Java Program

1.Bubble sort

**package** interviewQ;

**public** **class** BubbleSort {

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

// **TODO** Auto-generated method stub

**int** arr[] = **new** **int**[]{10,23,1,90,34};

**int** len = arr.length;

System.***out***.println("Before sorting an array is");

**for**(**int** i=0;i<len;i++){

System.***out***.print(arr[i]+"\t");

}

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

**for**(**int** i=0;i<len-1;i++){

**for**(**int** k=0;k<len-i-1;k++){

**if**(arr[k]>arr[k+1]){

**int** temp = arr[k];

arr[k] = arr[k+1];

arr[k+1] = temp;

}

}

}

System.***out***.println("After sorting an array is ");

**for**(**int** i=0;i<len;i++){

System.***out***.print(arr[i]+"\t");

}

}

}

2.Merge sort

3.Decimal to binary

**package** interviewQ;

**public** **class** BinaryNumber {

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

// **TODO** Auto-generated method stub

**int** val =10;

**int** temp=0;

String sum=" ";

**while**(val>0){

temp = val%2;

sum = sum+temp;

val =val/2;

}

//System.out.println(sum);

**for**(**int** i=sum.length()-1;i>0;i--){

System.***out***.print(sum.charAt(i)+"\t");

}

}

}

4.binary to decimal

**package** interviewQ;

**public** **class** DecimalNumber {

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

// **TODO** Auto-generated method stub

String binValue = "1011011";

**int** mulByTwo = 1;

**int** decVal=0;

System.***out***.println(Integer.*parseInt*(binValue, 2));//built-in method to test our result with this statement

//System.out.println(Integer.toBinaryString(Integer.parseInt(binValue, 2)));

**int** len = binValue.length();

**for**(**int** i=len-1;i>=0;i--){

String charVal = " "+binValue.charAt(i);

**int** temp = Integer.*parseInt*(charVal.trim());

**if**(temp==1 && (len-1)==i){

mulByTwo = mulByTwo\*1;

decVal = decVal+mulByTwo;

}

**else** **if**(temp==1){

mulByTwo = mulByTwo\*2;

decVal = decVal+mulByTwo;

}

**else** **if**(temp!=1 && (len-1)==i){

mulByTwo = mulByTwo\*1;

}

**else**{

mulByTwo = mulByTwo\*2;

}

}

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

}

}

5.Linear search

6.Binary search

7.Find missing number from array

8.Find out the finocci series with recursion

Without recursion

**public** **class** FobonacciSeries {

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

// **TODO** Auto-generated method stub

**int** first=0,second=1;

System.***out***.print(first+"\t"+second);

//System.out.println("\t");

**for**(**int** i=2;i<=10;i++){

**int** third =first+second;

System.***out***.print(third+"\t");

first = second;

second = third;

}

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

}

}

With recursion

**package** interviewQ;

**class** FibonacciSeries

{

**static** **int** *n1*=0,*n2*=1,*n3*=0;

**static** **void** printFibonacci(**int** count){

**if**(count>0){

*n3* = *n1* + *n2*;

*n1* = *n2*;

*n2* = *n3*;

System.***out***.print(" "+*n3*);

*printFibonacci*(count-1);

}

}

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

**int** count=10;

System.***out***.print(*n1*+" "+*n2*);//printing 0 and 1

*printFibonacci*(count-2);//n-2 because 2 numbers are already printed

}

}

9.Find add all the number present in string

**package** interviewQ;

**public** **class** NumberInString {

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

// **TODO** Auto-generated method stub

String str = "43String231";

**int** sum=0;

**int** len = str.length();

**for**(**int** i=0;i<len;i++){

**if**(Character.*isDigit*(str.charAt(i))){

sum = sum+Integer.*parseInt*((" "+str.charAt(i)).trim().toString());

}

}

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

}

}

10.count number of repeated character present in string using own logic and using collection.

Using collection

**package** interviewQ;

**import** java.util.HashMap;

**import** java.util.Map;

**public** **class** RepeatedCharacter {

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

// **TODO** Auto-generated method stub

String str = "Malyalamboyinnewyorkstreat";

Map<Character,Integer> repeatedChar = **new** HashMap<Character,Integer>();

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

**if**(repeatedChar.containsKey(str.charAt(i))){

repeatedChar.put(str.charAt(i), repeatedChar.get(str.charAt(i))+1);

}

**else**{

repeatedChar.put(str.charAt(i), 1);

}

}

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

}

}

Using logic and without any collection or utility method.

package interviewQ;

import java.util.HashMap;

import java.util.Map;

public class RepeatedCharacter1 {

public static void main(String[] args) {

String s = "vickyjaiswalatnewyorkstreat";

int distinct=0;

System.out.println(s.length());

for(int i=0;i<s.length();){

for(int j=0;j<s.length();j++){

if(s.charAt(i)==s.charAt(j)){

distinct++;

}

}

System.out.print(s.charAt(i)+"--"+distinct+"\t");

String sRepVal = String.valueOf(s.charAt(i)).toString();

s = s.replaceAll(sRepVal, "");

distinct=0;

}

}

}

11.Swap two number without third variable.

a.by divide

a =10 , b=5

a = a\*b;//50

b = a/b;//5

a = a/b//10

b.by addition

a =10 , b=5

a=a+b;//15

b=a-b;//10

a=a-b;//5

c.by one’s completement

x=10 in binary=1010

y = 5 in binary 0101

x=x^y;

x = x xor y

1010

Xor 0101

\_\_\_\_\_\_\_\_\_

1111

y = x^y

y = 1111 Xor 0101=1010

x = x^y

x = 1111 xor 1010 = 0101

0 for same different for 1

12.Find the HCF or GCD and LCF

13.reverse the string

14.reverse the number

15.count number of digit in number

16. How do you find the duplicate number on a given integer array?

**public** **class** DuplicateNumber {

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

// **TODO** Auto-generated method stub

**int** [] arry = {10,2,3,1,2,3,17,17,6,7};

**for**(**int** i=0;i<arry.length-1;i++){

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

**if**(arry[i]==arry[j] && i!=j){

System.***out***.println("Duplicate Element:="+arry[i]);

}

}

}

}

}

17. How do you find the largest and smallest number in an unsorted integer array?

Ans:-

**package** interviewQ;

**class** Test

{

**static** **int** *arr*[] = {500,10, 3240, 45, 90, 98};

// Method to find maximum in arr[]

**static** **int** largest()

{

**int** i;

// Initialize maximum element

**int** max = *arr*[0];

// Traverse array elements from second and

// compare every element with current max

**for** (i = 1; i < *arr*.length; i++)

**if** (*arr*[i] > max)

max = *arr*[i];

**return** max;

}

**static** **int** smallest()

{

**int** i;

// Initialize maximum element

**int** min = *arr*[0];

// Traverse array elements from second and

// compare every element with current max

**for** (i = 1; i < *arr*.length; i++)

**if** (*arr*[i] < min)

min = *arr*[i];

**return** min;

}

// Driver method

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

{

System.***out***.println("Largest in given array is " + *largest*());

}

}

18. How do you find all pairs of an integer array whose sum is equal to a given number?

19. How do you find duplicate numbers in an array if it contains multiple duplicates?

**public** **class** DuplicateNumber {

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

// **TODO** Auto-generated method stub

**int** [] arry = {10,2,3,1,2,3,17,17,6,7};

**for**(**int** i=0;i<arry.length-1;i++){

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

**if**(arry[i]==arry[j] && i!=j){

System.***out***.println("Duplicate Element:="+arry[i]);

}

}

}

}

}

20. How are duplicates removed from a given array in Java

**public** **class** RemoveDuplicateElementFromArray {

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

// **TODO** Auto-generated method stub

**int** arr[] = {10,10,20,20,30,30,50};

**int** len = arr.length;

**int** j=0;

**for**(**int** i=0;i<len-1;i++){

**if**(arr[i]!=arr[i+1]){

arr[j++] = arr[i];

}

}

arr[j++]=arr[len-1];

**for**(**int** k=0;k<j;k++){

System.***out***.println(arr[k]);

}

}

}

21. How is an integer array sorted in place using the quicksort algorithm?

22. How is an integer array sorted in place using the quicksort algorithm?

23. How do you reverse an array in place in Java?

24. How are duplicates removed from an array with library library?

**package** interviewQ;

**import** java.util.Arrays;

**import** java.util.HashSet;

**import** java.util.List;

**import** java.util.Set;

**public** **class** RemoveDuplicateElementFromArrayUsingCollection {

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

// **TODO** Auto-generated method stub

Integer array[] = {10,20,10,30,50,60,30};

Set setArray = **new** HashSet();

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

setArray.add(array[i]);

}

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

}

}

25. How do you find the second largest and smallest number in an unsorted integer array?

**package** interviewQ;

**class** GFG {

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

**int** arr[] = { -1,14,18,-1,7,20,22 };

**int** largest = arr[0];

**int** secondLargest=0;

System.***out***.println("The given array is:" );

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

System.***out***.print(arr[i]+"\t");

}

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

**if** (arr[i] > largest) {

secondLargest = largest;

largest = arr[i];

} /\*else if (arr[i] > secondLargest) {

secondLargest = arr[i];

}\*/

}

System.***out***.println("\nSecond largest number is:" + secondLargest);

}

}

27.)what is alternative of InstanceOf?

28.)why we use static in java?

29.)which one is god to use String or StringBuilder?

30.)write a program to create a utilities method for the union and intersection

31.)how to combined to List object in java?

32.)How to delete the particular element from array?

Using an collection

**package** interviewQ;

**import** java.util.Arrays;

**import** java.util.HashSet;

**import** java.util.List;

**import** java.util.Set;

**public** **class** RemoveDuplicateElementFromArrayUsingCollection {

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

// **TODO** Auto-generated method stub

Integer array[] = {10,20,10,30,50,60,30};

Set setArray = **new** HashSet();

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

setArray.add(array[i]);

}

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

}

}

33.)merge two array in java?

34.)how to print an array of element without loop in one statement?

Ans:-Array.toString(arrayObject);

35.)Remove duplicate number from array in java

Simple program

**package** interviewQ;

**public** **class** RemoveDuplicateElementFromArray {

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

// **TODO** Auto-generated method stub

**int** arr[] = {10,10,20,20,30,30,50};

**int** len = arr.length;

**int** j=0;

**for**(**int** i=0;i<len-1;i++){

**if**(arr[i]!=arr[i+1]){

arr[j++] = arr[i];

}

}

arr[j++]=arr[len-1];

**for**(**int** k=0;k<j;k++){

System.***out***.println(arr[k]);

}

}

}

Program with return

**package** interviewQ;

**public** **class** RemoveDuplicateInArray{

**public** **static** **int** removeDuplicateElements(**int** arr[], **int** n){

**if** (n==0 || n==1){

**return** n;

}

**int**[] temp = **new** **int**[n];

**int** j = 0;

**for** (**int** i=0; i<n-1; i++){

**if** (arr[i] != arr[i+1]){

temp[j++] = arr[i];

}

}

temp[j++] = arr[n-1];

// Changing original array

**for** (**int** i=0; i<j; i++){

arr[i] = temp[i];

}

**return** j;

}

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

**int** arr[] = {10,20,20,30,30,40,50,50};

**int** length = arr.length;

length = *removeDuplicateElements*(arr, length);

//printing array elements

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

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

}

}

Using collection

**package interviewQ;**

**import java.util.Arrays;**

**import java.util.Collections;**

**import java.util.HashSet;**

**import java.util.List;**

**import java.util.Set;**

**public class RemoveDuplicateElementFromArrayUsingCollection {**

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

**// TODO Auto-generated method stub**

**Integer array[] = {10,20,10,30,50,60,30};**

**Set setArray = Collections.EMPTY\_SET;**

**setArray = new HashSet();**

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

**setArray.add(array[i]);**

**}**

**//setArray = Collections.EMPTY\_SET;**

**assert(setArray!=null):"set should not be null";**

**String s =null;**

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

**}**

**}**36.)How to avoid null pointer exception?

Ans:-first use literal object then other like below

**if**("vicky".equals(s)){

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

}

Or

String Vicky=”Vicky”;

**if**(vicky.equals(s)){

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

}

References:

<https://simpleprogrammer.com/programming-interview-questions/>

<https://www.javacodegeeks.com/2012/06/avoid-null-pointer-exception-in-java.html>