



Problem 10. «Bigrams»

Users of a some communication system send messages to each other. Every message is written in English. Eve is a malefactor who intercepts messages in this channel and replaces them with new ones. In detail she does the following: intercepts a message, removes all spaces and punctuation marks from it, splits the message into bigrams starting from the beginning. Then she makes several iterations of destruction of the message. The number of iterations is random.

All bigrams are divided into 3 types:

- I. Bigram contains only vowels (i. e. AA, EI, IO, UO, YU, ...).
- II. Bigram contains only consonants (i. e. BN, TR, LL, PW, SD, ...).
- III. Bigram contains one vowel and one consonant (i. e. QA, EC, HI, KO, ...).

On each iteration Eve takes two random bigrams B_1 and B_2 of the different types and removes them from the message, at the same time she adds a new random bigram B_3 of the third type at the beginning of the message. So, if she chooses bigrams of I and II types (II and III; I and III) she will add an arbitrary bigram of III (I; II) type.

For example, the message CRYPTO TEXT can be transformed by Eve like this:

CRYPTO TEXT \rightarrow (CR) (YP) (TO) (TE) (XT) \rightarrow (OE) (CR) (TO) (TE) \rightarrow (FE) (TO) (TE)

The question is the following. You know that Alice has send to Bob the message

THE MEETING WILL TAKE PLACE AT THREE IN ‘EEYORE-EAGLE-BEE CREEK INN’

that was intercepted by Eve. She had repeated iterations of destruction until the only one bigram left. Could it be a bigram consisting of one vowel and one consonant?