数据结构作业8-括号匹配

源代码

#include <iostream>  
#include <string>  
using namespace std;  
typedef struct{  
 char data;  
 int top;  
}SqStack;  
void InitStack(SqStack\* &S){  
 S = new SqStack;  
 S->top = -1;  
}  
bool StackEmpty(SqStack\* S){  
 if(S->top == -1)  
 return true;  
 else  
 return false;  
}  
bool Push(SqStack\* &S, char e){  
 if(S->top == 100)  
 return false;  
 S->top++;  
 S->data = e;  
 return true;  
}  
bool Pop(SqStack\* &S, char &e){  
 if(S->top == -1)  
 return false;  
 e = S->data;  
 S->top--;  
 return true;  
}  
bool GetTop(SqStack\* S, char &e){  
 if(S->top == -1)  
 return false;  
 e = S->data;  
 return true;  
}  
int main(){  
 string str;  
 cin >> str;  
 SqStack\* S;  
 InitStack(S);  
 for(int i = 0; i < str.length(); i++){  
 if(str[i] == '(' || str[i] == '[' || str[i] == '{')  
 Push(S, str[i]);  
 else{  
 if(StackEmpty(S)){  
 cout << "括号不匹配" << endl;  
 return 0;  
 }  
 char e;  
 Pop(S, e);  
 if((e == '(' && str[i] != ')') || (e == '[' && str[i] != ']') || (e == '{' && str[i] != '}')){  
 cout << "括号不匹配" << endl;  
 return 0;  
 }  
 }  
 }  
 if(StackEmpty(S))  
 cout << "括号匹配" << endl;  
 else  
 cout << "括号不匹配" << endl;  
 return 0;  
}

程序运行截图：

形状

中度可信度描述已自动生成

文本

低可信度描述已自动生成