RIPHAH
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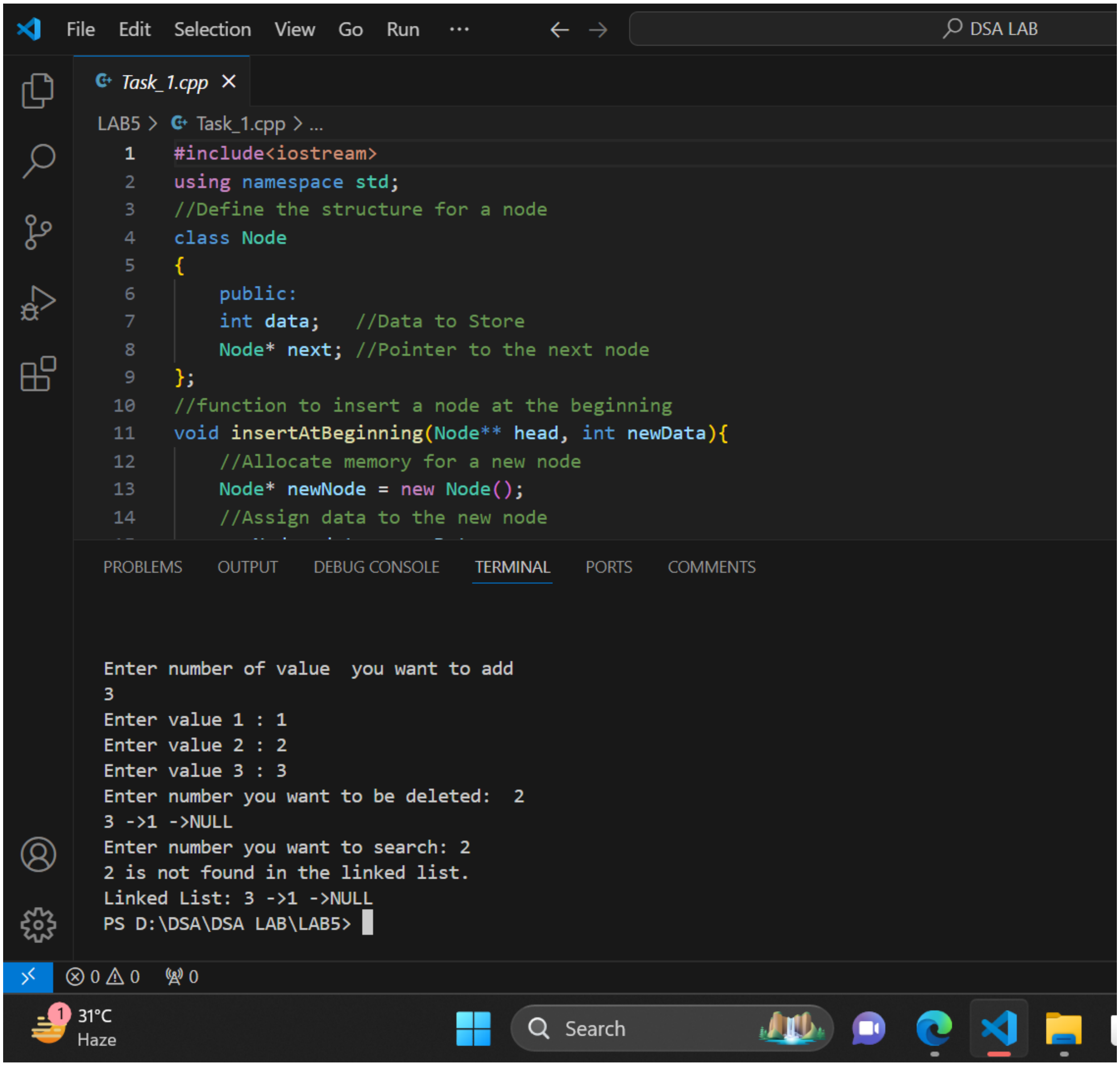
Section = BS SE 3-2

Course = Data Structures and Algorithms

Lab Task 5:

Q no1:

Code & Output:

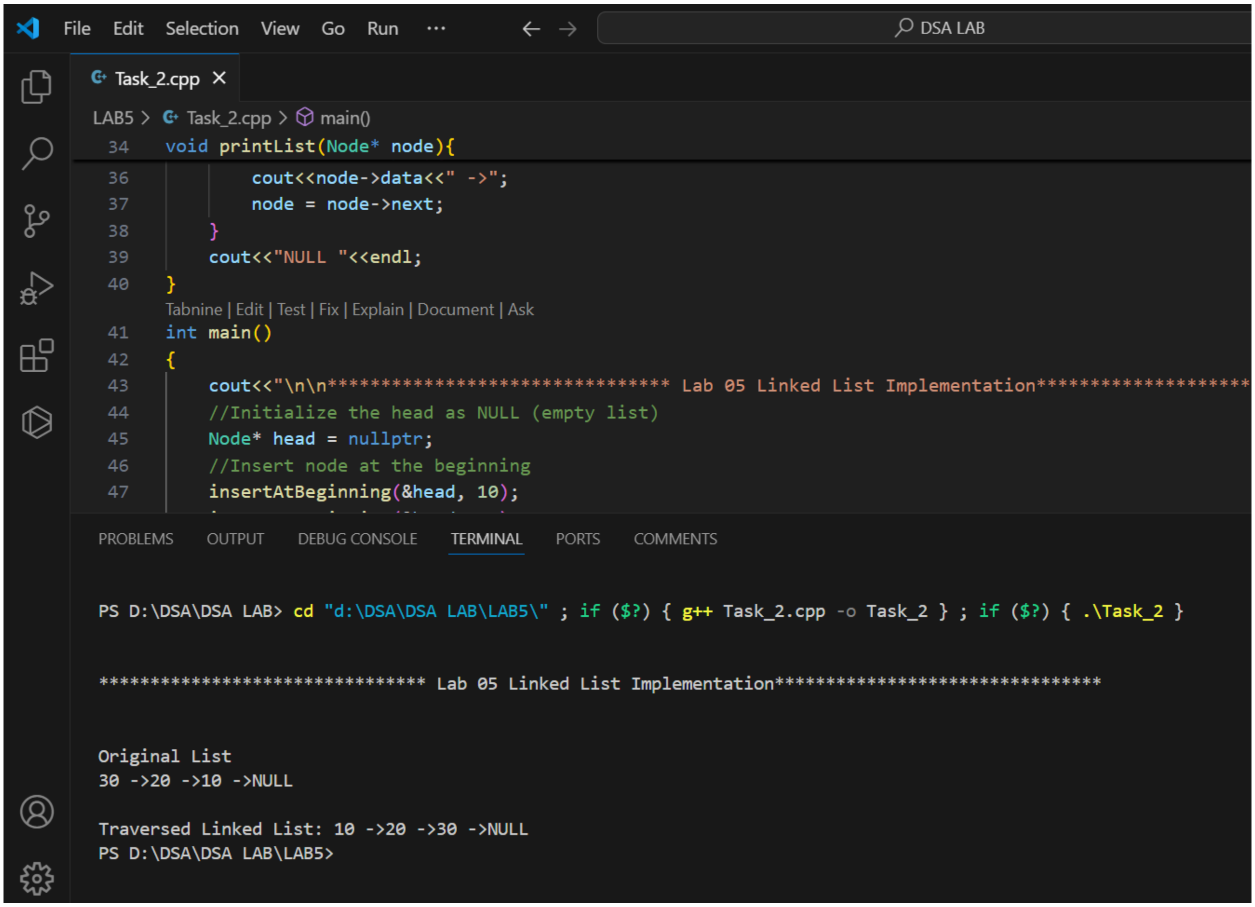


```cpp
#include<iostream>
using namespace std;
//Define the structure for a node
class Node
{
    public:
    int data;   //Data to Store
    Node* next; //Pointer to the next node
};
//function to insert a node at the beginning
void insertAtBeginning(Node** head, int newData){
    //Allocate memory for a new node
    Node* newNode = new Node();
    //Assign data to the new node
```

```
Enter number of value  you want to add
3
Enter value 1 : 1
Enter value 2 : 2
Enter value 3 : 3
Enter number you want to be deleted:  2
3 ->1 ->NULL
Enter number you want to search: 2
2 is not found in the linked list.
Linked List: 3 ->1 ->NULL
PS D:\DSA\DSA LAB\LAB5> 
```

Q no 2:

Code & Output:

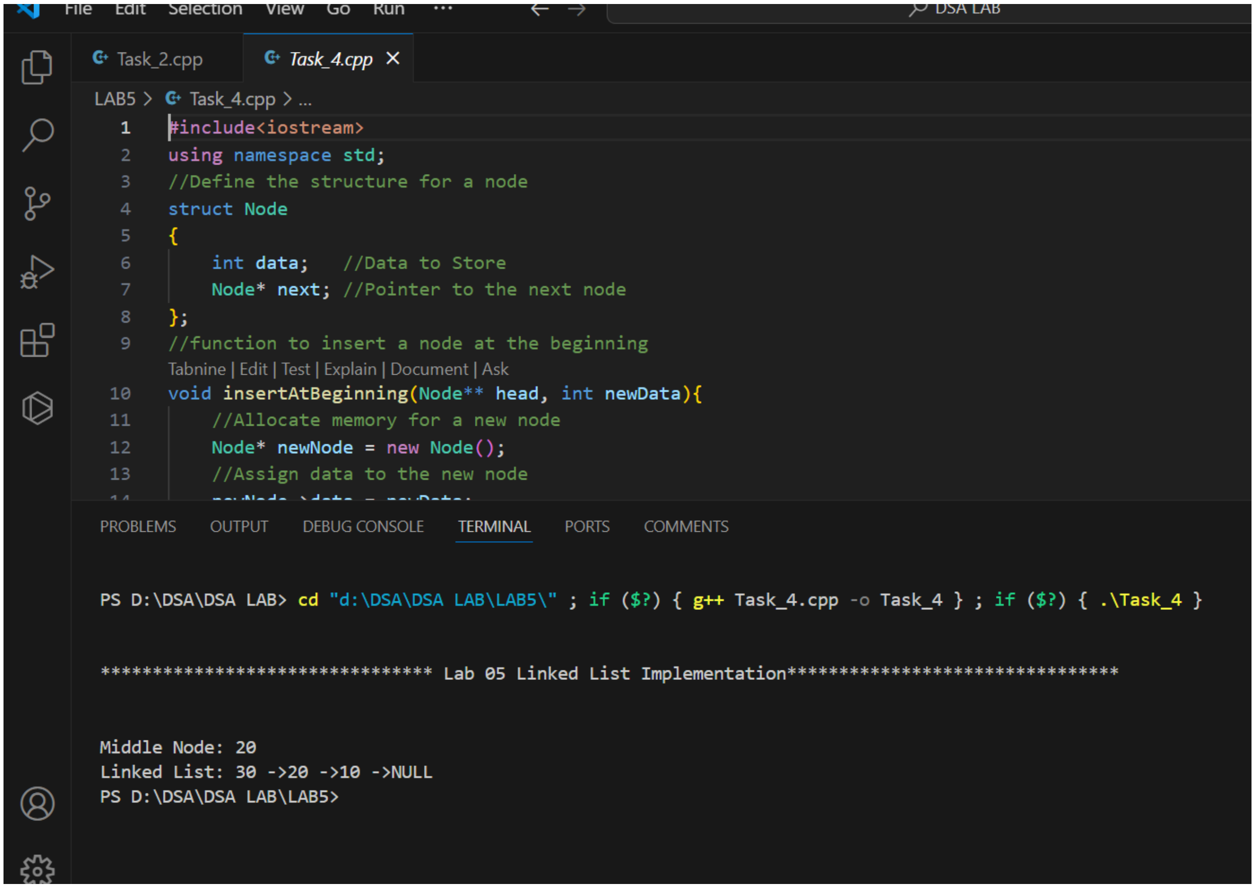


```cpp
void printList(Node* node){
        cout<<node->data<<" ->";
        node = node->next;
    }
    cout<<"NULL "<<endl;
}
int main()
{
    cout<<"\n\n******************************** Lab 05 Linked List Implementation********************
    //Initialize the head as NULL (empty list)
    Node* head = nullptr;
    //Insert node at the beginning
    insertAtBeginning(&head, 10);
```

```
PS D:\DSA\DSA LAB> cd "d:\DSA\DSA LAB\LAB5\" ; if ($?) { g++ Task_2.cpp -o Task_2 } ; if ($?) { .\Task_2 }


******************************** Lab 05 Linked List Implementation********************************


Original List
30 ->20 ->10 ->NULL

Traversed Linked List: 10 ->20 ->30 ->NULL
PS D:\DSA\DSA LAB\LAB5>
```

Q no 4:

Code & Output:



```cpp
#include<iostream>
using namespace std;
//Define the structure for a node
struct Node
{
    int data;    //Data to Store
    Node* next; //Pointer to the next node
};
//function to insert a node at the beginning
void insertAtBeginning(Node** head, int newData){
    //Allocate memory for a new node
    Node* newNode = new Node();
    //Assign data to the new node
    newNode->data = newData;
```

```
PS D:\DSA\DSA LAB> cd "d:\DSA\DSA LAB\LAB5\" ; if ($?) { g++ Task_4.cpp -o Task_4 } ; if ($?) { .\Task_4 }

******************************** Lab 05 Linked List Implementation********************************

Middle Node: 20
Linked List: 30 ->20 ->10 ->NULL
PS D:\DSA\DSA LAB\LAB5>
```