An avid hiker keeps meticulous records of their hikes. During the last hike that took exactly $steps$ steps, for every step it was noted if it was an uphill, U, or a downhill, D step. Hikes always start and end at sea level, and each step up or down represents a 1 unit change in altitude. We define the following terms:

- A mountain is a sequence of consecutive steps above sea level, starting with a step up from sea level and ending with a step down to sea level.
- A valley is a sequence of consecutive steps below sea level, starting with a step down from sea level and ending with a step up to sea level.

Given the sequence of up and down steps during a hike, find and print the number of valleys walked through.

Example

$steps = 8$ $path = [DDUUUUDD]$

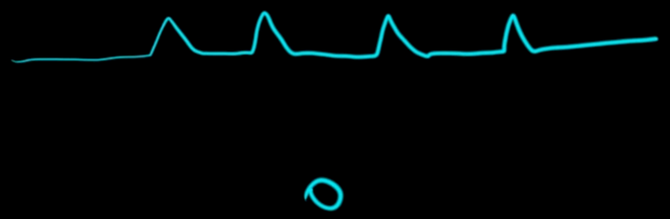
The hiker first enters a valley 2 units deep. Then they climb out and up onto a mountain 2 units high. Finally, the hiker returns to sea level and ends the hike.

Function Description

Complete the countingValleys function in the editor below.

countingValleys has the following parameter(s):

- int steps: the number of steps on the hike
- string path: a string describing the path



Returns

- int: the number of valleys traversed

Input Format

The first line contains an integer $steps$, the number of steps in the hike.

The second line contains a single string $path$, of $steps$ characters that describe the path.

Constraints

- $2 \leq steps \leq 10^6$
- $path[i] \in \{UD\}$

Sample Input

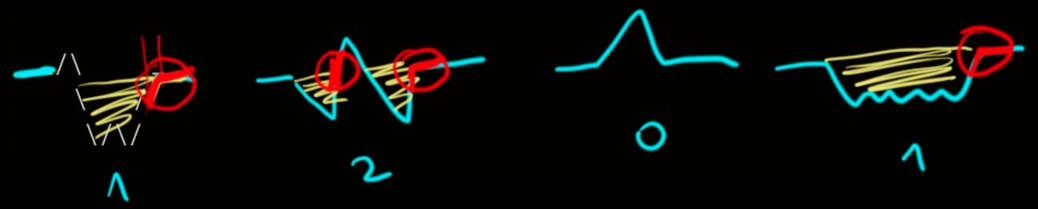
```
8
UDDDUDUU
```

Sample Output

```
1
```

Explanation

If we represent _ as sea level, a step up as /, and a step down as \, the hike can be drawn as:



```rust
fn countingValleys(steps: i32, path: &str) -> i32 {
    let mut count:i32 = 0;
    let mut prev_level:i32 = 0;
    for c:char in path.chars() {
        let cur_level:i32 = match c {
            'U' => prev_level + 1,
            'D' => prev_level - 1,
            _ => prev_level,
        };
        if cur_level == 0 && prev_level < 0 {
            count += 1
        }
        prev_level = cur_level;
    }

    count
}
```

$

soit

S

Iter<A>
List<A>

f: (S, A) → S

let s: S

for c in chars {

s2 = f(s, c)

s = s2

}

fold(S, f: (S, A) => S) → S

sø , f: (S, A) → S