CS 4530 Final Project: Improving Responses with Reactions, Points, and Auto Responses

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Project Description

On Stack Overflow, questions and answers are key to the ecosystem. Low responses and no questions can then hurt the platform, so we are introducing three factors to improve conversation: a **point bounty system**, **auto responses from LLMs,** and **reactions on questions and answers**.

Links

Repo:
https://github.com/neu-cs4530/spring25-team-project-spring25-project-group-403
Demo site: https://cs4530-s25-403-frontend.onrender.com/
Note: Due to the backend cold start, the first login on the frontend after an extended period of inactivity takes some time. This is due to render and not a consequence of our implementation.

Tech Stack and Design

Tech Stack: React, Mongo, Node, Awan LLM, Render

Design: We built our features with a focus on modular design and extensibility. For the auto response system, we used Node `fetch` to communicate with the Awan LLM API, implementing retry mechanisms and error handling within separate utility and service modules. Our prompt engineering combined system instructions with few-shot examples to ensure quality responses. The points system utilizes MongoDB to store points data in `Question` and `User` collections, with a separate `Metadata` collection tracking update timestamps. For reactions, we created a Reactions schema embedded within Question, Answer, and Message models. Throughout development, we prioritized decoupled components that can be easily maintained or replaced, such as our LLM implementation which could be swapped without extensive re-architecting.
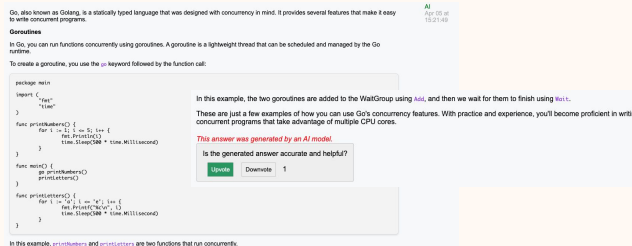
📷 Screenshots
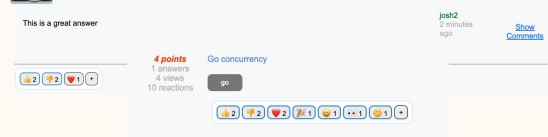
Question (top) and answer (bottom) with reactions
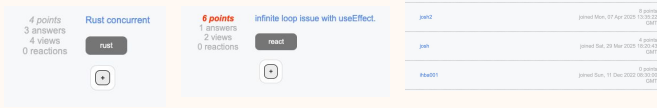
Answered question (left), unanswered question (middle), and leaderboard (right)

AI answer (left) and disclaimer / voting (right)

Future Work

- An "enriched" response option for the LLM feature, allowing users to request more detailed answers
- Expanding reactions to support ranking responses based on reaction counts - only partially implemented
- Refine the points formula to better incentivize answers to challenging questions
- Personalized reaction sets
- Integration between points and reactions for a more comprehensive engagement metric