EE/CprE/SE 491 WEEKLY REPORT 09
11/08/2024 – 11/14/2024
Group number: 20

Project title: HADES: Holistic Astronomical Database Exploration System

Client/Advisor: TRAJCEVSKI, GOCE

Team Members/Role:

NAME		ROLE
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
VARNITSKYY, SVYATOSLAV	–	GUI Specialist, Database Backend

- **Weekly Summary:**

This week, we worked to create prototypes for our user interface and natural language processing tools. For this, we established the UI's style and created a template for the navigation bar on the query page. Additionally, we tested a tool for automatically populating the database and generating a schema. We then used this schema to interact with ChatGPT and generate custom queries using natural language processing.

- **Past week's accomplishments:**
  - UI
    - Established styling
    - Expanded on existing toolbar to include correct navigation buttons and icons
    - Added text input field that will be utilized for ChatGPT integration
    - Added welcome message
  - Design Document
    - Began consolidation and correction of content
  - Backend
    - Worked on initial Python h5 file Parser for uploading into a workable SQL database
  - PostgreSQL
    - The database is queryable with a single H5 file parsed and uploaded

o **Individual contributions:**

NAME	Individual Contributions	Hours this week	HOURS cumulative
BYRD, JAMES	Continued learning about the React framework and investigated PostgreSQL usage for database creation and querying. Contributed to weekly team documents, including the Report, Design Document compilation and proofreading, and Lightning Talk.	4	40
COLLINS, EAMON	Continued to work on various documents and client communication. Investigated the prompt training process. Contributed to weekly lightning talk. Worked on .h5 parsing and viewing data in software.	4	40
NORRIS, ALEK	Built a parsing script for automatically uploading h5 data into a PostgreSQL database and practices SQL querying and structuring of the data once uploaded. Practice single message prompt training with GPT to see if it's able to learn schemas and use NLP to return a valid prompt. Assisted in Report, and Final Design document.	5	41
POLSTON, ALEXANDER	Prepared the documents for the week to ensure a productive week. Began correcting and consolidating design document components into a fully formed design document.	4	40
SNYDER, ANDREW	Worked on the lightning talk and contributed to the weekly report to ensure our progress was correctly tracked.	3	42
VARNITSKYY, SVYATOSLAV	Updated toolbar, added welcome message, added text input, and established styling on React project for home/query page. Contributed to lighting talk presentation and weekly report.	6	44

Plans for the upcoming week

- Continue work on UI
- Finish and correct the consolidation of the Design Document
- Experiment with REACT
- Start uploading all work to our Senior Design Website

Summary of weekly advisor meeting

- Demoed UI and received feedback.
- Demoed SQL Database
- Demoed data ingestion process and Natural Language Processing query results.