

2E Implement GreedyMotifSearch with Pseudocounts

Greedy Motif Search with Pseudocounts Problem

Implement *GreedyMotifSearch* with pseudocounts.

Input: A collection of strings *Dna*, and integers *k* and *t*.

Output: A collection of strings resulting from running *GREEDYMOTIFSEARCH*(*Dna*, *k*, *t*) with pseudocounts.

A	6/10	1/10	2/10	0/10	1/10
C	2/10	1/10	4/10	0/10	7/10
G	0/10	0/10	2/10	2/10	0/10
T	2/10	8/10	2/10	8/10	2/10

A	7/14	2/14	3/14	1/14	2/14
C	3/14	2/14	5/14	1/14	8/14
G	1/14	1/14	3/14	3/14	1/14
T	3/14	9/14	3/14	9/14	3/14

Formatting

Input: Space-separated integers *k* and *t*, followed by a newline-separated collection of strings *Dna*.

Output: A space-separated list of strings containing a collection of strings resulting from running *GREEDYMOTIFSEARCH*(*Dna*, *k*, *t*) with pseudocounts (If at any step you find more than one *Profile*-most probable *k*-mer in a given string, use the one occurring first).

Constraints

- The integer *k* will be between 1 and 10^2 .
- The integer *t* will be between 1 and 10^2 .
- The number of strings in *Dna* will be between 1 and 10^2 .
- The length of each string in *Dna* will be between 1 and 10^2 .
- Each string in *Dna* will be a DNA string.

Test Cases

Case 1

Description: The sample dataset is not actually run on your code.

Input:

3 5

GGCGTTCAGGCA AAGAATCAGTCA CAAGGAGTTCGC CACGTCAATCAC CAATAATATTCTG

Output:

TTC ATC TTC ATC TTC

Case 2

Description: A larger dataset of the same size as that provided by the randomized autograder.