/\* Program to search an element of an array using Binary search \*/

#include<iostream.h>

#include<process.h>

#include<conio.h>

void main()

{ clrscr();

int A[50], n,p;

cout<<"Enter the Size of array : ";

cin>>n;

cout<<"\n\nEnter the elements : \n\n";

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

cin>>A[i];

cout<<"\n\nArray formed is : ";

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

cout<<A[i]<<" ";

cout<<"\n\nEnter the element to be searched : ";

cin>>p;

void binary\_search(int A[], int n, int p); //declaration

binary\_search(A,n,p);

getch();

}

void binary\_search(int A[], int n, int p)

{ int L,U,mid; char ch;

lb: L=0; U=n-1;

while(L<=U) //i.e loop will continue if L<=u. if L>U loop will end

{ mid=(L+U)/2;

if(A[mid]==p)

{ cout<<"\n\nElement "<<p<<" found. Search Successful.";

cout<<"\n\nSubscript = "<<mid<<" \n\nPosition = "<<mid+1;

break;

}

else if(p<=A[mid])

U=mid-1;

else

L=mid+1;

}//end of while loop

if(L>U)

{cout<<"\n\nUnsuccessful search.";

cout<<"\n\n\n\nWant to search again. : "; cin>>ch;

if(ch=='y'||ch=='Y')

{cout<<"\n\n\n\nEnter the element to be searched : ";

cin>>p;

goto lb;}

else

exit(1);

}

}

**Output:**

Enter the Size of array : 5

Enter the elements :

2

5

8

9

11

Array formed is : 2 5 8 9 11

Enter the element to be searched : 8

Element 8 found. Search Successful.

Subscript = 2

Position = 3