

Code Challenge:

Decimal to Roman Numeral Converter

Last summer the archeology department excavated some ancient Roman ruins. They uncovered an old accountant's office in which they discovered thousands of tablets with hundreds of thousands of roman numerals on the tablets. Upon close examination, the archeologists and their students discovered the largest number they encountered on the tablets was MMMCMXCIX = 3,999.

Now they want to convert all the numbers from the tablets to decimal numbers. To make this conversion easier, they commissioned you to write a program to convert roman numerals to decimal numbers and decimal numbers back to roman numerals to check their accuracy.

There are seven basic roman numerals:

I = 1
V = 5
X = 10
L = 50
C = 100
D = 500
M = 1000

There are four basic rules for creating roman numerals:

1. Normally, values are combined by adding the values of the symbol together.

For example, III = 3, VII = 7, CLXV = 165.

2. Roman numerals also involve subtractive notation.

If symbol A is less than the symbol immediately following it (B), A is subtracted from B and AB is treated as a unit to add to the total. Thus, IV = 4, XL = 40, XC = 90.

3. Subtractive notation only ever involves two symbols.

So, for example, XIV = 14, not 4, and XCIV = 94 ((V - I) + (C - X)) instead of 84 (C - X - V - I).

4. A symbol representing 10x may not precede any symbol larger than 10x+1.

For example, C cannot be preceded by I or V, only by X (or, of course, by a symbol representing a value equal to or larger than C).

To test how well your code works you may use the calculator found at

<https://numeralsconverter.com/convert-number-to-numeral/>