

EE/CprE/SE 491 WEEKLY REPORT 04
10/03/2024 – 10/10/2024
Group number: 20

Project title: POSYDON

Client/Advisor: TRAJCEVSKI, GOCE

Team Members/Role:

<u>NAME</u>		<u>ROLE</u>
BYRD, JAMES	–	Database Backend, Cyber Specialist
COLLINS, EAMON	–	Client Contact, Database Backend
NORRIS, ALEK	–	Database Backend, Cyber Specialist
POLSTON, ALEXANDER	–	Database Backend, Cyber Specialist
SNYDER, ANDREW	–	Database Backend, Cyber Specialist
VARNITSKY, SVYATOSLAV	–	GUI Specialist, Database Backend

○ **Weekly Summary:**

This week, our team was tasked with investigating natural language model solutions for our tool to assist users with SQL query generation. Our client also suggested we proactively update our design document with our progress and developments each week to keep our document up-to-date and streamline the drafting process at the end of the semester.

○ **Past week's accomplishments:**

During this week, our team drafted an initial UI for the program in Figma and presented it to the client for approval, confirming that our design was on target. The team also explored the users and use cases, helping us better understand user needs and finalizing our target user groups as researchers, educators, and students.

Task Section:

- Group
 - Update the design document with current progress and developments since the first iteration presented to our client
 - Update UI design, incorporating client suggestions
 - Add login Screen
 - Add an area for NLP query statements to be generated and placed

- Develop and practice the lightning talk for presentation during class.
- Individual
 - Explore Generative AI models APIs and see which would work best for NLP and conversion into SQL.
 - Create a basic REACT application to gain experience with the tool

○ Pending issues:

- Update the Figma mockup of the UI to include a login screen and various updates to the sidebar menus.

○ Individual contributions:

<u>NAME</u>	<u>Individual Contributions</u>	<u>Hours this week</u>	<u>HOURS cumulative</u>
BYRD, JAMES	Assisted with the creation of mock UI using Figma. Collaborated on the development of lightning talk. Researched UI development solutions.	5	17
COLLINS, EAMON	Worked with the group to create a Figma mockup of our UI. Worked on a lightning talk presentation. Researched implementing an AI SQL generation feature. Communicated with the client.	4	17
NORRIS, ALEK	Self-studied React and HTML and learned the basics of how to build a frontend UI via React. Figma mockup and helped with Lightning talk	4	16
POLSTON, ALEXANDER	Worked with the group to help create a mock UI page, self-studied on information related to HTML programming, as well as learned about React.	3	15
SNYDER, ANDREW	Helped create a Figma mockup of our planned user interface. Performed research on different tools for developing our frontend and backend. Researched potential generative AI integration for generating SQL queries given our database schema and natural language requests.	5	19
VARNITSKY, SVYATOSLAV	Assisted in the creation of baseline Figma mockups for front-end UI. Assisted in creating the lightning talk presentation. Researched libraries that could be	3	15

	used for the front end.		
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Plans for the upcoming week

- Create and prepare for presenting a lightning talk in class
- Complete the introduction for the design document
 - Update existing information to be more accurate to our current progress
 - Update the format for the design document to appear more professional
- Practice using React to create a basic application
- Research additional ways generative AI can be used for producing SQL queries using natural language

○ Summary of weekly advisor meeting

In this meeting, the team focused on preparing for the upcoming lightning talk presentation, finalizing the users and groups presentation, and completing the corresponding design document report section. We discussed incorporating new UI features, such as a login system and dataset loading capabilities, while also making progress on database development. The team also reviewed and clarified the POSYDON binary star data, including its contents and our requirements for working with it. Additionally, we explored the introduction of Natural Language Processing (NLP) into the project to assist users in making SQL queries, especially for those who may be unfamiliar with such requests.

○ Figma mock for UI - Main Screen

