

Problem A : Balanced Attendance

In the first round of the programming league, the event coordinator needs to evaluate whether the attendance behavior of the participants has been balanced. Since the number of participants is large, the coordinator uses the automated hall-management system to analyze the attendance logs.

Each participant is assigned an attendance code — a string consisting of the characters:

- **P** → Present
- **A** → Absent
- **L** → Late

The system considers an attendance record **balanced** if both of the following conditions hold:

- The number of **P** (Present) characters is at least the number of **A** (Absent) characters.
- The longest contiguous sequence of **L** (Late) characters is at most 2. (That is, the substring LLL must not appear.)

The coordinator hands you a batch of attendance reports and asks you to check them quickly.

Your task: For each attendance string, determine whether it is **Balanced** or **Unbalanced**.

Input

The first line contains an integer t — the number of attendance reports. ($1 \leq t \leq 2000$)

Each of the next t lines contains a string s consisting only of the characters P, A, and L. ($1 \leq |s| \leq 2000$)

Output

For each report, print:

- **Balanced**, if both conditions hold.
- **Unbalanced**, otherwise.

Example

Standard Input	Standard Output
3	Balanced
PPALL	Balanced
APPLL	Unbalanced
PLLLP	
Standard Input	Standard Output
2	Balanced
PPP	Unbalanced
AALL	