# Problem A. Admissible Map

| | |
|---|---|
| Time limit: | 3 seconds |
| Memory limit: | 512 megabytes |

A *map* is a matrix consisting of symbols from the set of '`U`', '`L`', '`D`', and '`R`'.

A *map graph* of a map matrix $a$ is a directed graph with $n \cdot m$ vertices numbered as $(i, j)$ $(1 \le i \le n; 1 \le j \le m)$, where $n$ is the number of rows in the matrix, $m$ is the number of columns in the matrix. The graph has $n \cdot m$ directed edges $(i, j) \to (i + di_{a_{i,j}}, j + dj_{a_{i,j}})$, where $(di_U, dj_U) = (-1, 0)$; $(di_L, dj_L) = (0, -1)$; $(di_D, dj_D) = (1, 0)$; $(di_R, dj_R) = (0, 1)$. A map graph is *valid* when all edges point to valid vertices in the graph.

An *admissible map* is a map such that its map graph is valid and consists of a set of cycles.

A *description* of a map $a$ is a concatenation of all rows of the map — a string $a_{1,1}a_{1,2} \dots a_{1,m}a_{2,1} \dots a_{n,m}$.

You are given a string $s$. Your task is to find how many substrings of this string can constitute a description of some admissible map.

A *substring* of a string $s_1 s_2 \dots s_l$ of length $l$ is defined by a pair of indices $p$ and $q$ $(1 \le p \le q \le l)$ and is equal to $s_p s_{p+1} \dots s_q$. Two substrings of $s$ are considered different when the pair of their indices $(p, q)$ differs, even if they represent the same resulting string.

## Input

In the only input line, there is a string $s$, consisting of at least one and at most 20 000 symbols '`U`', '`L`', '`D`', or '`R`'.

## Output

Output one integer — the number of substrings of $s$ that constitute a description of some admissible map.

## Examples

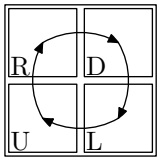
| standard input | standard output |
|---|---|
| RDUL | 2 |
| RDRU | 0 |
| RLRLRL | 6 |

## Note

In the first example, there are two substrings that can constitute a description of an admissible map — "`RDUL`" as a matrix of size $2 \times 2$ (pic. 1) and "`DU`" as a matrix of size $2 \times 1$ (pic. 2).

In the second example, no substring can constitute a description of an admissible map. E. g. if we try to look at the string "`RDRU`" as a matrix of size $2 \times 2$, we can find out that the resulting graph is not a set of cycles (pic. 3).

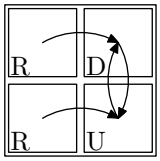
In the third example, three substrings "`RL`", two substrings "`RLRL`" and one substring "`RLRLRL`" can constitute an admissible map, some of them in multiple ways. E. g. here are two illustrations of substring "`RLRLRL`" as matrices of size $3 \times 2$ (pic. 4) and $1 \times 6$ (pic. 5).



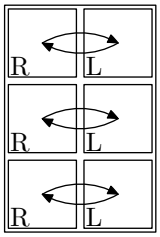
pic. 1



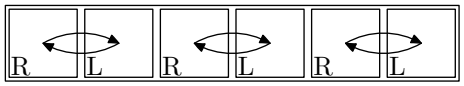
pic. 2



pic. 3



pic. 4



pic. 5