

```
//=====
// Name      : 21465_Pract9.cpp
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// Roll No.   : 21465
// Aim        : 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;
```

```
class StackOp
{
private:
```

```
    char stack[10];
```

```
public:
```

```
    void checkPara()
```

```
    {
```

```
        char exp[10], ch;
```

```
        int flag = 0;
```

```
        int top = -1;
```

```
        cout << "Enter the expression to check " << endl;
```

```
        cin >> exp;
```

```
        for (int i = 0; exp[i] != '\0'; i++)
```

```
        {
```

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

```
            {
```

```
                top++;
```

```
                stack[top] = exp[i];
```

```
            }
```

```
            else if (exp[i] == '}' || exp[i] == ']' || exp[i] == ')')
```

```
            {
```

```
                ch = stack[top];
```

```
                top--;
```

```
                switch (exp[i])
```

```
                {
```

```
                    case '}':
```

```
                        if (ch != '{')
```

```
                        {
```

```
                            flag = 1;
```

```
                        }
```

```
                        break;
```

```
                    case ')':
```

```
                        if (ch != '(')
```

```
                        {
```

```
                            flag = 1;
```

```
                        }
```

```

        break;

    case ']':

        if (ch != '[')
        {
            flag = 1;
        }
        break;
    }

    if (flag == 1)
    {
        break;
    }
}
else
{
    // continue for character
}
}

if (top != -1 && flag == 1)
{
    cout << "The given expression is not well paranthesized " << endl;
}
else
{
    cout << "The given expression is well parathesized " << endl;
}
}

};

int main()
{
    StackOp obj;
    obj.checkPara();

    return 0;
}

/**

```

Output:

```

$ g++ Pract9.cpp -o out && ./out
Enter the expression to check
({[a+b]})
The given expression is not well paranthesized

```

```

$ g++ Pract9.cpp -o out && ./out
Enter the expression to check
[(a+b)]
The given expression is well parathesized

```

*/