Snapshot Objectives

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1 Start Objective

Our start objective is what we want to cover for the first two months out of four for our project. For our project "Pineapple ChatBox" , we have already decided on our dependencies for Front-End and Back-End. Tasks will be assigned evenly between 2 groups one for the Front-End and design and the other on the logic and Back-End. Our current objective is to set up the main functions of the chatbox using spaCy.

1.1 Front-End

React: Main UI Framework. Offers many libraries and tools. Its Virtual DOM (Document Object Model) allows for efficient UI updates and only updates the real DOM, which serves as our UI, only when necessary. It is also component-based, which means that it is built from small, reusable pieces. This falls under the definition of modular. This makes it easier to create, clean, and maintain code.

1.2 Back-End

MySql: As an open source relational database management system, MySQL is also known for its robust and stable performance which is crucial for applications. MySQL can also scale to meet growing data and traffic demands.

Node.js: Backend Framework for API Development. It is event-driven, meaning it responds to specified occurrences rather than executing the code upon starting up. Offers thousands of npm packages to assist with development. It is also scalable. It will also be how we connect to our databases.

2 First Checkpoint

Following construction of the basic UI and API communication, the next objective is to integrate system modules and implement early-stage functionality.

2.1 System Functionality

Key module interactions:

- Convert user input to Statement objects using the Input Module.

- Clean and filter text using SDD-defined preprocessors.

- Send processed statements to the Logic Module for interpretation.

- Query the MySQL database via the Storage Module.

2.2 Contact Page

A Contact Us page will be created to allow users to submit:

- Name

- Email

- Message

3 Second Checkpoint

Checkpoint 2 focuses on improving system accuracy and expanding data interpretation capabilities.

3.1 Logic Module Enhancements

Enhancements include:

- Improved keyword extraction using spaCy.

- Higher-confidence statement comparison functions.

- Incorporation of Bayesian classification models referenced in the SDD.

3.2 Database Expansion

Database improvements based on the SDD:

- Expanding keyword and URL mappings.

- Updating crawled content.

- Reducing redundant rows in the `termXurlXkeywords` table.

3.3 FAQ Page

A Frequently Asked Questions page will be developed to reduce recurring user support issues and improve system usability.

4 Final Checkpoint

The final checkpoint focuses on refinement and optimization of the entire Pineapple ChatBox system.

4.1 Front-End Improvements

- Performance optimization for faster rendering.

- Enhanced accessibility to comply with W3C standards.

- UI polishing for readability and usability.

4.2 Back-End Improvements

- MySQL indexing and retrieval optimization.

- Enhanced Logic Module accuracy.

- Reduced latency across all server interactions.

- Reliable integration between React, Node.js, and Python systems.

4.3 System Stability

- Ensuring virtual machine consistency.

- Validating server startup procedures.

- Conducting requirement verification based on SDD criteria.

5 Conclusion

While we are happy with the product we have, more advance features are missing like spell check and 100 percent, and can give wrong responses especially if the query is not specific enough.

The team is proud of the progress made and remains committed to advancing the system to improve user access to campus information.