



SPP7: Interactive (Hi-Fi) Prototype

Team Melo

Kelsey A., Aiyesha C., Pedro K. & Chahim P.

University of Belize

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Mr. Medina Manuel

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Introduction

Project Name	University of Belize Transfer Matrix	
Team Members	Chahiem Pop Aiyesha Coleman Kelsey Aban Pedro Kukul	Project Manager Design Lead Programming Lead Programming Lead
Value Proposition	"Melo simplifies transfer data at the University of Belize, empowering students to compare courses and plan their academics with ease."	

Table 1. Team Header

Mission Statement

Melo is dedicated to improving the usability and accessibility of the University of Belize's transfer matrix, ensuring that students can efficiently navigate and manage their course transfers with ease and confidence.

Problem Statement/ Solution

Many users faced challenges when using the University of Belize's existing transfer matrix. Its inefficiency and poor navigation cause confusion and delays for students trying to transfer credits from other institutions. Melo aims to address all these issues by recreating the transfer matrix to be more streamlined and user-friendly. This will help students navigate the transfer process more effectively, make informed academic decisions, and reduce the workload for the university's staff, ultimately improving the overall process.

Tasks & Final Interface Scenarios

Simple

Print results from search. As users were searching for their course transferability status, we thought it would be beneficial for users to print out their results, in the case that they would need it for some future references. After obtaining their results, users could print them in a formatted manner suitable for any required purpose.

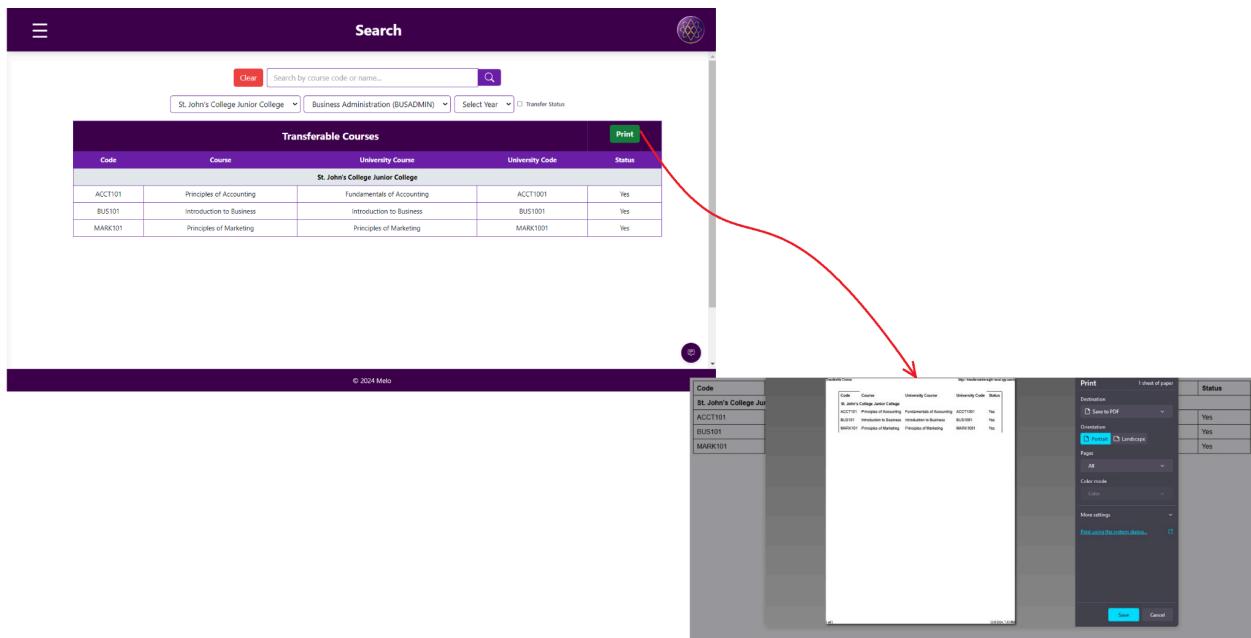


Fig 1. Storyboard: Printing Functionality

A general search for a course transfer matrix allows users to easily locate and compare course equivalencies across the database. By providing a broad and accessible search option, it caters to a diverse range of users, helping them make informed decisions with personal searches.

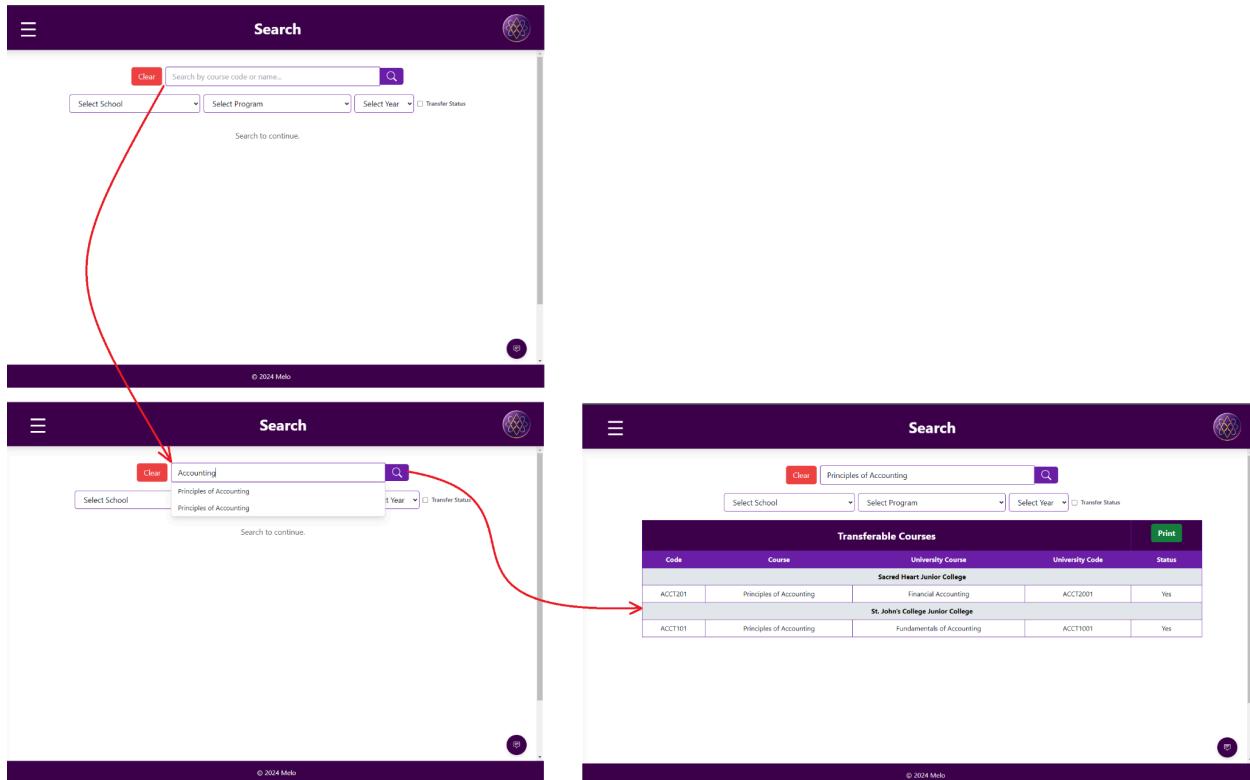


Fig 2. Storyboard: General Search Functionality

Moderate

Seek Faculty Assistance. To help users who may be confused, not satisfied with the help page, and need additional assistance, we offered a popup that would send an email to faculty requesting assistance or clarification. Ideally, a chatbot would have been the best option for providing quick assistance. However, due to limited time and technological constraints, we opted to focus on sending an email, as it was a simpler and more feasible solution.

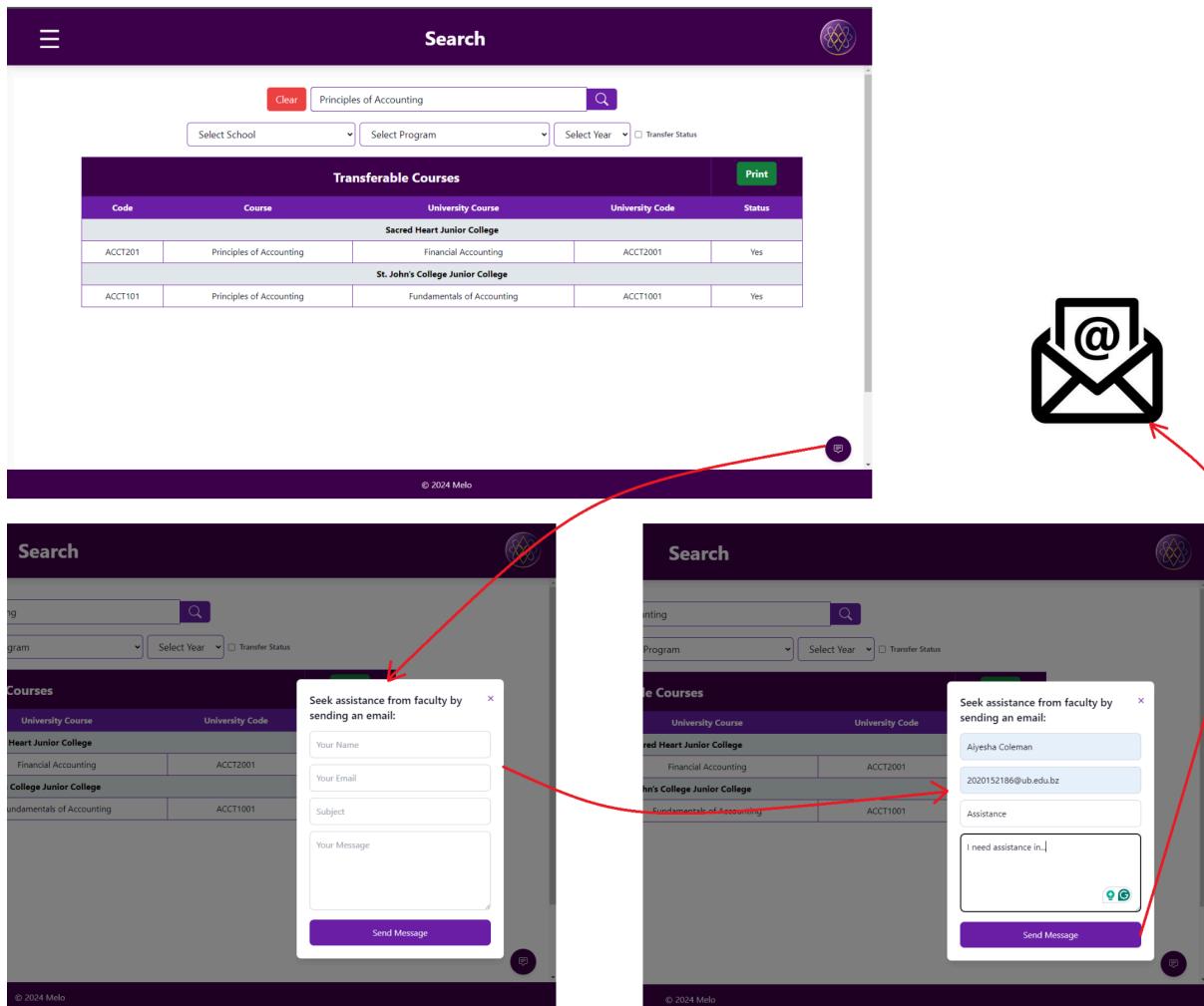


Fig 3. Storyboard: Assistance Functionality

Complex

Search Filters for specified information searches. The primary function of the original transfer matrix is to note the transferability of the users course credits. We improved the design by adding more detailed search options so that users may easily look towards their course transfer status.

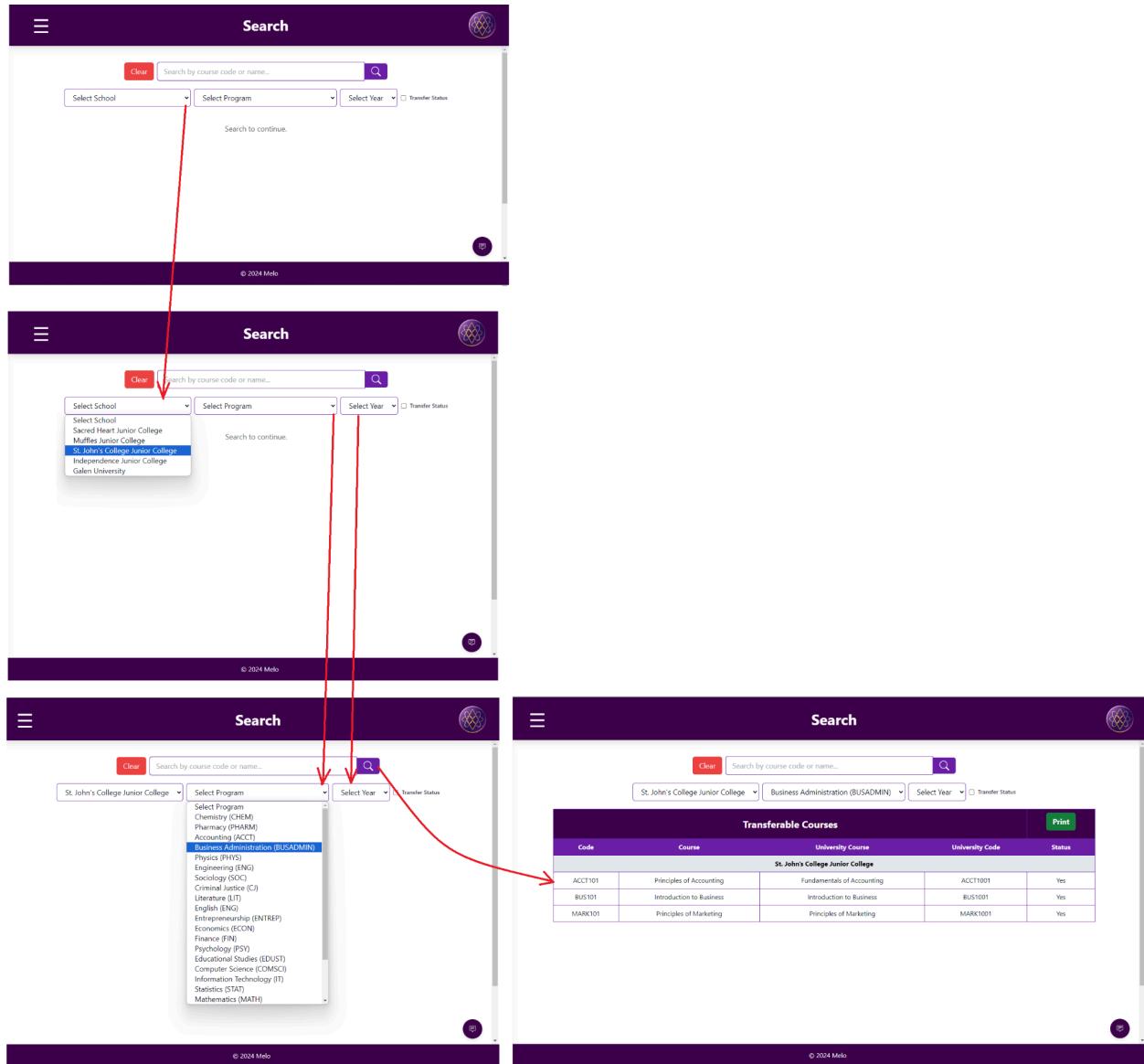


Fig 4. Storyboard: Filtered Search Functionality

Design Evolution

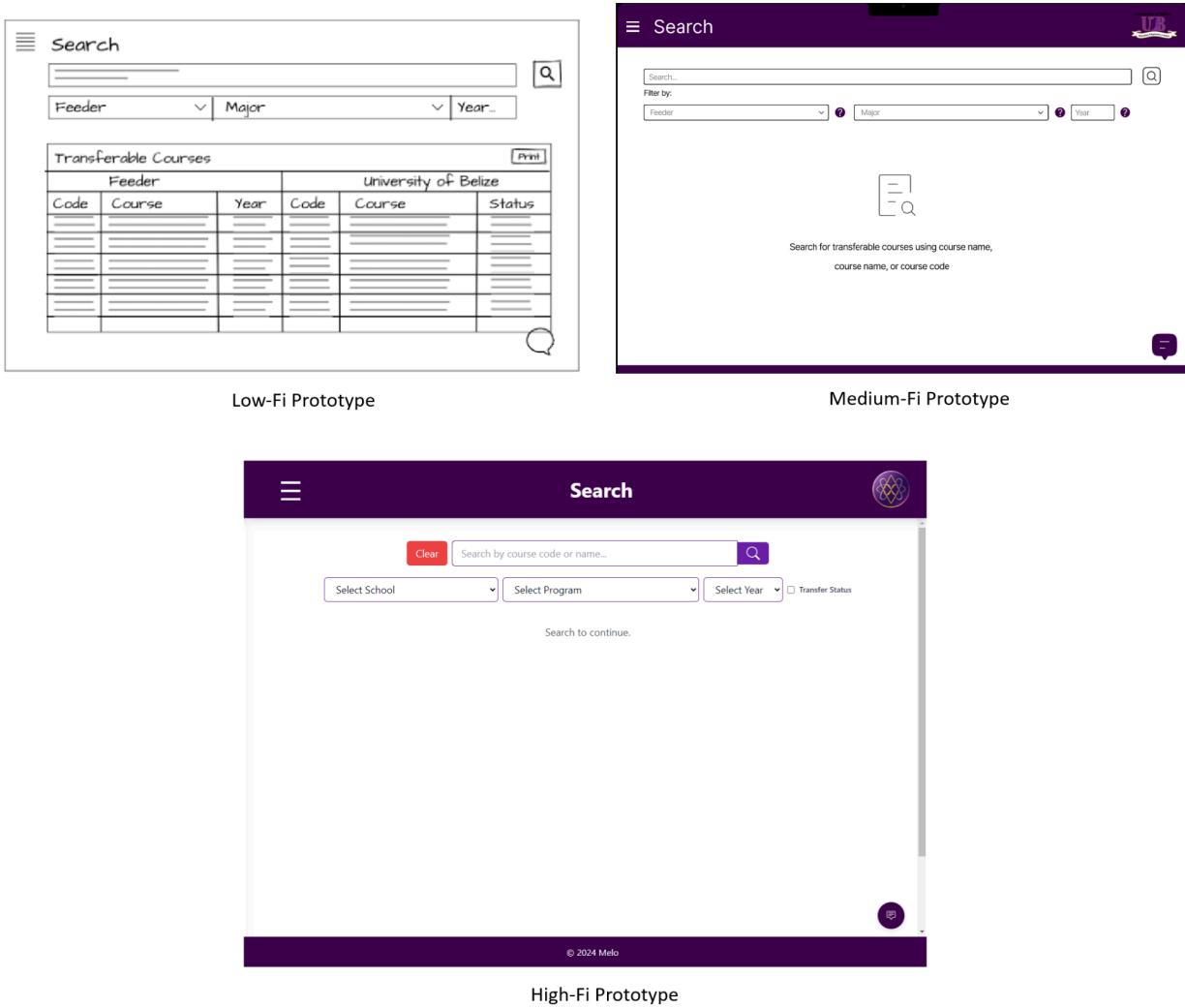
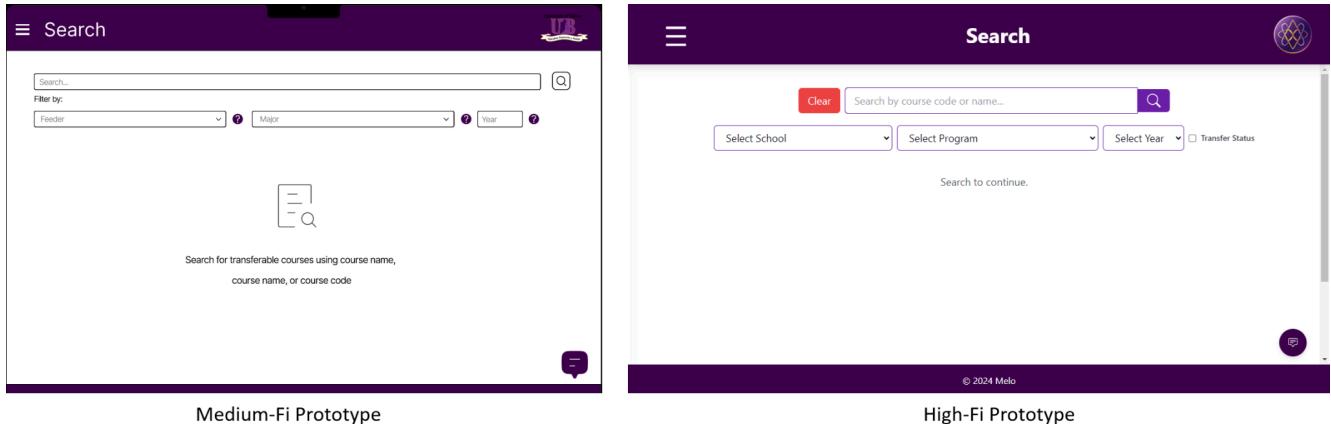


Fig 5. Assistance button location

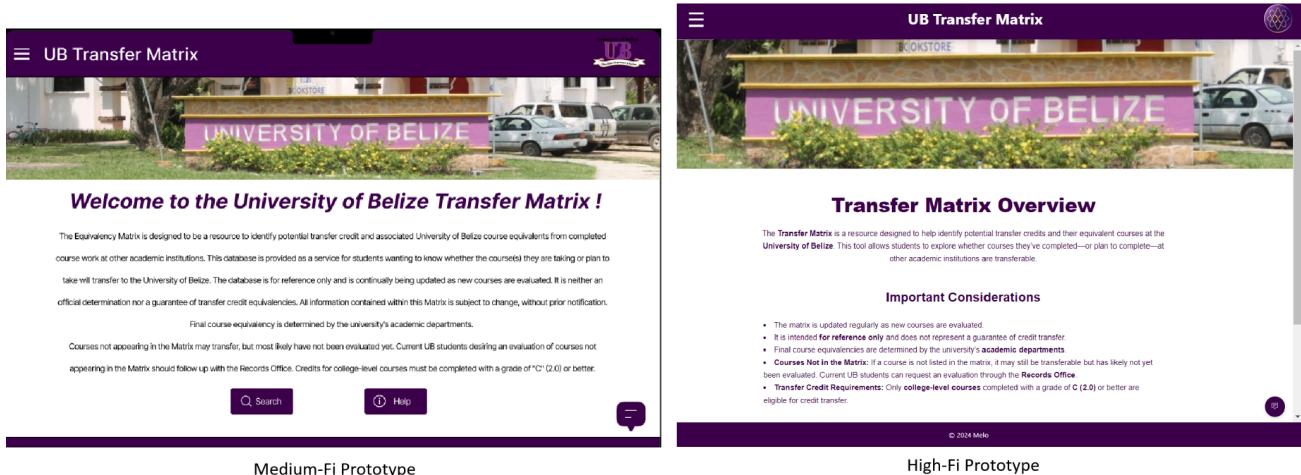
Change: A footer containing the copyright notice was added to the website, necessitating a comprehensive layout adjustment to ensure seamless integration. These updates were essential to prevent potential display issues and maintain the site's functionality and visual consistency.

Reason: Including a footer communicates ownership and protects the intellectual property of the website's content. This addition enhances professionalism and trustworthiness, reassuring users of the site's legitimacy and safeguarding its content.

*Fig 6. New Search Elements*

Change: A new checkbox was introduced as a search filter, allowing users to quickly and easily display only transferable courses. This enhancement simplifies the user experience by providing a more targeted search capability, reducing the time and effort required to find relevant results.

Reason: Enhance efficiency and streamline the search process.

*Fig 7. Homepage Simplicity*

Change: The home page information was restructured to prioritize clarity, simplicity, and a user-friendly layout. The original home page contained excessive information that was crowded and overly wordy, making it difficult for users to quickly understand key details.

Reason: The adjustments were made to ensure users can quickly scan the page, feel ready to engage with the interface, and focus on the primary tasks without unnecessary distractions.

Major Universability Problems Addressed

H1: Visibility of System Status [Severity 4]

In the prototype, a significant usability issue related to the Visibility of System Status was identified. The assistance message icon, located at the bottom of the interface, was not easily noticeable, causing users to overlook it when seeking help. Evaluator #B pointed out, “Users may struggle to find the message icon when they need assistance, leading to delays in seeking help.” To address this, the icon was relocated to a more visible area on the interface and enlarged to make it easier to spot.

Fix and Rationale:

This solution improves user awareness and accessibility, ensuring that users can easily find and use the icon when they need assistance. By enhancing the visibility of this critical feature, the interface provides a more intuitive way for users to seek help, reinforcing user support and system transparency.

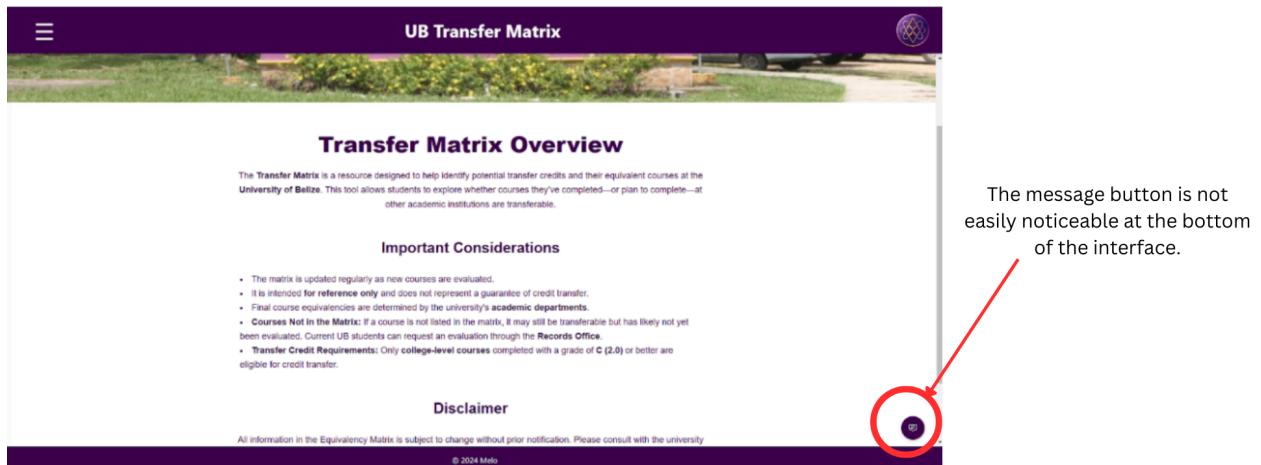


Fig 8. Heuristic 1 violation

H6: Recognition Not Recall [Severity 6]

A critical usability issue related to Recognition Not Recall was identified in the prototype, where users struggled to remember the exact code or course name to input. Evaluator #A observed, “Users often forget the precise details of the course code or name, leading to frustration and errors when entering information.”

Fix and Rationale:

To resolve this, an autofill or suggestion function was implemented, which provides users with possible course codes and names as they begin typing. This solution reduces the cognitive load on users, allowing them to quickly and easily select the correct course information without needing to recall the exact details. By improving recognition, the interface enhances efficiency and reduces the likelihood of input errors, creating a smoother and more user-friendly experience.

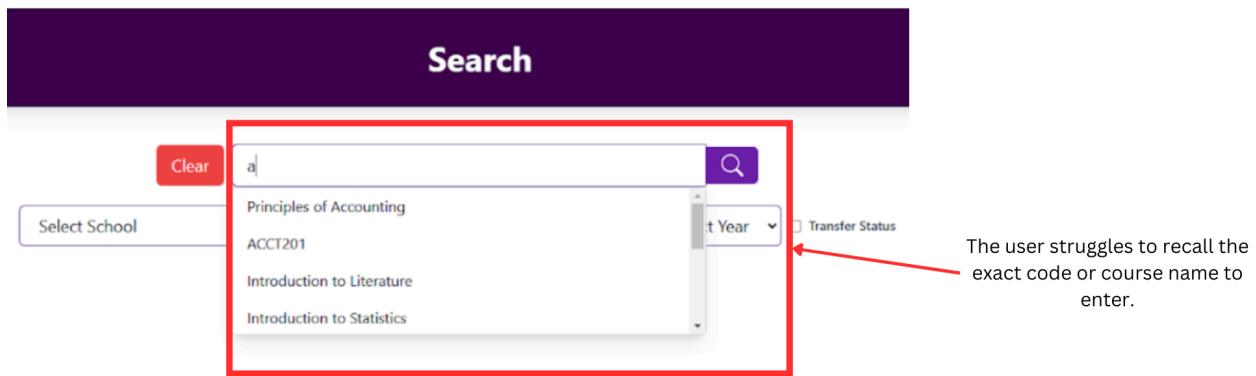


Fig 9. Heuristic 6 violation

H8: Aesthetic and Minimalist Design [Severity 1]

A usability issue related to Aesthetic and Minimalist Design was identified on the home page, where the welcome text appeared too crowded and wordy. Evaluator #C noted, “The home page contains too much text, making it overwhelming and difficult for users to quickly understand the key information.”

Fix and Rationale:

To address this, the layout was restructured, and the text was shortened to focus on providing only brief, essential information and key points. This solution not only improved the visual appeal by decluttering the page but also enhanced user experience by making it easier for users to quickly grasp the main message without feeling overwhelmed. The minimalist design approach ensures a clean, streamlined interface that better aligns with user expectations for simplicity and clarity.

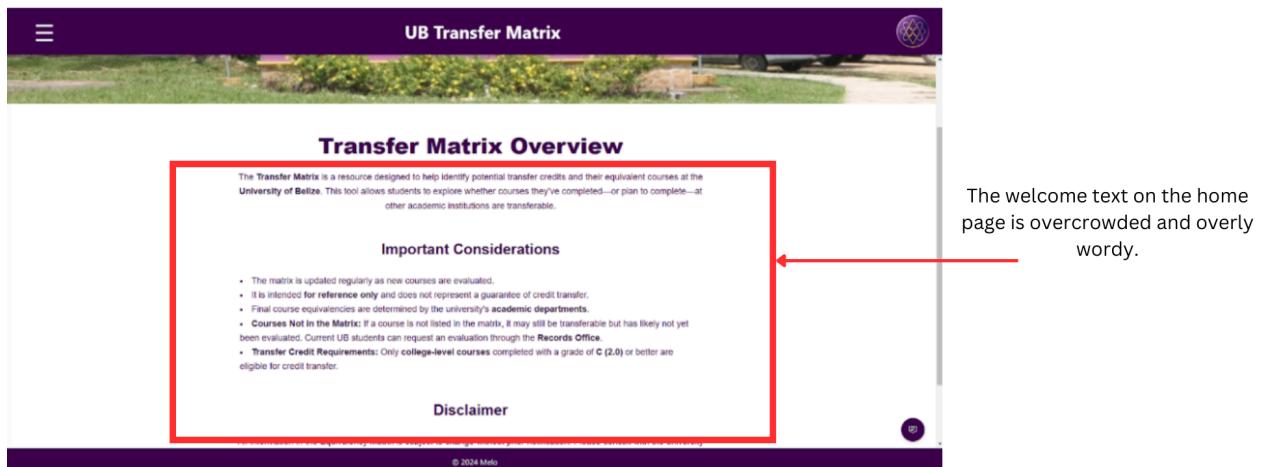


Fig 10. Heuristic 8 violation

Prototype Implementation

Tools used:

 Svelte - Development	 Figma - Prototype
 Vercel - Deployment	 Github - Repository

Table 2. Project Tools

How the Tools Helped:

GitHub allowed for efficient version control and seamless collaboration on projects, ensuring streamlined teamwork and code management. Visual Studio Code complemented this by offering powerful extensibility through features like debugging tools and a built-in terminal, enhancing productivity and ease of development. Additionally, Svelte DevKit simplified the process of building reactive applications by minimizing boilerplate code and providing efficient bundling, making it an excellent choice for modern web development. Finally, to deploy the websites, making them available to anyone who wants to utilize the application, Vercel was used to provide the application with a domain. This allowed for anyone with internet access and that has the link to be able to access the Hi-fidelity application.

How the Tools Did Not Help:

While Visual Studio Code offers a versatile and intuitive interface, it has certain drawbacks, including a reliance on internet connectivity for some features and extensions, which can be limiting in offline scenarios. Similarly, GitHub requires internet access to push changes and collaborate on repositories, making it less effective in offline environments. Additionally, both tools come with a learning curve, particularly for beginners who need time to fully understand and leverage their extensive features and capabilities. Similarly, Vercel needed a fully robust and clean build to deploy the website, any slight error in the production build would cause the deployment to fail.

Wizard of Oz:

- Users were guided to interact with a searchable dataset that matched the dummy data.
- The system appeared automated, but responses were limited to the predefined dataset

Hard-Coded Data

The application stored data in a JSON file, which contained hypothetical courses to be transferred from multiple feeder institutions. While this approach allowed for structured data management and ease of access, it limited the application's functionality to a predefined dataset, restricting flexibility and scalability for handling dynamic or real-time data updates.

Missing and Desired Future Implementations:

The prototype currently includes several key features that enhance usability and functionality. These features include a minimalist and modernized user interface, a simplified and dynamic search page for easier navigation, a print feature to facilitate documentation, and assistance options to guide users through the system. Together, these implementations contribute to a user-friendly experience that meets many of the prototype's initial objectives.

In the future, we aim to add several key features to enhance the prototype further. A designated database will provide robust and scalable data management, while introducing admin privileges will streamline system oversight and control. Additionally, we plan to implement more specific filters to improve search precision and efficiency. Enhancing error recovery mechanisms is also a priority, ensuring better support and resilience during unexpected issues, ultimately delivering a smoother user experience.

Summary

The heuristic evaluation of the prototype revealed several usability discrepancies that provided valuable insights for improvement. These issues guided meaningful resolutions aimed at enhancing the overall user experience and interface design. Through this evaluation process, critical usability concerns, such as the visibility of system status, recognition over recall, and aesthetic and minimalist design, were addressed with thoughtful and user-centric solutions. Furthermore, the prototype effectively fulfills its four primary tasks, offering a streamlined and user-friendly interaction with its features. By aligning with established usability heuristics, the prototype not only resolves previous pain points but also delivers a polished, functional, and visually appealing interface. These enhancements contribute to a smoother and more efficient user experience, ensuring the prototype meets both functional and usability goals.

Reference

Aban, K. D., Coleman, A. Z. L., Kukul, P. J., & Pop, C. R.(2025, November). *What is the UB Transfer Matrix?*. Home. https://kelseyaban.github.io/HCI_Website/index.html