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DNA reverse complement

5 points

Introduction

DNA (deoxyribonucleic acid) is the molecule that encapsulates all the information of the life species. The encoding is done through four nucleotides: adenine, thymine, cytosine and guanine that are usually abbreviated as A, T, C, G. In each position of one DNA strand, we can have just one of these nucleotides and the paired strand codifies the opposite base (A links with T, C with G) so the molecule encodes two bits per base pair.

The complement of a DNA sequence is the sequence you get by replacing each base by its pair: For each base, their corresponding pair is:

G → C
C → G
T → A
A → T

An equivalent protein, called reverse complement, is obtained if you find the complement of a sequence and then reverse it.

Your task is to write a program that finds the reverse complement of a DNA sequence.

Input

The input of the program will be a list of sequence, ending with a '.'. Sequences will always be shorter than 50 nucleotides (expressed as characters). None of them will be longer than 500 elements.

AAAACCCGGT
GCGCTTA

.

Output

The program must output the reverse complement of the sequences.

ACCGGGTTTT
TAAGCGC