Experiment : 3

```
// Linear Search

#include<stdio.h>

int linearSearch(int *arr, int size, int key)
{
        for(int i=0; i<size; ++i)
        {
                if (arr[i]==key)
                        return i;
        }

        return -1;
}

void main()
{
        int arrSize;

        scanf("%d", &arrSize);

        int arr[arrSize];
        for (int i=0; i<arrSize; ++i)
                scanf("%d", &arr[i]);

        int key;

        scanf("%d", &key);

        int index = linearSearch(&arr, arrSize, key);

        if (index==-1)
                printf("Not found!");

        else
                printf("Found at index %d.", index);
}



// Binary Search

#include<stdio.h>

int binarySearch(int *arr, int size, int key)
{
        int lb=0, ub=size-1;

        while(lb<=ub)
```

```
    {
        int mid = (lb+ub)/2;

        if (arr[mid]==key)
            return mid;
        else if (arr[mid]<key)
            ub=mid-1;
        else
            lb=mid+1;
    }

    return -1;
}

void main()
{
    int arrSize;

    scanf("%d", &arrSize);

    int arr[arrSize];

    for (int i=0; i<arrSize; ++i)
        scanf("%d", &arr[i]);

    int key;
    scanf("%d", &key);

    int index = binarySearch(&arr, arrSize, key);

    if (index==-1)
        printf("Not found!");

    else
        printf("Found at index %d.", index);
}
```