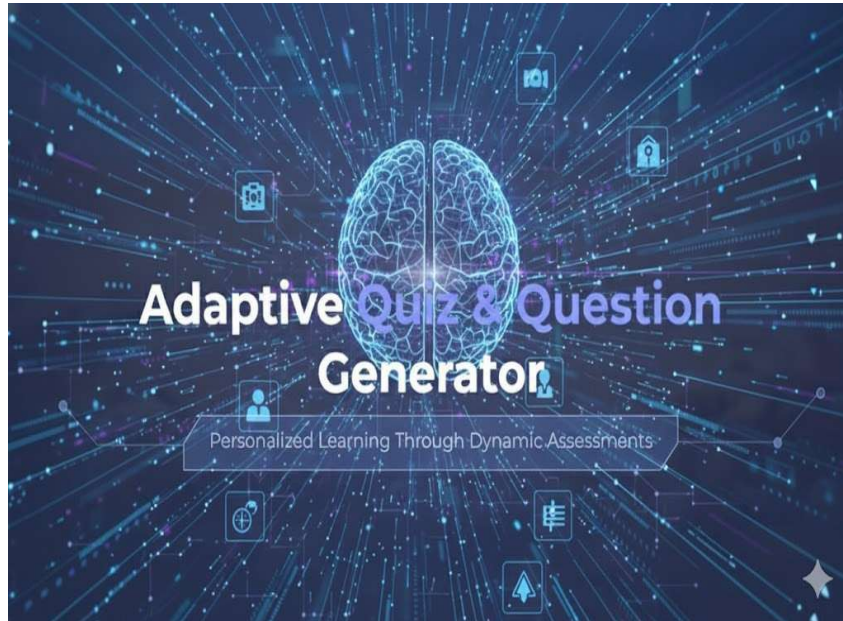


Adaptive Quiz & Question Generator

1. Project Title: Adaptive Quiz & Question Generator



2. Project Statement:

Learning is not one-size-fits-all. Students and self-learners often struggle to find quizzes that align with their current understanding or preferred learning style. Existing quiz tools offer static, generic questions that do not adapt to individual performance or difficulty preferences. This open-source project addresses the need for **personalized, adaptive assessments** by generating dynamic quizzes from any educational content (e.g., Wikipedia articles, open textbooks, course material). The system allows users to select difficulty levels and question types (MCQ, fill-in-the-blank, short answer) and adapts future questions based on performance history. It also aims to support multiple languages and knowledge domains.

3. Outcomes:

- Upload or fetch content from educational sources.
- Dynamically generate diverse question types using NLP.
- Personalized quizzes based on performance history.
- Difficulty-level filtering and adaptive scoring system.
- Admin interface to curate and manage content/question rules.
- Option for multilingual question generation.
- REST API & web interface for testing and public access.
- Dockerized deployment ready for cloud hosting.

4. Modules to be Implemented:

Module 1: User & Profile Management

- User registration, login (email/password + OAuth)
- Profile: subjects of interest, difficulty level, performance history

Module 2: Content Ingestion & Parsing

- Uploading or fetching learning material (PDF, URLs, or pasted text)
- NLP-based cleaning and segmentation of text into knowledge chunks

Module 3: Question Generator Engine

- Transformer-based or rule-based generation of:
 - MCQs
 - Fill-in-the-blank
 - True/False
 - Short answers
- Support for Bloom's taxonomy-based difficulty levels

Module 4: Adaptive Learning Engine

- Track performance and update the user's difficulty profile
- Recommend question types based on user interaction

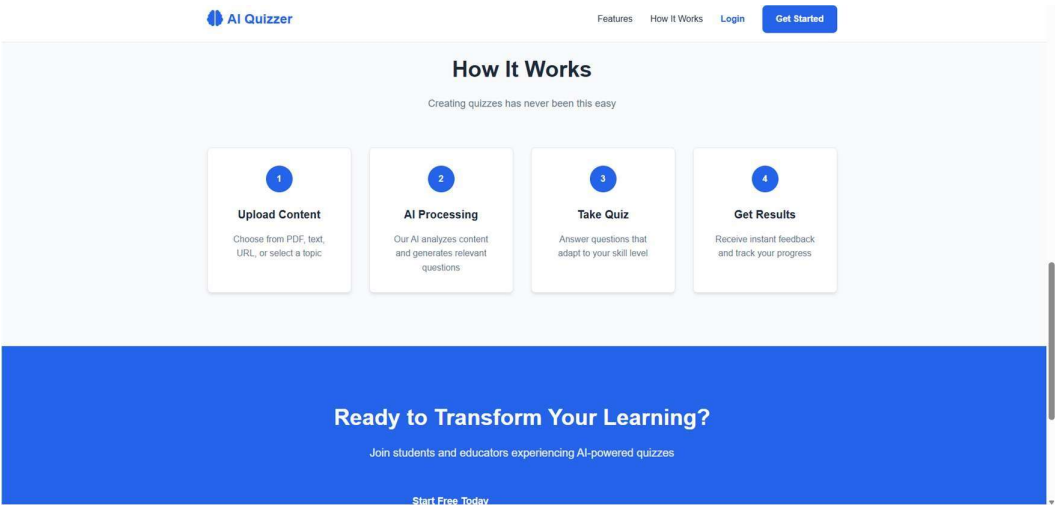
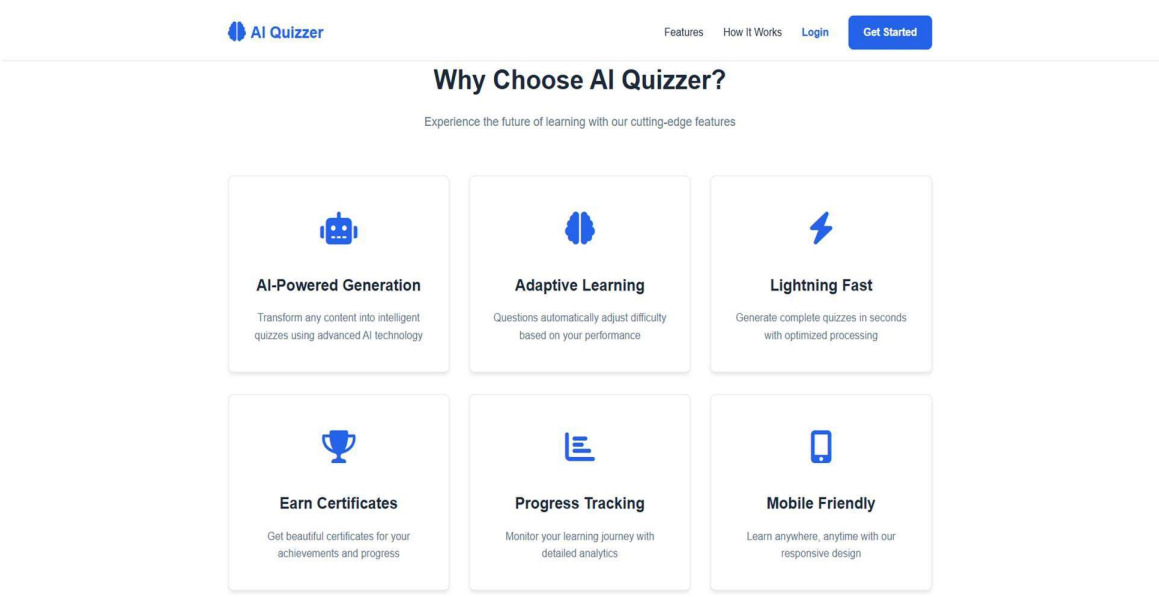
Module 5: Web Interface + Quiz UI

- Clean, responsive quiz interface with result summary
- Adaptive questioning logic based on current user state

Module 6: Admin Dashboard & Feedback

- Question moderation, user analytics, and flagging inappropriate outputs
- Feedback collection for individual questions

SMART AI QUIZ ADAPTER HOME PAGE:



5. Week-wise Module Implementation Plan

Milestone 1: Weeks 1–3 — User & Profile System + Content Upload

Goals:

- Secure login & registration (JWT, OAuth)
- User profile with preferred difficulty, subject, and question type
- Content upload module (text, PDF, or URL)

Tools: HTML, CSS, JavaScript, Node.js (Express), SQLite, Google OAuth 2.0, pdf-parse, Gemini API

Deliverables:

- Functional login/signup
- Profile editor UI
- Sample input text loaded & parsed into chunks

REGISTER ,LOGIN & WELCOME MAIL:

localhost:5000/register.html

AI Quizzer

Join Our Learning Community!
Start your personalized learning journey today

1 Basic Info 2 Interests Complete 3

Full Name

Email Address

Create Password

Confirm Password

Next →

Already have an account? Sign in here

Why Join Us?

- Personalized Learning**
AI adapts to your unique learning style
- Earn Achievements**
Get certificates and badges for progress
- Track Progress**
Monitor your improvement over time
- Join Community**
Learn with students worldwide

localhost:5000/register.html

AI Quizzer

Join Our Learning Community!
Start your personalized learning journey today

1 Basic Info 2 Interests Complete 3

What are you interested in learning?
Select your favorite subjects (choose at least 2)

Mathematics Computer Science Physics

Chemistry Biology History

Programming Machine Learning

← Previous Next →

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AI Quizzer

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Start your personalized learning journey today

1

2

3

Basic Info Interests Complete

✓

Almost Done!

Review your information and create your account

Name:

Jyothi

Email:

mikkilinenijyothiswaroopini@gmail.com

Interests:

Computer Science, Programming, Machine Learning

☒ I agree to the [Terms of Service](#) and [Privacy Policy](#)

← Previous

Create Account ✓

Already have an account? [Sign in here](#)

Why Join Us?

Personalized Learning

AI adapts to your unique learning style

Earn Achievements

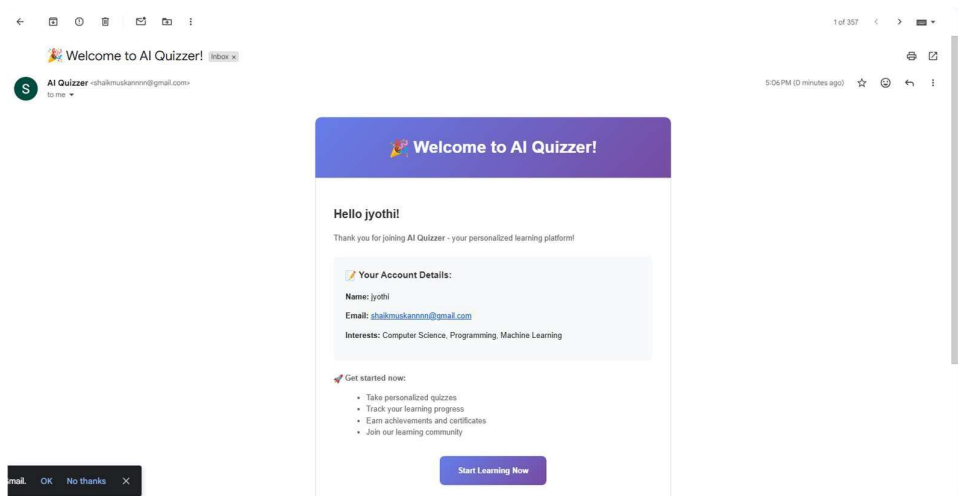
Get certificates and badges for progress

Track Progress

Monitor your improvement over time

Join Community

Learn with students worldwide



localhost:5000/login.html

AI Quizzer

Welcome Back!

Sign in to continue your learning journey

✉

shaikmuskan471@gmail.com

🔒

👁

☒ Remember me [Forgot password?](#)

Sign In

Try Demo Account

New to AI Quizzer?

Create New Account

Don't have an account? [Sign up now](#)

Admin Login

Continue Your Journey

AI-Powered Quizzes

Smart questions tailored for you

Track Progress

Monitor your learning journey

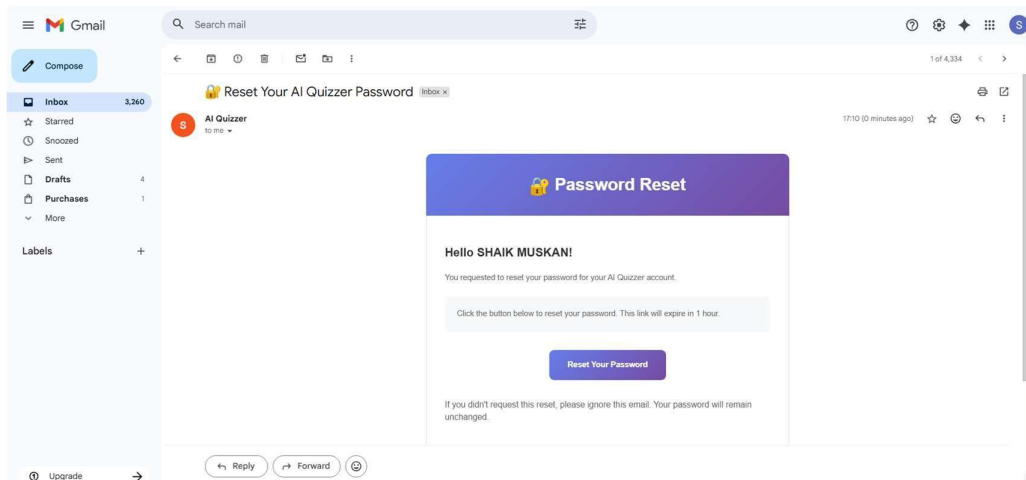
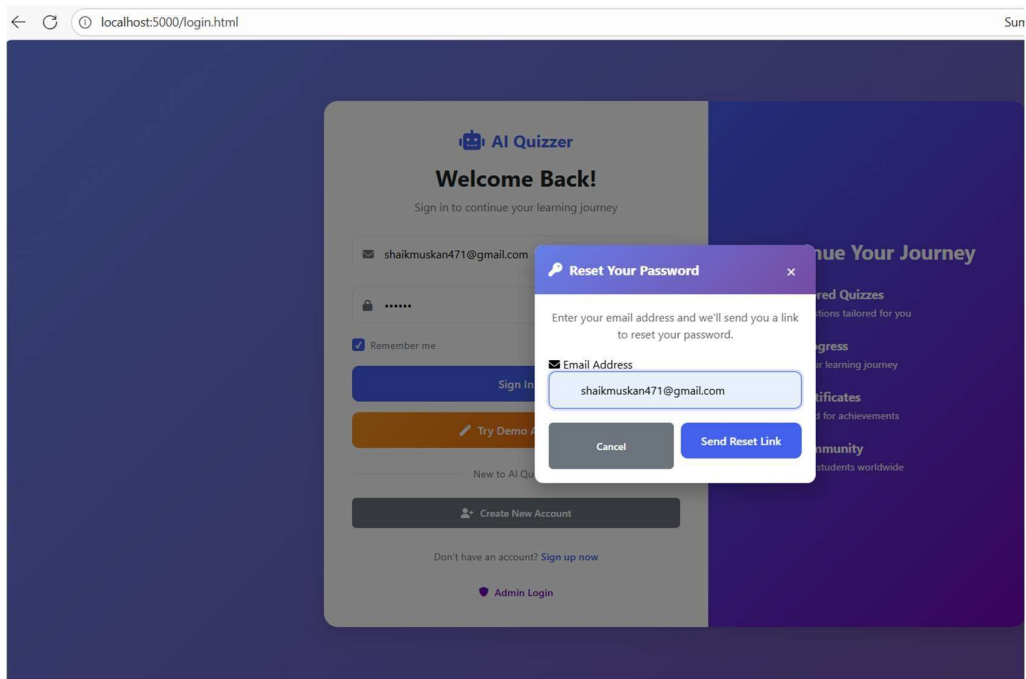
Earn Certificates

Get certified for achievements

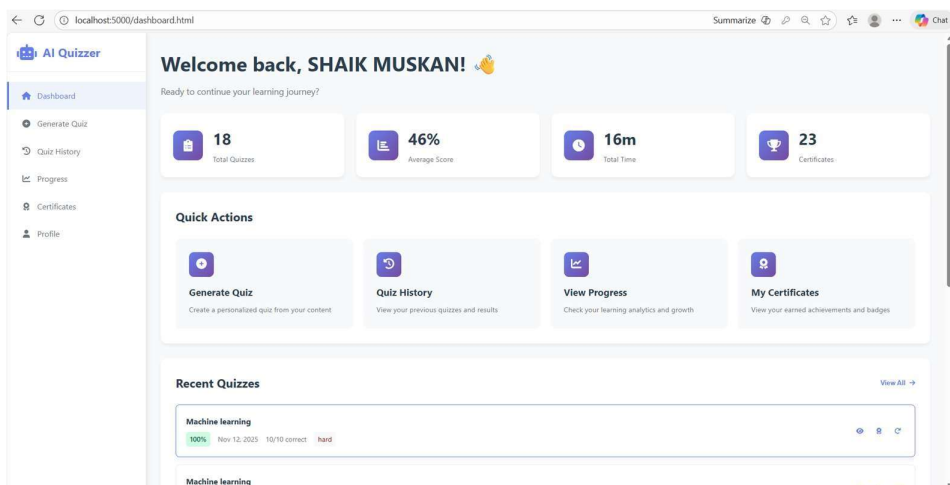
Join Community

Learn with students worldwide

RESET PASSWORD:



DASHBOARD:

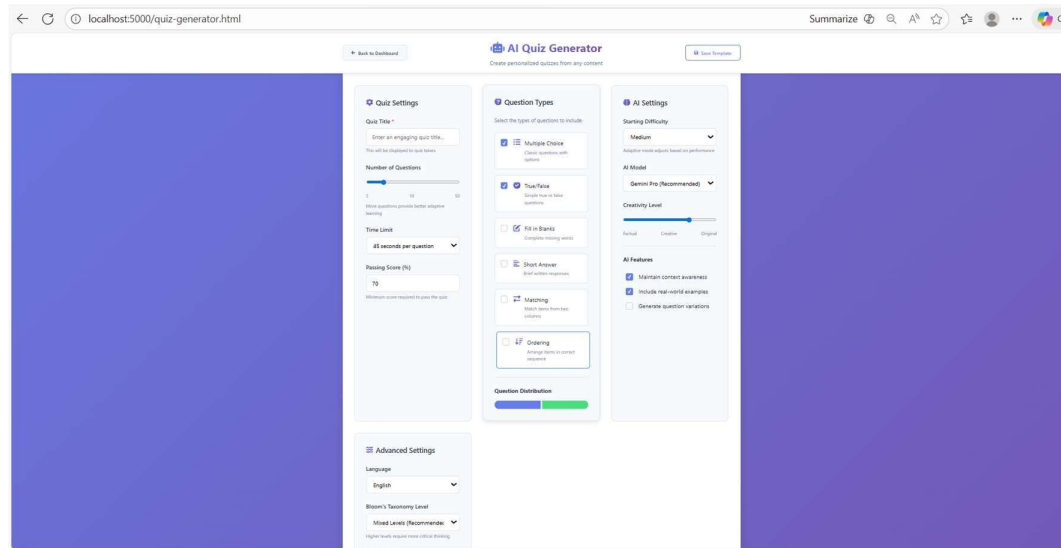
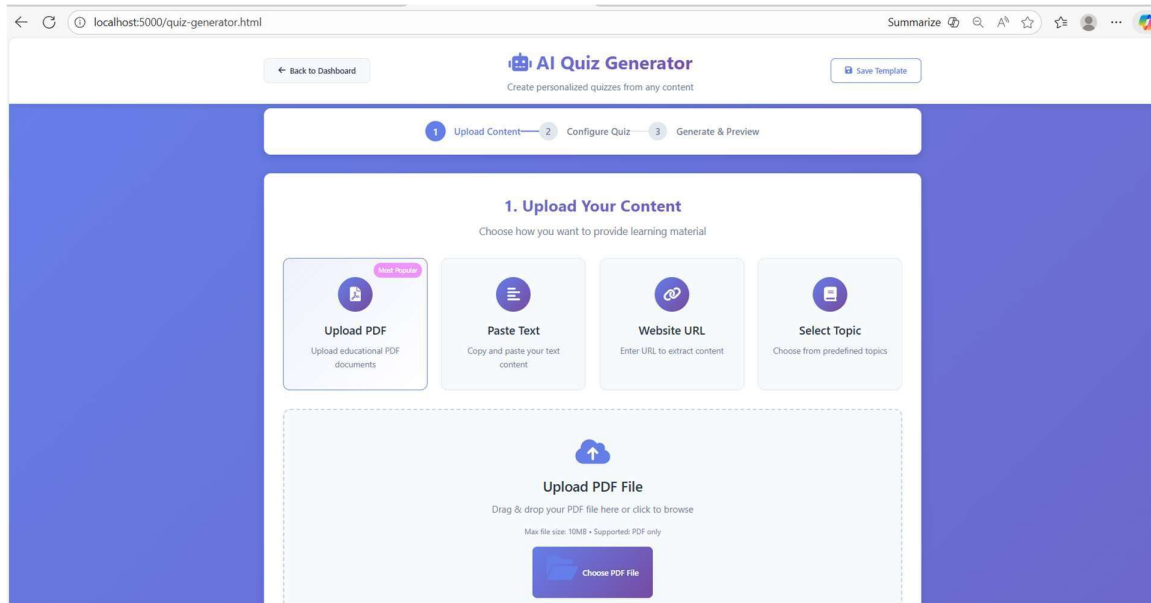


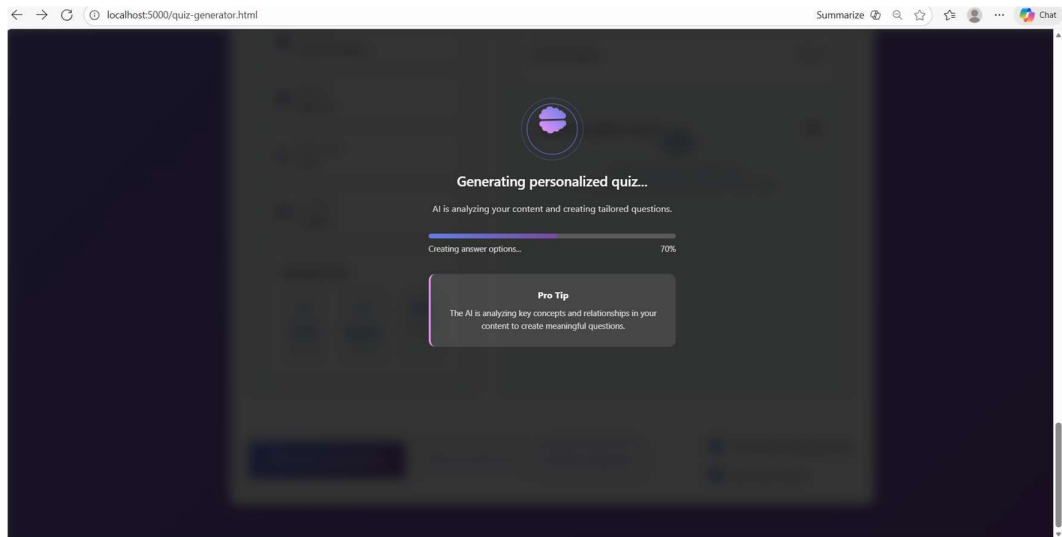
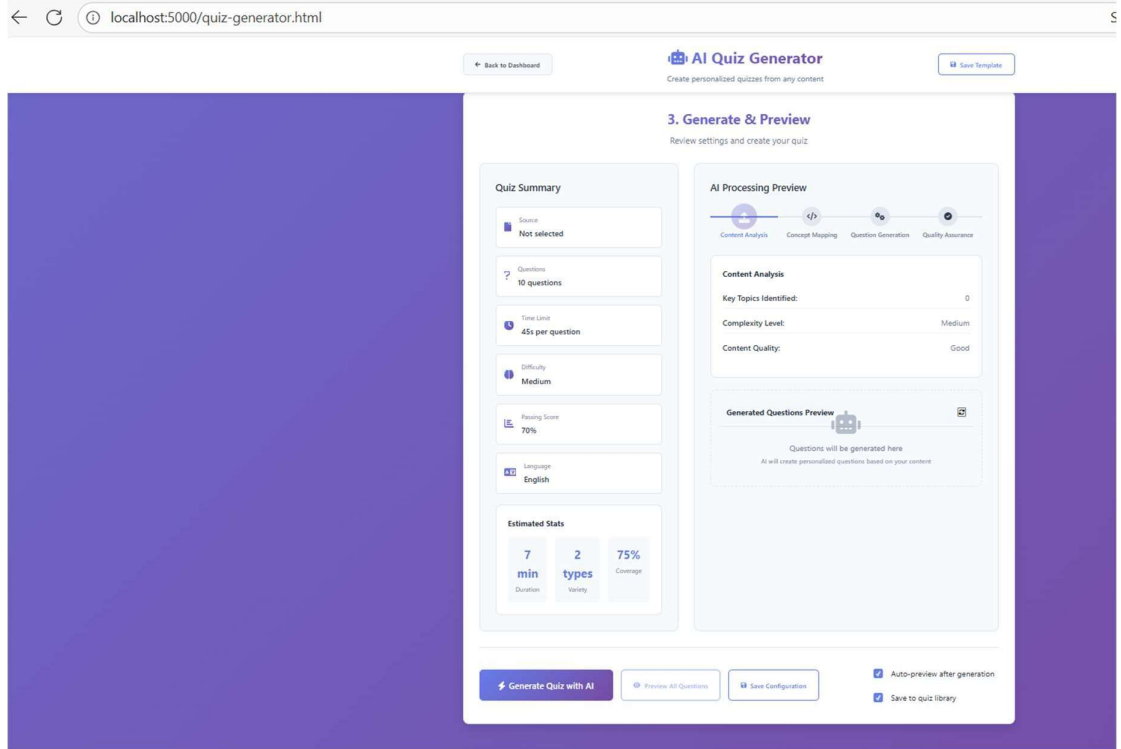
Milestone 2: Weeks 4–5 — Core Quiz Generator Engine

Goals:

Deliverables:

- Working question generator for uploaded material
- At least 3 question types with correct/incorrect distractors
- Auto-label questions by difficulty (based on content complexity)





Milestone 3: Weeks 6–7 — Adaptive Engine + Quiz Interface

Goals:

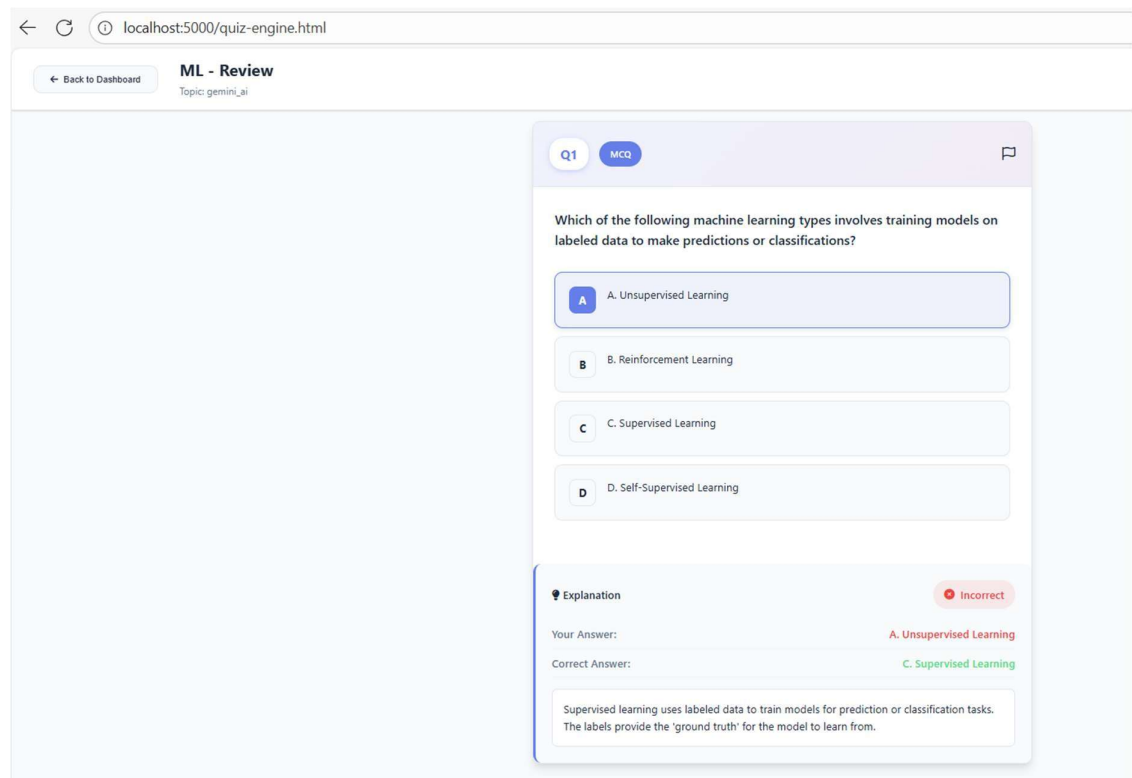
- Track user performance & adapt future quizzes
- Quiz UI with live scoring, progress tracking, and question routing

Tools:

HTML, CSS, JavaScript (Quiz UI), Node.js backend, SQLite (performance tracking), Google Gemini API (adaptive logic)

Deliverables:

- Quiz UI linked with the user model
- Adaptation algorithm using accuracy, response time
- Recommendations for next quiz session



Milestone 4: Week 8 — Admin Panel + Deployment + Documentation

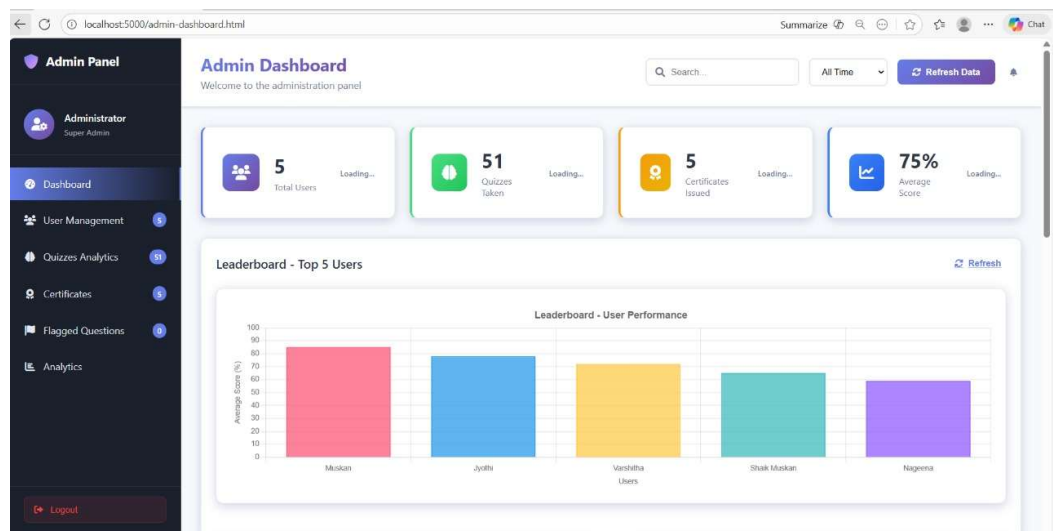
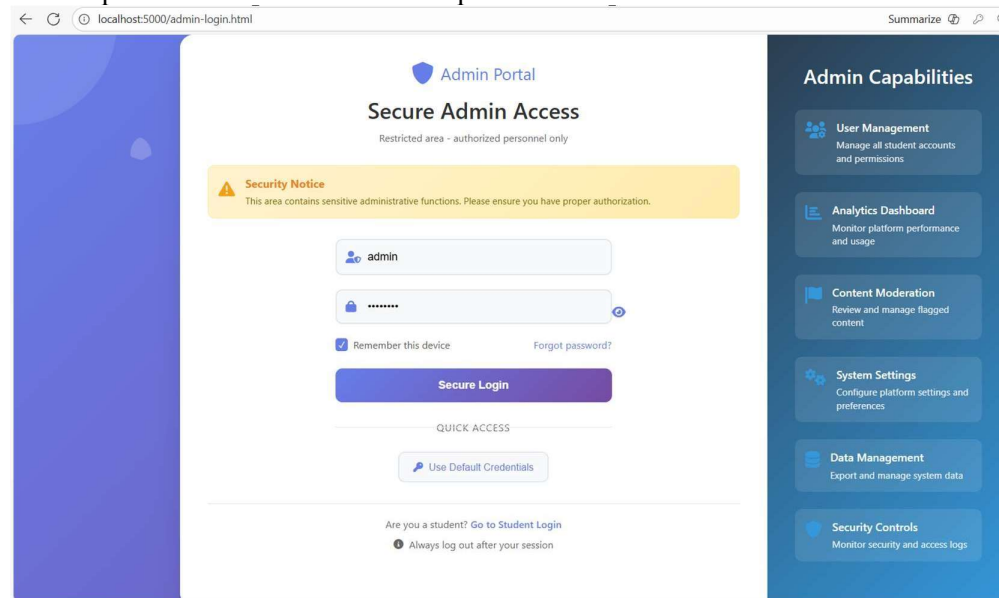
Goals:

- Admin dashboard to view/manage content, review flagged questions
- Collect feedback on questions
- Dockerize the project and deploy

Tools: Flask-admin/Dash, Docker, Streamlet Cloud/Hugging Face Spaces

Deliverables:

- Admin dashboard with content moderation
- Deployment on a cloud platform
- Complete documentation & demo presentation

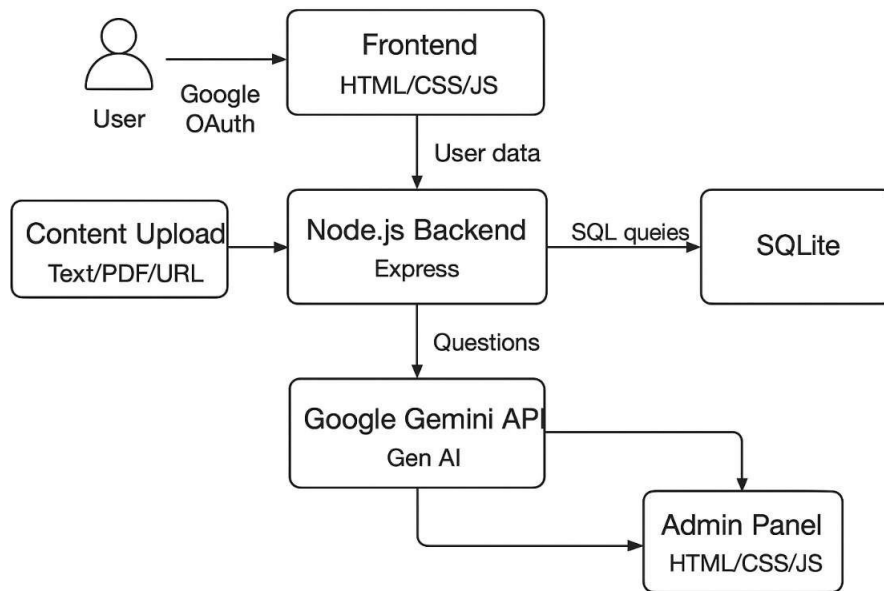


6. Evaluation Criteria

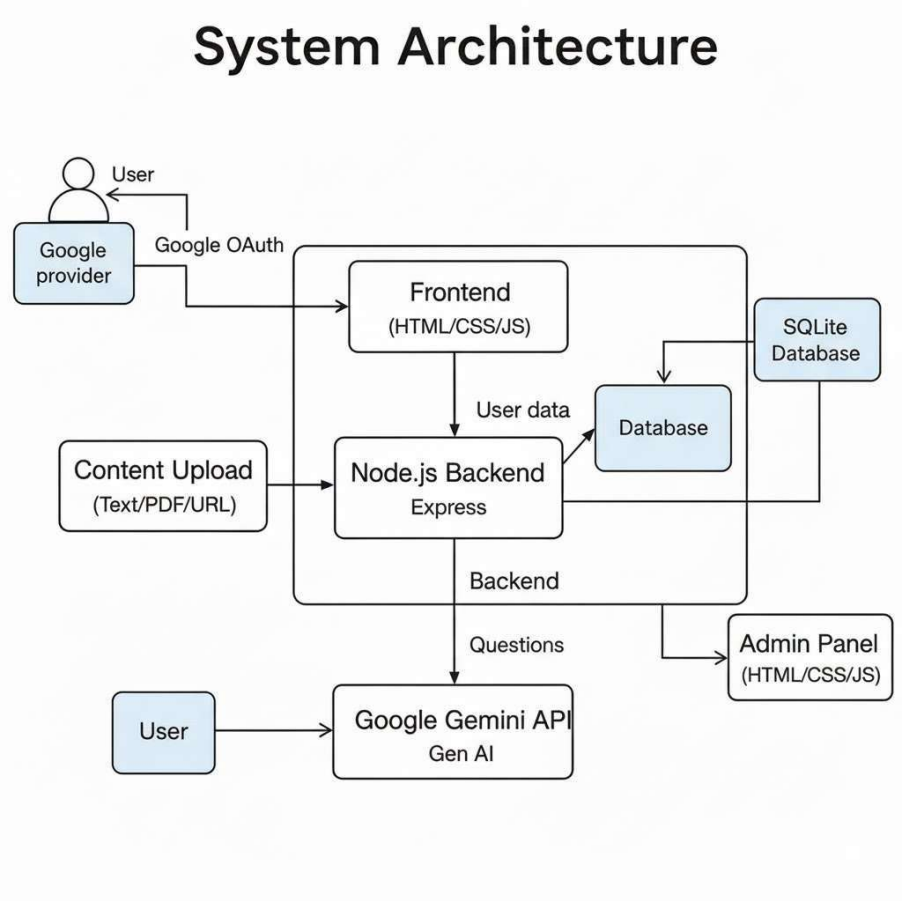
Milestone Success Criteria

- **Week 3** User registration, profile customization, and content upload functionality
- **Week 5** At least 3 question types generated from uploaded text; difficulty-level tagging.
- **Week 7** Adaptive quiz UI working; performance-based question adjustment working
- **Week 8** Admin panel ready; deployment complete; final documentation delivered.

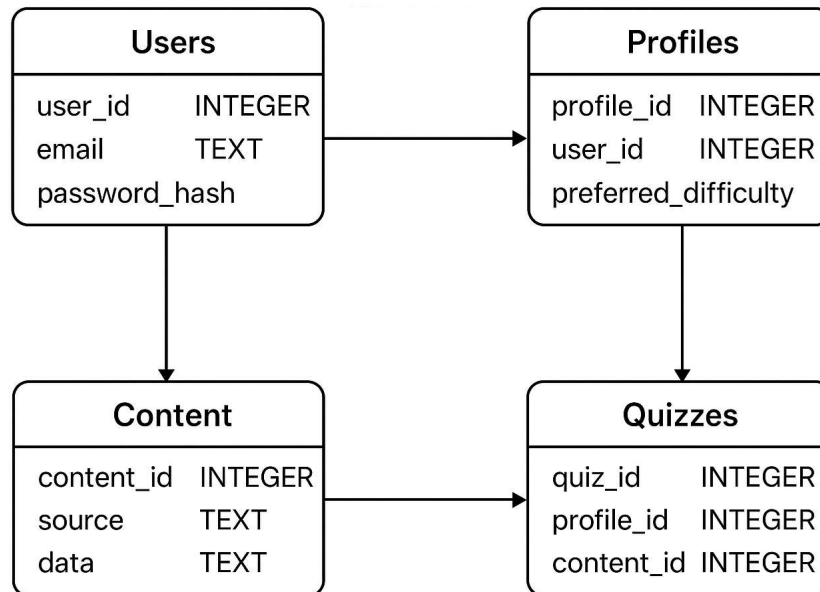
7. Flow Diagram:



8. Architecture Diagram:



9. Schema Diagram



Conclusion

The *Adaptive Quiz & Question Generator* project aims to transform traditional learning by offering a personalized, dynamic, and intelligent assessment system. By integrating NLP-driven question generation, user-specific difficulty adaptation, multilingual support, and a clean quiz interface, the platform ensures that learners receive quizzes tailored to their abilities and progress. With well-defined modules, week-wise milestones, and a complete deployment plan, this project provides a scalable and innovative solution for modern education. Its open-source nature encourages collaboration, continuous improvement, and widespread accessibility, making it a powerful tool for students, educators, and self-learners alike.