

DATA STRUCTURE AND PROGRAM DESIGN LAB – 04

4. This C program creates a linked list to store integer elements. It prompts the user to enter elements and add them to the list until the user enters 0. It then traverses the list and prints each element and " $=>$ " until reaching the null pointer. Finally, it displays the number of nodes in the list.

SAMPLE OUTPUT:

The screenshot shows a terminal window in a code editor. The left sidebar lists files: TORS (1 unsaved), Practical-4.c (selected), Practical-5.c, Practical-1B.c, Practical-1C.c, Practical-2.c, Practical-3.c, 3, 1B_output.docx, 1C_output.docx, 2_output.docx, 3_output.docx, cal-1A.c, cal-1B.c, cal-1C.c, cal-2.c, and 1B. The main area shows the C code for a linked list, the terminal command to compile and run it, the user input of integers, the resulting linked list output, and the total number of nodes.

```
C Practical-4.c
34     int main() {
46         if (head == NULL) {
47             head = (Node*) malloc(sizeof(Node));
48             head->data = 4;
49             head->next = NULL;
50         }
51         else {
52             Node* temp = head;
53             while (temp->next != NULL)
54                 temp = temp->next;
55             temp->next = (Node*) malloc(sizeof(Node));
56             temp->next->data = 3;
57             temp->next->next = NULL;
58         }
59     }
60
61     return 0;
62 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\Ankush\OneDrive\Desktop\DSPD-LAB> gcc Practical-4.c
PS C:\Users\Ankush\OneDrive\Desktop\DSPD-LAB> ./a.exe
Enter elements (enter 0 to stop):
4
3
5
7
8
0

Linked List: 4 => 3 => 5 => 7 => 8 => NULL
Total number of nodes = 5
PS C:\Users\Ankush\OneDrive\Desktop\DSPD-LAB> 
```