DOCENTIQ

An AI-Powered Academic Learning Platform

- Case Study: ISBAT University

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Statement of the Problem

ISBAT students often struggle to study effectively from scattered course materials, to verify information, and to identify topics they do not understand well.

Existing study methods give no integrated way to interact with personal course materials, to practise with generated assessments, or to receive targeted revision guidance.

There is a need for a system that gives document-based answers with references, generates quizzes and flashcards, identifies weak topics and recommends areas for revision.

1 Rereading slides

Slides are read again and again, with no past papers or practice questions.

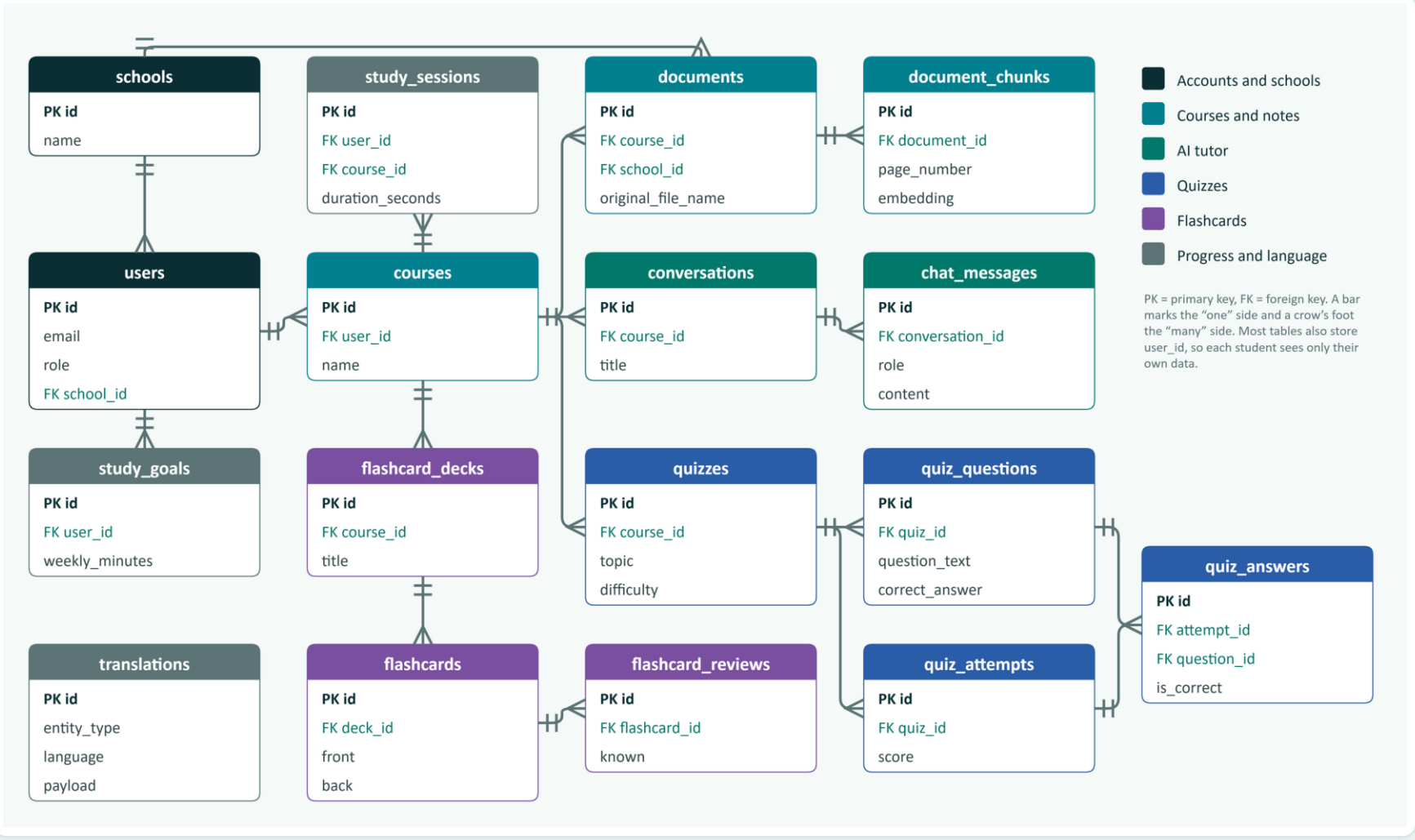
2 Unchecked explanations

Online or chat explanations may not match what the lecturer taught.

3 No feedback

Students only see a mark after a test and do not know which topics are weak.

Database Design



17

tables in MySQL 8

1

account owns each course, with its notes, chats, quizzes and flashcards

Chunks

of every file are stored with embeddings and page numbers for search

Diagram drawn in draw.io

Projected Scope

1 User authentication

Secure student registration and login to the platform.

2 Course management

Students organise their academic work into distinct courses.

3 Academic material management

Upload and store course material in PDF, Word, PowerPoint and text format.

4 AI tutor

A document-grounded tutor that answers questions from the uploaded material and names the file and page.

5 AI-generated assessments

Multiple-choice quizzes and flashcards generated from a student's own material.

6 Performance and study insights

Analysis of quiz results and study time, with advice on what to revise next.

Output from the Feasibility Study

Technical feasibility

Built with Flask, MySQL and Python. AI answers come from Groq, with OpenRouter and Gemini as backups.

Economic feasibility

Software and the free AI plans cost nothing (usage limits apply). Hosting, set-up, training and support make up the cost.

Operational feasibility

Students upload notes, ask questions and take quizzes in one place. ISBAT students answered a questionnaire on 17 September 2026.

Legal feasibility

Hashed passwords, private data for each student and sign-in protect user and academic information.

Schedule feasibility

Requirements took four weeks. Development and testing then followed in phases within the project period.

USD 385

estimated cost in the first year

About USD 3.85 for each of 100 students

Conclusion

ISBAT students rely on lecture slides alone, with little support for practice or revision. DocentIQ answers this: a platform where students upload their own material and get grounded answers, generated assessments and clear guidance on what to revise next.

Recommendations

- Pilot DocentIQ with one ISBAT class and collect student and lecturer feedback
- Lecturers share their slides through a school account, so the tutor answers from approved material
- Host it on a server that stays on, so students can use it at any time

Thank you

Live system: docentiq.rwenzorilabs.com