Session_2

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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");
    }
   }
  }
}
```