Project Proposal

Data Structures and Algorithm
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Habib University
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Implementation using data structure and algorithm

Project Title: Personalized Task Management System using a Priority Queue Data Structure

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Topic/Idea: The goal of this project is to develop a task management system that can prioritize tasks based on user preferences. This system will use a priority queue data structure to store and organize tasks, allowing users to easily add, remove, and update tasks in a to-do list that is going to be synchronised with a calender.

How is your idea novel? While task management systems exist, this project is unique because it employs a priority queue data structure that can prioritize tasks based on user-defined criteria. This approach allows users to manage their tasks more efficiently and helps them stay organized by giving them a timeline to do tasks in priority.

Data Structure: We will use a priority queue data structure to store and organize tasks. The priority of each task will be determined by user-defined criteria, such as due date, time required, importance, or category.

Algorithm: We will use standard priority queue algorithms, such as insert, remove, and update, to manage tasks in the queue. Additionally, we will implement sorting algorithms to sort tasks based on the criteria. We will be making a to-do list that will be frequently updated and will keep notifying user about any due assignment.

Application Details: The system will allow users to add, remove, and update tasks in the priority queue. Users can set criteria for prioritizing tasks, such as due date, importance, or category. The system will then generate a list of tasks that is sorted and that will include a suggested time to work on the task. This will be calculated based on our weekly schedule..

Expected Outcomes: We aim to develop a user-friendly task management system that can help users manage their tasks more efficiently. We also aim to evaluate the performance of our system and compare it with existing task management systems.

Conclusion: This project proposes a personalized task management system that employs a priority queue data structure. If successful, this system can have practical applications for individuals and businesses to manage their tasks more efficiently and stay organized.

References: Goodrich, M. T., and Tamassia, R. (2015). Data structures and algorithms in Java. John Wiley and Sons. Cormen, T. H., Leiserson, C. E., Rivest, R. L., and Stein, C. (2009). Introduction to algorithms. MIT press.