Problem 5

Pretty Poor Encryption

6 Points

Program Name: decrypt.cpp Input File: decrypt.dat

You are the top software engineer for a software company named Delusional Software that is releasing a new encryption package that will allow messages, such as email and chat messages, to be encrypted for transmission and then decrypted by the receiver. Your job is to develop the decrypting side of the package. You do have concerns however about the encryption algorithm being used in this package since all it involves is converting each character in the message to a binary representation of that character's ASCII value. The designers believe that this encryption algorithm will be uncrackable (you're starting to realize how this company got its name), and you are more than happy to develop it and see them proven wrong!

Input Description

Input to this problem will consist of a (non-empty) series of up to 100 data sets. Each data set will be formatted according to the following description, and there will be **no blank lines** separating data sets.

A single data set has 2 components:

Start line – A single line, "MESSAGE *X*", where *X* is the number of bytes that are to be decrypted, and ($1 \le X \le 80$).

Message line – This line will consist of *X* binary byte strings. Every line will consist of between 1 and 8 bytes of data, where each byte (series of eight 0's and 1's) represents the binary equivalent of the ASCII value of each ASCII-printable character found in the message (including spaces, but not newlines or tabs). Note that the binary byte strings on each line will not be delimited by any spaces.

Output Description

For each data set, there will be two lines of output. The first line will be a replication of the Start Line from the input file, and the following line will consist of the actual text message that was decrypted from the series of binary byte strings from the input.

Sample Input

```
MESSAGE 29
01010100011010000110010100100000010101010100100101001100001000000
01001010011101010110010001100111011001010111001100100000011000001
01110010011001010010000001100011011011110111011110110110000100000
01100111011101010111100101110011001000001
MESSAGE 42
01000101011100110111000001100101011000110111010010110000101101100
01101100011110010010000001110100011010000110010100100000011000001
01110101011101000110100001101111011100100010000001101111011001100
00100000011101000110100001101001011100110010000001110000011100010
01101111011000100110110001100101011011010010000100100000001000000
0011101100101001
```

Sample Output

```
MESSAGE 29
The UIL Judges are cool guys!
MESSAGE 42
Especially the author of this problem!  ;)
```