



Florida
International
University



Engineering
& Computing

Florida International University

Fall Semester 2024 Senior Design Project

StudyQuest

Students: Markus Berrios, Alfredo Medina, Christopher Schur, Cesar Vargas, Richard Aguado
Mentor: N/A
Instructor/Faculty: *Syedmasoud Sadjadi*, Florida International University

PROBLEM

One of the significant challenges was finding and implementing a free and open-source API to serve the AI chatbot. Additionally, integrating the chatbot into the frontend was a challenge to connect the Api to the frontend and making sure the chat interface was intuitive for users to navigate.

CURRENT SYSTEM

- Enhance User engagement:** Providing an interactive way to get suggestions from the platform to maintain engagement with app.
- Simplifying Information Access:** Using an AI chatbot allows for users to inquire without having to leave platform, which reduces time spent by users searching for info.
- Provide personalized Assistance:** The chatbot will take information in the conversation to provide the best suggestions it can provide to the user.

REQUIREMENTS

Functional Requirements:

- Chat Window that allows for user communication with Artificial Intelligence.
- Capability for user to communicate with AI chatbot through their peripherals.

Non-Func. Requirements:

- Responsive UI for User
- Fast Response time from chat

SYSTEM DESIGN

The system will be structured with:

1. The Frontend will consist of Node.js components for easy client-side and server-side development.
2. The backend will consist of using a Groq API for the chat model.

The UI will use the available libraries of UI components from Nodejs.

OBJECT DESIGN

- Chat Interface:** user-friendly window for messaging.
- AI Integration:** Connecting backend AI model to generate responses.
- Personalization:** Chatbot responds to user based of ongoing conversation between the user and the ai model.

IMPLEMENTATION

- Frontend:** Designed with React and using provided libraries that come with React.
- Backend:** My part connects the Groq API to the application which is the AI model that users communicate with.
- Features:** Partial Chat Window to not interrupt main task of user in the platform.

VERIFICATION

Testing for this feature is done by sending a request to the API endpoint and verifying if a response is given within the chat window. Additionally, measuring the speed of responses to provide seamless experience for the user.

SUMMARY

In this project, I played a role in designing, developing, and integrating a AI-powered chatbot to enhance user engagement and information access. My responsibilities included building the user interface, connecting it to the backend, and ensuring communication with the AI model.

REFERENCES

1. Next.js Documentation: nextjs.org/docs
2. Groq API Documentation: <https://console.groq.com/docs/overview>

ACKNOWLEDGEMENT

The material presented in this poster is based upon the work supported by XXXXX (*name of the project sponsor: federal, state or local government, or corporate partners, where applicable*). We/I thank XXXX for his/her/their assistance and mentorship that I/we received throughout the senior design project.