

## 2G Implement GibbsSampler

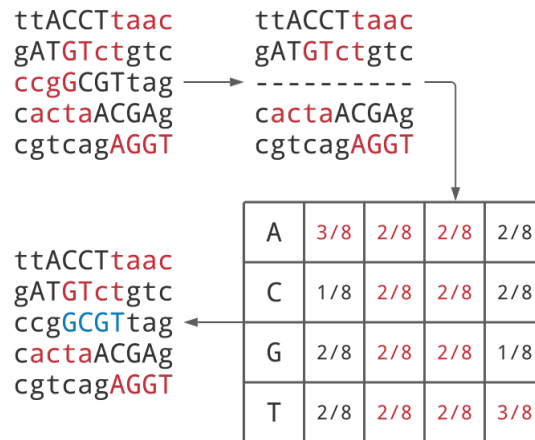
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### Gibbs Sampler Problem

Implement *GibbsSampler*.

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

**Output:** The strings resulting from running `GIBBSAMPLER(Dna, k, t, N)` with 20 random starts. Remember to use pseudocounts!



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### Formatting

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

**Output:** A space-separated list of strings containing the strings resulting from running `GIBBSAMPLER(Dna, k, t, N)` with 20 random starts. Remember to use pseudocounts!

### Constraints

- The integer *k* will be between 1 and  $10^2$ .
- The integer *t* will be between 1 and  $10^2$ .
- The integer *N* will be between 1 and  $10^4$ .
- 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  $10^3$ .
- Each string in *Dna* will be a DNA string.

## Test Cases

### Case 1

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

**Input:**

8 5 100

```
CGCCCCCTCTCGGGGGTGTTC GT    CGGCC  GGGCG GGT TGTGT  GTGCC  GTGCC G
T GT CCG G CCG    G  GT T C GCGGT T G TC  GTTC GTGC CGTCGGTG  CC
    TCC CC GCTCC CGTGC  TGTGGCCT
```

**Output:**

```
TCTCGGGG CC  GGTG T C GCG TTC GGTG TCC CGTG
```

### Case 2

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