

时间限制：C/C++/Rust/Pascal 2秒，其他语言4秒
空间限制：C/C++/Rust/Pascal 1024 M，其他语言2048 M
Special Judge, 64bit IO Format: %lld

题目描述

Alice has a valid parentheses sequence s and she wants to share it with Bob through a noisy channel. For each character, the channel independently transmits that character to Bob with a probability of $1/2$, or transmits an indistinguishable character '?' to Bob with a probability of $1/2$. For example, if Alice's valid parentheses sequence is $s = (()())$, Bob might receive the character sequences $(?)()()$, $?(??)?$, but cannot receive the character sequence $??(())$. After receiving the message, Bob tries to reconstruct the valid parentheses sequence that Alice transmitted. However, Alice knows that in some cases, the reconstruction is not unique: for instance, when receiving the character sequence $?(??)?$, there are two possible reconstructions: $(())()$ and $((()))$.

Please help Alice calculate the probability that the message Bob received can uniquely reconstruct the valid parentheses sequence. Output the answer modulo 998 244 353.

Parentheses sequence s is valid if either of the following holds true:

- s is empty;
- $s = '(' + t + ')'$, where t is a valid parentheses sequence;
- $s = t_1 + t_2$, where t_1 and t_2 are valid parentheses sequences.

输入描述:

The input consists of a single line containing a valid parentheses sequence s ($2 \leq |s| \leq 10^6$).

输出描述:

Output a single integer indicating the probability that the message Bob received can uniquely reconstruct the valid parentheses sequence, modulo 998 244 353.

示例1

输入

复制

```
()()
```

输出

复制

C++ (clang++18)

1

ACM模
请通过
入输出
出描述

运行结果 自测