

ROMAN AND ARABIC

CHALLENGE DESCRIPTION:

This challenge involves calculating the value of “aromatic” numbers which are a combination of Arabic digits and Roman numerals. An aromatic number is of the form $A_1R_1A_2R_2 \dots A_nR_n$, where each A_i is an Arabic digit, and each R_i is a Roman numeral. Each pair A_iR_i contributes a value described below, and by adding or subtracting these values together we get the value of the entire aromatic number. An Arabic digit A can be 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9. A Roman numeral R is one of the seven letters I, V, X, L, C, D, or M. Each Roman numeral has a base value: 1, 5, 10, 50, 100, 500, 1000, respectively. The value of a pair AR is A times the base value of R . Normally, you add up the values of the pairs to get the overall value. However, wherever there are consecutive symbols $ARA`R`$ with $R`$ having a strictly bigger base value than R , the value of pair AR must be subtracted from the total, instead of being added. For example, the number 3M1D2C has the value $3 \times 1000 + 1 \times 500 + 2 \times 100 = 3700$ and 3X2I4X has the value $3 \times 10 - 2 \times 1 + 4 \times 10 = 68$. Write a program that calculates the values of aromatic numbers.

INPUT SAMPLE:

The input is a valid aromatic number consisting of between 2 and 20 symbols. Your program should accept as its first argument a path to a filename. E.g.:

3M1D2C
2I3I2X9V1X

OUTPUT SAMPLE:

The output is the decimal value of the given aromatic number.

3700
-16