Comparing To-Do Lists with Improved Interactivity on PC Browsers

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1 INTRODUCTION

With the demand for task management solutions increasing, the To-Do List widget looks into different ways of making to-do list apps on PC browsers more interactive. To-do lists typically allow people to add a number of tasks and remove a number of tasks. Increased interactivity, however, brings in multiple aspects of user engagement, efficiency, and productivity.

This project sharply spotlights a number of to-do list tools with plentiful improved interactive features created solely for PC browsers. Features like better interfaces, the ability to cancel finished tasks, and the option to filter tasks by completed, incomplete, and all, greatly improve user experience. Every task can be completely organized by all users through these interactive elements.

One key focus is analyzing how interactive to-do list applications increase efficiency compared to static or less-intuitive alternatives. Tasks are managed intuitively, navigation is not complex, and interactivity is improved. For example, users are able to apply multiple filters for viewing definite categories. Also, users are able to use keyboard shortcuts, and these permit many operations to be done more rapidly.

This project intends to show that improved user engagement results in superior task organization along with completion rates; it achieves this by contrasting standard to-do list applications with interactive ones. The study also assesses the importance of modern browser capabilities. Responsive designs and performance optimizations, for example, are important for a smooth and dependable user experience.

The project stresses that greatly improved interactivity on PC browsers turns to-do list applications into truly strong task management tools; this helps users stay organized, productive as well as in control of daily responsibilities.

2 RELATED WORK

Kenneth Conley and James Carpenter [2] propose a task management app that combines a to-do list with a software assistant for task execution, delegation, and collaboration. Using AI and intuitive interactions, it reduces cognitive load, enhances efficiency, and improves task performance.

Ramadhama et al.[5] developed a gamified to-do list app using the waterfall method, incorporating points, levels, and badges to enhance motivation. User testing showed positive feedback and increased task completion, proving gamification's effectiveness in task management.

Brian M. Landry et al.[6] introduced TaskMinder, a to-do list app that uses machine learning to rank tasks based on location, user activity, and history. It also suggests tasks based on time constraints. The study covers its design, implementation, and evaluation, with recommendations for future improvements in adaptive personal information agents.

Jun Kato et al. [4] introduced Sharedo, a to-do list interface that enables task sharing between users and multiple agents, such as robots and software assistants. Unlike traditional single-agent systems, Sharedo allows flexible coordination, with agents requesting details, assisting users, or registering tasks requiring human input. The study highlights its potential for enhancing task management and collaboration.

[1]Gamification enhances user interaction by providing a sense of progress or achievement. Beyond quantitative feedback, emotional rein-

forcement can be a powerful motivator. This study explores 'Tamu To-Do', a mobile to-do list app using gamified emotional reinforcement. A week-long study (N=9) showed that this approach effectively boosts user motivation and engagement.

Indryani et al. [3] developed a web-based To-Do List system was developed using the waterfall approach to help students organize and complete assignments efficiently. The design was based on analyzing students' tendencies to forget tasks, involving needs analysis, system design, process flow creation, and coding. The goal is to enhance student productivity and task management efficiency.

3 PROTOTYPE

The to-do list is a web application from very dynamic interactive features that allows the users to carry out a good management of their tasks through an individualized experience. The application offers striking unique features to cross out completed tasks. As the user marks a task completed, the application strikes it and shows it faded out, giving instant feedback and a feeling of accomplishment. This visual feedback allows the users to immediately differentiate between completed tasks and those yet to be done.

The app also offers users the flexibility to filter and view tasks based on their status. Users can choose from the following viewing options:

1. **Completed Tasks:** Displays only tasks that have been marked as finished, making it easier to review achievements or verify past activities.
2. **Incomplete Tasks:** Shows all tasks that are still pending, allowing users to focus on what remains to be done.
3. **All Tasks:** Provides an overview of both completed and incomplete tasks, offering a comprehensive view of the entire to-do list.

These features are designed to streamline task management and improve user productivity by organizing tasks in a flexible and intuitive manner

4 Design

Variant A presents a very simple and minimalist design of a to-do list application. Tasks can be added using an input field, an "Add Task" button, and a list of tasks with the associated "Delete" buttons. The look is neat but not very interactive, allowing one just to add and delete tasks. There is no option of marking them as complete or filtering them by their statuses, and that is the main limitation of its functionality. The background gradient may look modern, but the interaction design is very basic.

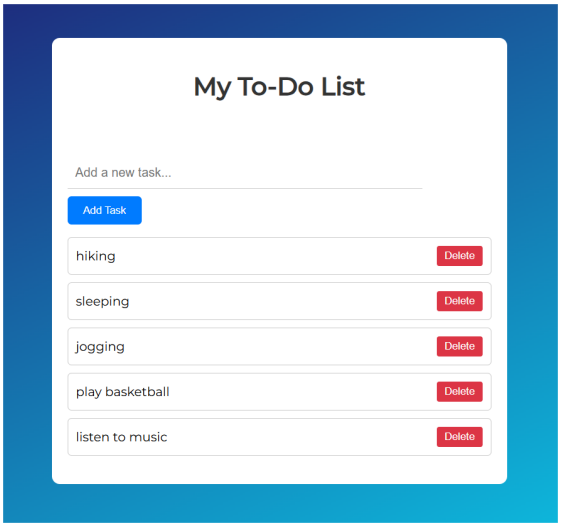

Figure 1: Variant A

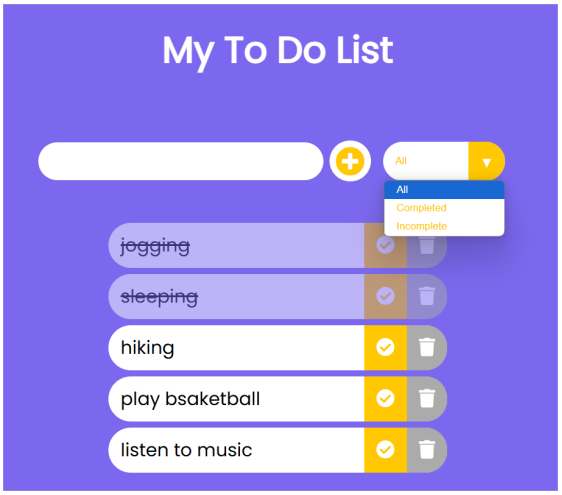

Figure 2: Variant B

In contrast, Variant B greatly improves interactivity and usability. It added features such as a visual strikethrough effect to indicate task completion; filtering options to see completed, incomplete, or all tasks; and an improved overall UI with improved colors and organization. The intuitive "+" button and the dropdown menu allow the users to be more engaged in Variant B while task management is aided with actionable icons.

These additions in Variant B make the application not only more functional but also more enjoyable to work with, addressing the limitations of Variant A by adding advanced interac-

tivity and flexibility for task organization.

5 Methodology

This study aims to explore how design differences influence user experience and task management efficiency in to-do list applications. The following hypotheses have been formulated:

1. Users engaging with Variant B will complete their tasks more efficiently compared to those using Variant A

2. Participants utilizing Variant B will show greater accuracy in task organization due to its enhanced interactive features.

3. User feedback for Variant B will be more favorable than for Variant A, highlighting improved usability and engagement.

4. Variant B will make task tracking and organization easier through features such as task filtering, visual strikethroughs for completed tasks, and a more intuitive interface.

These hypotheses should be seen in the context of PC screen

To evaluate these hypotheses, a website with both To-Do List variants was set up. It consists of four pages in total:

1st page: The user is given a task to complete using the To-Do List application.

2nd page: Interaction with Variant A, allowing the user to add, remove, and manage tasks.

3rd page: Interaction with Variant B, which includes additional functionalities such as task filtering and completion tracking, with user actions being recorded.

4th page: The user is directed to a Google Form to evaluate both variants, providing feedback on usability, design, and overall experience.

5.1 Independent variables (factors)

- **Design structure:**The two variants differ in their design functionality and physical structure. Variant A has a much more spartan design with simpler task input and an "Add Task" button. The design separates elements further for clarity to the user. A more interactive and dynamic design offers additional features in filter options, with icons for marking tasks as complete or for deleting them.

- **Color scheme:** The color scheme also varies, Variant A features a gradient background transitioning from deep blue to cyan, creating a modern but subtle visual appeal. Variant B uses mediumslateblue with yellow and white elements, making the interface more vibrant and engaging. These differences in color schemes affect user perception, engagement, and overall usability.

5.2 Dependent variables (factors)

The study examines user efficiency, user satisfaction, and engagement in a To-Do List app. Variant A prioritizes speed, while Variant B enhances organization and retention through filtering and task status updates. Satisfaction varies based on design preferences, with Variant B appealing to structured users and Variant A to those favoring simplicity.

A 2x2 study design with within-subjects analysis evaluates the impact of design and color on these variables. Error count (duplicate/empty tasks) measures performance, while user feedback assesses satisfaction. Participants engage with both variants, ensuring a balanced comparison, with data collected through error logs, surveys, and interviews to analyze usability and engagement.

6 Report on Data

The study included 10 participants from diverse backgrounds to ensure comprehensive and reliable results. The sample population was evenly distributed by gender, with 50% identifying as male and 50% as female. Additionally, the majority of participants fell within the 22-28 age range, allowing for balanced insights into user interactions with the To-Do List app.

7 Analysis

The To-Do List app study focuses on four key metrics: Error Count, User Efficiency, User Satisfaction, and Engagement. Error Count tracks mistakes when adding duplicate or empty tasks, affecting User Efficiency, which measures ease of interaction. User Satisfaction is gathered through surveys, reflecting ease of use and design appeal. Engagement evaluates how often users return. Analyzing these metrics helps identify usability strengths and areas for improvement, ensuring a more intuitive and engaging task management experience.

The research indicated that Variant B resulted in users exhibiting greater satisfaction, engagement, and error reduction than Variant A. Participants made significantly fewer mistakes, exhibited higher levels of engagement, and liked

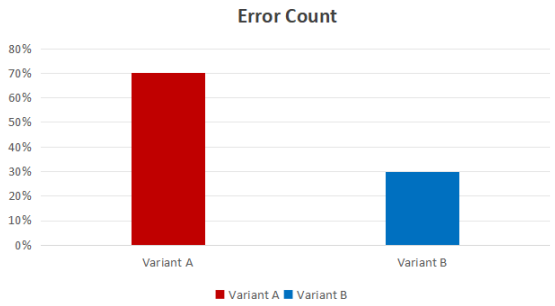

Figure 3: Error Count

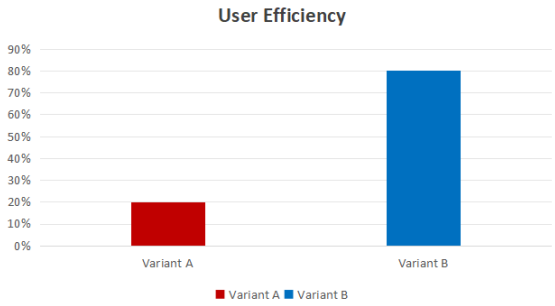

Figure 4: User Efficiency

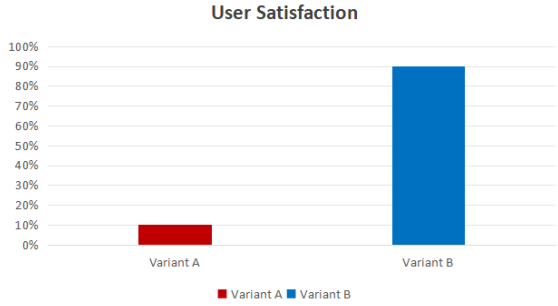

Figure 5: User Satisfaction

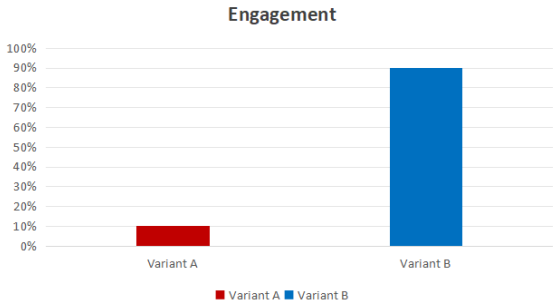

Figure 6: Engagement

the structured format. Color played a very minimal role in this, though. Users' comments clearly indicate the need for a more intuitive and efficient task management experience, with good emphasis on a user-friendly and engaging design of The To-Do List.

8 Discussion

The results indicate that Variant B of the To-Do List application enables users to work more efficiently and reduces errors, results in better task organization, and leads to greater satisfaction from users. The structured design allows users to interact with the application more effectively, avoiding mistakes from adding duplicate or empty tasks.

Despite the advantages of Variant B, some concepts, such as color choices and layout modifications, could further enhance usability. Future enhancements may constitute AI-driven task suggestions, customizable aspects, and further improvements to the accessibility options, addressing a wider range of users. Continuous implementation of user feedback and the redesigning of the To-Do List application will enable an increasingly intuitive, efficient, and engaging task management tool. The final goal shall be to create a smart, user-oriented platform that would simplify productivity and encourage users to engage for relatively a longer term. .

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