COMSATS University Islamabad, Attock Campus

Department of computer Science

Program: BSE

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Course: DS Theory

Assignment: 01

Date: 24 September, 2024

Submitted To: Mr. Kamran

Introduction

The objective of this assignment is to implement a task management system using a singly linked list in C++.

Each task contains a unique ID, description, and priority level. The following functionalities are implemented:

1. Add a new task based on its priority (higher priority tasks come first).
2. View all tasks.
3. Remove the task with the highest priority.
4. Remove a specific task by its task ID

Explanation:

Task Structure: Contains the information with which we define a task like its ID, description, priority, and the next task in line.

createTask: Creates a new task with the provided ID, description, and priority.

addTask: Adds a new task to the list in its place (in accordance with priority index)

viewTasks : Lists all tasks Shows "No tasks available." If no tasks.

deleteTask: This function will remove the task and free its memory.

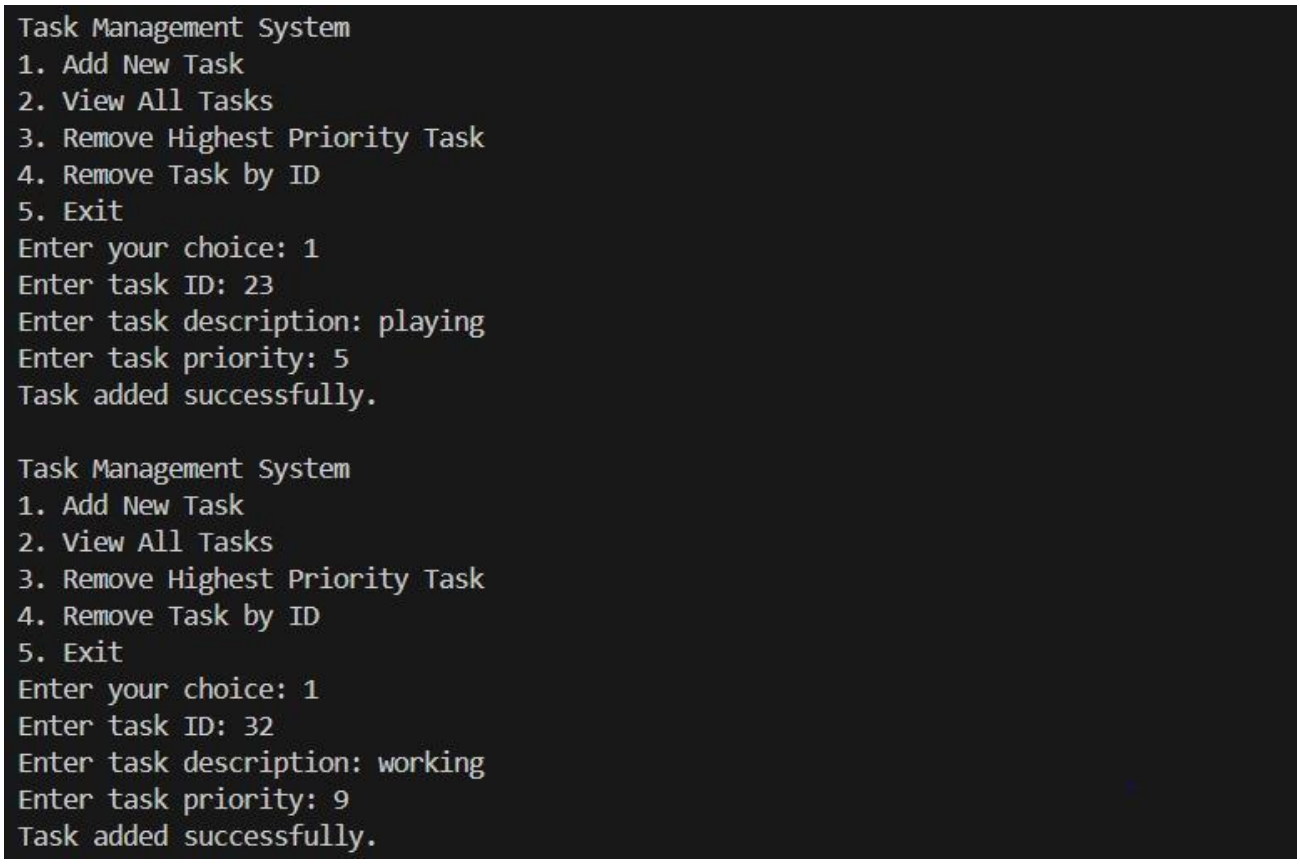
removeHighestPriorityTask: This function removes the highest priority task.

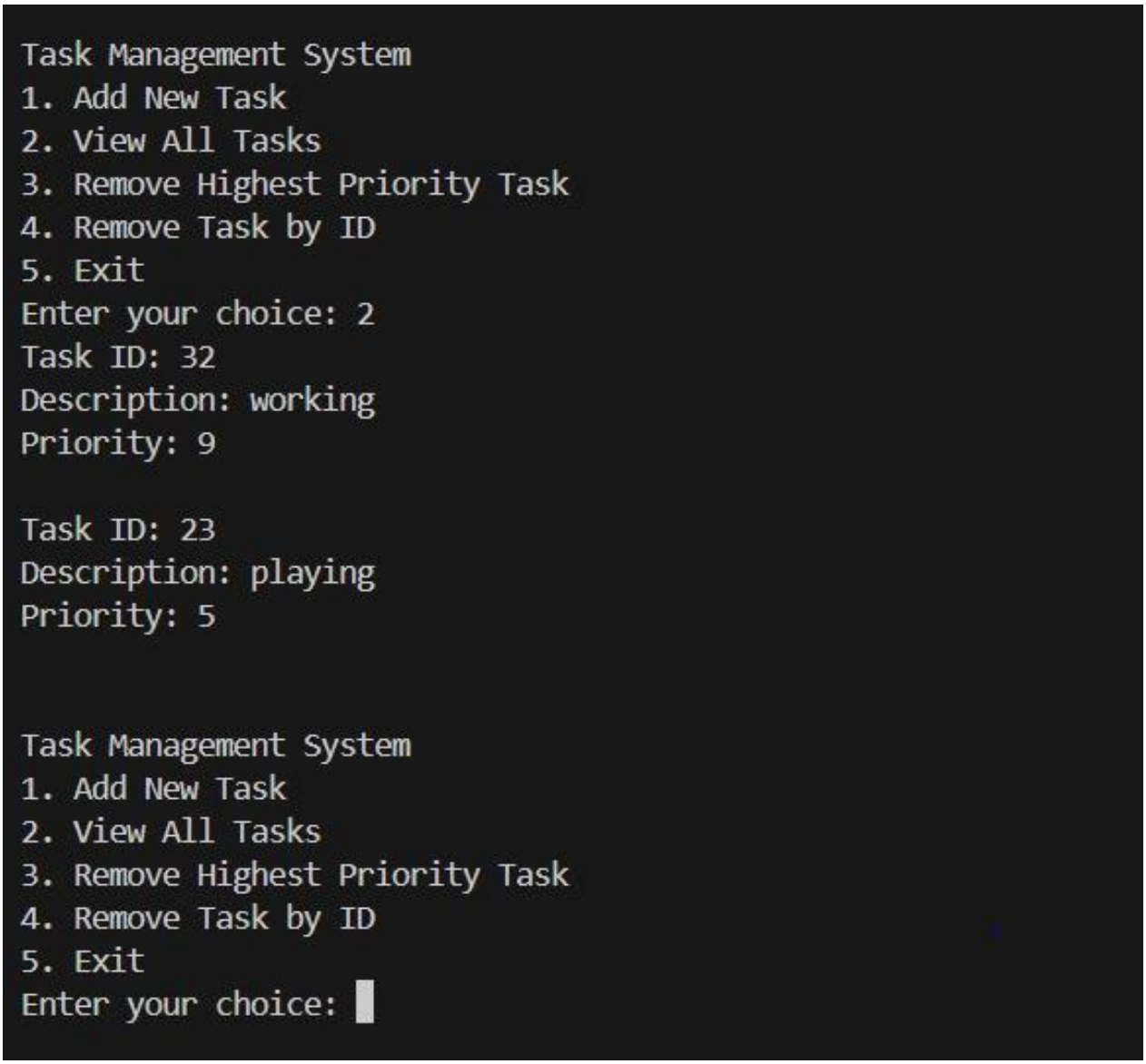
removeTaskByID : Removes a task by its id Shows a message if not found.

Main Function: Provides options to:

1. Add a task. 2. View tasks. 3. Remove the top-priority task.
4. Remove a task by ID. 5. Exit the program.

Output Screenshots:





Conclusion

Through this project, I have learned how to implement and manage a singly linked list in C++ for practical applications such as task management.
The most difficult part of the task insertion process was keeping the list prioritized. This task gave me invaluable practice using linked lists and managing memory in C++.