**Session\_2**

**Check V-Top Login for the Exercises**

**Sample Programs**

**/\*Arrar SUM,Sort a numeric array and a string array\*/**

import java.util.Arrays;

public class ex1

{

public static void main(String[] args)

{

int[] my\_array1 = {

1789, 2035, 1899, 1456, 2013,

1458, 2458, 1254, 1472, 2365,

1456, 2165, 1457, 2456};

String[] my\_array2 = {

"Java",

"Python",

"PHP",

"C#",

"C Programming",

"C++"

};

System.out.println("Original numeric array : "+Arrays.toString(my\_array1));

Arrays.sort(my\_array1);

System.out.println("Sorted numeric array : "+Arrays.toString(my\_array1));

System.out.println("Original string array : "+Arrays.toString(my\_array2));

Arrays.sort(my\_array2);

System.out.println("Sorted string array : "+Arrays.toString(my\_array2));

int sum = 0;

for (int i : my\_array1)

sum += i;

System.out.println("The sum is " + sum);

double average = sum / my\_array1.length;

System.out.println("Average value of the array elements is : " + average);

}

}

**/\*Find the common elements between two \*/**

import java.util.\*;

public class ex2

{

public static void main(String[] args)

{

String[] array1 = {"Python", "JAVA", "PHP", "C#", "C++", "SQL"};

String[] array2 = {"MySQL", "SQL", "SQLite", "Oracle", "PostgreSQL", "DB2", "JAVA"};

System.out.println("Array1 : "+Arrays.toString(array1));

System.out.println("Array2 : "+Arrays.toString(array2));

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

for (int i = 0; i < array1.length; i++)

{

for (int j = 0; j < array2.length; j++)

{

if(array1[i].equals(array2[j]))

{

set.add(array1[i]);

}

}

}

System.out.println("Common element : "+(set)); //OUTPUT : [THREE, FOUR, FIVE]

}

}

**/\* Array Addition\*/**

import java.util.Scanner;

public class ex3

{

public static void main(String args[])

{

int m, n, c, d;

Scanner in = new Scanner(System.in);

System.out.println("Input number of rows of matrix");

m = in.nextInt();

System.out.println("Input number of columns of matrix");

n = in.nextInt();

int array1[][] = new int[m][n];

int array2[][] = new int[m][n];

int sum[][] = new int[m][n];

System.out.println("Input elements of first matrix");

for ( c = 0 ; c < m ; c++ )

for ( d = 0 ; d < n ; d++ )

array1[c][d] = in.nextInt();

System.out.println("Input the elements of second matrix");

for ( c = 0 ; c < m ; c++ )

for ( d = 0 ; d < n ; d++ )

array2[c][d] = in.nextInt();

for ( c = 0 ; c < m ; c++ )

for ( d = 0 ; d < n ; d++ )

sum[c][d] = array1[c][d] + array2[c][d];

System.out.println("Sum of the matrices:-");

for ( c = 0 ; c < m ; c++ )

{

for ( d = 0 ; d < n ; d++ )

System.out.print(sum[c][d]+"\t");

System.out.println();

}

}

}

**/\* Matrix Multiplication\*/**

import java.util.Scanner;

class MatrixMultiplication

{

public static void main(String args[])

{

int m, n, p, q, sum = 0, c, d, k;

Scanner in = new Scanner(System.in);

System.out.println("Enter the number of rows and columns of first matrix");

m = in.nextInt();

n = in.nextInt();

int first[][] = new int[m][n];

System.out.println("Enter elements of first matrix");

for (c = 0; c < m; c++)

for (d = 0; d < n; d++)

first[c][d] = in.nextInt();

System.out.println("Enter the number of rows and columns of second matrix");

p = in.nextInt();

q = in.nextInt();

if (n != p)

System.out.println("The matrices can't be multiplied with each other.");

else

{

int second[][] = new int[p][q];

int multiply[][] = new int[m][q];

System.out.println("Enter elements of second matrix");

for (c = 0; c < p; c++)

for (d = 0; d < q; d++)

second[c][d] = in.nextInt();

for (c = 0; c < m; c++) {

for (d = 0; d < q; d++) {

for (k = 0; k < p; k++)

sum = sum + first[c][k]\*second[k][d];

multiply[c][d] = sum;

sum = 0;

}

}

System.out.println("Product of the matrices:");

for (c = 0; c < m; c++) {

for (d = 0; d < q; d++)

System.out.print(multiply[c][d]+"\t");

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

}

}

}

}