CS4530 Final Project : CodeCommunity

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Description

CodeCommunity extends the existing FakeStackOverflow with features to enhance user collaboration, accessibility, and customization. This is accomplished by adding Communities and Polls, Markdown support for questions and answers, runnable code snippets, screen reader support, and custom color palettes.

Demo: demo, **Source**: source

Features

Markdown and Runnable Code Snippets

- Markdown - Used the 'marked.js' library to parse text and convert it to HTML on user input. Before displaying, this HTML is sanitized to prevent malicious code.
- Code Snippets - Defined using ```{language}```. We used the package "highlight.js" to recognize code blocks and format them into tagged HTML elements such as keyword, params, etc.... We wrote a custom plugin to detect and tag other elements such as operands.
- Runnable Code: - Snippets can be run by pressing a "run code" button. The code snippet is sent to our server, which makes an initial request to an external API (API_NAME). Users are shown the error output of the code, formatting issues, or the successful output of the snippet.

- Markdown, runnable code and tables

Accessibility and UI Customization

- Keyboard Support - Added autofocus attributes to all pages and refactored all clickable divs into button or link elements. Popup modals were also refactored to use the react-modal library, which restricts keyboard focus appropriately. As a result, users can always use Tab/Esc to navigate the site.
- Screen Reader - We assigned descriptive htmlFor, aria-label and role to html elements to ensure accurate TTS with common screen readers.
- Color Blindness / UI Customization - Added a modal which allows users to choose or create and save custom color palettes. We provide 3 general

palettes: default, high contrast, and colorblind. Users can customize and save color palettes for the site:
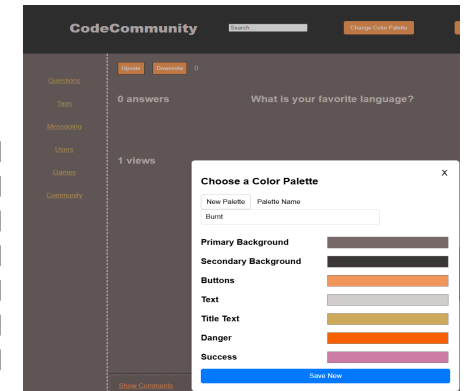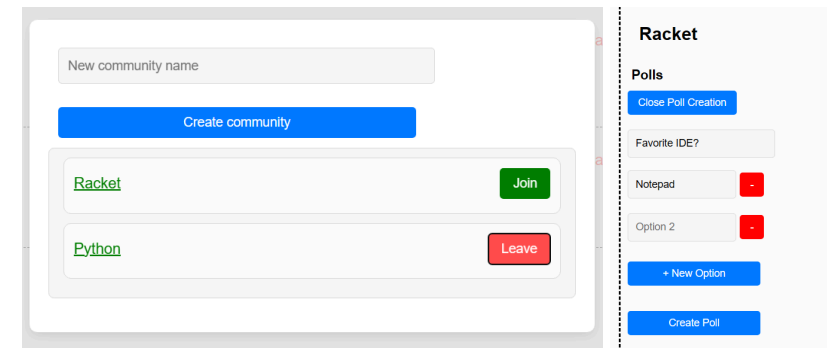

Communities, Chats, and Polls

- Communities - Users can see a feed from all the communities they've joined and navigate to a specific community to see posts only from that community. When a community is created a chat is also created for that community.
- Community Chats - When a user joins a community, they're added to a community-wide group chat. Community chats extend the existing messaging implementation.
- Community Polls - Users can create polls within communities which will automatically close after a period of time. On the server, the node-schedule library schedules a callback to run at the closing time. When the callback is triggered, it sends a WebSocket update to notify voters the poll has ended.

Future Work

Color Palettes - We could extend the feature to detect unusable palettes, or to allow users to share palettes with each other.

Code Snippets - . We could use our own sandboxing environment (such as a vm in a EC2 container) to avoid the limitations of an external api.

Polls: Allow users to choose poll expiration time

Communities: Add higher position users such as moderators or owners