**The Metropolitan City E-Library Design Report**

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**Introduction**

The Metropolitan City Library is launching a new E-Library platform to provide members with convenient access to a wide range of books, journals, e-books, and audiobooks. This project focuses on designing an intuitive user interface that caters to both seasoned digital library users and those who are new to online platforms. The design emphasizes ease of use, incorporating principles of human-computer interaction to support effective and enjoyable navigation. The primary objective is to minimize cognitive load, offer clear feedback, maintain consistency across the interface, and provide mechanisms for error prevention and recovery.

**Layout Overview**

To create a user-friendly experience, I selected a consistent and intuitive layout with clearly labeled sections, designed to ensure seamless navigation for users across different age groups. This layout is also optimized for various devices, including desktops, laptops, mobile phones, and tablets. Below is a detailed explanation of each section of the design:

**Figure 1**

*Homepage Section*

A library with a plant in the middle

Description automatically generated with medium confidence

*Note*. picture by Hang Yang in 2024. Own work.

A sidebar menu is included to allow easy navigation between sections like "Latest Arrivals," "My Collection," "Search," and "Help Center.". This menu provides a consistent anchor for navigation, helping both experienced and new users find their way through the E-Library. It reduces cognitive load by keeping main options visible at all times, supporting quick access without overloading the screen.

**Figure 2**

*Find a book Search Section*

A screenshot of a library

Description automatically generated

*Note*. picture by Hang Yang in 2024. Own work.

Each menu item changes color when clicked, offering visual feedback. Color changes reinforce user actions, making it easy to see which section is currently active. This aligns with the principle of feedback, letting users know their actions have been registered and improving overall usability.

**Figure 3**

*Search Filter Section*

A screenshot of a library

Description automatically generated

*Note*. picture by Hang Yang in 2024. Own work.

The search function includes multiple filter options such as genre, status (available or borrowed), ratings, material type, and published date. Filters help users quickly narrow down large collections of books, journals, and audiobooks. This feature reduces cognitive load by simplifying the search process, allowing users to efficiently find exactly what they’re looking for.

Books are presented in a table list view, displaying details such as author, ratings, status, genre, and material type. This structured layout provides a clear overview of book details immediately, making it easier for users to compare items. The consistency of this format supports error prevention, as users can easily scan for details without repeatedly opening individual book profiles.

**Figure 4**

*My Collection Section*

A screenshot of a library

Description automatically generated

*Note*. picture by Hang Yang in 2024. Own work.

The "My Collection" section is organized into categories: “Books Borrowed,” “Books Due,” and “To-Read List,” allowing users to intuitively manage their collection. This structure makes it easy to understand the status of each book and prioritize returning due items to avoid late fees or penalties.

**Figure 5**

*Latest Arrivals Section*

A screenshot of a library

Description automatically generated

*Note*. picture by Hang Yang in 2024. Own work.

**Figure 6**

*Help Center Section*

A screenshot of a phone library

Description automatically generated

*Note*. picture by Hang Yang in 2024. Own work.

Icons and buttons are consistent across the platform (e.g., a magnifying glass icon for search, a book icon for the library collection, phone, email icons etc.). Using familiar symbols reduces the learning curve, especially for new users, by providing recognizable actions. This follows the principle of consistency, helping users build mental models that make future interactions easier. Also, clear error messages and recovery options (like back navigation and undo options) are integrated throughout the platform. These features guide users through potential mistakes, making the interface forgiving and supportive, which is especially helpful for older users who may be less familiar with digital interfaces.

**Conclusion**

The proposed E-Library interface design prioritizes an accessible, intuitive user experience that accommodates both experienced and novice users. Key features such as the sidebar menu, color-differentiated click states, advanced search filters, and a structured table list view are carefully crafted to support many principles of human-computer interaction. The design ensures predictability and familiarity through consistently labeled sections and familiar symbols, allowing users to easily anticipate the results of their actions. Synthesizability is achieved by providing clear visual cues, such as color changes, that reinforce users’ understanding of their actions. Consistency is maintained across all elements, simplifying navigation, and reducing the learning curve, making it suitable for users of all backgrounds. Dialog initiative is supported by an intuitive sidebar menu, allowing users to control their navigation and choose their paths through the E-Library. Customizability is embedded in features like search filters and the "My Collection" section, allowing users to tailor their experience to their needs and preferences. Responsiveness is maintained with interactive elements that react quickly to user inputs, while task conformance is reflected in the layout, which efficiently supports common library tasks like searching, borrowing, and managing book collections. By incorporating these HCI principles, the design supports an efficient, user-friendly transition into the digital library world for all Metropolitan City Library members.

**References**

Wickramasinghe, B. (2020, December 26). Human-Computer Interaction — Principles, Evaluation and Universal Design Principle. Medium. <https://bimalics.medium.com/human-computer-interaction-principles-evaluation-and-universal-design-principle-3687123b5b2a>