#include <stdio.h>

#include <string.h>

#define MAX 10

char prod[MAX][MAX], prefix[MAX], alpha[MAX], beta[MAX], newProd[MAX][MAX];

int n;

void findPrefix(char \*s1, char \*s2)

{

int i = 0;

while (s1[i] == s2[i] && s1[i] != '\0')

{

prefix[i] = s1[i];

i++;

}

prefix[i] = '\0';

}

void removeLeftFactoring()

{

for (int i = 0; i < n - 1; i++)

{

if (prod[i][0] == prod[i + 1][0])

{

findPrefix(&prod[i][2], &prod[i + 1][2]);

printf("%c -> %s%c'\n", prod[i][0], prefix, prod[i][0]);

printf("%c' -> %s | %s\n", prod[i][0], &prod[i][2] + strlen(prefix), &prod[i + 1][2] + strlen(prefix));

} else {

printf("%s\n", prod[i]);

}

}

printf("%s\n", prod[n - 1]);

}

int main()

{

printf("Enter number of productions: ");

scanf("%d", &n);

printf("Enter productions (e.g., A=abc, A=abd):\n");

for (int i = 0; i < n; i++)

scanf("%s", prod[i]);

printf("\nAfter eliminating left factoring:\n");

removeLeftFactoring();

return 0;

}