Linear search

**ALGORITHM**

**Input**: Read an array

**Output**: Displaying the status of the searched element in the array

**Steps**:

1. Start
2. Declare i,a[20],n,flag=0,ele
3. print "Enter the size: "
4. read n
5. print "Enter the elements of the array"
6. for(i=0;i<n;i++)
7. read a[i]
8. printf("Enter the element to be searched: ");
9. read ele
10. for(i=0;i<n;i++)
11. if(a[i]==ele)

Print " present in the array"

flag==1

return

1. if(flag==0)
2. print "not found"
3. Stop

**PROGRAM**

#include <stdio.h>

void main()

{

int i,a[20],n,flag=0,ele;

printf("Enter the size: ");

scanf("%d",&n);

printf("Enter the elements of the array\n");

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

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

printf("Enter the element to be searched: ");

scanf("%d",&ele);

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

{

if(a[i]==ele)

{

printf("%d present in the array\n",ele);

flag==1;

return;

}

}

if(flag==0)

printf("%d is not found\n",ele);

}

Binary search

**ALGORITHM**

**Input**: Read an array in ascending order

**Output**: Displaying the status of the searched element in the array

**Steps**:

1. Start
2. Declare i,a[10],n,ele
3. Print "Enter the size: "
4. read n
5. print "Enter the elements of the array"
6. for(i=0;i<n;i++)
7. read a[i]
8. print "Enter the element to be searched: "
9. read ele
10. int start=0,end=n-1,mid
11. mid=(start+end)/2
12. while(start<=end)
13. if(ele==a[mid])

print "Element found"

break

1. else if(ele>a[mid])
2. start=mid+1
3. else
4. end=mid-1
5. mid=(start+end)/2
6. if(start>end)
7. print "not found"
8. Stop

**PROGRAM**

#include <stdio.h>

void main()

{

int i,a[10],n,ele;

printf("Enter the size: ");

scanf("%d",&n);

printf("Enter the elements of the array\n");

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

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

printf("Enter the element to be searched: ");

scanf("%d",&ele);

int start=0,end=n-1,mid;

mid=(start+end)/2;

while(start<=end)

{

if(ele==a[mid])

{

printf("Element found at %dth position",mid+1);

break;

}

else if(ele>a[mid])

start=mid+1;

else

end=mid-1;

mid=(start+end)/2;

}

if(start>end)

printf("%d is not found\n",ele);

}