INPUT

```
#include<iostream>
#include<stdlib.h>
#define SIZE 80

using namespace std;

class mystack
{
	private :
		char ST[SIZE];
		int top;
	public :
		mystack();
		void push(char X);
		char pop();
		int isEmpty();
		int isFull();
};

mystack :: mystack()
{
	top = -1;
}

int mystack :: isEmpty()
{
	if(top == -1)
		return 1;
	else
		return 0;
}

int mystack :: isFull()
{
	if(top == SIZE-1)
		return 1;
	else
		return 0;
}

void mystack :: push(char X)
{
	if(!isFull())
	{
		top++;
		ST[top] = X;
	}
```

```
	else
		cout<<"\nStack Overflow !! Error!!";
}

char mystack :: pop()
{
	if(!isEmpty())
	{
		char X = '\0';
		X = ST[top];
		top--;
		return X;
	}
	else
		cout<<"\nStack underflow!";
}


/*void convert_string(char Str[],char Str1[])
{
	int i,j = 0;
	for(i=0;Str[i] != '\0';i++)
	{
		if(Str[i] >= 'a' && Str[i] <= 'z')//ascii a - z 97 -122
			Str1[j++] = Str[i];
		if(Str[i] >= 'A' && Str[i] <= 'Z')//ascii A - Z 65 -90
			Str1[j++] = Str[i] + 32;
		if(Str[i] >= '0' && Str[i] <= '9')
			Str1[j++] = Str[i];
	}
	Str1[j] = '\0';
}*/

int main()
{
	int ch,flag,i;
	char Str[80];
	char temp='\0';
	mystack S;
	system("clear");
	do
	{
		cout<<"\n\t\t\t1 : Check for correct parenthesis";
		cout<<"\n\t\t\t2 : Exit";
		cout<<"\n\nEnter ur choice : ";
		cin>>ch;
		switch(ch)
		{
```

```
                case 1 : cout<<"\nEnter the string to be checked: ";
                        cin.ignore();
                        cin.getline(Str,80);
                        cout<<"\nEntered String is "<<Str;
                        flag=1;
                        for(i=0;Str[i]!='\0';i++)
                        {

                                if((Str[i]=='{') || (Str[i]=='[') || (Str[i]=='('))
                                        S.push(Str[i]);
                                if((Str[i]=='}') || (Str[i]==']') || (Str[i]==')'))
                                {
                                        temp=S.pop();
                                        if((Str[i]=='}' && temp=='{') || (Str[i]==']'
                                        && temp=='[') || (Str[i]==')' && temp=='('))
                                        continue;
                                        else
                                        {
                                                flag=0;
                                                break;
                                        }
                                }
                        }
                        if(flag==1)
                                cout<<"\nString is well parenthesised";
                        else
                                cout<<"\nString is not parenthesised well!";
                        break;
                case 2 : cout<<"\nEnd of Program\n";
                        return 0;
                default: cout<<"\nInvalid choice !! Try again\n\n";
        }
    }while(true);
}
```

OUTPUT

```
1 : Check for correct parenthesis
        2 : Exit

Enter ur choice : 1

Enter the string to be checked: (55+90)^[[69+99]]÷{40}

Entered String is (55+90)^[[69+99]]÷{40}
String is well parenthesised
        1 : Check for correct parenthesis
        2 : Exit
```

Enter ur choice : 1

Enter the string to be checked: {[99+69])}(()}

Entered String is {[99+69])}(()}
String is not parenthesised well!
1 : Check for correct parenthesis
2 : Exit

Enter ur choice : 2

End of Program

[Program finished]