Bereich: Arrays (mehrdimensional)

Subtraktion zweier Matrizen

Musterlösung

Package: `de.dhbwka.java.exercise.arrays`

Klasse: `MatrixSubtraction`

```
package de.dhbwka.java.exercise.arrays;

import java.util.Random;
import java.util.Scanner;

/**
 * @author DHBW lecturer
 * @version 1.0
 *
 * Part of lectures on 'Programming in Java'.
 * Baden-Wuerttemberg Cooperative State University.
 *
 * (C) 2015 by W. Geiger, T. Schlachter, C. Schmitt, W. Süß
 */
public class MatrixSubtraction {

	public static void main(String[] args) {
		Scanner scan = new Scanner(System.in);
		Random rnd = new Random();
		System.out.print("Bitte Anzahl der Zeilen n eingeben: ");
		int n = scan.nextInt();
		System.out.print("Bitte Anzahl der Spalten m eingeben: ");
		int m = scan.nextInt();
		int[][] x = new int [n][m];
		int[][] y = new int [n][m];
		// fill arrays with random numbers
		for (int i = 0; i < n; i++) {
			for (int j = 0; j < m; j++) {
				x[i][j] = rnd.nextInt(100);
				y[i][j] = rnd.nextInt(100);
			}
		}
		// output matrix x
		System.out.println("X:");
		for (int i = 0; i < n; i++) {
			for (int res : x[i]) {
				System.out.printf("%4d",res);
			}
			System.out.println();
		}
		// output matrix y
		System.out.println("Y:");
		for (int i = 0; i < n; i++) {
			for (int res : y[i]) {
				System.out.printf("%4d",res);
			}
			System.out.println();
		}
```

```
            // output result x-y
            System.out.println("X-Y:");
            for (int i = 0; i < n; i++) {
                  for (int j = 0; j < m; j++) {
                        System.out.printf("%4d",x[i][j] - y[i][j]);
                  }
                  System.out.println();
            }
            scan.close();
      }

}
```

Bereich: Arrays (mehrdimensional)

Pascalsches Dreieck	**Musterlösung**
Package: `de.dhbwka.java.exercise.arrays`	**Klasse:** `Pascal`

```
package de.dhbwka.java.exercise.arrays;

/**
 * @author DHBW lecturer
 * @version 1.0
 *
 * Part of lectures on 'Programming in Java'.
 * Baden-Wuerttemberg Cooperative State University.
 *
 * (C) 2015 by W. Geiger, T. Schlachter, C. Schmitt, W. Süß
 */
public class Pascal {

	public static void main(String[] args) {
		int maxRows = 9;
		int[][] pascal = new int[maxRows][];
		for (int i = 0; i < pascal.length; i++) {
			pascal[i] = new int[i+1];
			pascal[i][0] = 1;
			pascal[i][pascal[i].length - 1] = 1;
			if (i>1) {
				for (int j = 1; j < pascal[i].length-1; j++) {
					pascal[i][j] = pascal[i-1][j-1]
							+ pascal[i-1][j];

				}
			}
		}
		for (int i = 0; i < pascal.length; i++) {
			// insert blanks for centered output
			for (int j = 1; j < maxRows-i; j++)
				System.out.print("  ");
			// output one row
			for (int j : pascal[i])
				System.out.printf(" %2d ",j);
			System.out.println();
		}
	}

}
```