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/*
 * Pragyan Bhattarai
 * 1002124905
 * */
package Assignment4;

import java.util.Scanner;

public class assignment4 {

    public static void main(String[] args)
    {
        int a1,a2,b1,b2; // four variables to store dimensions
        Scanner keyboard = new Scanner(System.in);
        System.out.println("Enter dimensions of first matrix :");
        a1= keyboard.nextInt();
        b1= keyboard.nextInt();// input of dimensions for first matrix

        do { // do loop to ensure loop runs at least once
            System.out.println("Enter dimensions of second matrix :");
            a2= keyboard.nextInt();
            b2= keyboard.nextInt();// input of dimensions for second matrix

            if (a1!=a2 || b1!=b2) // check if both of input for matrix B
matches with A or not
                System.out.println("The dimensions of first and second
matrix doesn't match :");
            } while (a1!=a2 || b1!=b2);

            int[][] arr1= new int[a1][b1];// creating 3 matrices; 2 for user input,
1 for final output
            int[][] arr2= new int[a2][b2];
            int[][] arr3= new int[a2][b2];

            System.out.println("Enter the values of matrix A\n");

            for (int i=0;i<a1;i++)// nested loop concept so that matrix index
increases one at a time
            {
                for (int j=0;j<b1;j++)
                {
                    System.out.println("Enter the number for ["+i+"]["+j+"]
position");
                    arr1[i][j]= keyboard.nextInt();// takes data for first
matrix
                }
            }
            System.out.println("Enter the values of matrix B\n");

            for (int i=0;i<a2;i++)
            {
                for (int j=0;j<b2;j++)
                {
                    System.out.println("Enter the number for ["+i+"]["+j+"]
position");
                    arr2[i][j]= keyboard.nextInt();// takes data for second
matrix
                }
            }
        }
    }
}

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        System.out.println("Elements of matrix A :");
        for (int i=0;i<a1;i++)
        {
            for (int j=0;j<b1;j++)
            {
                System.out.print(arr1[i][j]+"\\t"); // prints data of first
matrix
            }
            System.out.print("\\n");
        }
        System.out.println("Elements of matrix B :");
        for (int i=0;i<a2;i++)
        {
            for (int j=0;j<b2;j++)
            {
                System.out.print(arr2[i][j]+"\\t");// prints data of second
matrix
            }
            System.out.print("\\n");
        }
        System.out.println("Matrix Substraction (A-B) is given by ");

        for (int i=0;i<a2;i++)
        {
            for (int j=0;j<b2;j++)
            {
                arr3[i][j]=arr1[i][j]-arr2[i][j];// subtract matrix B from
matrix A and stores in matrix C
                System.out.print(arr3[i][j] +"\\t");
            }
            System.out.print("\\n");
        }
    }
}

```