```
/*
 *      A program which searches for a number in an array.
 */


import java.util.Scanner;

class BinarySearch {
        public static void main (String[] args) {
                double[] numbers = ArrayUtils.getArray();
                BubbleSort.bubbleSort(numbers);
                System.out.print("Enter the number to search : ");
                double n = (new Scanner(System.in)).nextDouble();
                int index = binarySearch(n, numbers);
                System.out.println((index == -1)? "Number not found" :
                                                  "Number found at " + index);
        }
        public static int binarySearch (double n, double[] arr) {
                int mid, left = 0, right = arr.length - 1;
                while (left <= right) {
                        mid = (left + right) / 2;
                        if (n < arr[mid])       right = mid - 1;
                        else if (n > arr[mid])  left = mid + 1;
                        else                    return mid;
                }
                return -1;
        }
}

/*
 *      Variable Description :
 *      ---------------------------------------------------------------------------------
 *      Serial no. |    Variable name   |       Data type       |       Purpose
 *      ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
 *         1       |    n               |       int             |  Stores the number to
 *                 |                    |                       |  be searched for
 *      -----------+--------------------+-----------------------+-----------------------
 *         2       |    mid             |       int             |  Stores the index of
 *                 |                    |                       |  the midpoint of 'arr'
 *      -----------+--------------------+-----------------------+-----------------------
 *         3       |    numbers         |       double[]        |  Store the numbers
 *                 |                    |                       |  entered
 *      -----------+--------------------+-----------------------+-----------------------
 *         4       |    index           |       int             |  Store the index of 'n'
 *      ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
 */
```