

4.3.2019 16:45:58

PairSums.java

Page 1/2

```

1  /*
2   * HSR - Uebungen 'Algorithmen & Datenstrukturen 1'
3   * Version: Mon Mar  4 16:45:58 CET 2019
4   */
5
6  package uebung03.as.aufgabe01;
7
8  import java.util.Arrays;
9
10
11  public class PairSums {
12
13      public static void main(String[] args) {
14
15          int[] a1 = {47, 73, 21, 17};
16          System.out.println("\n" + Arrays.toString(a1) + ":");
17          int[] b1 = generateSums(a1);
18          printSums(b1, a1.length);
19
20          int[] a2 = {1, 2, 3, 4, 5, 7};
21          System.out.println("\n" + Arrays.toString(a2) + ":");
22          int[] b2 = generateSums(a2);
23          printSums(b2, a2.length);
24
25          System.out.println("\nRuntime-Measurement:");
26          runtimeMeasurement();
27      }
28  }
29
30  /**
31   * Generates the PAIR-sums.
32   * Generates the PAIR-sums in the sequence of: i=1, i=2, ... i=n-1
33   * Places the calculated sums in the same sequence in the resulting array.
34   * @param a The array with the input-data: a1, ... , an
35   *         (e.g. [47, 73, 21, 17])
36   * @return The resulting array with all sums
37   *         (e.g. [120, 68, 64, 94, 90, 38])
38   */
39  static int[] generateSums(int[] a) {
40
41      // TODO Implement here...
42
43      return null;
44  }
45
46  /**
47   * Prints the sums to stdout.
48   * @param b The array with all PAIR-Sums.
49   * @param n The size n of the original sequence of numbers.
50   */
51  private static void printSums(int[] b, int n) {
52
53      // TODO Implement here...
54  }
55
56  /**
57   * Makes a runtime-measurement of generateSums().
58   * See the 'Session-Log' below.
59   */
60  private static void runtimeMeasurement() {
61
62      // TODO Implement here...
63  }
64
65  }
66
67  }
68
69

```

4.3.2019 16:45:58

PairSums.java

Page 2/2

```

70
71  /* Session-Log:
72
73  $ java -Xint -Xms100m -Xmx100m uebung03/as/aufgabe01/PairSums
74
75  [47, 73, 21, 17]:
76      120      68      64
77          94      90
78              38
79
80  [1, 2, 3, 4, 5, 7]:
81      3          4      5          6          8
82          5          6          7          9
83              7          8          10
84                  9          11
85                      12
86
87  Runtime-Measurement:
88  Size:   256    Time:      0.6 ms    Ratio to last: 0.0
89  Size:   512    Time:      2.2 ms    Ratio to last: 4.0
90  Size:  1,024    Time:      8.9 ms    Ratio to last: 3.9
91  Size:  2,048    Time:     35.3 ms    Ratio to last: 4.0
92  Size:  4,096    Time:    144.7 ms    Ratio to last: 4.1
93
94  */

```