Report No : 1

Report Name: Write a program to in inseration an array

Code:

```
#include <iostream>
using namespace std;

int main(){
   int n , i;
   cout << "Enter Array Size: ";
   cin >> n;
   int myArray[n];
   for (i = 0; i < n; i++){
      cout << "Enter " << (i + 1) << " element: ";
      cin >> myArray[i];
   }
   cout << "Old Array: ";
   for (i = 0; i < n; i++){
      cout << " " << myArray[i];
   }

   int j = n, k;
   cout << "\nEnter Insert index in array: ";
   cin >> k;
   while (j >= k) {
      myArray[j + 1] = myArray[j];
      j -= 1;
   }
   int item;
   cout << "Enter insert value: ";
   cin >> item;
   myArray[k] = item;
   n = n + 1;
   cout << "Updated Array: ";
   for (i = 0; i < n; i++){
      cout << " " << myArray[i];
   }
}
```

```
PS Z:\CSE All File\4th Semester\Data Structure\2nd Lab Report> cd "
2nd Lab Report\" ; if ($?) { g++ Insertion.cpp -o Insertion } ; if
Enter Array Size: 5
Enter 1 element: 1
Enter 2 element: 2
Enter 3 element: 3
Enter 4 element: 4
Enter 5 element: 5
Old Array:  1 2 3 4 5
Enter Insert index in array: 3
Enter insert value: 90
Updated Array:  1 2 3 90 4 5
PS Z:\CSE All File\4th Semester\Data Structure\2nd Lab Report>
```

Report No : 2

Report Name: Write a program to in deletion an array

Code:

```
#include <iostream>
using namespace std;

int main(){
   int n , i;
   cout << "Enter Array Size: ";
   cin >> n;
   int myArray[n];
   for (i = 0; i < n; i++){
      cout << "Enter " << (i + 1) << " element: ";
      cin >> myArray[i];
   }
   cout << "Old Array: ";
   for (i = 0; i < n; i++){
      cout << " " << myArray[i];
   }

   int k;
   cout << "\nEnter deletion index in array: ";
   cin >> k;
   int item = myArray[k];
   for (int j = k; j < n; j++){
      myArray[j] = myArray[j + 1];
   }
   n = n - 1;
   cout << "Updated Array: ";
   for (i = 0; i < n; i++)
   {
      cout << " " << myArray[i];
   }
}
```

```
PS Z:\CSE All File\4th Semester\Data Structure\2nd Lab Report> cd
2nd Lab Report\" ; if ($?) { g++ deletion.cpp -o deletion } ; if
Enter Array Size: 5
Enter 1 element: 11
Enter 2 element: 22
Enter 3 element: 33
Enter 4 element: 44
Enter 5 element: 55
Old Array:  11 22 33 44 55
Enter deletion index in array: 2
Updated Array:  11 22 44 55
PS Z:\CSE All File\4th Semester\Data Structure\2nd Lab Report>
```

Report No : 3

Report Name: Write a program to in binary search an array

Code:

```
#include <bits/stdc++.h>
using namespace std;

int main(){
   int n , i;
   cout << "Enter size of array: ";
   cin >> n;
   int myArray[n];
   for(i = 0 ; i < n ; i++){
      cout << "Enter " << (i + 1) << " element: ";
      cin >> myArray[i];
   }
   int s = sizeof(myArray) / sizeof(myArray[0]);
   sort(myArray, myArray + s);
   int search;
   cout << "\nEnter element to search: ";
   cin >> search;
   int loc = 0 , beg = 0 , end = n-1;
   int mid = (beg + end)/2;
   while(beg <= end){
      if(myArray[mid] == search){
         loc = mid;
         cout << "index: " << loc << " Search Value: " << search;
         break;
      }else if(search < myArray[mid]){
         end = mid - 1;
      }else if(search > myArray[mid]){
         beg = mid + 1;
      }
      mid = (beg + end)/2
   }
   if(loc == 0){
      cout << "Result not found";
   }
}
```

```
PS Z:\CSE All File\4th Semester\Data Structure\2nd Lab Report> cd "z:\CSE All F
2nd Lab Report\Report code\" ; if ($?) { g++ binary_search.cpp -o binary_search

Enter size of array: 5
Enter 1 element: 10
Enter 2 element: 20
Enter 3 element: 30
Enter 4 element: 40
Enter 5 element: 50

Enter element to search: 40
index: 3 Search Value: 40
PS Z:\CSE All File\4th Semester\Data Structure\2nd Lab Report\Report code>
```

Report No : 4

Report Name: Write a program to in linear search an array

Code:

```
#include <iostream>
using namespace std;

int main(){
   int n;
   cout << "Enter size of array: ";
   cin >> n;
   int myArray[n];
   int i;
   for(i = 0 ; i < n ; i++){
      cout << "Enter " << (i + 1) << " element: ";
      cin >> myArray[i];
   }
   int search;
   int find = 0;
   cout << "\nEnter element to search: ";
   cin >> search;

   for(i = 0 ; i < n ; i++){
       if(myArray[i] == search){
         find = 1;
         break;
       }
   }
   if(find == 1){
      cout << "\nResult found in index: " <<  i  << " and number is: " << search;
   }
   else{
       cout << "\nResult not found";
   }
   return 0;
}
```

```
PS Z:\CSE All File\4th Semester\Data Structure\2nd Lab Report> cd
2nd Lab Report\" ; if ($?) { g++ linear_search.cpp -o linear_searc
Enter size of array: 5
Enter 1 element: 10
Enter 2 element: 20
Enter 3 element: 30
Enter 4 element: 40
Enter 5 element: 50

Enter element to search: 40

Result found in index: 3 and number is: 40
PS Z:\CSE All File\4th Semester\Data Structure\2nd Lab Report>
```