Practice Arena

Practice problems aimed to improve your coding skills.

- PRACTICE-02_SCAN-PRINT
- PRACTICE-03_TYPES
- LAB-PRAC-02_SCAN-PRINT
- LAB-PRAC-01
- PRACTICE-04_COND
- BONUS-PRAC-02
- LAB-PRAC-03_TYPES
- PRACTICE-05_COND-LOOPS
- LAB-PRAC-04_COND
- LAB-PRAC-05_CONDLOOPS
- PRACTICE-07_LOOPS-ARR
- LAB-PRAC-06_LOOPS
- LAB-PRAC-07_LOOPS-ARR
  - Home Alone
  - Arrangements with Arrays
  - Overlapping Patterns
  - Lucky Draw
  - Diamond Array
  - Linear Leap
  - Candy Crush
  - Nested Safes
  - Heros Arc
  - Linear Loopy Maze
  - Histogram Heights
  - Changing Times
- LABEXAM-PRAC-01_MIDSEM
- PRACTICE-09_PTR-MAT
- LAB-PRAC-08_ARR-STR
- PRACTICE-10_MAT-FUN
- LAB-PRAC-09_PTR-MAT
- LAB-PRAC-10_MAT-FUN
- PRACTICE-11_FUN-PTR
- LAB-PRAC-11_FUN-PTR
- LAB-PRAC-12_FUN-STRUC
- LABEXAM-PRAC-02_ENDSEM
- LAB-PRAC-13_STRUC-NUM
- LAB-PRAC-14_SORT-MISC

Overlapping Patterns

LAB-PRAC-07_LOOPS-ARR

Overlapping Patterns [20 marks]

Problem Statement
Mr C likes figuring out patterns in sequences. He is very happy if he is able to find the pattern “1 2 1” (without quotes) in the sequence. You will be given a sequence of integers in the input. The sequence contain only the numbers 0, 1 and 2. The sequence will be terminated by a -1 and this -1 is not a part of the sequence.

Mr C wants to figure out how many times does the pattern "1 2 1" (without quotes) appear in the pattern. Your output should simply be the number of time this pattern appears in the sequence you have been given.

Caution

1. Be careful about extra/missing lines and extra/missing spaces.
2. The given sequence may have zero occurrences of the pattern. The sequence itself may be empty.
3. Note that, the occurrences of the pattern "1 2 1" (without quotes) can be overlapping as demonstrated in the following examples. However, in brief, we can appreciate this by looking at the sequence 1 2 1 2 1. This sequence actually contains two occurrences of the pattern 1 2 1. The third element of the sequence which is a 1, acts as the final element of one occurrence of the pattern 1 2 1 and also acts as the beginning of a new occurrence of the pattern 1 2 1. Thus, if we were to explicity bracket the occurrences, we would get (1 2 (1) 2 1)

HINT: You may require the use of flags in this question.

EXAMPLE 1:
INPUT
1 2 1 2 1 2 0 1 -1
OUTPUT:
2
Explanation: The first 3 numbers form 121. In addition, the 3rd to 5th numbers also form 121. The occurrences of the pattern are (1 2 (1) 2 1) 2 0 1

EXAMPLE 2:
INPUT
1 2 1 0 1 2 1 1 0 0 -1
OUTPUT:
2
Explanation: The first 3 numbers, as well as the 5th-7th numbers, form the pattern 121. Thus, the number of times the pattern appears is 2. The occurrences of the pattern are (1 2 1) 0 (1 2 1) 1 0 0

Grading Scheme:
Total marks: **[20 Points]**

There will be no partial grading in this question. An exact match will receive full marks whereas an

incomplete match will receive 0 points. Please be careful of missing/extra spaces and missing/lines (take help of visible test cases). Each visible test case is worth 2 point and each hidden test case is worth 4 points. There are 2 visible and 4 hidden test cases.

Start Solving! (/editor/practice/6139)