Experiment 1.1

Student Name:Rajiv Paul **UID:20BCS1812**
Branch: CSE **Section/Group:6B**
Semester: 3rd **Date of Performance: 26/08/2021**
Subject Name:Java Program Lab **Subject Code:20CSP-219**

Q1. Write a program to perform Insertion and deletion operation where Let LA is a Linear Array (unordered) with N elements and K is a positive integer such that K<=N.

1) Aim/Overview of the practical:

To write a program to perform insertion and deletion operation.

2) Software required:

Vs Code

3) Source Code:

```cpp
#include <iostream>
using namespace std;
void inputArray(int arr[], int elements)
{
    cout << "Enter the value of elements" << endl;
    for (int i = 0; i < elements; i++)
    {
        cin >> arr[i];
    }
}
void insertElement(int arr[], int elements, int x, int n)
{
    cout << "Enter the value of the element you want to insert: "
         << endl;
    cin >> n;
    cout << "Enter the index where you want to insert: " << endl;
    cin >> x;
    for (int i = elements - 1; i >= x; i--)
    {
        arr[i + 1] = arr[i];
    }
    arr[x] = n;
    cout<<"\nThe element is inserted successfully!"<<endl<<endl;
}

void deleteElement(int arr[], int elements, int n)
{
    cout << "Enter the index of the element you want to delete: "
         << endl;
    cin >> n;
    for (int i = n; i < elements - 1; i++)
    {
        arr[i] = arr[i + 1];
    }
    cout<<"\nThe element is deleted successfully!"<<endl<<endl;
}
```

```cpp
void display(int arr[], int elements)
{
    for (int i = 0; i < elements; i++)
    {
        cout << arr[i] << " ";
    }
}
int main()
{
    int n, x, elements, end;
    int arr[100];
    cout << "Enter the number of elements you want to enter: " << endl;
    cin >> elements;
    inputArray(arr, elements);
    cout << "Original array: ";
    display(arr, elements);
    cout << endl;
    insertElement(arr, elements, x, n);
    cout << "Array after the insertion of value: ";
    elements = elements + 1;
    display(arr, elements);
    cout << endl;
    deleteElement(arr, elements, n);
    cout << "Array after the deletion of value: ";
    elements = elements - 1;
    display(arr, elements);
    cout << endl;
    return 0;
}
```

4. Output:

```
Enter the number of elements you want to enter:
4
Enter the value of elements
1
2
3
4
Original array: 1 2 3 4
Enter the value of the element you want to insert:
9
Enter the index where you want to insert:
4

The element is inserted successfully!

Array after the insertion of value: 1 2 3 4 9
Enter the index of the element you want to delete:
0

The element is deleted successfully!

Array after the deletion of value: 2 3 4 9
```