1. Write A Java Program for Binary Search Using Array

**package** module2.ajk.assignment;

**import** java.util.Scanner;

//Write A Java Program for Binary Search Using Array

**public** **class** binearySearch {

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

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

System.***out***.print("Enter the size of array = ");

**int** size = sc.nextInt();

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

System.***out***.println("Enter the elements");

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

num[i] += sc.nextInt();

}

//sorting

**int** temp = 0;

System.***out***.println("Sorted values");

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

**for** (**int** j = i+1; j < num.length; j++) {

**if**(num[i] > num[j]) {

temp = num[i];

num[i] = num[j];

num[j] = temp;

}

}

System.***out***.println(num[i]);

}

System.***out***.println("enter search value = ");

**int** search = sc.nextInt();

//binary algorithm

**int** firstI =0;

**int** lastI = num.length;

**int** flag = 0;

**while**(firstI <= lastI) {

**int** midl = (firstI+lastI)/2;

**if** (num[midl] == search) {

System.***out***.println("element indx is = "+midl);

System.***out***.println("value is = "+num[midl]);

flag =1;

**break**;

}

**if**(num[midl]<search) {

firstI = midl+1;

}

**if**(num[midl]>search) {

lastI = midl-1;

}

}

**if**(flag == 0) {

System.***out***.println("No element ");

}

}

}

Output:-

Enter the size of array = 5

Enter the elements

12

34

18

20

14

Sorted values

12

14

18

20

34

enter search value =

12

element indx is = 0

value is = 12

1. How To Find Third Largest and Second Smallest Element in An Array

**package** module2.ajk.assignment;

**import** java.util.Scanner;

**public** **class** findThiredLsecondSmall {

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

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

// array size

System.***out***.print("Enter the array size = ");

**int** size = sc.nextInt();

// elements input

System.***out***.println("Enter the values or elements = ");

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

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

num[i]=sc.nextInt();

}

// sorting the elements assenting order

System.***out***.println("Sorted order");

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

**for** (**int** j = i+1; j < num.length; j++) {

**if** (num[i] > num[j]) {

**int** tmp = num[i];

num[i] = num[j];

num[j] = tmp;

}

}

System.***out***.println(num[i]);

}

// Algorithm for element 3rd Largest = num.length - 3 and second smallest element = num[i+1]

**int** thirdLgst = num[num.length-3];

**int** secondSmallest = num[1];

System.***out***.print("Third Largest Number is = ");

System.***out***.print(thirdLgst);

System.***out***.println();

System.***out***.print("second smallest Number is = ");

System.***out***.print(secondSmallest);

}

}

Output : -

Enter the array size = 8

Enter the values or elements =

9

5

3

6

3

4

8

1

Sorted order

1

3

3

4

5

6

8

9

Third Largest Number is = 6

second smallest Number is = 3

1. Write A Java Program How to Merge Two Arrays

**package** module2.ajk.assignment;

**import** java.util.Scanner;

**import** java.util.Arrays;

**public** **class** ArrayMerge {

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

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

**int** i;

System.***out***.println("First array");

// array size

System.***out***.print("Enter the first array size = ");

**int** size = sc.nextInt();

// elements input

System.***out***.println("Enter the first array elements = ");

**int**[] num1 = **new** **int**[size];

**for** ( i = 0; i < num1.length; i++) {

num1[i]=sc.nextInt();

}

**for** ( i = 0; i < num1.length; i++) {

System.***out***.println(num1[i]);

}

System.***out***.println("second array");

// array size

System.***out***.print("Enter the second array size = ");

**int** size1 = sc.nextInt();

// elements input

System.***out***.println("Enter the second array elements = ");

**int**[] num = **new** **int**[size1];

**for** ( i = 0; i < num.length; i++) {

num[i]=sc.nextInt();

}

**for** ( i = 0; i < num1.length; i++) {

System.***out***.println(num[i]);

}

//merge

**int** num3 = num1.length;

**int** num4 = num.length;

**int** length = num3 + num4;

**int**[] result = **new** **int**[length];

System.*arraycopy*(num1, 0, result, 0, num3);

System.*arraycopy*(num, 0, result, num3, num4);

System.***out***.print("Merge array is = ");

System.***out***.print(Arrays.*toString*(result));

}

}

OutPut:-

First array

Enter the first array size = 3

Enter the first array elements =

1

2

3

1

2

3

second array

Enter the second array size = 3

Enter the second array elements =

1

2

3

1

2

3

Merge array is = [1, 2, 3, 1, 2, 3]