

Experiment No: 1

Name: Aniket Balendra Tiwari

Roll No: 21143285

Program:

Linear Search :

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

int search(int arr[], int N, int x)
{
    int i;
    for (i = 0; i < N; i++)
        if (arr[i] == x)
            return i;
    return -1;
}

int main(void)
{
    cout << "Name: Aniket Tiwari \nRoll No : 21143285\n";
    int N;
    cout << "Enter the size of array : ";
    cin >> N;
    int arr[N];
    cout << "Enter array elements : ";
    for (auto& x : arr)
        cin >> x;

    int x;
    cout << "Enter element to search :";
    cin >> x;

    cout << "Given Array is : ";
    for (auto x : arr)
        cout << x << " ";
    cout << endl;
```

```

int result = search(arr, N, x);
if (result == -1)
    cout << "Element is not present in array";
else
    cout << "Element is present at index " << result;
return 0;
}

```

Output:

```

PROBLEMS  OUTPUT  TERMINAL  JUPYTER  DEBUG CONSOLE

Microsoft Windows [Version 10.0.22621.521]
(c) Microsoft Corporation. All rights reserved.

D:\Programming\College Experiments\TY 5 Sem\DAA Lab>cd "d:\Program
h && "d:\Programming\College Experiments\TY 5 Sem\DAA Lab\"LinearSe
Name: Aniket Tiwari
Roll No : 21143285
Enter the size of array : 5
Enter array elements : 10 20 30 40 50
Enter element to search :30
Given Array is : 10 20 30 40 50
Element is present at index 2
d:\Programming\College Experiments\TY 5 Sem\DAA Lab>

```

Binary Search:

```

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

int binarySearch(int arr[], int l, int r, int x)
{
    while (l <= r) {
        int m = l + (r - l) / 2;
        if (arr[m] == x)
            return m;
        if (arr[m] < x)
            l = m + 1;
        else

```

```

        r = m - 1;
    }
    return -1;
}

int main(void)
{
    cout << "Name: Aniket Tiwari \nRoll No : 21143285\n";
    int n;
    cout << "Enter the size of array : ";
    cin >> n;
    int arr[n];
    cout << "Enter array elements : ";
    for (auto& x : arr)
        cin >> x;

    cout << "Given Array is : ";
    for (auto x : arr)
        cout << x << " ";
    cout << endl;

    int x;
    cout << "Enter element to search :";
    cin >> x;

    int result = binarySearch(arr, 0, n - 1, x);
    (result == -1) ? cout << "Element is not present in array" : cout << "Element
is present at index " << result;
    return 0;
}

```

Output:

PROBLEMS

OUTPUT

TERMINAL

JUPYTER

DEBUG CONSOLE

Microsoft Windows [Version 10.0.22621.521]
(c) Microsoft Corporation. All rights reserved.

```
D:\Programming\College Experiments\TY 5 Sem\DAA Lab>cd "d:\Programming
h && "d:\Programming\College Experiments\TY 5 Sem\DAA Lab\"BinarySearc
Name: Aniket Tiwari
Roll No : 21143285
Enter the size of array : 5
Enter array elements : 10 20 30 50 60
Given Array is : 10 20 30 50 60
Enter element to search :20
Element is present at index 1
d:\Programming\College Experiments\TY 5 Sem\DAA Lab>█
```