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Exercise 12a. Implement the program 'exercise\_12a\_fznumber' that computes the number of flat zones of an input image:

exercise\_12a\_fznumber exercise\_12a\_input\_01.txt exercise\_12a\_input\_01.pgm exercise\_12a\_output\_01.txt

The input file 'exercise\_12a\_input\_01.txt' is an input file with 1 line of parameters:

-At line 1: an integer number 'connectivity' that denotes the connectivity number employed (4 or 8, corresponding to 4-connectivity or 8-connectivity, respectively).

The output text file 'exercise\_12a\_output\_01.txt' should contain 1 line with the number of flat zones (an integer number).

Note: 8-connectivity can be assumed (it is not necessary to consider 4-connectivity).

Note: internally, an auxiliary image of sufficient bit depth (16 bits or, better, 32 bits) should be used.

To check imFlatZonesNumber:

(a) immed\_gray\_inv\_20051218\_thresh127.pgm has 55 flat zones with 8-connectivity (with 4-connectivity, the number of flat zones is also 55).

(b) the gray-level image immed\_gray\_inv.pgm has 12488 flat zones with 8-connectivity (with 4-connectivity, 16909 flat zones).

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