiz types.
 - Select a quiz type to attend.
 - **Attend Quiz:**
 - Start a quiz with a pre-set number of questions.
 - Each question has a timer (optional).
 - Submit answers interactively.
 - **View Quiz History:**
 - Access past quiz results, categorized by date and quiz type.
 - Review correct and incorrect answers (optional).
-

Detailed Functional Requirements

1. Admin Features

- **Bulk Upload:**
 - CSV Format:

```
Question, Option A, Option B, Option C, Option D, Correct Option, Quiz Type
```
 - Validate:
 - Check for empty fields or incorrect formats.
 - Reject invalid rows and notify the admin.
 - Store questions with metadata (difficulty level, quiz type, etc.).
- **Manage Users:**
 - List all users with search and filter options.
 - Edit user details like name, email, and role.

- Delete users and mark accounts as inactive/active.
 - **Generate Results:**
 - Summary:
 - Total quizzes taken.
 - Average scores by quiz type.
 - Individual:
 - Detailed performance for each user.
 - Exportable in various formats.
-

2. User Features

- **Register:**
 - Fields: Name, Email, Password, Confirm Password.
 - Password validation (length, special characters, etc.).
 - Option to upload a profile picture.
 - **Login:**
 - Input: Email and Password.
 - Feedback on invalid credentials.
 - Password reset option.
 - **Quiz Type Selection:**
 - Display quiz types in a list or grid view.
 - Show quiz details (e.g., duration, difficulty level).
 - Filter or search for quizzes by name or category.
 - **Attend Quiz:**
 - Interactive UI:
 - Show one question at a time.
 - Options for skipping or marking a question.
 - Timer for the entire quiz or each question.
 - Submit functionality to calculate and store results.
 - **Quiz History:**
 - Display past quizzes with:
 - Date and time of quiz.
 - Score and status (Pass/Fail).
 - Option to review answers with explanations (if enabled).
-

Workflow

User Workflow:

1. Register/Login :

- Register or log in to access the quiz dashboard.

1. Select Quiz Type :

- Choose a category (e.g., General Knowledge, Science).
- Begin the quiz.

1. Attend Quiz :

- Questions displayed one by one.
- Submit answers and complete the quiz.

1. View Results :

- Results displayed immediately or in the quiz history section.
-

Technical Requirements

1. Frontend :

- Framework: React.js / Angular / Vue.js.
- Responsive UI for mobile and desktop.

1. Backend :

- Framework: Node.js with Express / .NET Core / Django.
- RESTful APIs for communication.

1. Database :

- Relational: MySQL / PostgreSQL.
- Tables for Users, Questions, Quiz Results, and Quiz Metadata.

1. Authentication :

- JWT-based for secure sessions.

1. Hosting :

- Cloud-based: AWS / Azure / Google Cloud.
-

Non-Functional Requirements

- **Scalability** : Support multiple users concurrently.
 - **Security** : Protect user data with encryption.
 - **Usability** : Intuitive interface for all users.
 - **Performance** : Ensure quizzes load under 2 seconds.
-

Would you like to explore any specific part in more detail, such as the database schema or UI/UX design?