Practical 9

#include <iostream>

#include <string.h>

using namespace std;

class braces

{

char st[20];

int top;

public:

void push(char a);

void pop();

void input();

};

void braces::push(char a)

{

top++;

st[top] = a;

}

void braces::pop()

{

top--;

}

void braces::input()

{

char ch[20];

int x = 1, i = 0;

top = -1;

cout << "\nEnter the expression: ";

cin >> ch;

while (i < strlen(ch))

{

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

{

push(ch[i]);

}

if (ch[i] == '}')

{

if (st[top] == '{')

pop();

else

{

cout << "\nMatching opening brace '{' is not found: ";

}

}

if (ch[i] == ']')

{

if (st[top] == '[')

pop();

else

{

cout << "\nMatching brace '[' is not found: ";

}

}

if (ch[i] == ')')

{

if (st[top] == '(')

pop();

else

{

cout << "\n Matching opening brace '(' is not found: ";

}

}

i++;

}

if (top == -1)

{

x = 5;

cout << "\nStack is empty";

cout << "\n EXPRESSION IS WELL PARENTHESIZED\n";

}

else

{

while (top != -1)

{

if (st[top] == '[')

{

pop();

cout << "\nMatching closing brace ']' is not found: ";

}

if (st[top] == '{')

{

pop();

cout << "\nMatching closing brace '}' is not found: ";

}

if (st[top] == '(')

{

pop();

cout << "\nMatching closing brace ')' is not found: ";

}

}

cout << "\n EXPRESSION IS NOT WELL PARENTHESIZED";

}

}

int main()

{

braces c;

c.input();

}

