Array interview programs

1.write a java program to find duplicate element in an array.

package com.howtodoinjava.interview;

import java.util.HashSet;

import java.util.Set;

public class DuplicateInArray

{

public static void main(String[] args)

{

int[] array = {1,1,2,3,4,5,6,7,8,8};

Set<Integer> set = new HashSet<Integer>();

for(int i = 0; i < array.length ; i++)

{

//If same integer is already present then add method will return FALSE

if(set.add(array[i]) == false)

{

System.out.println("Duplicate element found : " + array[i]);

}

}

}

}

Output:

Duplicate element found : 1

Duplicate element found : 8

2.> write a java program to find second largest number in an array.

1. **public** **class** SecondLargestInArrayExample{
2. **public** **static** **int** getSecondLargest(**int**[] a, **int** total){
3. **int** temp;
4. **for** (**int** i = 0; i < total; i++)
5. {
6. **for** (**int** j = i + 1; j < total; j++)
7. {
8. **if** (a[i] > a[j])
9. {
10. temp = a[i];
11. a[i] = a[j];
12. a[j] = temp;
13. }
14. }
15. }
16. **return** a[total-2];
17. }
18. **public** **static** **void** main(String args[]){
19. **int** a[]={1,2,5,6,3,2};
20. **int** b[]={44,66,99,77,33,22,55};
21. System.out.println("Second Largest: "+getSecondLargest(a,6));
22. System.out.println("Second Largest: "+getSecondLargest(b,7));
23. }}

Output:

Second Largest: 5

Second Largest: 77

3.> how to find missing number in the array.

import java.util.\*;

public class Exercise24 {

public static void main(String[] args) {

int total\_num;

int[] numbers = new int[]{1,2,3,4,6,7};

total\_num = 7;

int expected\_num\_sum = total\_num \* ((total\_num + 1) / 2);

int num\_sum = 0;

for (int i: numbers) {

num\_sum += i;

}

System.out.print( expected\_num\_sum - num\_sum);

System.out.print("\n");

}

}

Sample Data: 1,2,3,4,6,7

4.> how to find number occuring odd number of times in an array.

|  |
| --- |
| public class OddOccuringNumber { |
|  | public static int findNumber(int [] A){ |
|  | int x=0; |
|  | for(int i=0;i<A.length;i++){ |
|  | x= x^A[i]; |
|  | } |
|  | return x; |
|  | } |
|  | public static void main(String[] args) { |
|  | int[] A = { 1, 1, 2, 2, 3, 3, 4, 4, 5, 5, 5, 6, 6, 6, 6, 7, 7 }; |
|  | System.out.println("Element appearing add number of times: " + findNumber(A)); |
|  |  |
|  | } |
|  | } |

Element appearing add number of times: 5

5.> Write a java program to count occurrences of each element in an array.

1. **import** java.util.Scanner;
2. **public** **class** Count\_Occurrence
3. {
4. **public** **static** **void** main(String[] args)
5. {
6. **int** n, x, count = 0, i = 0;
7. Scanner s = **new** Scanner(System.in);
8. System.out.print("Enter no. of elements you want in array:");
9. n = s.nextInt();
10. **int** a[] = **new** **int**[n];
11. System.out.println("Enter all the elements:");
12. **for**(i = 0; i < n; i++)
13. {
14. a[i] = s.nextInt();
15. }
16. System.out.print("Enter the element of which you want to count number of occurrences:");
17. x = s.nextInt();
18. **for**(i = 0; i < n; i++)
19. {
20. **if**(a[i] == x)
21. {
22. count++;
23. }
24. }
25. System.out.println("Number of Occurrence of the Element:"+count);
26. }
27. }

Output:

$ javac Count\_Occurrence.java

$ java Count\_Occurrence

Enter no. of elements you want in array:5

Enter all the elements:

2

3

3

4

3

Enter the element of which you want to count number of occurrences:3

Number of Occurrence of the Element:3

7.> How to find the missing element in integer array of 1 to 7.

|  |
| --- |
| import java.io.\*;    class GFG  {  static int search(int ar[],                    int size)  {      int a = 0, b = size - 1;      int mid = 0;      while ((b - a) > 1)      {          mid = (a + b) / 2;          if ((ar[a] - a) != (ar[mid] - mid))              b = mid;          else if ((ar[b] - b) != (ar[mid] - mid))              a = mid;      }      return (ar[mid] + 1);  }    // Driver Code  public static void main (String[] args)  {      int ar[] = { 1, 2, 3, 4, 5, 6, 8 };      int size = ar.length;      System.out.println("Missing number: " +                          search(ar, size));  }  }    // This code is contributed  // by inder\_verma. |

**Output:**

Missing number: 7

8.> How to cut or remove an element from the array.

import java.util.Arrays;

public class Exercise7 {

public static void main(String[] args) {

int[] my\_array = {25, 14, 56, 15, 36, 56, 77, 18, 29, 49};

System.out.println("Original Array : "+Arrays.toString(my\_array));

// Remove the second element (index->1, value->14) of the array

int removeIndex = 1;

for(int i = removeIndex; i < my\_array.length -1; i++){

my\_array[i] = my\_array[i + 1];

}

// We cannot alter the size of an array , after the removal, the last and second last element in the array will exist twice

System.out.println("After removing the second element: "+Arrays.toString(my\_array));

}

}

O/P

Original Array : [25, 14, 56, 15, 36, 56, 77, 18, 29, 49]

After removing the second element: [25, 56, 15, 36, 56, 77, 18, 29, 49, 49]

9.> How to get largest and smallest number in an array.

/\*

  Find Largest and Smallest Number in an Array Example

  This Java Example shows how to find largest and smallest number in an

  array.

\*/

public class FindLargestSmallestNumber {

public static void main(String[] args) {

//array of 10 numbers

int numbers[] = new int[]{32,43,53,54,32,65,63,98,43,23};

//assign first element of an array to largest and smallest

int smallest = numbers[0];

int largetst = numbers[0];

for(int i=1; i< numbers.length; i++)

{

if(numbers[i] > largetst)

largetst = numbers[i];

else if (numbers[i] < smallest)

smallest = numbers[i];

}

System.out.println("Largest Number is : " + largetst);

System.out.println("Smallest Number is : " + smallest);

}

}

/\*

Output of this program would be

Largest Number is : 98

Smallest Number is : 23

\*/