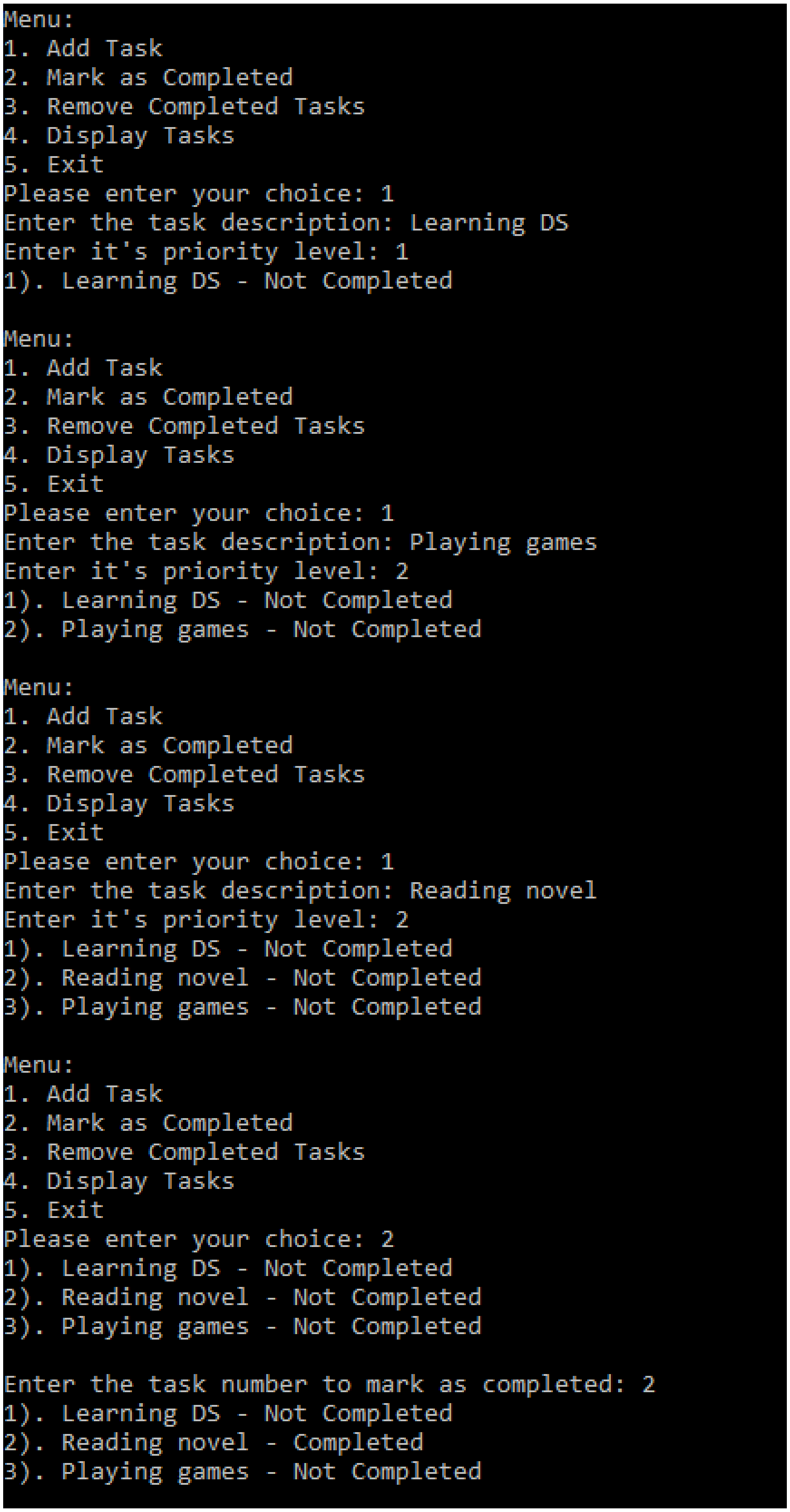
Lab Task 04

1. “To-Do List”

Scenario: You are tasked with developing a basic to-do list application. Users should be able to add tasks to their list, along with their priority, mark tasks as completed, and remove completed tasks. The application will be implemented using a **doubly linked** list data structure to manage tasks.

Menu Options:

- Add Task: Allow users to add a new task to their to-do list, along with the priority level. Priority level is simply the position where you want to insert in the list. By default the task is not completed so it’s completion status is false.
- Mark as Completed: Let users mark a task as completed when they have finished it. So display the list of tasks and user will mark any task as completed, so the Boolean variable completed will become true.
- Remove Completed Tasks: Allow users to remove all completed tasks from the list.
- Display Tasks: Display the current list of tasks, showing their completion status. User should be prompted to display tasks in which order. Forward or reserve. The display the tasks accordingly. Each task in the doubly linked list will have a description (string), a completed flag (boolean), a next pointer (pointing to the next task), and a prev pointer (pointing to the previous task).
- Implement the destructor as well.



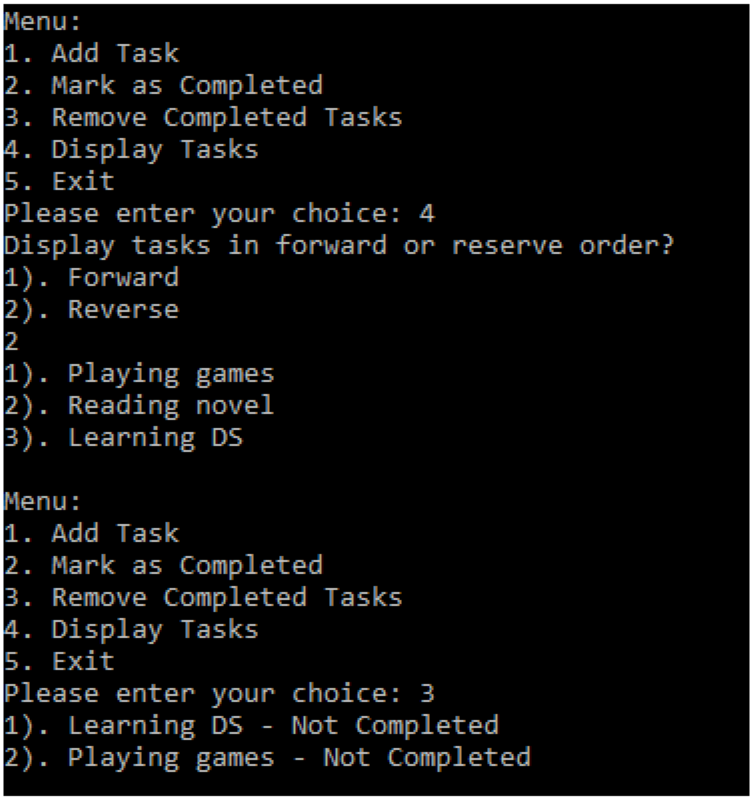
```
Menu:
1. Add Task
2. Mark as Completed
3. Remove Completed Tasks
4. Display Tasks
5. Exit
Please enter your choice: 1
Enter the task description: Learning DS
Enter it's priority level: 1
1). Learning DS - Not Completed

Menu:
1. Add Task
2. Mark as Completed
3. Remove Completed Tasks
4. Display Tasks
5. Exit
Please enter your choice: 1
Enter the task description: Playing games
Enter it's priority level: 2
1). Learning DS - Not Completed
2). Playing games - Not Completed

Menu:
1. Add Task
2. Mark as Completed
3. Remove Completed Tasks
4. Display Tasks
5. Exit
Please enter your choice: 1
Enter the task description: Reading novel
Enter it's priority level: 2
1). Learning DS - Not Completed
2). Reading novel - Not Completed
3). Playing games - Not Completed

Menu:
1. Add Task
2. Mark as Completed
3. Remove Completed Tasks
4. Display Tasks
5. Exit
Please enter your choice: 2
1). Learning DS - Not Completed
2). Reading novel - Not Completed
3). Playing games - Not Completed

Enter the task number to mark as completed: 2
1). Learning DS - Not Completed
2). Reading novel - Completed
3). Playing games - Not Completed
```



```
Menu:
1. Add Task
2. Mark as Completed
3. Remove Completed Tasks
4. Display Tasks
5. Exit
Please enter your choice: 4
Display tasks in forward or reserve order?
1). Forward
2). Reverse
2
1). Playing games
2). Reading novel
3). Learning DS

Menu:
1. Add Task
2. Mark as Completed
3. Remove Completed Tasks
4. Display Tasks
5. Exit
Please enter your choice: 3
1). Learning DS - Not Completed
2). Playing games - Not Completed
```

2. “Music Player with extra functionalities”

Scenario: Implement the same music player we did for the last time, just add the extra functionalities where, if the user wants to play next song after the last song in the list, start playing from the beginning of the list.

Note: Implement using circular linked list this time, with all the operations and the destructor.