Problem H. Hash Code Hacker

Input file:	`hash.in`
Output file:	`hash.out`
Time limit:	2 seconds
Memory limit:	256 megabytes

According to Java standard library documentation, the hash code of `String` is computed as

```
s[0]*31^(n-1) + s[1]*31^(n-2) + ... + s[n-1]
```

Here `s[i]` is the i-th character of the string, `n` is the length of the string, and `^` indicates exponentiation. Computation uses signed 32-bit integers in two's complement form.

Heather is going to hack the servers of Not Entirely Evil Recording Company (NEERC). To perform an attack she needs k distinct query strings that have equal hash codes. Unfortunately, NEERC servers accept query string containing lower- and uppercase English letters only.

Heather hired you to write a program that generates such query strings for her.

Input

The single line of the input file contains integer k — the number of required query strings to generate ($2 \le k \le 1000$).

Output

Output k lines. Each line should contain a single query string. Each query string should be non-empty and its length should not exceed 1000 characters. Query string should contain only lower- and uppercase English letters. All query strings should be distinct and should have equal hash codes.

Example

hash.in	hash.out
4	edHs mENAGeS fEHs edIT