

```
/*binary search*/
```

```
#include<stdio.h>
```

```
int binary_search(int arr[],int key,int low,int high);
```

```
int main(){
```

```
    int n,a,i,j,temp,key;
```

```
    printf("enter the array size:\n");
```

```
    scanf("%d",&n);
```

```
    int arr[n];
```

```
    printf("enter the array values\n");
```

```
    for(i=0;i<n;i++){
```

```
        scanf("%d",&arr[i]);
```

```
    }
```

```
    for(i=0;i<n;i++){
```

```
        for(j=i+1;j<n;j++){
```

```
            if(arr[i]>arr[j]){
```

```
                temp=arr[i];
```

```
                arr[i]=arr[j];
```

```
                arr[j]=temp;
```

```
            }
```

```
        }
```

```
    }
```

```
    printf("sorted array\n");
```

```
    for(i=0;i<n;i++){
```

```
        printf("%d\n",arr[i]);
```

```
    }
```

```
    printf("enter your search element:\n");
```

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

```
    a=binary_search(arr,key,0,n-1);
```

```
    printf("%d found at loc: %d\n",key,a+1);
```

```
}
```

```

int binary_search(int arr[],int key,int low,int high){

    int mid=(low+high)/2;

    if(high>=low){

        if(arr[mid]==key){

            return mid;

        }

        else if(arr[mid]>key){

            return binary_search(arr,key,low,mid-1);

        }

        else{        //arr[mid]<key

            return binary_search(arr,key,mid+1,high);

        }

    }

    else{

        printf("key not found\n"); //low>high

    }

}

```

```

C:\Users\HP\OneDrive\Desktop >
enter the array size:
5
enter the array values
50
10
20
40
30
sorted array
10
20
30
40
50
enter your search element:
20
20 found at loc: 2

-----
Process exited after 8.282 seconds with return value 0
Press any key to continue . . .

```