To-Do List Application (with priority and deadlines)

A PROGRAMMING IN C PROJECT

Problem Definition

- Managing daily activities becomes difficult when tasks are not organized properly. people often forget important deadlines, lose track of priority work, or fail to complete tasks.

- There is a need for a simple, efficient and user-friendly to record, manage, and update tasks in an organized way.

PURPOSE

The purpose of this project is to enhance a basic TO-DO LIST APPLICATION with the C programming concepts file
Handling, string validation, and conditional data display.
This application allow users to set deadlines along with the time , allow the users to edit any existing task (but deadline date and time line cannot edit it's fixed once you set) , allow the user to change priority and change the status of tasks.....

OBJECTIVES

The major objectives of the application are:
To store and manage tasks using C structures and arrays.
To provide CRUD operation (Create, Read, Update, Delete).
To validate date, time, and input values.
To save tasks to a file and load them .
To implement user-friendly menu interface.

Solution Approach

METHODOLOGY

The To-Do list Application uses:

Structure to represent individual tasks.

Array of Task to hold all tasks in memory

Utility Function to handle input validation.

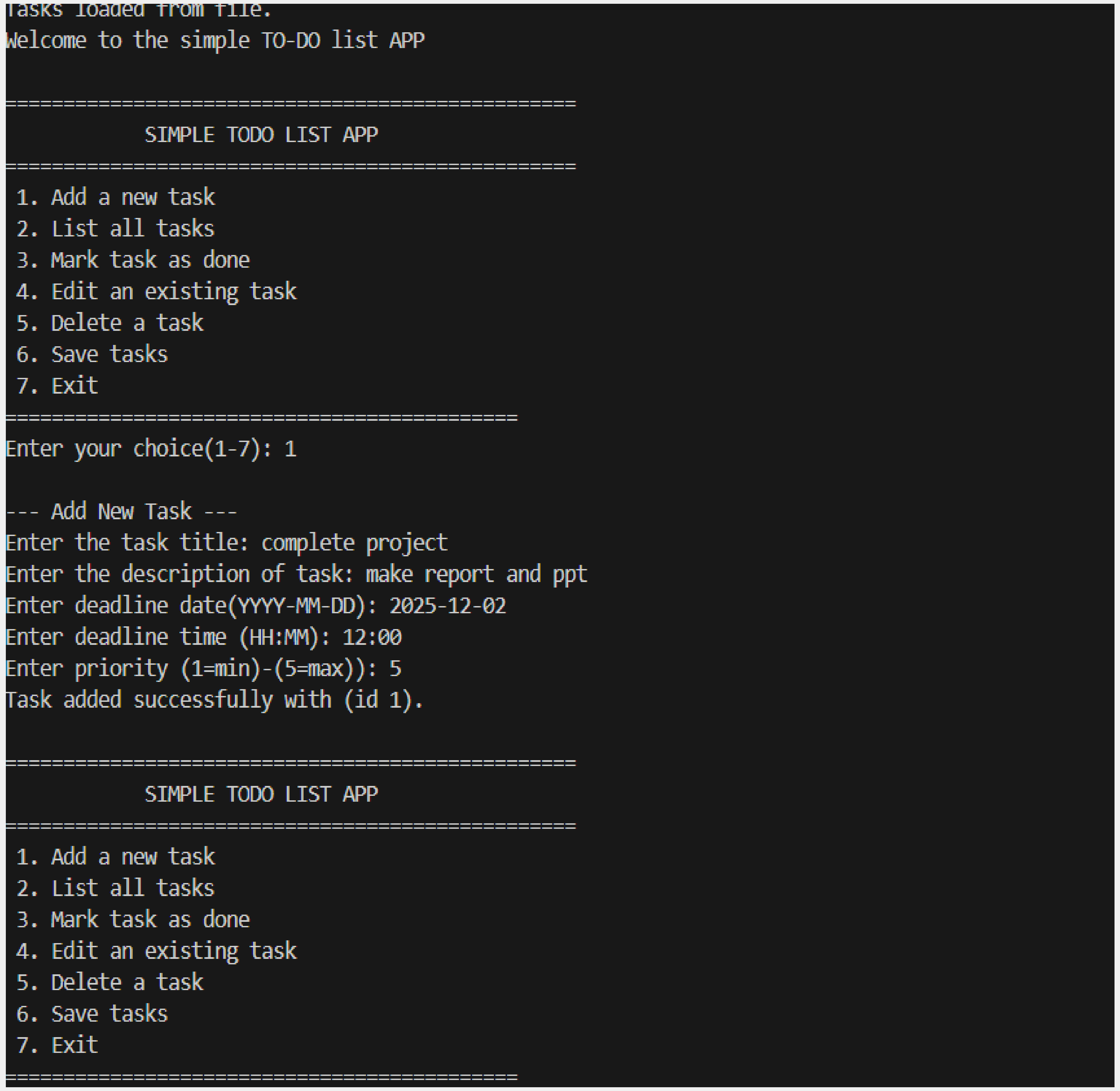
File operations for saving and loading tasks.

Menu-driven loop for user interaction.

Working Code Demonstration

THIS IS OUTPUT OF CODE WITH VALID INPUTS

THE MENU WILL APPER AGAIN AND AGAIN UNTIL THE USER SELECT EXIT(7).

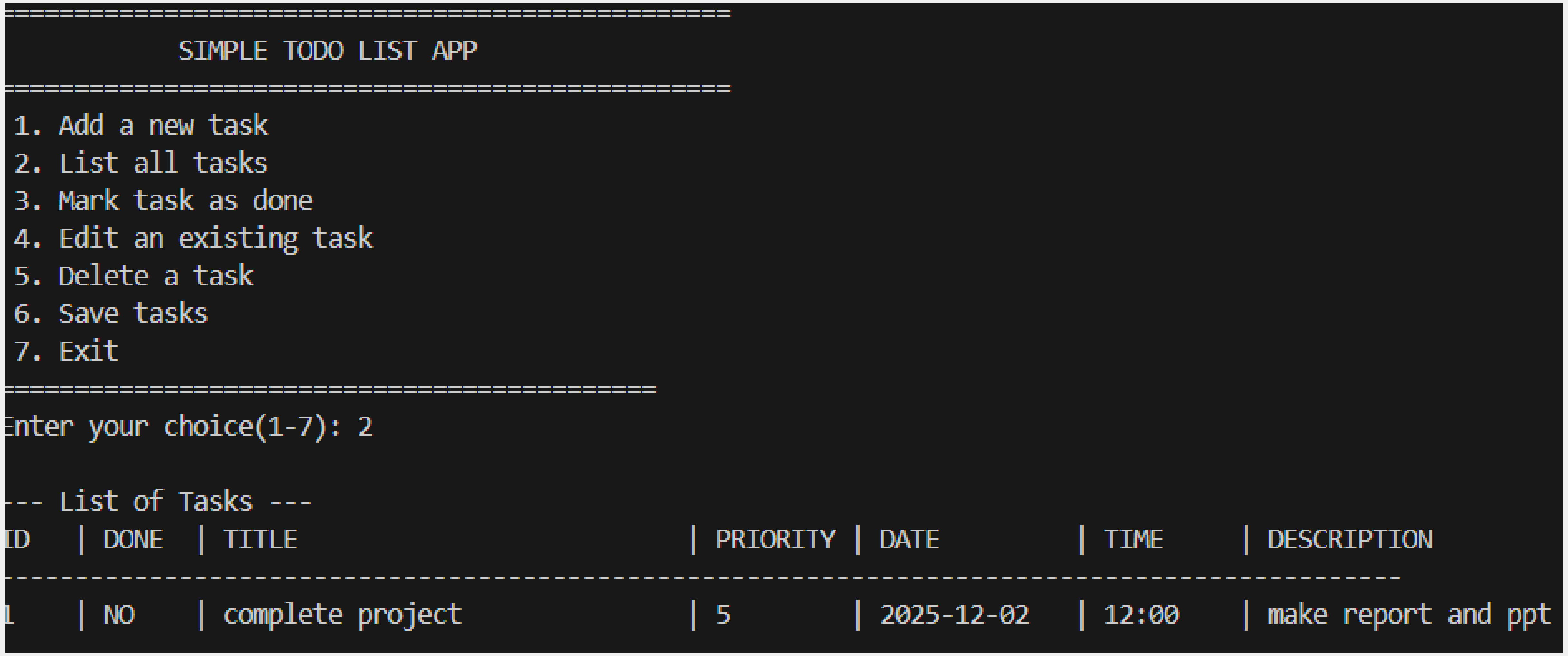


```
Tasks loaded from file.
Welcome to the simple TO-DO list APP

==================================================
           SIMPLE TODO LIST APP
==================================================
 1. Add a new task
 2. List all tasks
 3. Mark task as done
 4. Edit an existing task
 5. Delete a task
 6. Save tasks
 7. Exit
============================================
Enter your choice(1-7): 1

--- Add New Task ---
Enter the task title: complete project
Enter the description of task: make report and ppt
Enter deadline date(YYYY-MM-DD): 2025-12-02
Enter deadline time (HH:MM): 12:00
Enter priority (1=min)-(5=max)): 5
Task added successfully with (id 1).

==================================================
           SIMPLE TODO LIST APP
==================================================
 1. Add a new task
 2. List all tasks
 3. Mark task as done
 4. Edit an existing task
 5. Delete a task
 6. Save tasks
 7. Exit
============================================
```

Working Code Demonstration

OUTPUT WHEN THE USER SELECT LIST ALL

THE FIRST ENTERED TASK WILL GET ID 1

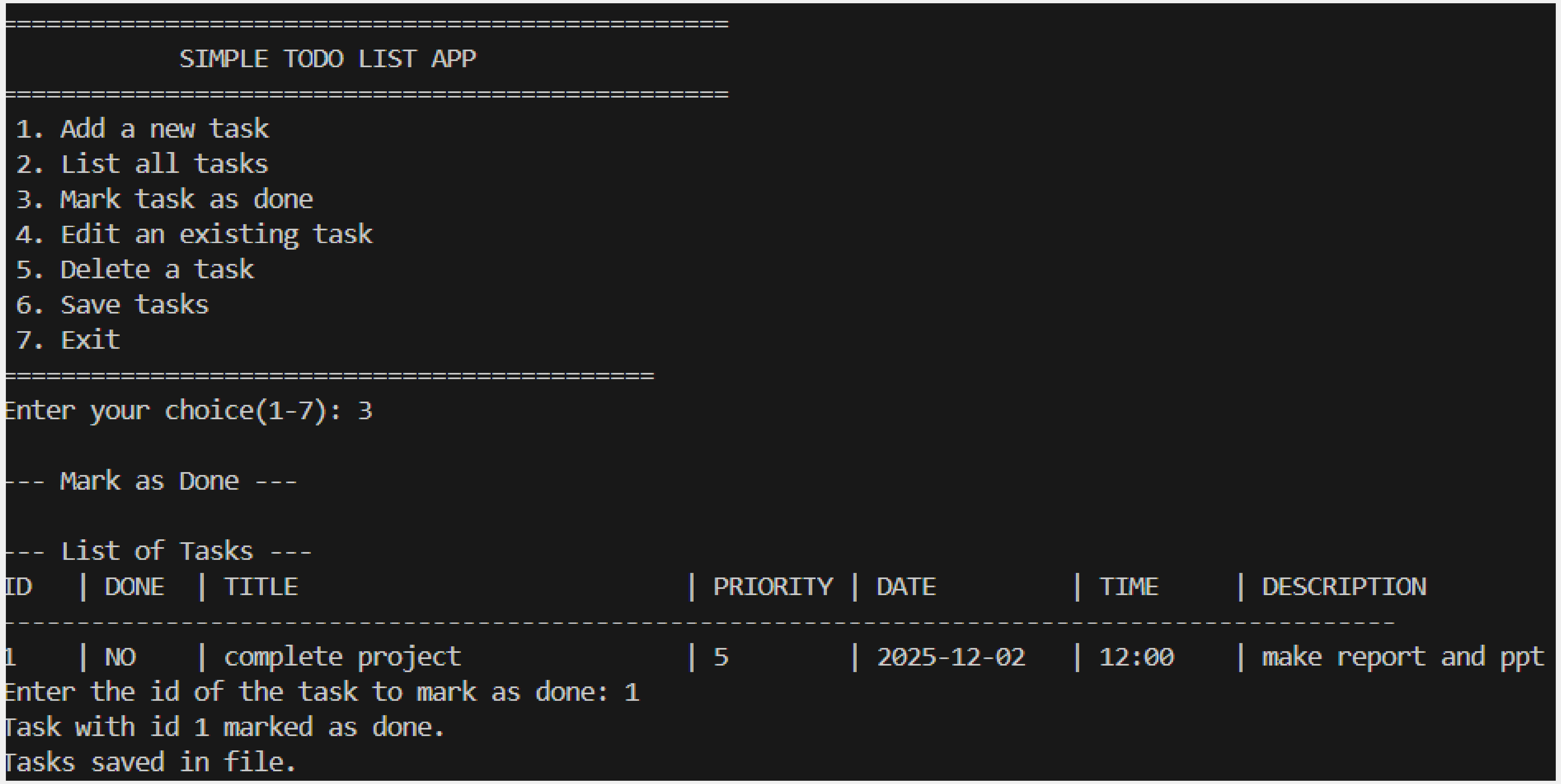


```
==================================================
            SIMPLE TODO LIST APP
==================================================
 1. Add a new task
 2. List all tasks
 3. Mark task as done
 4. Edit an existing task
 5. Delete a task
 6. Save tasks
 7. Exit
============================================
Enter your choice(1-7): 2

--- List of Tasks ---
ID    | DONE  | TITLE                          | PRIORITY | DATE          | TIME      | DESCRIPTION
-----------------------------------------------------------------------------------------------
1     | NO    | complete project               | 5        | 2025-12-02    | 12:00     | make report and ppt
```

Working Code Demonstration

OUTPUT WHEN SELECTED MARK AS DONE

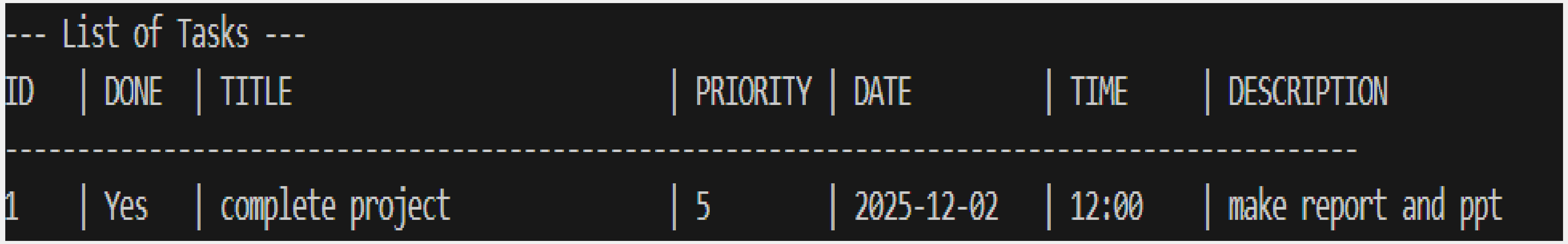
THE UPDATE IS AUTO SAVED IN FILE



```
=================================================
           SIMPLE TODO LIST APP
=================================================
 1. Add a new task
 2. List all tasks
 3. Mark task as done
 4. Edit an existing task
 5. Delete a task
 6. Save tasks
 7. Exit
============================================
Enter your choice(1-7): 3

--- Mark as Done ---

--- List of Tasks ---
ID   | DONE  | TITLE                           | PRIORITY | DATE        | TIME     | DESCRIPTION
----------------------------------------------------------------------------------------------
1    | NO    | complete project                | 5        | 2025-12-02  | 12:00    | make report and ppt
Enter the id of the task to mark as done: 1
Task with id 1 marked as done.
Tasks saved in file.
```

Working Code Demonstration

AFTER UPDATING THE STATUS



```
--- List of Tasks ---
ID    | DONE  | TITLE                          | PRIORITY | DATE          | TIME      | DESCRIPTION
------------------------------------------------------------------------------------------------------
1     | Yes   | complete project               | 5        | 2025-12-02    | 12:00     | make report and ppt
```

CONCLUSION:

The To-Do list application demononstrates that how using the C programming concepts a practical, user friendly task management system can create. By using structures, arrays,file handling and modular functions this project organize data efficiently and ensure the long term stroage of the tasks through saving them in file.

The program successfully performs all the essential operations such as adding, listing, editing, deleting and marking tasks as complete. It's a User friendly application

Overall this project highlights the importance of structure programming, clean code organisation, and data persistence.

Error Handling In The Code

Input error in readline()

checks if fgets() failed.

print the error message and exit the program.

INPUT VALIDATION

Ensures the user enter a valid integer.

check if the integer is in specific range.

DATE AND TIME VALIDATION

Ensure the date and time Format.

Error Handling In The Code

FILE OPERATION ERROR HANDLING

SAVING TASKS.

- Check if file was opened successfully.
- If not , print error but does not crash.

LOADING TASKS

- If the file does not exist,print message and continues.
- Prevents Errors when first running the proram without a saved file.

References

- UPES University course material and class notes
- Online c tutorials

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UNIVERSITY OF TOMORROW

Thank You