Practical – 14

AIM: Valid Parentheses

Given a string s containing just the characters '(', ')', '{', '}', '[' and ']', determine if the input string is valid. An input string is valid if: Open brackets must be closed by the same type of brackets. Open brackets must be closed in the correct order. Every close bracket has a corresponding open bracket of the same type.

* Program

#include<bits/stdc++.h>

using namespace std;

char\* Stack, top=0, n;

void push(char x);

char pop();

void display();

int main(){

string s;

cin >> s;

int len = s.length();

n = len;

Stack = new char[n];

char open[3] = {'[', '(', '{'};

char close[3] = {']', ')', '}'};

for(int i=0; i<len; i++){

int flag = 1;

for(int j=0; j<3; j++){

if(s[i] == open[j]){

push(s[i]);

break;

}

else if(s[i] == close[j]){

char x = pop();

if(x == open[j]){

flag = 1;

break;

}

else{

flag = 0;

break;

}

}

}

if(flag == 0){

break;

}

}

if(top != 0){

cout << "Input String is not valid" << endl;

}

else{

cout << "Input String is valid" << endl;

}

}

void push(char x){

Stack[top] = x;

top++;

}

char pop(){

top--;

char a = Stack[top];

return a;

}

* Output



* Conclusion:

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