13. Roman to Integer

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Roman numerals are represented by seven different symbols: I, V, X, L, C, D and M.

Symbol	Value
I	1
V	5
Χ	10
L	50
С	100
D	500
М	1000

For example, 2 is written as II in Roman numeral, just two ones added together. 12 is written as XII, which is simply X + II. The number 27 is written as XXVII, which is XX + V + II.

Roman numerals are usually written largest to smallest from left to right. However, the numeral for four is not IIII . Instead, the number four is written as IV . Because the one is before the five we subtract it making four. The same principle applies to the number nine, which is written as IX . There are six instances where subtraction is used:

- I can be placed before V (5) and X (10) to make 4 and 9.
- X can be placed before L (50) and C (100) to make 40 and 90.
- C can be placed before D (500) and M (1000) to make 400 and 900.

Given a roman numeral, convert it to an integer.

Example 1:

```
Input: s = "III"
Output: 3
Explanation: III = 3.
```

Example 2:

```
Input: s = "LVIII"
Output: 58
Explanation: L = 50, V= 5, III = 3.
```

Example 3:

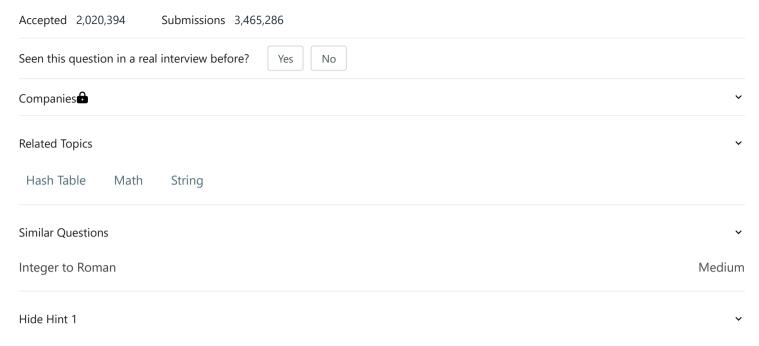
```
Input: s = "MCMXCIV"
Output: 1994
Explanation: M = 1000, CM = 900, XC = 90 and IV = 4.
```

Constraints:

```
• 1 <= s.length <= 15
```

[•] s contains only the characters ('I', 'V', 'X', 'L', 'C', 'D', 'M').

• It is **guaranteed** that s is a valid roman numeral in the range [1, 3999].



Problem is simpler to solve by working the string from back to front and using a map.