Task Manager Console Application

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1 Summary

The "Task Manager Console Application" is a simple C++ project designed for managing tasks. It allows users to add tasks with titles, descriptions, and automatically sets due dates. The project includes a basic menu system for user interaction.

2 Project Details

The project involves the following key components:

- **Task Class:** Represents a task with properties such as title, description, and due date.
- **TaskManager Class:** Manages a collection of tasks, allowing users to add tasks and display all tasks.
- **Menu System:** Provides a user-friendly menu for adding tasks, displaying all tasks, and quitting the program.

3 C++ Code

```
#include <iostream>
#include <string>
#include <vector>
#include <ctime>

class Task {
public:
    std::string title;
    std::string description;
    time_t dueDate;

    void display() const {
        struct tm* timeInfo;
        timeInfo = localtime(&dueDate);

        std::cout << "Title: " << title << "\n";
        std::cout << "Description: " << description << "\n";
        std::cout << "Due Date: " << asctime(timeInfo) << "\n";
        std::cout << "--------------------\n";
    }
};

class TaskManager {
```

```
private:
    std::vector<Task> tasks;

public:
    void addTask(const Task& task) {
        tasks.push_back(task);
    }

    void displayAllTasks() const {
        if (tasks.empty()) {
            std::cout << "No tasks available.\n";
        } else {
            std::cout << "=== All Tasks ===\n";
            for (const auto& task : tasks) {
                task.display();
            }
        }
    }
};

int main() {
    TaskManager taskManager;

    while (true) {
        std::cout << "Task Management System\n";
        std::cout << "1. Add a Task\n";
        std::cout << "2. Display All Tasks\n";
        std::cout << "3. Quit\n";
        std::cout << "Enter your choice: ";

        int choice;
        std::cin >> choice;

        switch (choice) {
            case 1: {
                Task newTask;
                std::cout << "Enter task title: ";
                std::cin.ignore(); // Ignore the newline character in the input buffer
                std::getline(std::cin, newTask.title);
                std::cout << "Enter task description: ";
                std::getline(std::cin, newTask.description);

                // Setting a due date 7 days from the current date
                time_t currentTime = time(nullptr);
                newTask.dueDate = currentTime + 7 * 24 * 60 * 60;

                taskManager.addTask(newTask);
                std::cout << "Task added successfully!\n";
                break;
            }
            case 2:
                taskManager.displayAllTasks();
                break;
            case 3:
```

```
                std::cout << "Exiting the Task Management System. Goodbye!\n";
                return 0;
            default:
                std::cout << "Invalid choice. Please try again.\n";
        }
    }
}
```

4 Example Outputs

```
Task Management System
1. Add a Task
2. Display All Tasks
3. Quit
Enter your choice: 1

Enter task title: Complete C++ Project
Enter task description: Create a sample C++ project for my portfolio
Task added successfully!

Task Management System
1. Add a Task
2. Display All Tasks
3. Quit
Enter your choice: 2

=== All Tasks ===
Title: Complete C++ Project
Description: Create a sample C++ project for my portfolio
Due Date: [Date 7 days from now]
-----------------

Task Management System
1. Add a Task
2. Display All Tasks
3. Quit
Enter your choice: 3

Exiting the Task Management System. Goodbye!
```

5 Conclusion

The "Task Manager Console Application" showcases fundamental C++ programming skills by implementing a simple task management system. It includes features for user input, class-based design, and dynamic memory allocation.