**Uncle Grandpa and zero(s)**

**Note:** This problem will be graded for 1%. I have also given some hints on the solution below!

Uncle Grandpa has an array. He wants to count the number of subarray (a continuous nonempty segment of the array) that has the sum equal to zero. Please help him!

## Input

The first line contains a single integer – the length of the array

The second line contains integers – the element of the array a

## Output

One integer is the answer to the problem

## Examples

|  |  |
| --- | --- |
| Input (zero1.in) | Output (zero1.out) |
| 5  1 -1 1 -1 1 | 6 |

|  |  |
| --- | --- |
| Input (zero2.in) | Output (zero2.out) |
| 4  0 0 0 0 | 10 |

## Explanation:

In the first example, 6 subarrays having sum equal to 0 are: ,

## Hint:

Given an array (1-indexed), for example , we define . To calculate in just , we can do it as follows:

|  |
| --- |
| s[0] = 0;  for (int i = 1; i <= n; i++) {  s[i] = s[i - 1] + a[i];  } |

To calculate the sum of a subarray in just , you can take

## Important Note:

In this problem, you are only allowed to use ArrayList, array, LinkedList, Queue & Stack. The use of other data structure will result in **0 marks** for the assignment.

## Note:

1. A skeleton file has been given to help you. You should not create a new file or rename the file provided. You should develop your program using this skeleton file.
2. You are free to define your own helper methods and classes (or remove existing ones) if it is suitable but you must put all the new classes, if any, in the same skeleton file provided

## Skeleton File

You are given the skeleton file Zero.java. You should see the following contents when you open the file:

|  |
| --- |
| /\*\*  \* Name :  \* Matric. No :  \*/  import java.util.\*;  public class Zero {  private void run() {  }  public static void main(String args[]) {  Zero runner = new Zero();  runner.run();  }  } |