**Arrays**

**1. Write a function to add integer values of an array**

import java.util.Arrays;

public class ArrayExample {

public static void main(String[] args) {

int arr[] = {1,2,3,4,5,6};

int n = arr.length;

int newArr[] = new int[n+1];

int value = 7;

System.out.println(Arrays.toString(arr));

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

newArr[i] = arr[i];

}

newArr[n] = value;

System.out.println(Arrays.toString(newArr));

}

}

**2. Write a function to calculate the average value of an array of integers**

public class ArrayAverage {

public static void main(String[] args) {

int[] array = { 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 };

int length = array.length;

int sum = 0;

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

sum += array[i];

}

double average = sum / length;

System.out.println("Average of array : "+average);

}

}

**3. Write a program to find the index of an array element**

import java.util.\*;

public class index {

public static int findIndex(int arr[], int t)

{

if (arr == null) {

return -1;

}

int len = arr.length;

int i = 0;

while (i < len) {

if (arr[i] == t) {

return i;

}

else {

i = i + 1;

}

}

return -1;

}

public static void main(String[] args)

{

int[] my\_array = { 5, 4, 6, 1, 3, 2, 7, 8, 9 };

System.out.println("Index position of 5 is: "

+ findIndex(my\_array, 5));

System.out.println("Index position of 7 is: "

+ findIndex(my\_array, 7));

}

}

**4. Write a function to test if array contains a specific value**

public class Exercise5 {

public static boolean contains(int[] arr, int item) {

for (int n : arr) {

if (item == n) {

return true;

}

}

return false;

}

public static void main(String[] args) {

int[] my\_array1 = {

1789, 2035, 1899, 1456, 2013,

1458, 2458, 1254, 1472, 2365,

1456, 2265, 1457, 2456};

System.out.println(contains(my\_array1, 2013));

System.out.println(contains(my\_array1, 2015));

}

}

**5. Write a function to remove a specific element from an 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));

int removeIndex = 1;

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

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

}

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

}

}

**6. Write a function to copy an array to another array**

import java.util.Arrays;

class GFG {

public static void main(String[] args)

{

int a[] = { 1, 8, 3, 5, 9, 10 };

int b[] = Arrays.copyOfRange(a, 2, 6);

System.out.println("Contents of a[] ");

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

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

System.out.println("\n\nContents of b[] ");

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

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

}

}

**7. Write a function to insert an element at a specific position in the array**

import java.util.Scanner;

public class Insert\_Array

{

public static void main(String[] args)

{

int n, pos, x;

Scanner s = new Scanner(System.in);

System.out.print("Enter no. of elements you want in array:");

n = s.nextInt();

int a[] = new int[n+1];

System.out.println("Enter all the elements:");

for(int i = 0; i < n; i++)

{

a[i] = s.nextInt();

}

System.out.print("Enter the position where you want to insert element:");

pos = s.nextInt();

System.out.print("Enter the element you want to insert:");

x = s.nextInt();

for(int i = (n-1); i >= (pos-1); i--)

{

a[i+1] = a[i];

}

a[pos-1] = x;

System.out.print("After inserting:");

for(int i = 0; i < n; i++)

{

System.out.print(a[i]+",");

}

System.out.print(a[n]);

}

}

**8. Write a function to find the minimum and maximum value of an array**

class Main

{

public static void findMinAndMax(int[] nums)

{

int max = nums[0];

int min = nums[0];

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

{

if (nums[i] > max) {

max = nums[i];

}

else if (nums[i] < min) {

min = nums[i];

}

}

System.out.println("The minimum array element is " + min);

System.out.println("The maximum array element is " + max);

}

public static void main(String[] args)

{

int[] nums = { 5, 7, 2, 4, 9, 6 };

findMinAndMax(nums);

}

}

**9. Write a function to reverse an array of integer values**

public class ReverseArray {

public static void main(String[] args) {

int [] arr = new int [] {1, 2, 3, 4, 5};

System.out.println("Original array: ");

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

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

}

System.out.println();

System.out.println("Array in reverse order: ");

//Loop through the array in reverse order

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

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

}

}

}

**10. Write a function to find the duplicate values of an array**

public class DuplicateElement {

public static void main(String[] args) {

//Initialize array

int [] arr = new int [] {1, 2, 3, 4, 2, 7, 8, 8, 3};

System.out.println("Duplicate elements in given array: ");

//Searches for duplicate element

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

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

if(arr[i] == arr[j])

System.out.println(arr[j]);

}

}

}

}

**11. Write a program to find the common values between two arrays**

import java.io.\*;

import java.util.\*;

class GFG {

private static void FindCommonElemet(String[] arr1,

String[] arr2)

{

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

for (int i = 0; i < arr1.length; i++) {

for (int j = 0; j < arr2.length; j++) {

if (arr1[i] == arr2[j]) {

set.add(arr1[i]);

break;

}

}

}

for (String i : set) {

System.out.print(i + " ");

}

}

public static void main(String[] args)

{

String[] arr1

= { "Article", "in", "Geeks", "for", "Geeks" };

String[] arr2 = { "Geeks", "for", "Geeks" };

System.out.println("Array 1: "

+ Arrays.toString(arr1));

System.out.println("Array 2: "

+ Arrays.toString(arr2));

System.out.print("Common Elements: ");

FindCommonElemet(arr1, arr2);

}

}

**13. Write a method to find the second largest number in an array**

public class SecondLargestInArrayExample{

public static int getSecondLargest(int[] a, int total){

int temp;

for (int i = 0; i < total; i++)

{

for (int j = i + 1; j < total; j++)

{

if (a[i] > a[j])

{

temp = a[i];

a[i] = a[j];

a[j] = temp;

}

}

}

return a[total-2];

}

public static void main(String args[]){

int a[]={1,2,5,6,3,2};

int b[]={44,66,99,77,33,22,55};

System.out.println("Second Largest: "+getSecondLargest(a,6));

System.out.println("Second Largest: "+getSecondLargest(b,7));

}}

**14. Write a method to find the second largest number in an array**

import java.util.\*;

class GFG{

static void print2largest(int arr[],

int arr\_size)

{

int i, first, second;

if (arr\_size < 2)

{

System.out.printf(" Invalid Input ");

return;

}

Arrays.sort(arr);

for (i = arr\_size - 2; i >= 0; i--)

{

if (arr[i] != arr[arr\_size - 1])

{

System.out.printf("The second largest " +

"element is %d\n", arr[i]);

return;

}

}

System.out.printf("There is no second " +

"largest element\n");

}

public static void main(String[] args)

{

int arr[] = {12, 35, 1, 10, 34, 1};

int n = arr.length;

print2largest(arr, n);

}

}

**15. Write a method to find number of even number and odd numbers in an array**

public class OddEvenInArrayExample{

public static void main(String args[]){

int a[]={1,2,5,6,3,2};

System.out.println("Odd Numbers:");

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

if(a[i]%2!=0){

System.out.println(a[i]);

}

}

System.out.println("Even Numbers:");

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

if(a[i]%2==0){

System.out.println(a[i]);

}

}

}}

**16. Write a function to get the difference of largest and smallest value**

import java.util.Arrays;

public class Exercise28 {

public static void main(String[] args)

{

int[] array\_nums = {5, 7, 2, 4, 9};

System.out.println("Original Array: "+Arrays.toString(array\_nums));

int max\_val = array\_nums[0];

int min = array\_nums[0];

for(int i = 1; i < array\_nums.length; i++)

{

if(array\_nums[i] > max\_val)

max\_val = array\_nums[i];

else if(array\_nums[i] < min)

min = array\_nums[i];

}

System.out.println("Difference between the largest and smallest values of the said array: "+(max\_val-min));

}

}

**19. Write a function to find the missing number of sorted array of 1 to 100**

public class FindMissingNumberInSortedArrayExample{

static int ar[]={3,5,8,44}; //given array

public static void main(String[] args) {

displayMissing();

}

static public void displayMissing(){

System.out.print("given array(already sorted): ");

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

System.out.print(ar[j] +" "); // display it

System.out.print("\nNumbers missing between 1 to 100 in array : ");

int j=0;

for(int i=1;i<=100;i++){

if(j<ar.length && i==ar[j])

j++;

else

System.out.print(i+" ");

}

}

}