

Design a tiny URL or URL shortener

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Problems

Design a system that takes big URLs like "<http://www.geeksforgeeks.org/count-sum-of-digits-in-numbers-from-1-to-n/>" and converts them into a short **6 character URL**. It is given that URLs are stored in database and every URL has an associated integer **id**. So your program should take an integer id and generate a 6 character long URL.

A URL character can be one of the following

1. A lower case alphabet ['a' to 'z'], total 26 characters
2. An upper case alphabet ['A' to 'Z'], total 26 characters
3. A digit ['0' to '9'], total 10 characters

There are total $26 + 26 + 10 = 62$ possible characters.

So the task is to convert an integer (database id) to a base 62 number where digits of 62 base are "abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789"

Input:

The first line of input contains an integer T denoting the number of test cases. The second line consists of a long integer.

Output:

For each testcase, in a new line, print the **shortened** string in the first line and convert the shortened string back to ID (to make sure that your conversion works fine) and print that in the second line.

Constraints:

$$1 \leq T \leq 100$$

$$1 \leq N \leq 2^{32}-1$$

Example:

Input:

```
1
12345
```

Output:

```
dnh
12345
```

**** For More Input/Output Examples Use 'Expected Output' option ****

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