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Instructo r	<u>Miss Hira Sohail</u>
<u>Date</u>	<u>16<sup>th</sup> July 2025</u>

1. In-Lab Tasks: (Write your lab task & screenshots here)

```
OUTPUT
                                                                                     TERMINAL
                                                     ----- Task Manager Menu -----:
 PROBLEMS
                                  TERMINAL
                                                     Press 1 for Add a New Task.
                                                     Press 2 for Remove task.
[cc@ncdc-0063 codes]$ gcc lab6 task1.c -o task1
                                                     Press 3 for Display task.
[cc@ncdc-0063 codes]$ ./task1
                                                     Press 4 for Update task.
                                                     Press 5 for Exit.
 ----- Task Manager Menu
 Press 1 for Add a New Task.
                                                     Enter description: take exam.
 Press 2 for Remove task.
                                                     Enter priority (1=High, 2=Med, 3=Low): 3
 Press 3 for Display task.
 Press 4 for Update task.
                                                     Enter due date (format: YYYY MM DD)
 Press 5 for Exit.
                                                     Enter year: 2025
Enter month: 07
 Enter description: enroll the student.
 Enter priority (1=High, 2=Med, 3=Low): 1
                                                     Enter day: 25
                                                     The new task is added successfully!
 Enter due date (format: YYYY MM DD)
                                                     ----- Task Manager Menu -----:
 Enter year: 2025
                                                     Press 1 for Add a New Task.
 Enter month: 07
                                                     Press 2 for Remove task.
 Enter day: 01
                                                     Press 3 for Display task.
 The new task is added successfully!
                                                     Press 4 for Update task.
                                                     Press 5 for Exit.
  ----- Task Manager Menu
 Press 1 for Add a New Task.
 Press 2 for Remove task.
                                                     ----- Node List -----
 Press 3 for Display task.
 Press 4 for Update task.
                                                     Description: enroll the student.
 Press 5 for Exit.
                                                     Priority: 1
                                                     Due Date: 2025-07-01
 Enter description: assign the lab.
 Enter priority (1=High, 2=Med, 3=Low): 1
                                                     Description: assign the lab.
                                                     Priority: 1
 Enter due date (format: YYYY MM DD)
                                                     Due Date: 2025-07-07
 Enter year: 2025
                                                     Description: assign the assignments.
 Enter month: 07
                                                     Priority: 1
 Enter day: 07
                                                     Due Date: 2025-07-10
 The new task is added successfully!
                                                     Description: take exam.
 ----- Task Manager Menu -----:
                                                     Priority: 3
 Press 1 for Add a New Task.
                                                     Due Date: 2025-07-25
 Press 2 for Remove task.
 Press 3 for Display task.
 Press 4 for Update task.
                                                     ----- Task Manager Menu -----:
 Press 5 for Exit.
                                                     Press 1 for Add a New Task.
                                                     Press 2 for Remove task.
 Enter description: assign the assignments.
                                                     Press 3 for Display task.
 Enter priority (1=High, 2=Med, 3=Low): 1
                                                     Press 4 for Update task.
                                                     Press 5 for Exit.
 Enter due date (format: YYYY MM DD)
                                                     Enter description to update: assign the lab.
 Enter year: 2025
                                                     Enter new priority: 3
 Enter month: 07
                                                     Enter new due date (YYYY MM DD): 2025
 Enter day: 10
 The new task is added successfully!
```

```
OUTPUT
                 DEBUG CONSOLE
                                TERMINAL
                                                         OUTPUT
                                                                 DEBUG CONSOLE
                                                                               TERMINAL
The Output (Ctrl+K Ctrl+H) | ccessfully!
                                               ----- Task Manager Menu -----:
----- Task Manager Menu
                                               Press 1 for Add a New Task.
Press 2 for Remove task.
Press 1 for Add a New Task.
Press 2 for Remove task.
                                               Press 3 for Display task.
Press 3 for Display task.
                                               Press 4 for Update task.
Press 4 for Update task.
                                               Press 5 for Exit.
Press 5 for Exit.
                                               Enter description: entrance test.
                                               Enter priority (1=High, 2=Med, 3=Low): 3
----- Node List -----
                                               Enter due date (format: YYYY MM DD)
Description: enroll the student.
Priority: 1
                                               Enter year: 2025
Due Date: 2025-07-01
                                               Enter month: 05
                                               Enter day: 01
Description: assign the lab.
                                               The new task is added successfully!
Priority: 3
Due Date: 2025-07-07
                                               ----- Task Manager Menu -----:
                                               Press 1 for Add a New Task.
Description: assign the assignments.
                                               Press 2 for Remove task.
Priority: 1
                                               Press 3 for Display task.
Due Date: 2025-07-10
                                               Press 4 for Update task.
                                               Press 5 for Exit.
Description: take exam.
Priority: 3
Due Date: 2025-07-25
                                               ----- Node List -----
                                               Description: entrance test.
----- Task Manager Menu -----:
                                               Priority: 3
Press 1 for Add a New Task.
                                               Due Date: 2025-05-01
Press 2 for Remove task.
Press 3 for Display task.
                                               Description: enroll the student.
Press 4 for Update task.
                                               Priority: 1
Press 5 for Exit.
                                               Due Date: 2025-07-01
Enter description: entrance test.
                                               Description: assign the lab.
Enter priority (1=High, 2=Med, 3=Low): 3
                                               Priority: 3
                                               Due Date: 2025-07-07
Enter due date (format: YYYY MM DD)
                                               Description: assign the assignments.
Enter year: 2025
                                               Priority: 1
Enter month: 05
                                               Due Date: 2025-07-10
Enter day: 01
The new task is added successfully!
                                               Description: take exam.
                                               Priority: 3
----- Task Manager Menu
                                               Due Date: 2025-07-25
Press 1 for Add a New Task.
Press 2 for Remove task.
Press 3 for Display task.
                                               ----- Task Manager Menu -----:
Press 4 for Update task.
                                               Press 1 for Add a New Task.
Press 5 for Exit.
                                               Press 2 for Remove task.
                                               Press 3 for Display task.
                                               Press 4 for Update task.
                                               Press 5 for Exit.
----- Node List -----
```

## ii. Task 2:

TERMINAL TERMINAL [cc@ncdc-0063 codes]\$ ls lab6\_task1.c lab6\_task2.c lab6\_task3.c task1 [cc@ncdc-0063 codes]\$ gcc lab6\_task2.c -o task2 Options available I - Insert a name into the list Delete a name from the list [cc@ncdc-0063 codes]\$ ./task2 C - Count the number of items on the list Program to Maintain a List of Names F - Move an item to the front of the list L - Print the last item on the list (iteratively) Options available I - Insert a name into the listD - Delete a name from the list M - Print the last item on the list (recursively) Print the names on the list (iteratively)
Print the names on the list (recursively) C - Count the number of items on the list  ${\sf F}$  - Move an item to the front of the list L - Print the last item on the list (iteratively) R - Print the names in reverse order O - Quit M - Print the last item on the list (recursively) P - Print the names on the list (iteratively)
S - Print the names on the list (recursively) Enter desired option: i Enter name to be inserted into list: siddiqui Enter old name which new name should precede, R - Print the names in reverse order or enter ? if new name should be placed last: ? siddiqui inserted into the list Q - Quit Enter desired option: i Enter name to be inserted into list: muddassir muddassir inserted into the list Options available  $oldsymbol{ ilde{I}}$  - Insert a name into the list Delete a name from the list Options available C - Count the number of items on the list . - Insert a name into the list  ${\sf F}$  - Move an item to the front of the list  ${\sf L}$  - Print the last item on the list (iteratively) D - Delete a name from the list C - Count the number of items on the list
F - Move an item to the front of the list
L - Print the last item on the list (iteratively)
M - Print the last item on the list (recursively) M - Print the last item on the list (recursively) Print the names on the list (iteratively) Print the names on the list (recursively) P - Print the names on the list (iteratively) S - Print the names on the list (recursively) R - Print the names in reverse order 0 - Ouit Enter desired option: mudddasssir\_ali Last item in the list: siddiqui R - Print the names in reverse order 0 - Ouit Enter desired option: 1 Options available Invalid Option - Try Again! I - Insert a name into the list Options available D - Delete a name from the list
C - Count the number of items on the list I - Insert a name into the list D - Delete a name from the list F - Move an item to the front of the listL - Print the last item on the list (iteratively)M - Print the last item on the list (recursively) C - Count the number of items on the list F - Move an item to the front of the list
L - Print the last item on the list (iteratively)
M - Print the last item on the list (recursively)
P - Print the names on the list (iteratively) P - Print the names on the list (iteratively) S - Print the names on the list (recursively) S - Print the names on the list (recursively) R - Print the names in reverse order Q - Quit R - Print the names in reverse order Enter desired option: 1 Q - Quit Invalid Option - Try Again! Enter desired option: i Options available Enter name to be inserted into list: ali Enter old name which new name should precede, I - Insert a name into the list or enter ? if new name should be placed last: ? ali inserted into the list Delete a name from the list Count the number of items on the list Move an item to the front of the list Print the last item on the list (iteratively) Options available Print the last item on the list (recursively)
Print the names on the list (iteratively) I - Insert a name into the list Delete a name from the list Print the names on the list (recursively) Count the number of items on the list Move an item to the front of the list Print the last item on the list (iteratively) Print the names in reverse order



## iii. Task 3:

## C/C++ Programming

```
PROBLEMS
           OUTPUT
                    DEBUG CONSOLE
                                  TERMINAL
                                            PORTS
[cc@ncdc-0063 codes]$ gcc lab6 task3.c -o task3
[cc@ncdc-0063 codes]$ ./task3
 Enter number of elements in List 1: 3
 Enter element 1 of List 1: 7
 Enter element 2 of List 1: 3
 Enter element 3 of List 1: 5
 Enter number of elements in List 2: 3
 Enter element 1 of List 2: 2
 Enter element 2 of List 2: 4
 Enter element 3 of List 2: 1
 List 1: 7 -> 3 -> 5
 List 2: 2 -> 4 -> 1
 Merged and Sorted List: 1 -> 2 -> 3 -> 4 -> 5 -> 7
 [cc@ncdc-0063 codes]$
```

## 2. <u>Critical Analysis</u>: (Write you critical analysis / conclusion here)

A linked list is a linear data structure that stores a sequence of elements called nodes, where each node contains data and a reference (or link) to the next node in the sequence. In this lab we learn how to add, delete and update the linked list.