

Tenant.AI

Empowering Renters with Personalized Guidance

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#4 Mini Class Project

Design Justification

Why this design?

Tenant.AI was designed to address the challenges faced by tenants in Massachusetts, particularly those navigating legal issues related to housing. Many tenants struggle to access accurate, timely information about their rights or the resources available to them. Existing resources, like government websites or legal aid centers, often lack accessibility features or fail to provide personalized guidance, and often times users don't know where to look for resources.

By leveraging a Retrieval-Augmented Generation (RAG) chatbot, Tenant.AI offers tenants quick access to reliable information, empowering them to make informed decisions. The design ensures accessibility through features like large text size, high contrast visuals, and screen-reader compatibility, making it inclusive for people with visual disabilities. This alignment with accessibility principles ensures that users of varying abilities can benefit equally.

User Population

Tenant.AI is designed to serve tenants in Massachusetts facing housing-related legal challenges, with a focus on accessibility for individuals with visual impairments and cognitive disabilities. These groups were prioritized because their unique needs make it particularly challenging to navigate traditional housing resources, such as government websites or legal aid centers, which often lack inclusive designs.

User Group and Their Needs

Individuals with Visual Impairments

Visual impairments make it difficult to access text-heavy resources, including legal documents or websites that lack adequate screen-reader compatibility. Accessible design features [1], such as:

- Screen-reader support (e.g. ARIA labeling of components, alt-text for images, clear semantic HTML).
- High contrast visuals for low-vision users.
- Large text size options, aid in overcoming these barriers.

Accessibility Features

Tenant.AI incorporates robust accessibility features to ensure inclusivity for users with visual disabilities. The tool utilizes ARIA roles and labels to enhance screen reader compatibility [2], allowing users with visual impairments to navigate seamlessly. Text colors and contrasts with backgrounds were validated using WebAIM [3] to ensure compliance with accessibility standards, while alternative text for images provides descriptive support for screen readers. The interface is designed to safely zoom up to 200% without breaking functionality [4], making it accessible for users with low vision. Thorough testing with a screen reader extension on Chrome further ensured that the tool is fully functional and user-friendly.

Addressing Harms or Biases

While Tenant.AI aims to support tenants, potential harms or biases could arise. One concern is misinformation, as the AI might provide inaccurate answers if the training data is incomplete or biased. Additionally, some users may face exclusion, particularly those without access to digital tools or with advanced accessibility needs that are not fully addressed. Overgeneralization is another potential issue, as the AI might misinterpret nuanced legal queries, leading to incorrect guidance or inadequate support.

To mitigate these challenges, several strategies will be implemented. Data validation ensures that the AI model is trained using curated and verified legal documents, reducing the risk of misinformation. A feedback system allows users to report incorrect or unhelpful responses, promoting continuous improvement. Regular user testing with the target population, including individuals with disabilities, ensures the tool is both usable and inclusive. Finally, ethical oversight from legal experts and accessibility advocates helps refine the tool’s functionality, ensuring it meets the needs of diverse users while minimizing unintended consequences.

References

- [1] Beatriz Martins and Carlos Duarte. “A large-scale web accessibility analysis considering technology adoption”. en. In: *Universal Access in the Information Society* 23.4 (Nov. 2024), pp. 1857–1872. ISSN: 1615-5297. DOI: 10.1007/s10209-023-01010-0. URL: <https://doi.org/10.1007/s10209-023-01010-0> (visited on 11/24/2024).
- [2] Andrew Kirkpatrick et al. *Web content accessibility guidelines (Wcag) 2.1*. URL: <https://www.w3.org/TR/WCAG21/>.
- [3] *Webaim: contrast checker*. URL: <https://webaim.org/resources/contrastchecker/> (visited on 11/24/2024).
- [4] Sarit Felicia Anais Szpiro et al. “How people with low vision access computing devices: understanding challenges and opportunities”. In: *Proceedings of the 18th International ACM SIGACCESS Conference on Computers and Accessibility*. ASSETS ’16. New York, NY, USA: Association for Computing Machinery, Oct. 2016, pp. 171–180. ISBN: 9781450341240. DOI: 10.1145/2982142.2982168. URL: <https://dl.acm.org/doi/10.1145/2982142.2982168> (visited on 11/23/2024).