**Write a program to search an element in one-dimensional array using Binary Search Algorithm.**

**Display a message stating whether element found in array or not. Also display the index position**

**of the element if found.**

**import** java.util.Arrays;

**import** java.util.Scanner;

**public** **class** BinarySeach {

**public** **static** **void** main(String[] args){

**int** counter, num, item, array[], first, last, middle;

Scanner input = **new** Scanner(System.***in***);

System.***out***.println("Enter number of elements:");

num = input.nextInt();

//Creating array to store the all the numbers

array = **new** **int**[num];

System.***out***.println("Enter " + num + " integers");

**for** (counter = 0; counter < num; counter++)

array[counter] = input.nextInt();

Arrays.*sort*(array);

System.***out***.println("Sorted array :");

**for**(**int** i=0;i<num;i++)

System.***out***.print(array[i]+ " ");

System.***out***.println("Enter the search value:");

item = input.nextInt();

first = 0;

last = num - 1;

middle = (first + last)/2;

**while**( first <= last )

{

**if** ( array[middle] < item )

first = middle + 1;

**else** **if** ( array[middle] == item )

{

System.***out***.println(item + " found at location " + (middle + 1) + ".");

**break**;

}

**else**

{

last = middle - 1;

}

middle = (first + last)/2;

}

**if** ( first > last )

System.***out***.println(item + " is not found.\n");

}

}

**OUTPUT**:

Enter number of elements:

10

Enter 10 integers

2

3

51

33

66

4

5

4

5

3

Sorted array :

2 3 3 4 4 5 5 33 51 66 Enter the search value:

33

33 found at location 8.