

Assignment_2

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>
using namespace std;
#define size 10

class stackexp
{
    int top;
    char stk[size];
public:
    stackexp()
    {
        top=-1;
    }
    void push(char);
    char pop();
    int isfull();
    int isempty();
};

void stackexp::push(char x)
{
    top=top+1;
    stk[top]=x;
}

char stackexp::pop()
{
    char s;
    s=stk[top];
    top=top-1;
    return s;
}

int stackexp::isfull()
{
    if(top==size)
        return 1;
    else
        return 0;
}

int stackexp::isempty()
```

```

{
    if(top== -1)
        return 1;
    else
        return 0;
}

int main()
{
    stackexp s1;
    char exp[20],ch;
    int i=0;
    cout << "\n\t!! Parenthesis Checker..!!!" << endl; // prints !!!Hello World!!!
    cout<<"\nEnter the expression to check whether it is in well form or not : ";
    cin>>exp;
    if((exp[0]=='(') || (exp[0]=='[') || (exp[0]=='{'))
    {
        cout<<"\n Invalid Expression.....\n";
        return 0;
    }
    else
    {
        while(exp[i]!='\0')
        {
            ch=exp[i];
            switch(ch)
            {
                case '(':s1.push(ch);break;
                case '[':s1.push(ch);break;
                case '{':s1.push(ch);break;
                case ')':s1.pop();break;
                case ']':s1.pop();break;
                case '}':s1.pop();break;
            }
            i=i+1;
        }
    }
    if(s1.isempty())
    {
        cout<<"\nExpression is well parenthesised...\n";
    }
    else
    {
        cout<<"\nSorry !!! Invalid Expression or not in well parenthesized....\n";
    }
    return 0;
}

```