Name:

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AIM: Using Divide and Conquer Strategies design a function for Binary Search using C++/ Java/ Python/ Scala.

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import java.util.Scanner;

class BinarySearchExample

{

public static void main(String args[])

{

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

//To capture user input

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");

//Loop to store each numbers in array

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

array[counter] = input.nextInt();

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");

}

}

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Output:

C:\Users\K!SH>cd\

C:\>javac BinarySearch.java

C:\>java BinarySearch

Enter number of elements

7

Enter 7 integers

4

9

8

3

6

7

1

Enter value to find

3

3 found at location 4.

C:\>javac BinarySearch.java

C:\>java BinarySearch

Enter number of elements

7

Enter 7 integers

4

9

8

3

6

7

1

Enter value to find

55

55 is not present in the list.

/\*