



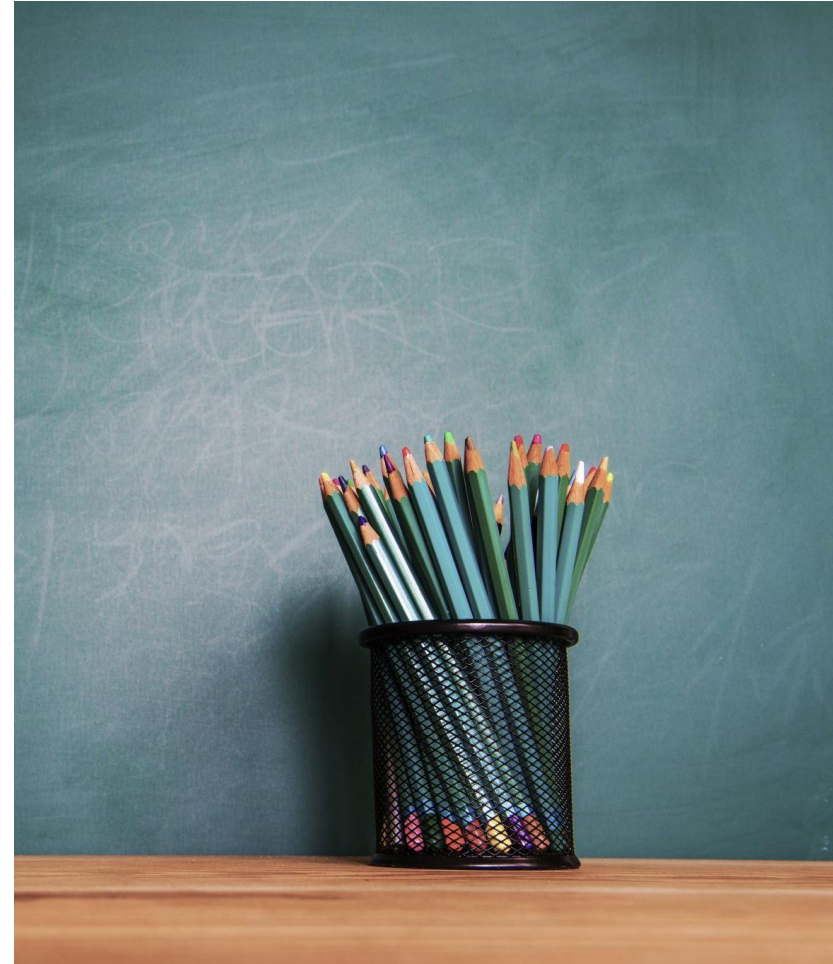
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AI MENTOR

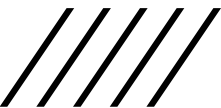
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ELECTRONIC ENGINEERING



○ Project Overview

- Fine-tuned models with specialised tutors
- Personalised learning modes like flashcards, quizzes and progress tracking
- Mobile application (Expo) with authentication and cloud sync
- Hosted Backend on EC2 and Website front-end on Netlify (with custom domain)





Current Problems

Some problems are that traditional AI software lacks educational personalisation.

Quality tutoring is expensive and usually very limited in space and also many students need support outside of college hours.



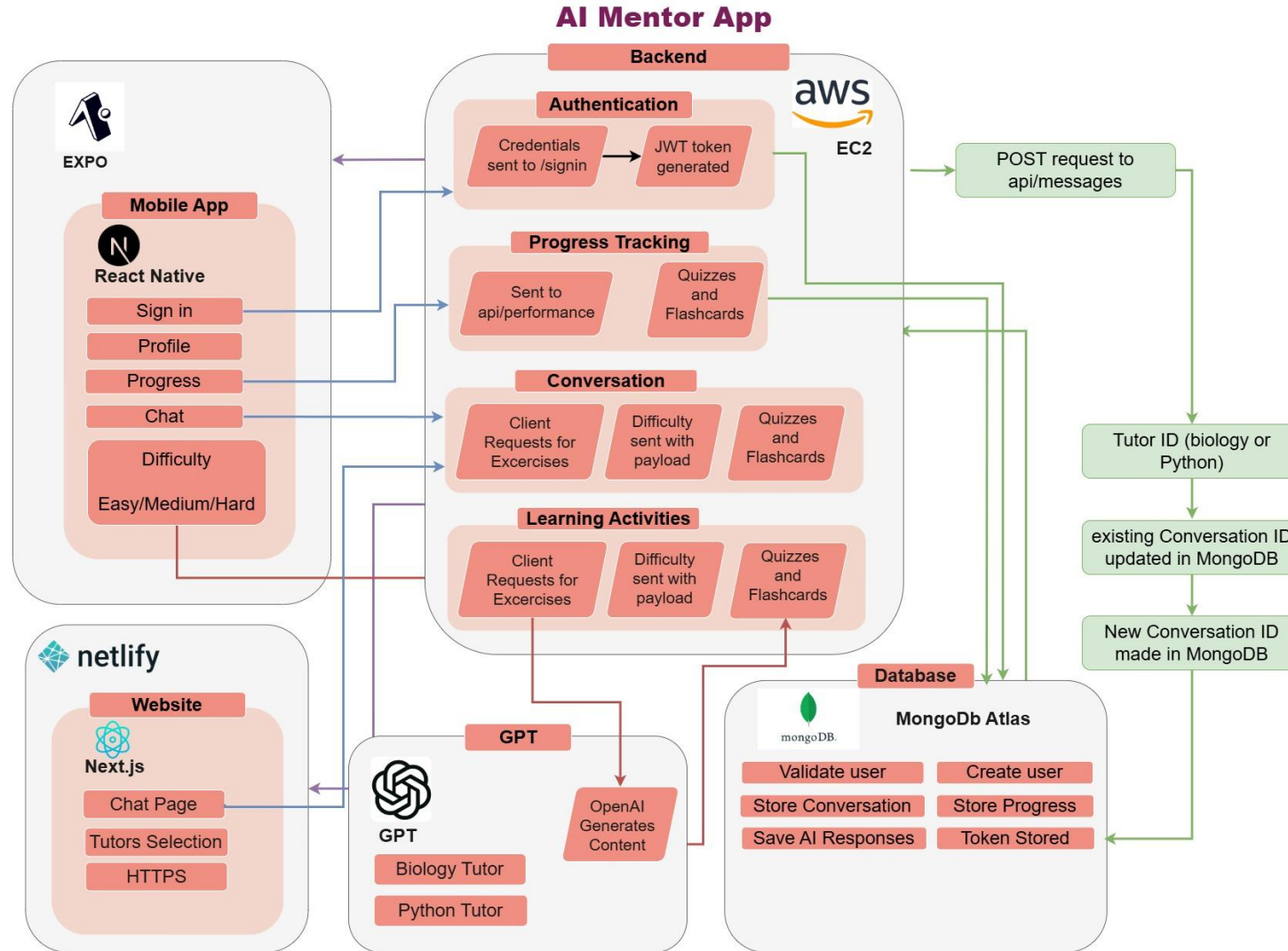


Solutions

- Performance tracking and learning paths
- 24/7 availability
- Interactive learning modes to help students greatly.
- Student would have a better time if they can learn without constantly asking for support.



Architecture Diagram



○ AI Model Training

- Fine-tuned models for specific domains such as my biology tutor with topics such as genetics, ecology
- Python programming with massive knowledgebase (dumps from Stack Overflow)

Training Method:

Used educational content from trusted sources.

Custom tuning for better responses.

Subject specific cleaned and data uploaded.



My Website

AI Mentor

Empowering Your Learning Journey

Experience interactive tutoring through our AI-driven platform.

[Explore Tutors](#)

○ Features – Conversation

The conversation tab provides an easy way for students to ask questions and receive detailed explanations.

- Natural dialogue with subject specific tutors such as my biology and python tutors' options.
- Contextual explanations adapted to user understanding



○ Conversation - Example

give me some topics to study related to ecology

Some topics related to ecology that you could study include: population dynamics, community ecology, ecosystem ecology, and environmental science.

what is population dynamic

Population dynamics is the study of how populations of organisms change over time, including their size, composition, and distribution.



○ Mobile Expo App

- Includes user login and authentication
- Difficulty setting for a more tailored experience
- Conversation sync with desktop app
- Individual topic progression
- In depth explanation for each answer in quizzes



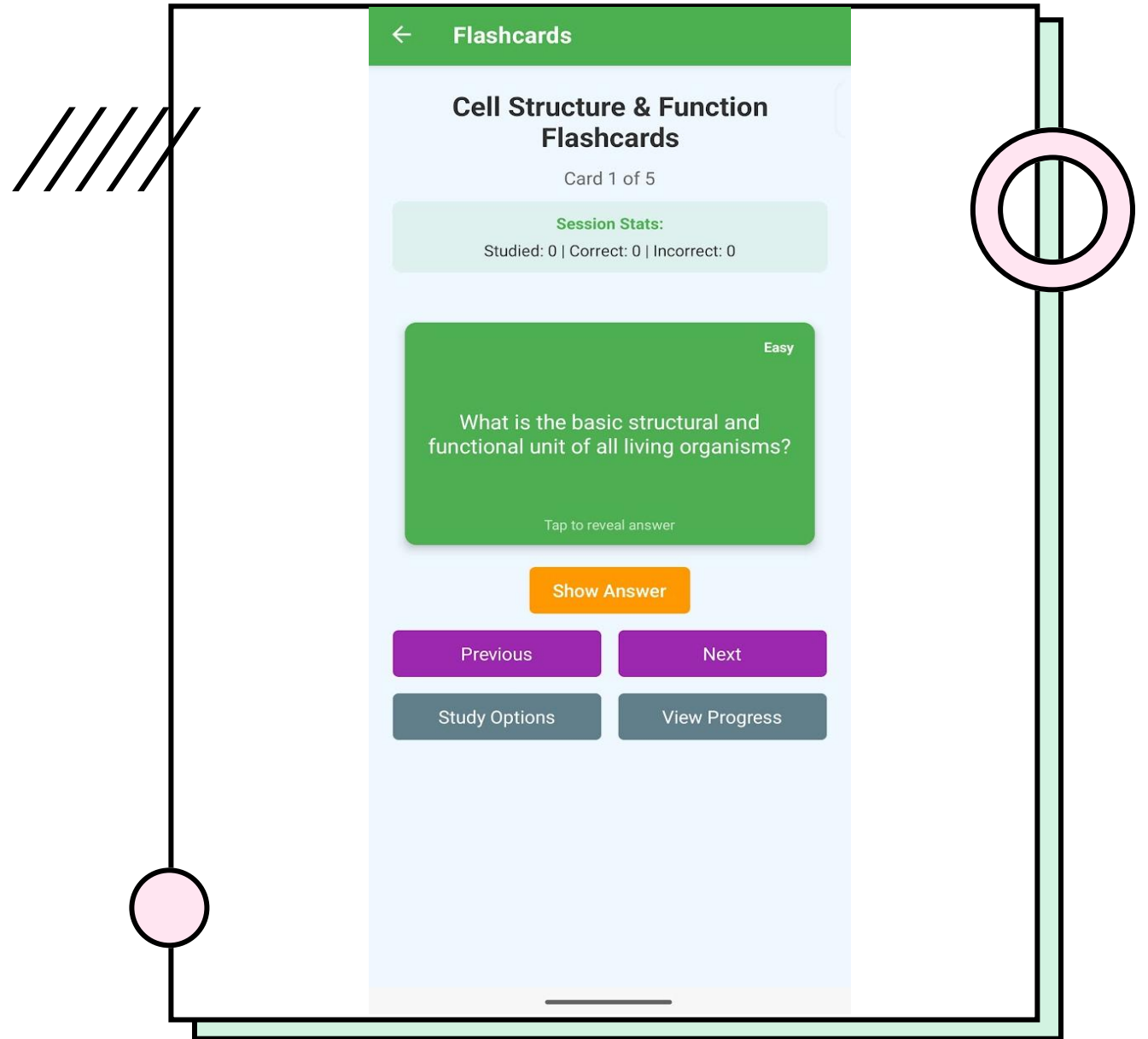
○ Learning Tools

Our learning tools automatically adjust difficulty based on students' preference from easy, normal to hard mode. This is brilliant for creating a custom-made learning experience.

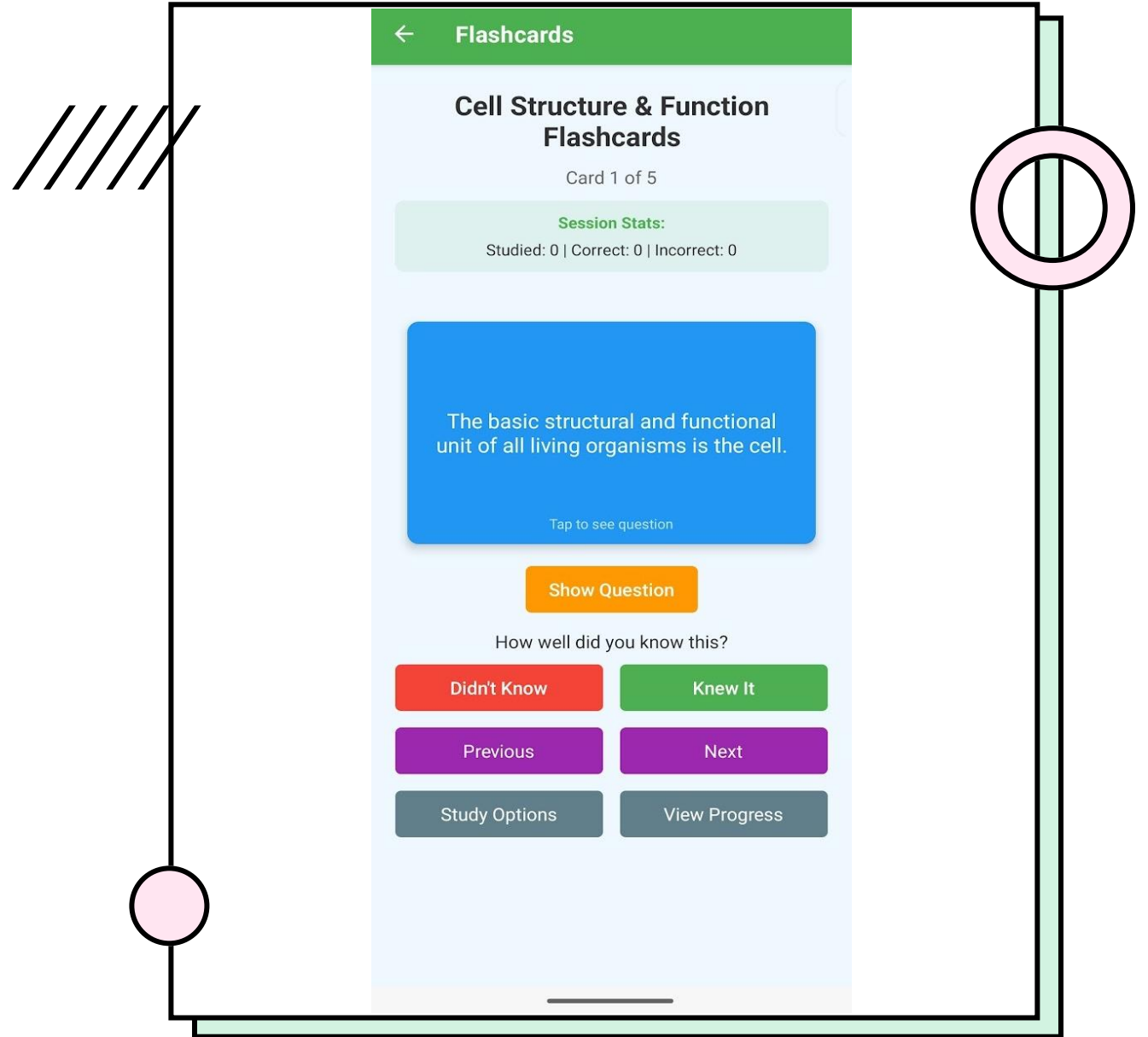
- Interactive flashcards that adjust to performance
- AI-generated quizzes with personalized feedback
- Progress tracking across subjects and topics



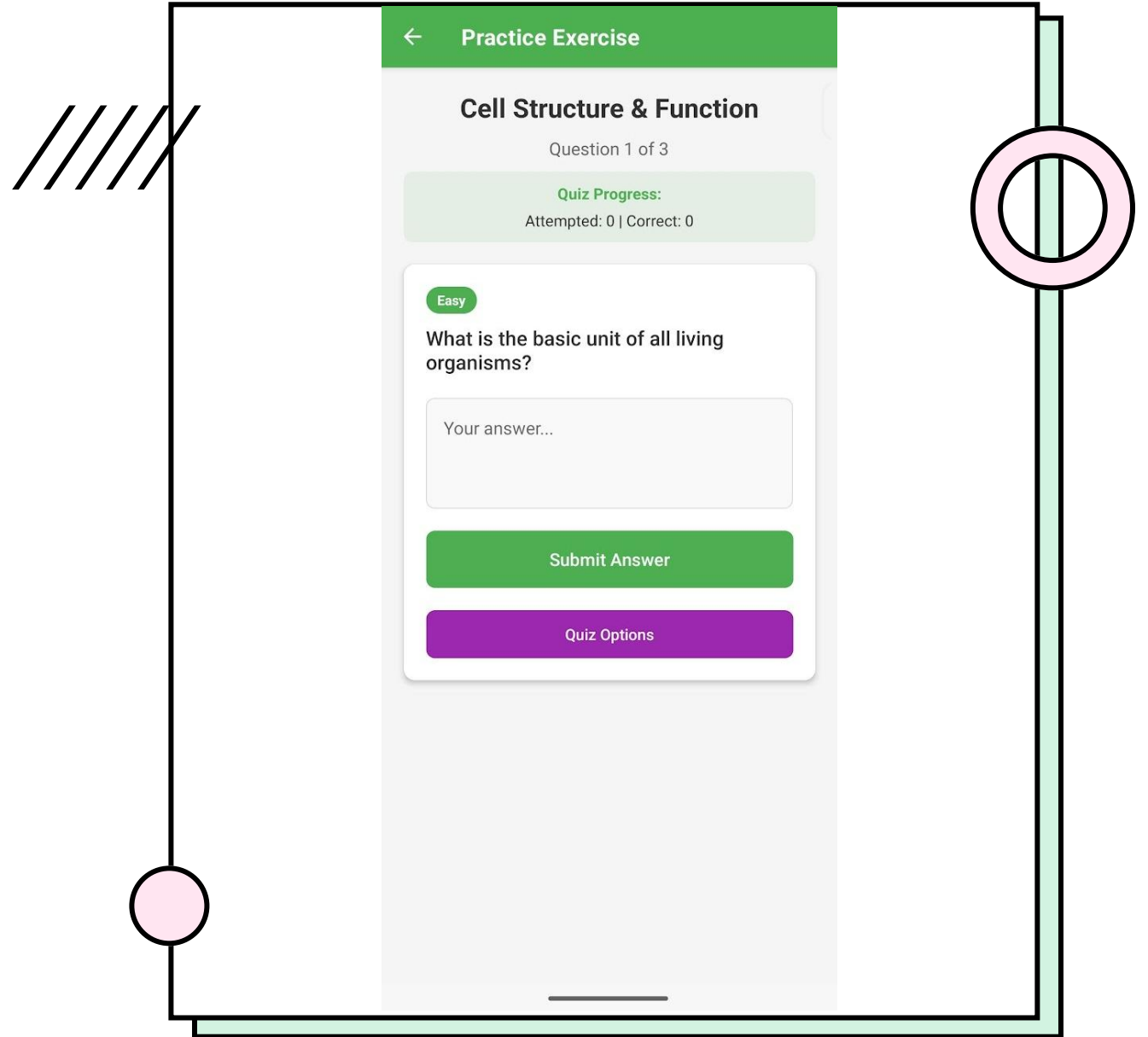
FLASHCARDS - SHOWCASE



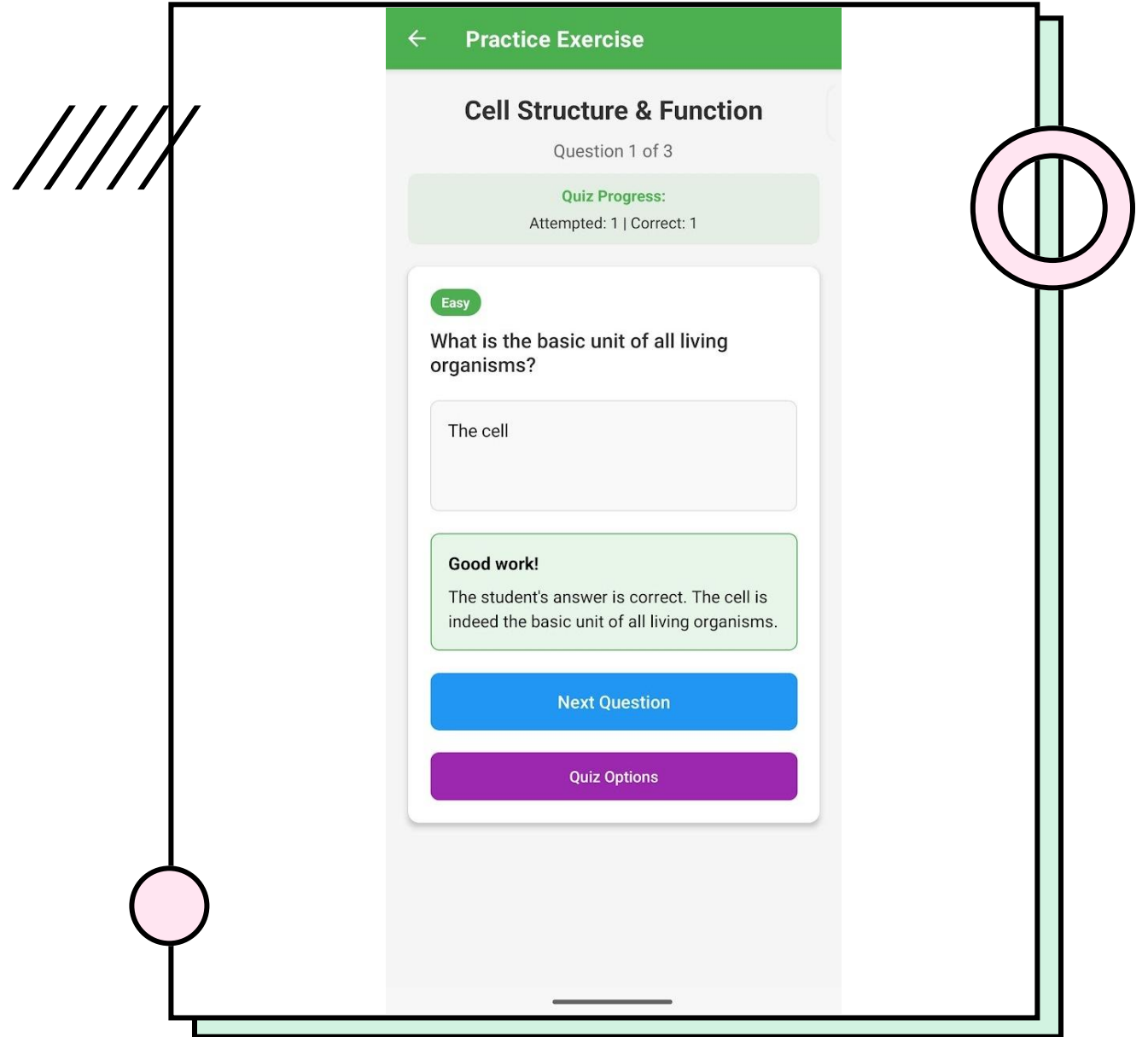
FLASHCARDS - SHOWCASE



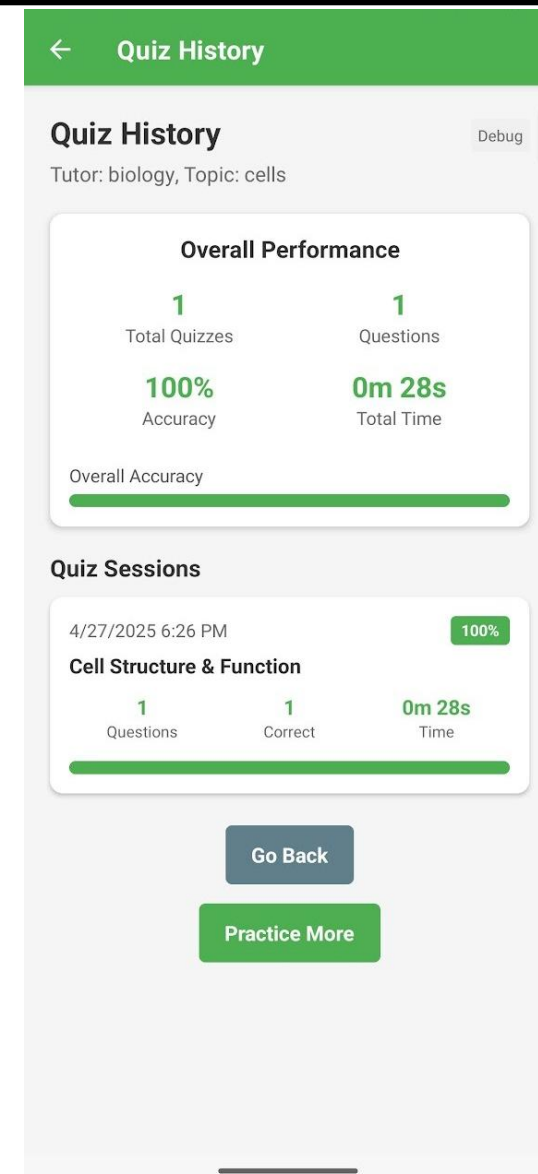
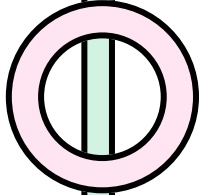
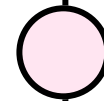
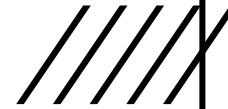
QUIZ - SHOWCASE



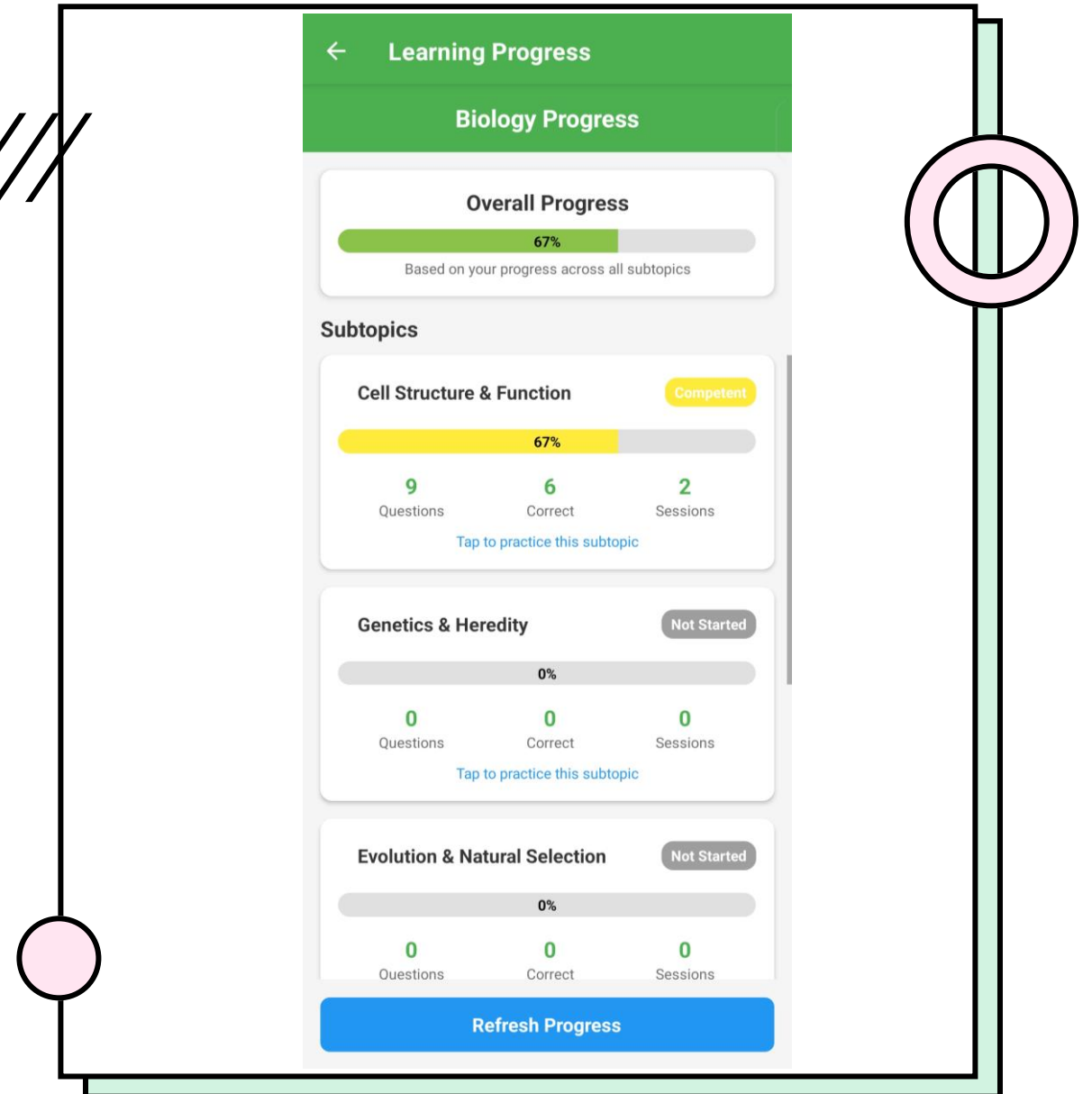
QUIZ - SHOWCASE



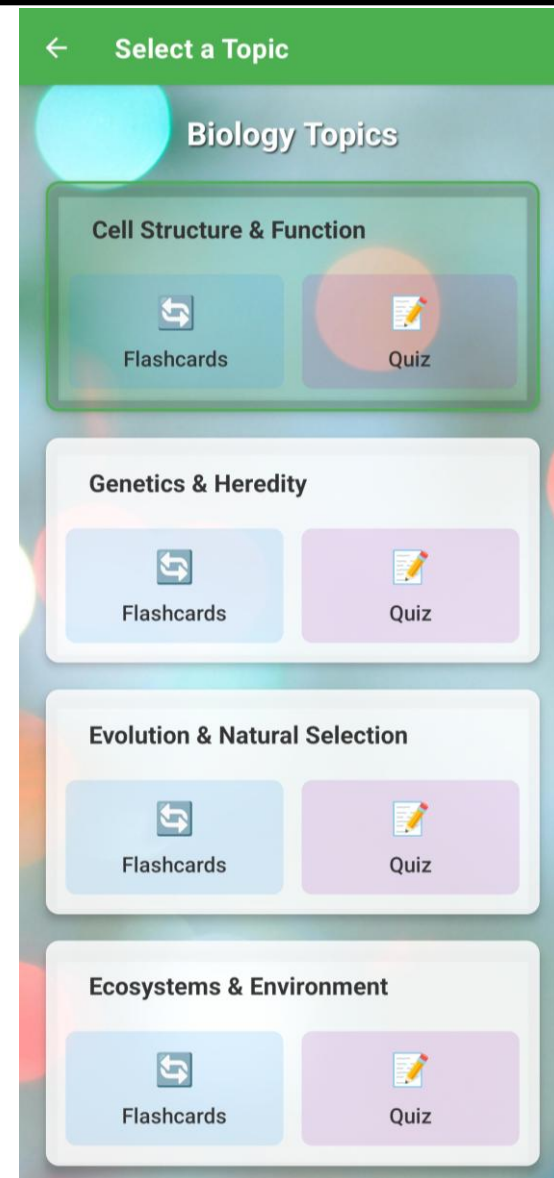
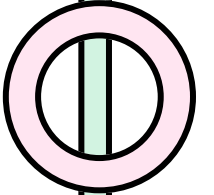
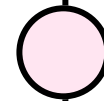
PROGRESSION - SHOWCASE



OVERALL PROGRESSION - SHOWCASE



OVERALL PROGRESSION - SHOWCASE



○ Demo

https://youtu.be/Mo_94nMYWs0



○ Conclusion

I believe this AI Mentor is accessible and capable enough to keep users engaged and excited to learn more on a daily basis. The flashcard and quiz system is a responsive and a seamless experience for improving your own knowledge base. All put together with an overall progress system.

I hope in the future I am able to add more features to demonstrate the power of fine-tune models and AI.

