

AI-POWERED QUIZ GENERATION & MANAGEMENT SYSTEM

Automated Quiz Creation, Student Tracking, and
Admin Control

Introduction

- This project is an AI-driven Quiz Application that generates MCQs from uploaded PDFs or custom text. It allows students to attempt quizzes and enables administrators to monitor progress in real-time.

Objectives

- - Automate quiz generation using AI
- - Provide interactive student participation
- - Enable real-time tracking for admin
- - Enhance learning engagement and assessment

System Architecture

- Frontend: Next.js (React-based UI)
- Backend: Flask API with Groq LLM integration
- Database: In-memory storage (QUIZZES dictionary)
- AI Model: Groq LLaMA-3 for MCQ generation
- Communication: REST APIs with JSON

Key Features

- For Students:
 - - Join quizzes with unique ID
 - - Attempt multiple-choice questions
 - - Auto-calculated scores with explanations
- For Admin:
 - - Generate quizzes from PDF/text
 - - Monitor student participation
 - - View real-time scores and activity

Workflow

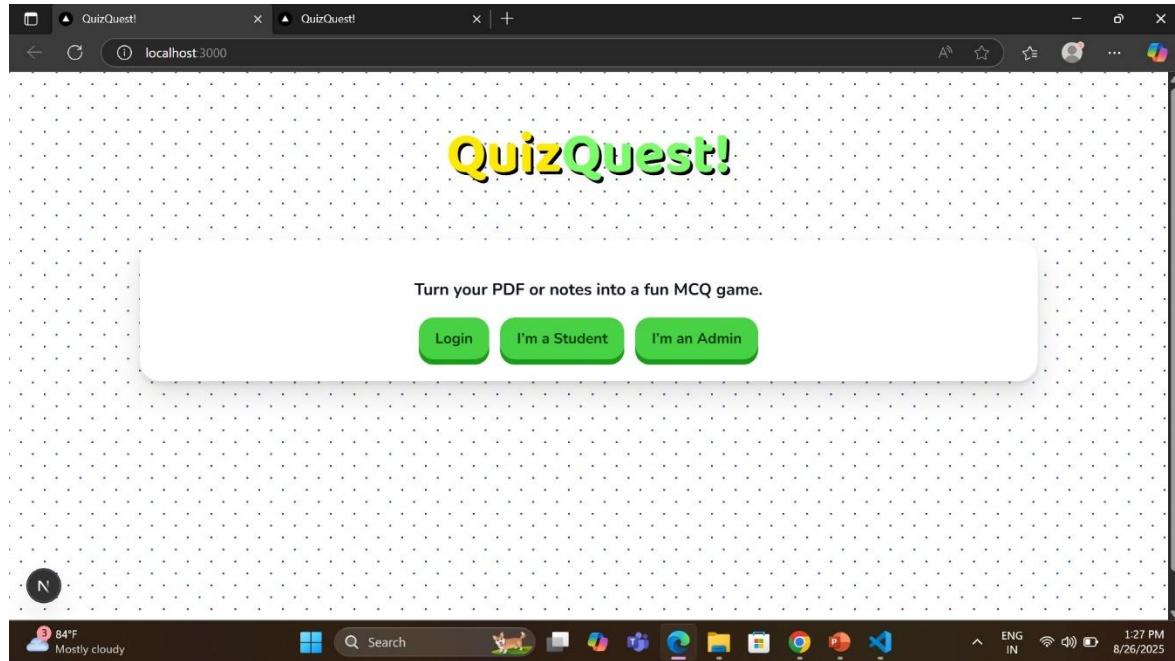
- 1. Admin uploads PDF or provides text
- 2. AI generates quiz questions
- 3. Students join with quiz ID
- 4. Students attempt questions
- 5. Submissions are evaluated automatically
- 6. Admin monitors progress and results

Technologies Used

- - Next.js (React, TailwindCSS)
- - Flask (Python)
- - Groq LLaMA-3 API
- - PyMuPDF (PDF text extraction)
- - RESTful API communication
- - JSON data handling

Demo Screenshots

1) This is the main UI of QUIZ Quest



Demo Screenshots

2) This is the admin page

The screenshot shows a Microsoft Edge browser window with two tabs open, both titled "QuizQuest". The active tab's URL is "localhost:3000/admin". The page content is as follows:

Admin · Hello nikhil 🙌

Upload a questionnaire/paragraph PDF or paste text to create a quiz.

✖ Not logged in as admin. Please go to /login

Upload PDF

No file chosen

— or —

Paste a paragraph / notes

Number of questions

Generate Quiz

The system status bar at the bottom shows: 84°F Mostly cloudy, Search, various icons (File Explorer, Task View, etc.), ENG IN, 1:28 PM, 8/26/2025.

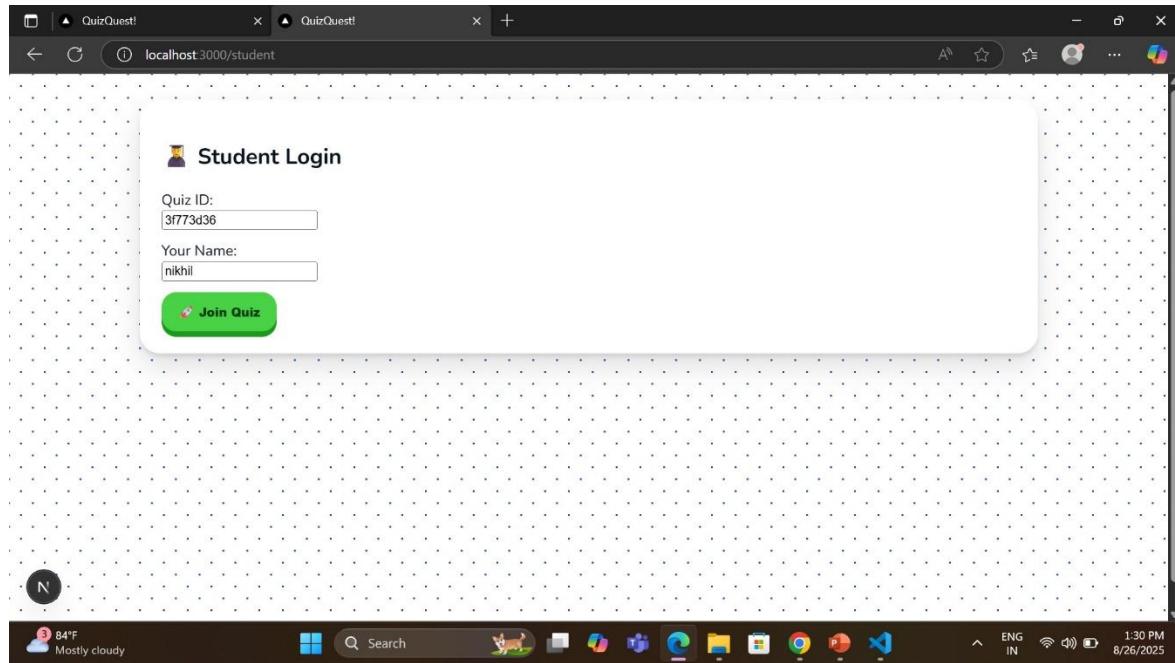
Demo Screenshots

3) This is a admin page after generating the PDF into QUIZ by using AI

The screenshot shows a dual-monitor setup. The left monitor displays the QuizQuest admin interface at localhost:3000/admin. The interface has a dark theme with a light gray sidebar. The main area contains fields for generating a quiz: "Ready! Quiz ID: 3f773d36", "Upload PDF" (with a file chosen as "When summer.pdf"), "Paste a paragraph / notes" (with a placeholder "Paste text here..."), "Number of questions" (set to 10), and a "Generate Quiz" button. Below these, a message says "Quiz generated! ID: 3f773d36" and provides a link to "Open Admin Control Panel". It also includes sharing information: "Share with students: 3f773d36" and "Students will join at: /quiz/3f773d36". The right monitor is mostly black, with a small portion of a video player visible.

Demo Screenshots

4) This is a student page



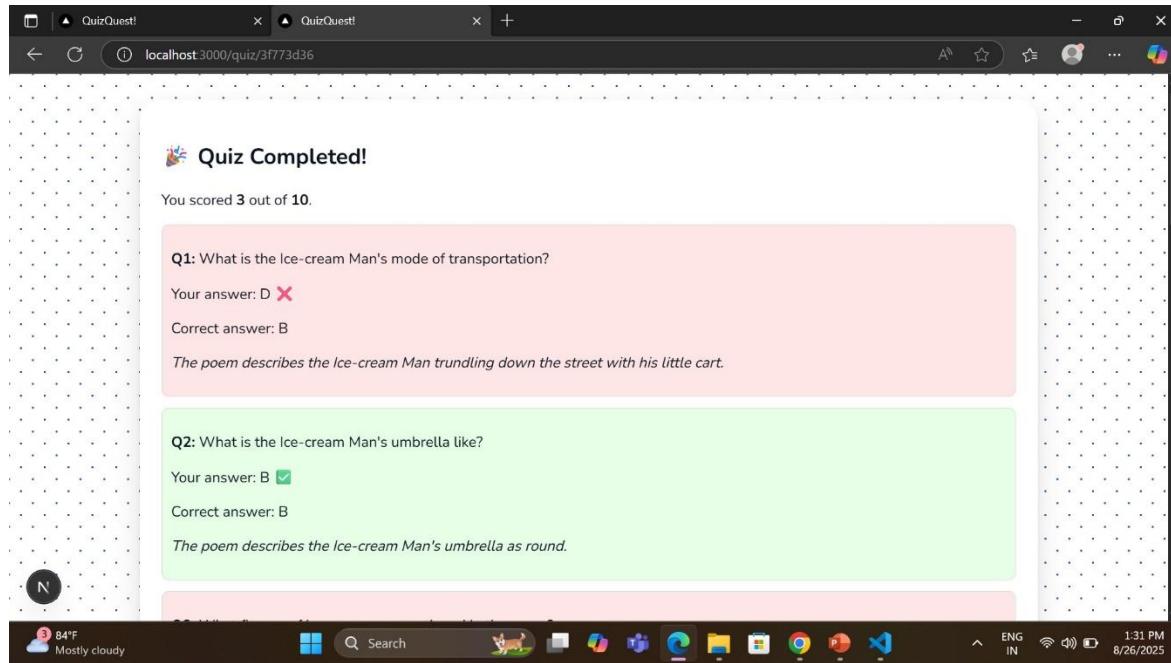
Demo Screenshots

5)This is the student page after starting the QUIZ

The screenshot shows a Microsoft Edge browser window displaying a quiz titled "Quiz: 3f773d36". The quiz consists of one question: "What is the Ice-cream Man's mode of transportation?". The options are A. Bicycle, B. Little cart, C. Horse-drawn carriage, and D. Skateboard. A green "Next" button is visible at the bottom left. The browser has two tabs open, both titled "QuizQuest!". The system tray at the bottom shows the date as 8/26/2025, the time as 1:30 PM, and the weather as 84°F Mostly cloudy.

Demo Screenshots

6) This is after result of the QUIZ



Demo Screenshots

7) This is the admin control panel

The screenshot shows a Microsoft Edge browser window displaying the 'Admin Control Panel — Quiz 3f773d36' interface. The URL in the address bar is `localhost:3000/quiz/3f773d36/admin`. The page header includes the QuizQuest logo and navigation links for 'Quiz', 'Dashboard', 'Create', 'Logout', and 'Help'. The main content area displays quiz details: 'Total Questions: 10' and 'Time Limit: 5 mins'. Below this is a 'Student Status' section with a table showing student names, their status (Completed or In Progress), and their score (3/10). The table has three columns: Student, Status, and Score.

Student	Status	Score
nikhil	Completed	3/10
Anonymous	In Progress	-

At the bottom of the screen, the Windows taskbar shows the date and time as 8/26/2025, 1:31 PM. Other icons include the Start button, a search bar, and various system and application icons.

Conclusion

- This AI-powered quiz system streamlines assessment by automating question generation and tracking. It benefits both students and teachers by providing real-time evaluation and an engaging learning experience.

Future Scope

- - Integration with databases for persistence
- - Support for multimedia-based questions
- - Advanced analytics for student performance
- - Deployment as a cloud-based SaaS platform