

Online Course Enhanced Learning Intelligent Assistant (OCELIA)

Summer 2024

BACKGROUND

In this new educational landscape, the integration of technology into post-secondary environments has become increasingly important. During class discussions, students are often passive, having not understood the provided texts.

This project aims to use a Large Language Model to address student passiveness in online teaching, emphasizing one of the many applications AI has in educational contexts. Specifically, this project will support GEOG 121 students and their engagement with academic resources.

PROJECT DETAILS

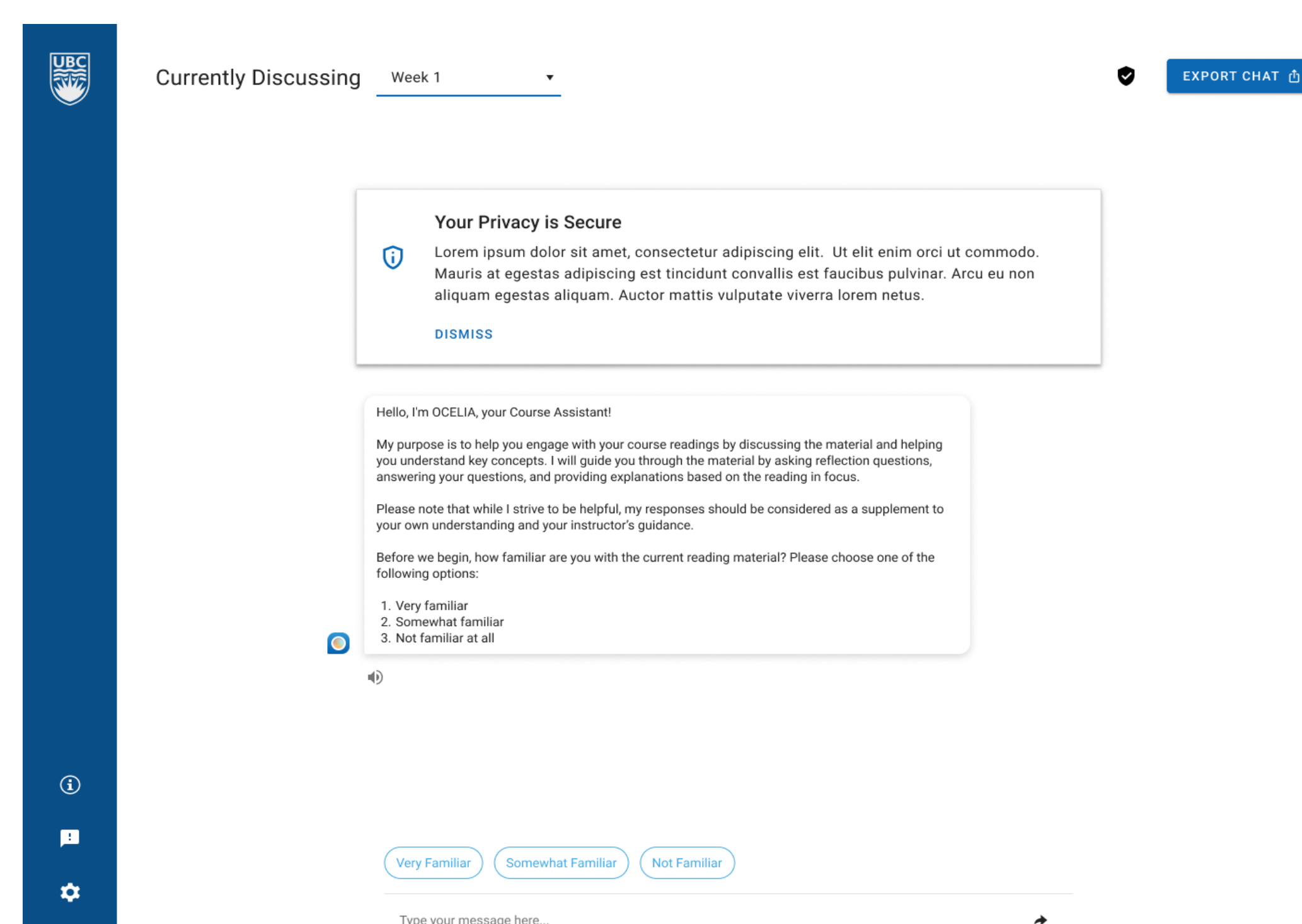
The Online Course Enhanced Learning Intelligent Assistant (OCELIA) is a conversational experience that goes beyond the standard Q&A format of most chatbots, facilitating deeper understanding, and encouraging students to critically engage with academic texts.

OCELIA includes:

- A responsive and accessible user interface that allows users to easily switch between focused discussions for each week's reading material
- Robust, encoded AI conversational behavior that opens and sustains conversation with students by asking probing questions.

PROCESS

Design



The design process of the prototype was rooted in AI research and user interview data, with both identifying key opportunities for OCELIA. These include creating tools for sustained academic discussion, preventing information overload by focusing on key points, and allowing students to describe concepts in their own words.

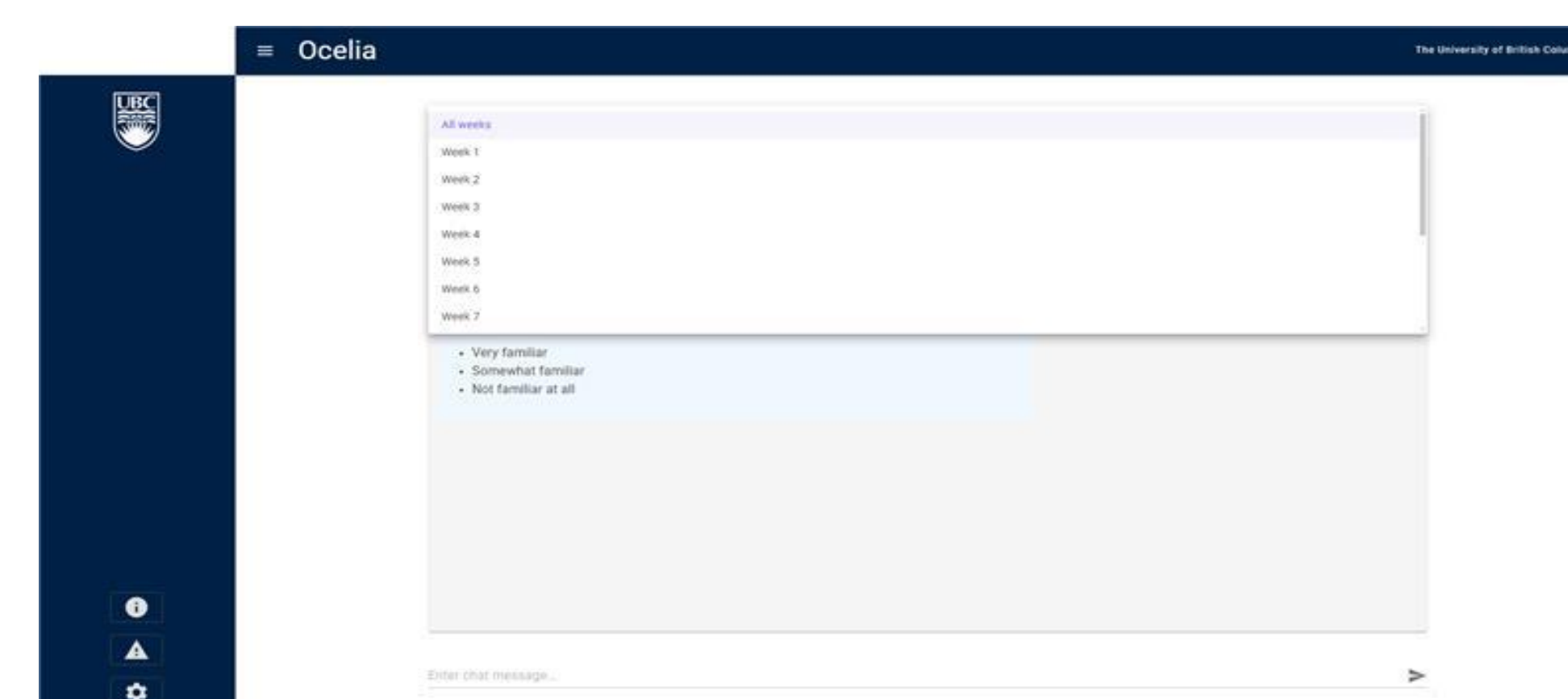
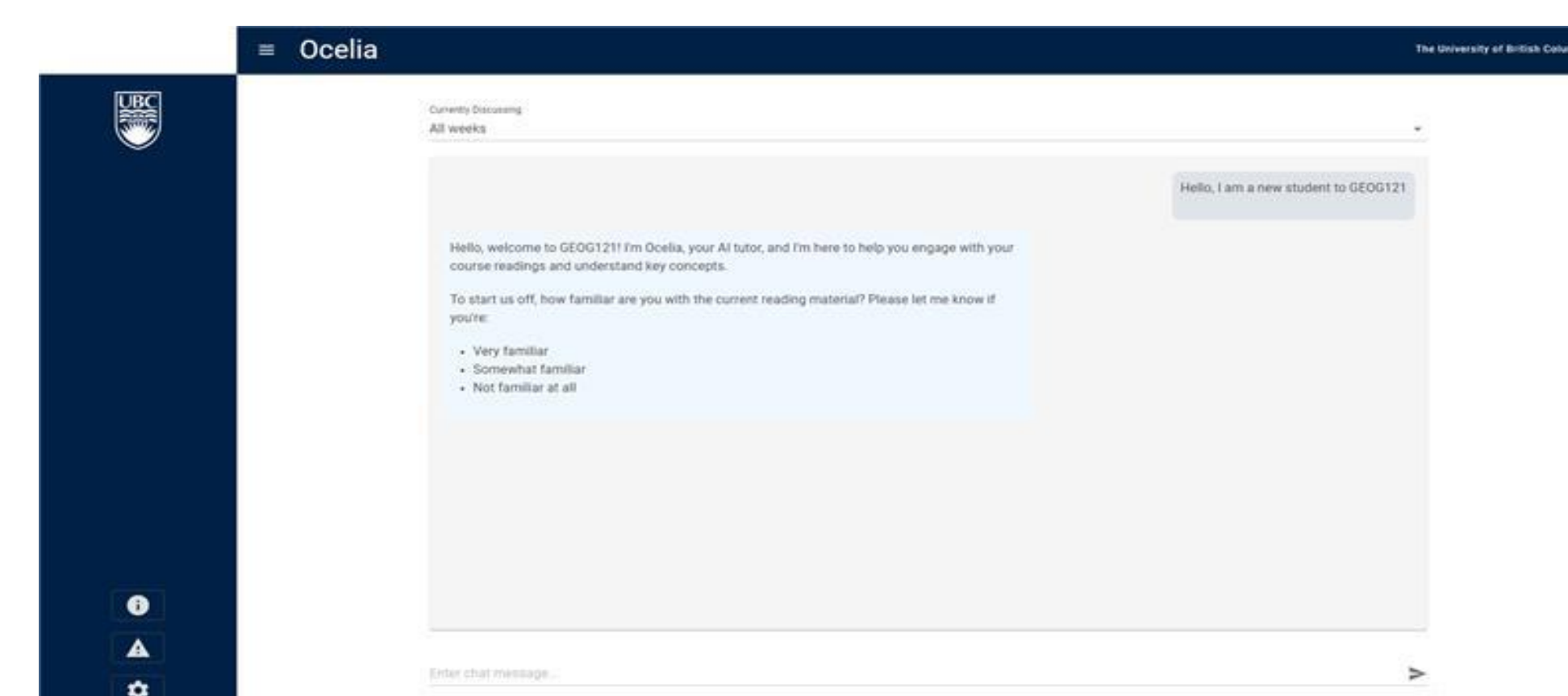
Personas and user stories emphasize the need for incremental help in explaining key concepts, using diverse discussions to understand main takeaways and link readings to course objectives.

The prototype's design include features such as user onboarding, a "Currently Discussing" menu, an "Export Chat" button, a privacy icon, a sidebar with information buttons, a privacy pop-up, a chat window, quick reply bubbles, and generation tools for feedback and response manipulation.

Development

OCELIA uses Blazor as its core framework. The MudBlazor component library was used to implement the user interface design. The team focused on WebAssembly rendering to increase efficiency and manage project size and dependencies.

The intelligent agent is built on the OpenAI Assistant API, which allows for custom behavior specification and the uploading of specific documents. For assisting GEOG 121 students, these documents consist of the individual weekly readings and their associated learning goals. This agent is accessed through EML's OpenAI WebSocket server.

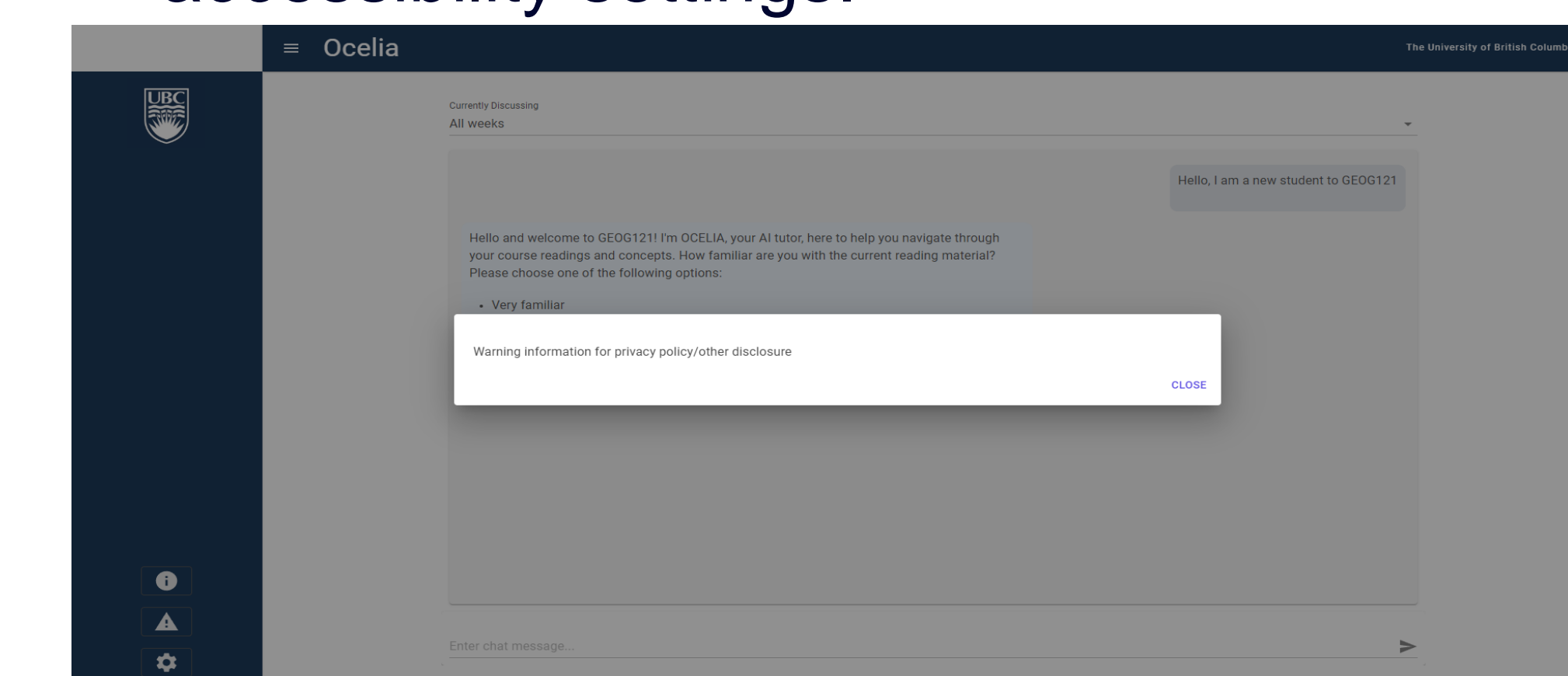


KEY FEATURES

- Custom, web-accessible, and responsive AI chat interface
- AI tutor chat interactions
- Integration of course material into knowledge bank
- Implementation of useful text interaction between user and AI.

NEXT STEPS

- User testing to ensure desired behavior and effectiveness
- Long term, cross-conversational memory.
- Implementing usability functions such as "Quick Replies", generation modifiers, and accessibility settings.



ACKNOWLEDGEMENT

Principal Investigator:
Dr. Siobhán Wittig McPhee

Subject Matter Expert
Michael Jerowski

Student Team
Mariane Olivan
Walker Rout

Made With Help From EML Staff
eml.ubc.ca

