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## 6. Transformers: Optimus Prime

**Program Name:** Transform.java

**Input File:** transform.dat

Sam wants to send a message to his friend Mikaela but is afraid of the message being read by others. Sam has a simple encryption scheme to apply to his message. Instead of sending characters Sam will send numbers. He wants to use the ASCII values of characters but that is a little too obvious. Everyone knows 'A' is 65, right? So he will represent the numbers using bases other than base ten. To make his code harder to break he is going to change the base for each line. The first line of the message will use base two, the second line will use base three, the third line will use base five, the fourth line will use base seven. If there are more than four lines in the message the fifth line will cycle back to base two, the sixth line will be base three and so forth. Here is an example of which base to use on a given line

```
Line 1 -- uses base two
Line 2 -- uses base three
Line 3 -- uses base five
Line 4 -- bases seven
Line 5 -- uses base two
Line 6 -- uses base three
Line 7 -- uses base five
Line 8 -- uses base seven
Line 9 -- uses base two
...
```

Each character in the message will be replaced by a number, including spaces. The number will be the ASCII value of the character in the appropriate base. The newline characters at the end of the line are not encoded. The number for each character will be followed by a single underscore character, '\_', except for the last character on a given line.

### Input

The first line of input will contain a single integer *n* that indicates the number lines in Sam's message. The following *n* lines will be the plain text version of Sam's message.

### Output

Output the encoded messaging using Sam's encryption algorithm.

### Example Input File

```
5
Mik
Hi!
How are u?
"car" is yellow
Bye :)
```

### Example Output To Screen

```
1001101_1101001_1101011
2200_10220_1020_1012
242_421_434_112_342_424_401_112_432_223
46_201_166_222_46_44_210_223_44_232_203_213_213_216_230
1000010_1111001_1100101_100000_111010_101001
```