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SMART HOME TASK MANAGER: A SOLUTION FOR HOUSEHOLD CHORES AND TIME MANAGEMENT

Rationale

Managing household chores efficiently is a common challenge for families, particularly in homes with multiple members. The traditional approach to dividing and tracking chores often leads to confusion, mismanagement, and inefficiency. Many individuals struggle with time management when balancing household responsibilities with work, school, and personal tasks. Additionally, the absence of a structured system to monitor completed and pending tasks creates frustration and often results in unfinished household duties.

Another major issue is the lack of motivation and accountability when tasks are assigned manually. Family members may forget their assigned chores or fail to complete them on time, leading to an unequal workload distribution. Furthermore, scheduling conflicts make it difficult to establish a consistent and fair chore routine. With the increasing adoption of smart home technologies, a digital solution for managing household tasks can significantly improve organization, accountability, and time management.

This study proposes the development of a *Smart Home Task Manager*, a web-based and mobile-enabled system that allows families to assign, track, and manage household tasks efficiently. The platform will automate chore assignments, provide reminders, and offer real-time tracking to ensure tasks are completed on schedule. By incorporating task prioritization and scheduling features, the system aims to promote teamwork, improve time management, and create a fair and structured way of handling household responsibilities.

Significance of the Study

The development of a smart home task manager will provide numerous benefits to households, improving organization, accountability, and efficiency. For families, the system will offer a centralized platform where members can easily view their assigned tasks, receive automated reminders, and track completed chores. This reduces the chances of forgotten or overlooked responsibilities while ensuring fair task distribution.

For individuals managing multiple responsibilities, the system will enhance time management by providing scheduling tools that align with personal and family routines. With automated task allocation, the system ensures that workloads are distributed equitably,

preventing certain members from bearing an unfair burden of household chores. The integration of notifications and reminders will also encourage users to stay on top of their responsibilities, fostering accountability and teamwork within the household.

Additionally, this study contributes to the broader development of smart home technologies by integrating automation into everyday household management. The research will serve as a reference for future studies on digital home management solutions, exploring further advancements such as AI-powered task suggestions and smart home device integration. As technology continues to shape modern living, implementing a structured and automated approach to household task management will improve efficiency and overall quality of life.

Scope and Limitations

This study focuses on the design and development of a smart home task manager that enables families to efficiently assign, track, and manage household chores. The system will include the following key modules:

The **User Management Module** will allow family members to create accounts and set task preferences. Each user will have an individual profile displaying their assigned tasks, task history, and completion records. Parents or designated administrators will have additional permissions to modify task assignments and monitor progress.

The **Task Assignment Module** will enable users to assign household chores to specific family members. Tasks can be manually assigned or automatically distributed based on workload balancing settings. The module will also allow users to set task priorities and due dates, ensuring that essential chores are completed on time.

The **Task Notification Module** will send automated reminders and alerts to users regarding their upcoming and overdue tasks. Notifications can be customized based on urgency, ensuring that important responsibilities are not neglected. This module helps reinforce accountability and encourages timely completion of chores.

The **Progress Tracking Module** will provide real-time updates on task completion. Users can mark tasks as completed, and administrators can verify them before marking them as finalized. The system will also generate progress reports to visualize each member's contributions and overall household task management efficiency.

The **Scheduling Module** will allow users to create daily, weekly, and monthly schedules for household tasks. This module ensures that recurring chores are planned effectively, avoiding conflicts and last-minute adjustments. The system will also suggest optimized task distribution based on availability and past completion history.

However, the system has some limitations. It requires an internet connection to function, making it inaccessible in offline mode. Additionally, while the system includes automated task distribution and reminders, it does not feature AI-based predictive task assignment in its initial version. Future iterations may incorporate advanced automation features, including integration with smart home devices such as voice assistants and IoT-enabled household appliances.

Objectives

The general objective of this study is to develop a smart home task manager that streamlines household chore assignments, improves task tracking, and enhances time management within families.

Specifically, this study aims to:

- Identify common challenges in household task management through surveys and interviews.
- Design and develop a system that:
    - Provides an intuitive interface for assigning and managing household tasks.
    - Offers automated notifications and reminders to enhance accountability.
    - Tracks task completion and generates progress reports.
    - Allows users to create and manage chore schedules based on availability and priority.
- Implement a web-based and mobile-enabled system to ensure accessibility.
- Test the system through usability testing, integration testing, and performance evaluation.
- Assess the system’s effectiveness based on ISO 25010 software quality standards to ensure functionality, usability, and efficiency.

Expected Output

The expected output of this study is a fully functional *Smart Home Task Manager* that provides an organized and efficient solution for managing household chores. The system will feature an intuitive dashboard for assigning tasks, tracking progress, and scheduling chores, ensuring that family members stay informed of their responsibilities.

Users will benefit from an automated reminder system that helps reduce missed or delayed tasks. The real-time task tracking feature will improve accountability, allowing administrators to monitor completion rates and adjust schedules as needed. Additionally, the system's reporting module will provide insights into household task management trends, helping families optimize their daily routines.

A comprehensive user guide will be provided to ensure smooth adoption of the platform, and usability testing will be conducted to refine system functionalities. The final product will serve as an innovative digital solution for enhancing household task management and promoting a more organized and cooperative living environment.

References

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