

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

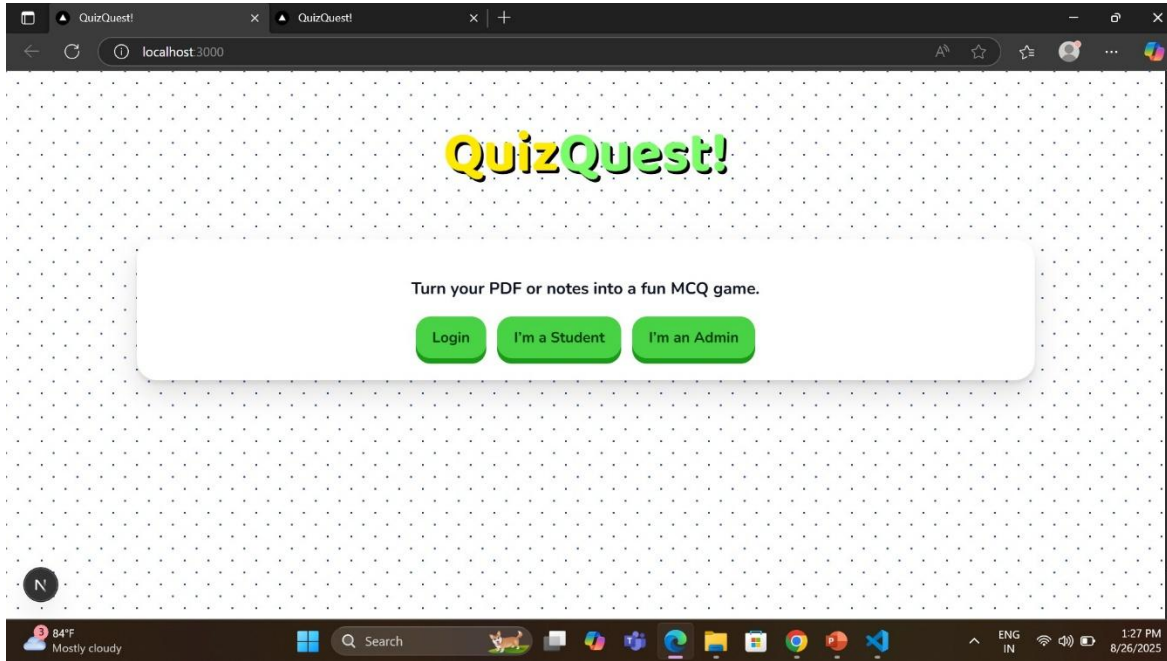
- 1. Admin uploads PDF or provides text
- 2. AI generates quiz questions
- 3. Students join with quiz ID
- 4. Students attempt questions
- 5. Submissions are evaluated automatically
- 6. Admin monitors progress and results

Technologies Used

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

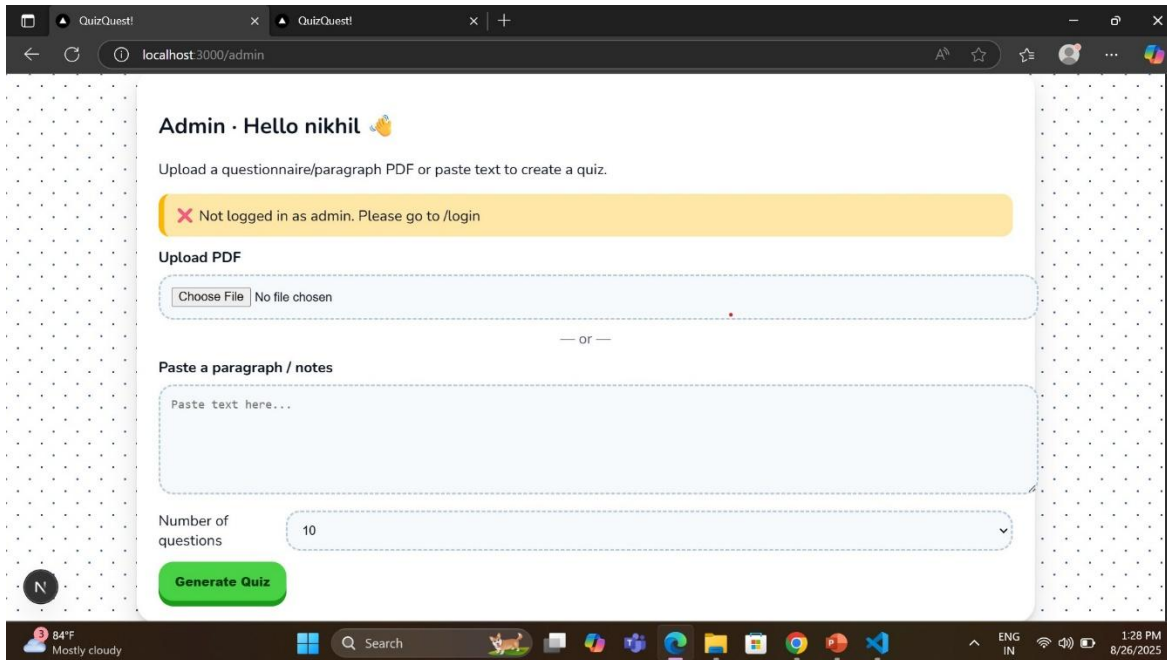
Demo Screenshots

1) This is the main UI of QUIZ Quest



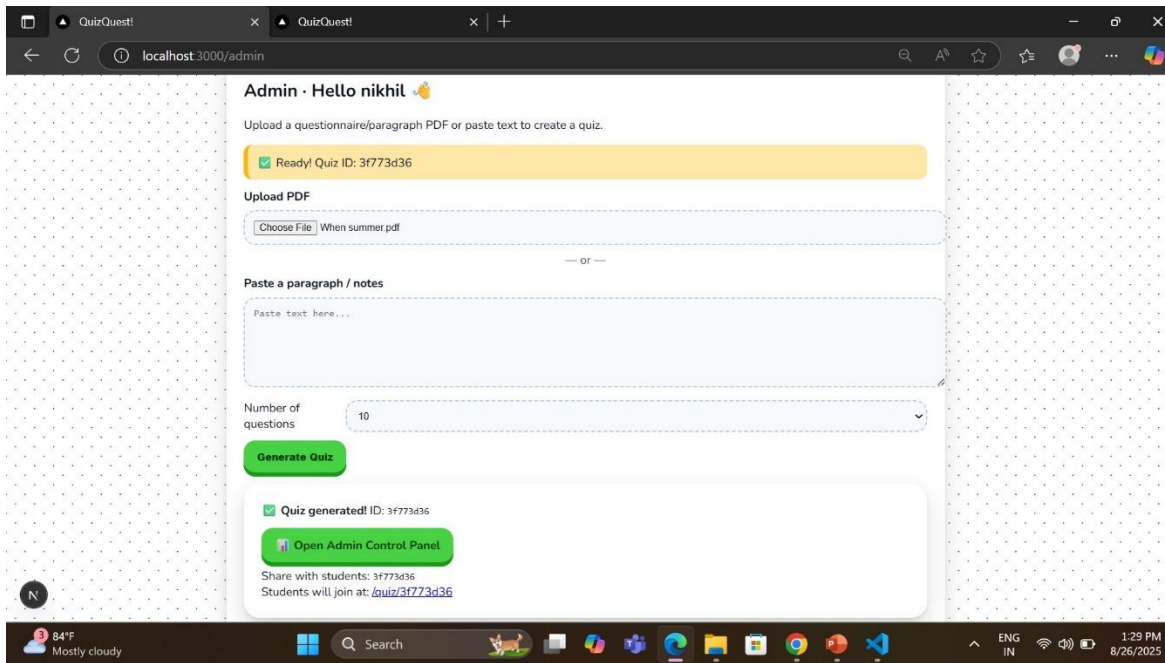
Demo Screenshots

2) This is the admin page



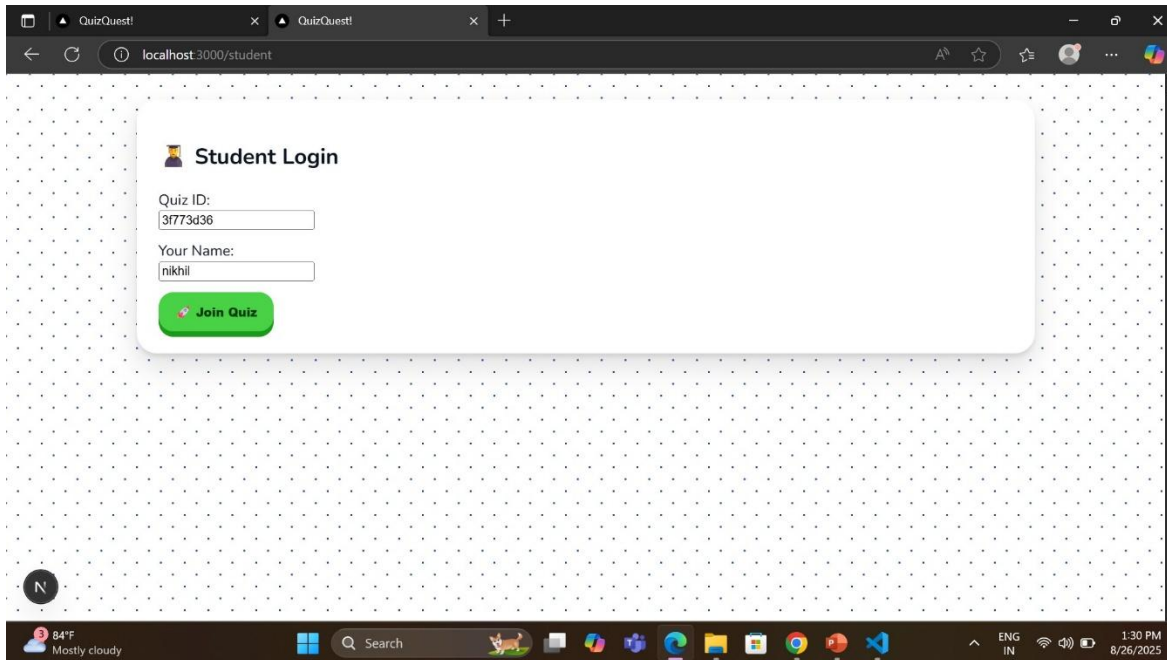
Demo Screenshots

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



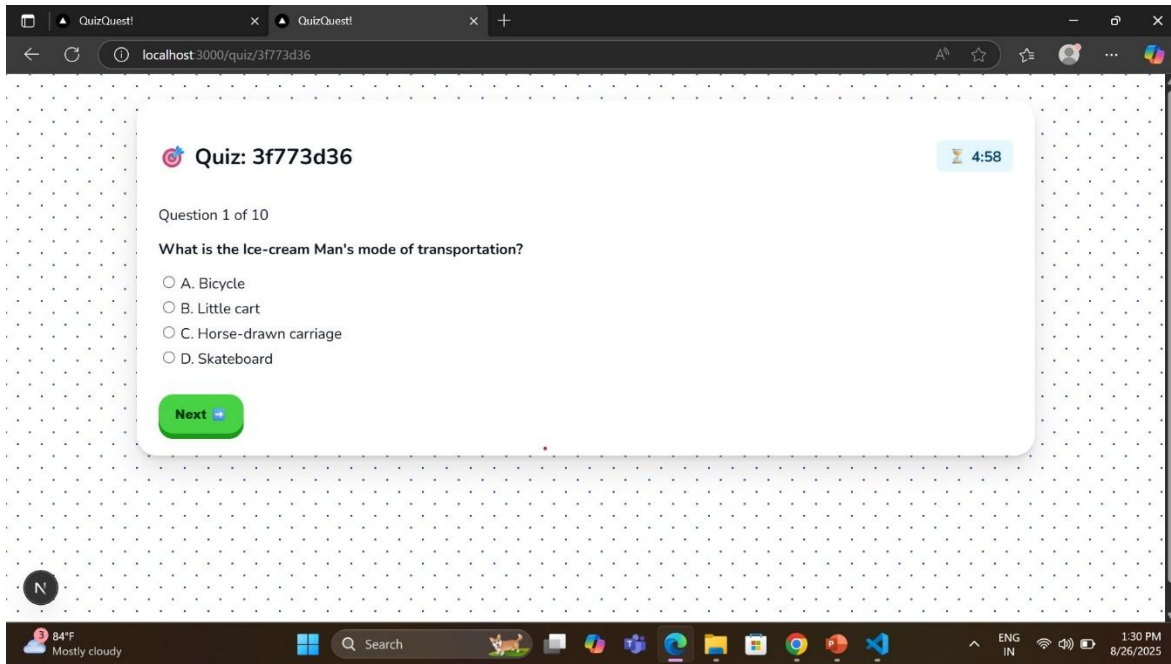
Demo Screenshots

4) This is a student page



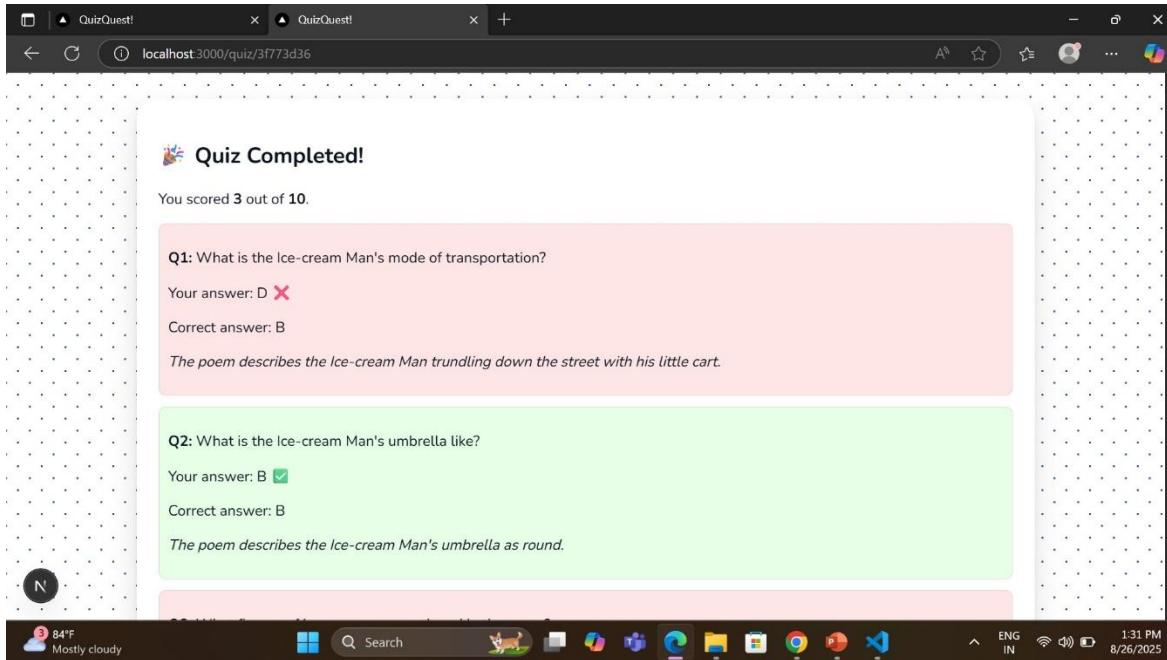
Demo Screenshots

5) This is the student page after starting the QUIZ



Demo Screenshots

6) This is after result of the QUIZ



Demo Screenshots

7) This is the admin control panel

Admin Control Panel — Quiz 3f773d36

Total Questions: 10
Time Limit: 5 mins

Student Status

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

The screenshot shows a web browser window with the URL `localhost:3000/quiz/3f773d36/admin`. The page displays the Admin Control Panel for Quiz 3f773d36. It includes a table with student status. The table has three columns: Student, Status, and Score. The first row shows 'nikhil' with a 'Completed' status (indicated by a green checkmark) and a score of '3/10'. The second row shows 'Anonymous' with an 'In Progress' status (indicated by a clock icon) and a score of '-'. The background of the panel has a light blue dotted pattern. The browser window shows two tabs, both titled 'QuizQuest!'. The Windows taskbar at the bottom displays the system tray with a temperature of 84°F, a search bar, and various application icons. The system clock shows 1:31 PM on 8/26/2025.

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