/\* In any language program mostly syntax error occurs due to unbalancing delimiter such as  
(),{},[]. Write C++ program using stack to check whether given expression is well  
parenthesized or not. \*/  
  
#include<iostream>  
#include<strings.h>  
#include<string.h>  
#include<math.h>  
using namespace std;  
  
  
class stack  
{  
  
public:  
    int top;  
    char stk[30];  
    stack()  
    {  
        top=-1;  
    }  
    void push(char s)  
    {  
        stk[++top]=s;  
    }  
  
    char pop()  
    {  
        return stk[top--];  
    }  
  
    char s()  
    {  
        return stk[top];  
    }  
  
    int t()  
    {  
        return top;  
    }  
   void checkp(char [],stack);  
  
};  
  
  
  
void stack::checkp(char exp[30],stack s)  
{  
    int i;  
    while(exp[i]!='$')  
    {  
        if(exp[i]=='(')  
            s.push(exp[i]);  
        else if(exp[i]==')')  
            s.pop();  
        i++;  
  
    }  
    if(s.top==-1)  
        cout<<"\n well paranthesized expression";  
    else  
        cout<<"\n not well paranthesized expression";  
}  
  
int main()  
{  
    stack s;  
    char exp[30];  
    int len;  
    cout<<"\nenter expression with paranthesis";  
    //cin.ignore();  
    //cin.sync();  
    cin.getline(exp,sizeof(exp));  
    cout<<"\n expression:"<<exp;  
    len=strlen(exp);  
    cout<<"length:"<<len;  
    exp[len]='$';//ending of expression  
    s.checkp(exp,s);  
    return 0;  
}