

Artificium

Find Palindromes

Runtime Limit – 3s

Problem Statement

Tell whether a string is a **Strong Palindrome**, a **Weak Palindrome** or **Not a Palindrome**.

A string is a **Strong Palindrome** if it's totally equal forwards and backwards

A string is a **Weak Palindrome** if it's equal forwards and backwards, without considering the case

Otherwise, a string is **Not a Palindrome**

Format

Input

1st line : n , the number of strings to test.

n next lines : A string s to test, can contain any ASCII character

Output

n lines: Strong Palindrome, Weak Palindrome or Not a Palindrome

Constraints

$1 \leq n \leq 100$

$\text{len}(s) \leq 256$

Sample

Input

2

kayak

KayaK

Output

Strong Palindrome

Strong Palindrome