#include <stdio.h>

#include <string.h>

int main() {

char A, p[10][10], pre[10], rest[10][10];

int n, i, j, l, minl = 99;

scanf(" %c%d", &A, &n);

for (i = 0; i < n; i++) scanf("%s", p[i]);

l = strlen(p[0]);

strcpy(pre, p[0]);

for (i = 1; i < n; i++) {

j = 0;

while (p[i][j] == pre[j] && j < strlen(p[i])) j++;

if (j < minl) minl = j;

}

pre[minl] = '\0';

for (i = 0; i < n; i++) strcpy(rest[i], p[i] + strlen(pre));

printf("%c -> %s%c'\n%c' -> ", A, pre, A, A);

for (i = 0; i < n; i++) printf("%s ", rest[i][0] ? rest[i] : "e");

printf("\n");

}

