

Group 511: AI Overflow

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Features

Our project aims to improve content quality, accessibility, and developer support. These enhancements target both technical and non-technical users, strengthening the overall platform experience.

AI-Enhanced Content & Moderation

We added optional AI-generated answers to provide immediate guidance when regular answers are slow or unnecessary for simpler questions. Moderators can now remove harmful/reported content, supported by an AI toxicity classifier that flags unsafe or inappropriate posts.

Accessibility Improvements

To better support all users, we introduced customizable themes, colors, and font sizes. Markdown-based question formatting also makes it easier to clearly present problems, improving readability and broadening platform accessibility.

Developer-Focused API Documentation

We also expanded our Swagger implementation to create clear, reliable, and automatically updated API documentation. This will streamline onboarding, improve route testing, and ensure consistency as new endpoints are added to the platform.

Demo and Source

Repository: <https://github.com/neu-cs4530/fall25-project-fall25-project-group-511>
Demo Site: <https://fall25-project-fall25-project-group-511-vrdj.onrender.com/>

Tech Stack and Design

We implemented the AI Overflow features in the existing Fake StackOverflow codebase. This follows the MERN stack: our frontend design is built with React in Typescript, the backend is built with Node and Express, and we use MongoDB for data persistence.

- For our AI features, we called API endpoints using Hugging Face's Inference Client, specifically `chatCompletion` and `textClassification`. Live updates like post deletion and answer regeneration were handled with socket-io.
- We also added new controller and service functions to delete/report questions, answers, comments as well as a new field and functions to handle a user's role.
- For Accessibility we added a field to handle a user's UI preferences and functions to change them.
- Our continuous integration pipeline runs an automated test suite on the frontend and backend components, and then deploys the site using Render.

Future Work

For our future work we would like to add more security features like two factor authentication, improve the ui to look more distinct, and add a trivia game to our website. We would also like to add indications for when an AI answer was regenerated and more accessibility features like screen reading and tabbing through links.

