**2. Write an algorithm and program to implement Binary Search.**

**i)Using arrays**

* PROGRAM

#include <iostream>

using namespace std;

int main()

{

int count, i, arr[30], num, first, last, middle;

cout<<"Enter the no. of elements:";

cin>>count;

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

{

cout<<"Enter number "<<(i+1)<<": ";

cin>>arr[i];

}

cout<<"Enter the number that you want to search:";

cin>>num;

first = 0;

last = count-1;

middle = (first+last)/2;

while (first <= last)

{

if(arr[middle] < num)

{

first = middle + 1;

}

else if(arr[middle] == num)

{

cout<<num<<" found in the array at the location "<<middle+1<<"\n";

break;

}

else {

last = middle - 1;

}

middle = (first + last)/2;

}

if(first > last)

{

cout<<num<<" not found in the array";

}

return 0;

}

* OUTPUT

