
Reduction of digits

P96965_en

Write a function that, given a natural number x , returns the reduction of its digits.

Interface

C++	int <i>reduction_of_digits</i> (int x);
C	int <i>reduction_of_digits</i> (int x);
Java	public static int <i>reductionOfDigits</i> (int x);
Python	<i>reduction_of_digits</i> (x) # returns int <i>reduction_of_digits</i> (x : int) \rightarrow int

In this exercise, we say that reducing the digits of a number means computing the sum of its digits. If the sum has just one digit, this is already the result. Otherwise, we apply the same process again to the sum, until we get a single digit.

Solve this problem using a recursive function to return the sum of the digits of a natural number x .

Interface

C++	int <i>sum_of_digits</i> (int x);
C	int <i>sum_of_digits</i> (int x);
Java	public static int <i>sumOfDigits</i> (int x);
Python	<i>sum_of_digits</i> (x) # returns int <i>sum_of_digits</i> (x : int) \rightarrow int

Precondition

x is a natural number.

Observation

Although there is a mathematic trick to solve this problem faster than by adding up its digits, do not use it here.

Observation

You only need to submit the required procedure; your main program will be ignored.

Problem information

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