Progress Report #4	
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1. Objectives

- To fix serious runtime issues that were found during system testing, including a KeyError that was preventing the presentation of statistics.
- To improve the user experience, the user interface should be entirely redesigned from a simple text layout to a contemporary, two-column chat application.
- To add more thorough, structured instructions on the AIMS site to the chatbot's knowledge base in order to greatly increase its size.
- To put in place a real-time system monitoring panel that includes comprehensive information and visual status indications.
- Must track each user's session and queue position in order to implement multi-user capability.

2. Discussion

In this progress report, we addressed some runtime bug and executed a overhaul for the AIMSsist chatbot for enhancement of our project. A significant KeyError was identified that crashed the application when attempting to display processing statistics; this was traced to a key mismatch in the get_queue_stats method and we was able to resolved. We improve the interface by redesigning it and keeping with current standards. So we transitioned from the the chat message to be on one place and the user could just scroll up or down.

Furthermore, the chatbot's knowledge base was significantly expanded from three simple topics to eight comprehensive procedures, including Add/Drop, Class Schedules, and Document Requests, with detailed, markdown-formatted responses. The core QueueManager was also enhanced to handle unique user IDs, allowing the system to able to manage multiple conversations and accurately report queue positions for each user.

3. Materials and Equipment

- PyCharm
- Streamlit
- Python
- Github

4. Procedure

1. Fixing Runtime KeyError by identifying the error in the System *Monitor* section.
2. Implementing Multi-User Tracking and we add_user_message method was modified to accept and store a unique user_id.
3. Redesigning the User Interface. The previous st.write loop for displaying messages was replaced with st.chat_message inside an st.container for a more interactive and structured chat interface.
4. We developed the System Monitor by adding st.metric components to display live systems such as active users and total processes.
5. We expanded the knowledge base by adding Five new, detailed procedures were added to the AIMSKnowledgeBase class.
6. The previously hardcoded “Quick Questions” buttons were replaced with a dynamic “Quick Topics” section.

5. Output

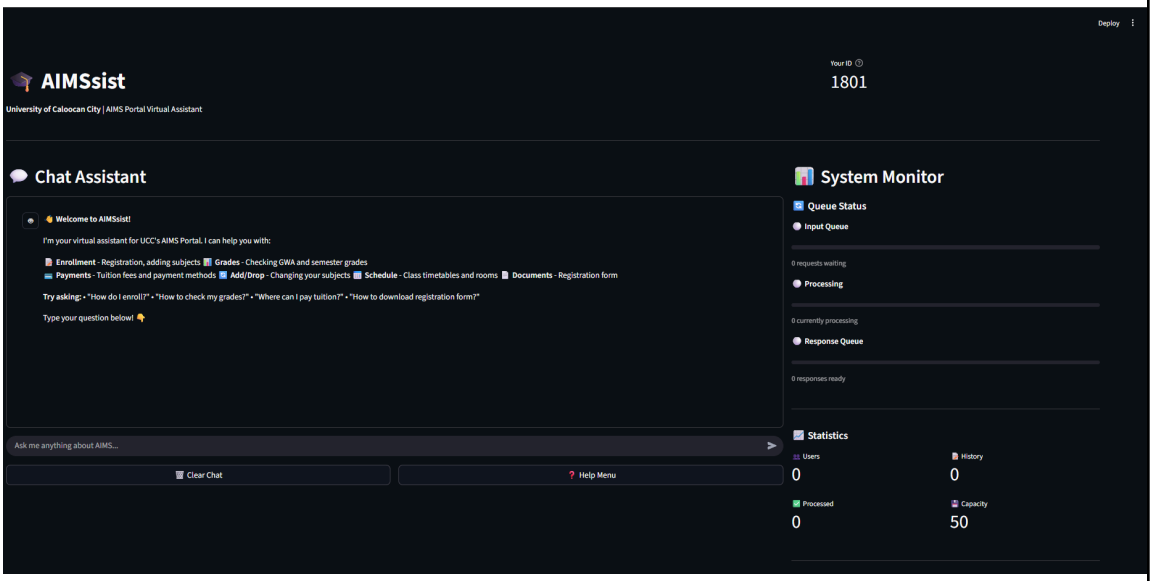

Figure 1. Redesigned Two-Column User Interface

This new interface is now getting closer to the usual chatbot interface. We also edited the Queue Status and renamed it System Monitor and removed others on it and only Input Queue, Processing, Response Queue remained. We have also added a statistics on the left section which shows how many users are currently on etc.

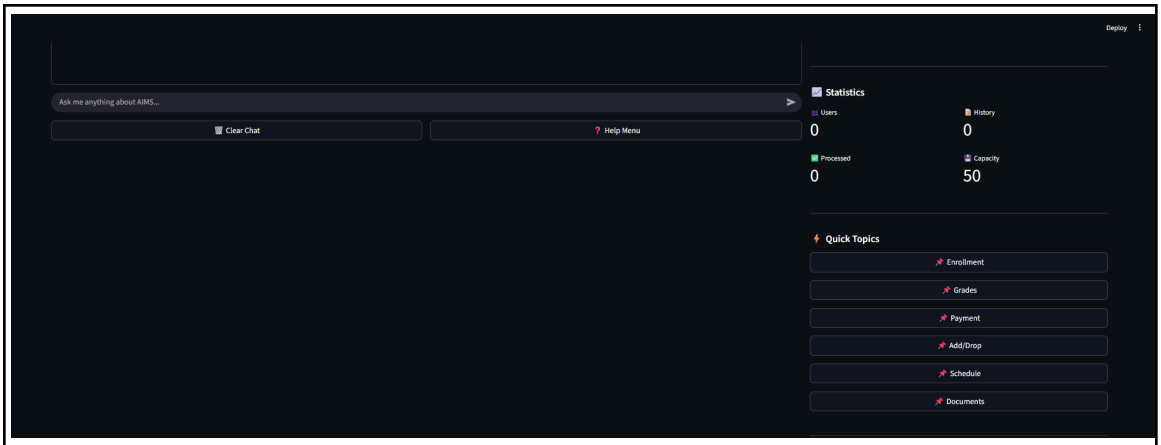

Figure 2. Expanded Knowledge Base and Dynamic Topics

This chatbot's intelligence has been upgraded. As shown in the "Quick Topics" which is previously named "Quick Questions" in a previous progress report. The AIMSsist can now handle a wider range of student questions on the AIMS student portal. The chatbot also now provides more detailed responses.

6. Conclusion

In conclusion, this progress report shows improvement on our program of a critical bug and a major evolution of the AIMSsist chatbot. The objectives are already met, resulting in a more reliable, functional, and user-friendly application. We designed the User interface to become more easy to use and a real-time System Monitor provides information while using the program. It makes the chatbot more informative and useful for students. This version represents more Improvement in our programs capability and lays a solid foundation for future enhancements.