#include <iostream>

#include <vector>

using namespace std;

int N;

vector<pair<char,char>> v(26);

void preOrder(char c){

cout << c ;

if(v[c-'A'].first != '.')

preOrder(v[c-'A'].first);

if(v[c-'A'].second != '.')

preOrder(v[c-'A'].second);

}

void inOrder(char c){

if(c == '.')

return;

inOrder(v[c-'A'].first);

cout << c;

inOrder(v[c-'A'].second);

}

void postOrder(char c){

if(c == '.')

return;

postOrder(v[c-'A'].first);

postOrder(v[c-'A'].second);

cout << c;

}

int main(){

cin >> N;

for(int i=0; i<N; i++){

char node, left, right;

cin >> node >> left >> right;

int idx = node - 'A';

v[idx] = {left, right};

}

preOrder('A');

cout << "\n";

inOrder('A');

cout << "\n";

postOrder('A');

return 0;

}