LAB PRACTICALS (JAN-JUN, 2025)

S. No.	WEEK No.	NAME OF PRACTICAL	Date	Signature
1.	WEEK 1			
2.	WEEK 2			
3.	WEEK 3			
4.	WEEK 4			
5.	WEEK 5			
6.	WEEK 6			
7.	WEEK 7			
8.	WEEK 8			
9.	WEEK 9			
10.	WEEK 10			
11.	WEEK 11			
12.	WEEK 12			
13.	WEEK 13			
14.	WEEK 14			

LAB 01

TASK 01:

BUBBLE SORT

CODE:

```
#include <bits/stdc++.h>
using namespace std;
void bubblesort(int arr[] , int n){
    int count=0;
    for(int i=0;i<n-1;i++){
        bool swapped = false;

        for(int j=0;j<n-i-1;j++){
            if(arr[j] > arr[j+1]){
                swap(arr[j],arr[j+1]);
                swapped = true;
            }
            count++;
        }
        if(!swapped){break;}
    }
    cout<<count<<endl;
}
void print(int arr[] ,int n){
    for(int i=0;i<n;i++){
        cout<<arr[i]<<" ";
    }
    cout<<endl;
}
int main(){
    int arr[7] = {7,6,5,4,3,2,1};
    int n = 7;
    print(arr,n);
    bubblesort(arr,n);
    print(arr,n);
}
```

OUTPUT:

```
PS C:\Users\Ritik gupta\Desktop\Lab\DAA\Lab 1> cd "c:\Users\Ritik gupta
 }
7 6 5 4 3 2 1
21
1 2 3 4 5 6 7
PS C:\Users\Ritik gupta\Desktop\Lab\DAA\Lab 1>
```

SELECTION SORT:

```
#include <bits/stdc++.h>
using namespace std;
void selectionsort(int arr[] , int n){
    int count =0;
    for(int i =0;i<n-1;i++){
        int min_idx = i;
        for(int j = i+1;j<n;j++){
            if(arr[j] < arr[min_idx]){
                min_idx = j;
            }
            count++;
        }
        swap(arr[min_idx],arr[i]);
    }
    cout<<count<<endl;
}
void print(int arr[] ,int n){
    for(int i=0;i<n;i++){
        cout<<arr[i]<<" ";
    }
    cout<<endl;
}
int main(){
    int arr[5] = {3,8,2,5,1};
    int n = 5;
    print(arr,n);
    selectionsort(arr,n);
    print(arr,n);
}
```

OUTPUT:

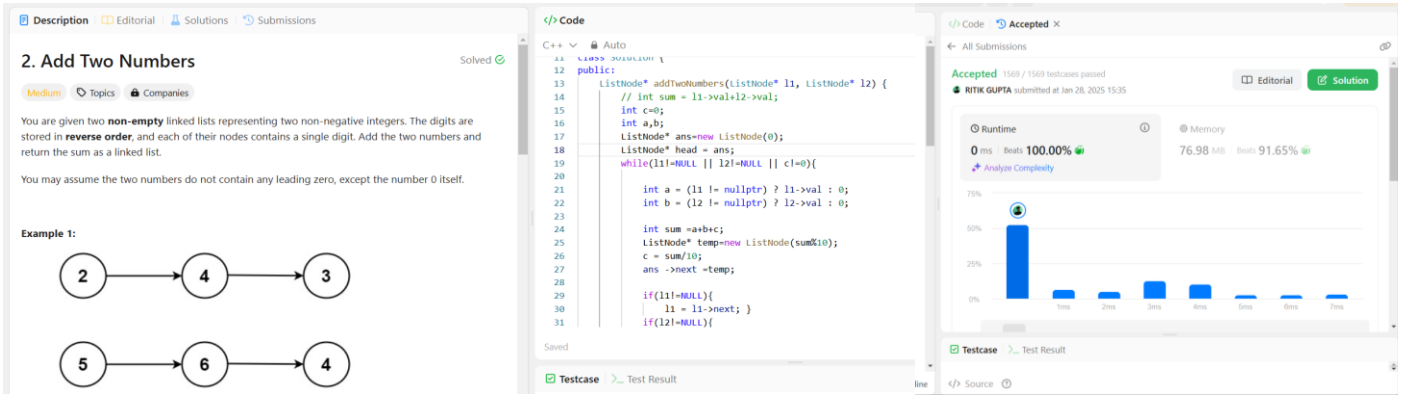
```
PS C:\Users\Ritik gupta\Desktop\Lab\DAA\Lab 1> cd "c:\Users\Ritik gupta\Desktop\
 }
3 8 2 5 1
10
1 2 3 5 8
PS C:\Users\Ritik gupta\Desktop\Lab\DAA\Lab 1>
```

Time Complexities:

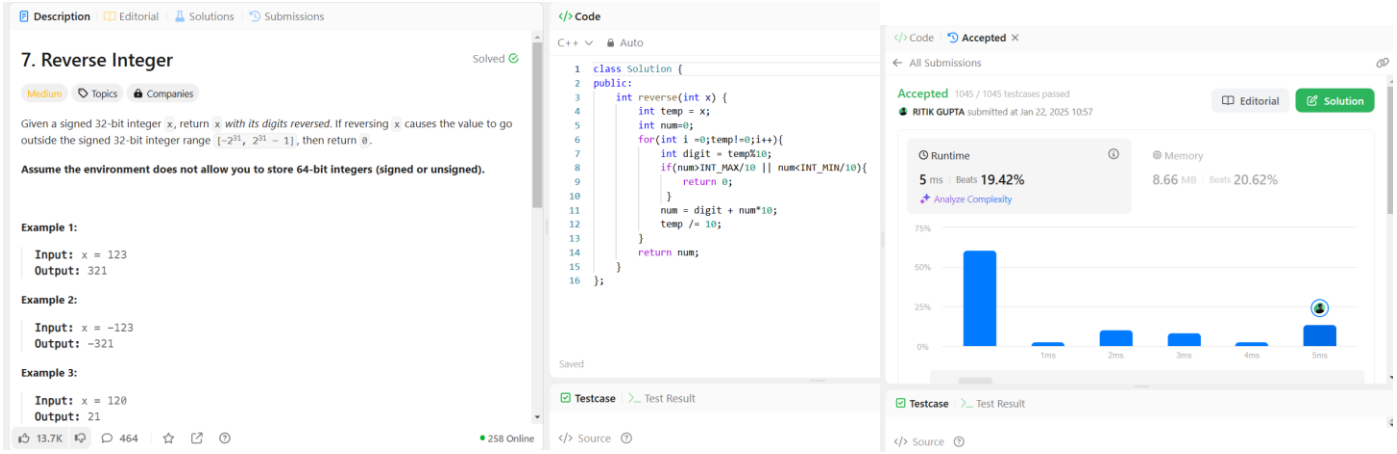
	Bubble sort	**Selection sort**
Best case	**n.(n-1)/2**	**n.(n-1)/2**
Worst case	**n-1**	**n.(n-1)/2**

TASK-02:

1.Add two numbers



2.Reverse integer



3.Dutch flag