//balance paranthesis

#include<iostream>

#include <stack>

#include<string>

using namespace std;

bool isPair(char opening, char closing)

{

bool ret=false;

if(opening =='{' && closing =='}')

ret=true;

else if(opening =='(' && closing ==')')

ret=true;

else if(opening =='[' && closing ==']')

ret=true;

return ret;

}

bool checkBalanced(string exp)

{

stack<char> c;

for (int i=0;i<exp.length();i++)

{

if(exp[i] =='(' || exp[i] =='{' || exp[i] =='[')

c.push(exp[i]);

else if(isPair(c.top(),exp[i]))

c.pop();

else

return false;

}

return true;

}

int main()

{

string exp;

cout<<"enter expression: ";

cin>>exp;

if(checkBalanced(exp))

cout<<"exp is balanced";

else

cout<<"exp is not balanced";

return 0;

}