

Due date 12/4/2025 @ 10:00PM

In this project, you are required to develop a **Task Management System**. Your program should read a set of tasks from a file named *tasks.txt* and store them in a **linked list**.

The user can perform any task, meaning that completed tasks should be **removed** from the list. Additionally, the user has the option to **undo** the most recently performed task(s). However, any undone tasks should be placed back at the **end** of the linked list.

The program should also generate a **summary report** that includes the following categories:

- **Unperformed tasks**
- **Undone tasks**
- **Performed tasks**

This report should be saved in a file named *Report.txt*.

You are only allowed to use **linked lists, stacks, and queues** to implement this system.

Each task contains the following information:

- Task ID
- Task name
- Task date
- Task duration (in hours)

Below is an example of the input file (*tasks.txt*):

```
10#meeting#22/3/2025#1.5
11#attend lecture#25/3/2025#3
12#shopping#21/3/2025#5.5
13#visit grandparents#24/3/2025#7
14#study COMP2421 course#24/3/2025#3.5
15#submit project 1#5/4/2025#0.1
.....
```

Your program should display the following options through a well-structured menu:

1. **Load Tasks File** – Load tasks from the file.
2. **Add a New Task** – Add a new task to the system.
3. **Delete a Task** – Remove a specific task based on its Task ID.
4. **Search for a Task** – Search for a task by either Task ID or Task Name (prompt the user for their choice).
5. **View Unperformed Tasks** – Display all unperformed tasks along with their details.
6. **Perform a Task** – Mark a task as performed and remove it from the list.
7. **Undo Last Performed Task** – Restore the most recently performed task.
8. **View Performed Tasks** – Display all performed tasks in the order they were completed.
9. **Generate Summary Report** – Create and save a report of unperformed, undone, and performed tasks.
10. **Exit** – Close the program.

The deadline of this project is on **Saturday 12 April 2025 before 10:00 PM**. Late submissions will not be accepted for any reason. Please make sure that your application is running properly on your laptop before the discussions.

Notes and submission instructions:

1. **This is individual work.** It should represent your own efforts. It is fine to discuss your work and to ask your colleagues, but you are not allowed to copy/paste the work of others or give your work to anyone else. You are not allowed to post/copy from other websites and/or social media and this will be considered as cheating. **Using AI tools to assist writing the code will result in zero grade.**
2. Any **plagiarized** code will not be marked.
3. **Document format.** Please submit only the code file (**c** file) containing the code of your project. Please rename it as follows: “**P1_YourStudentID_FirstNameLastName_SectionNo.c**”.
4. **Input/output file name.** Make sure that the input/output file names are the same as in the specifications.
5. Include your full name, student ID, and section number in the beginning of your file.
6. Please do not compress the file, only the C-file is needed.
7. Files not following the convention in point 2 will not be marked.

All the best