**1-) Shopping List Problem**

You have moved to a city which Roman numerals are used to represent numeric values. You have nothing left in the fridge to prepare dinner, so you need to do some shopping. You prepared a list of items to purchase, but you need to convert Roman numbers to your currency to be able to calculate how much you need to pay for shopping. Your task is to write a program (in Java or C#) to do that calculation.

List of Roman Numerals:

|  |  |
| --- | --- |
| *Symbol* | *Value* |
| *I* | *1* |
| *V* | *5* |
| *X* | *10* |
| *L* | *50* |
| *C* | *100* |
| *D* | *500* |
| *M* | *1,000* |

Many numbers include hundreds, units and tens. The Roman numeral system being basically decimal, each power of ten is added in descending sequence from left to right, as with Arabic numerals. For example:

* 39 = "Thirty nine" (XXX+IX) = **XXXIX**.
* 246 = "Two hundred and forty six" (CC+XL+VI) = **CCXLVI**.
* 421 = "Four hundred and twenty one" (CD+XX+I) = **CDXXI**.

As each power of ten (or "place") has its own notation there is no need for place keeping zeros, so "missing places" are ignored, as in Latin (and English) speech, thus:

* 160 = "One hundred and sixty" (C+LX) = **CLX**
* 207 = "Two hundred and seven" (CC+VII) = **CCVII**
* 1066 = "A thousand and sixty six" (M+LX+VI) = **MLXVI**.[[3]](http://www.wikizeroo.net/index.php?q=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnL3dpa2kvUm9tYW5fbnVtZXJhbHMjY2l0ZV9ub3RlLTM)[[4]](http://www.wikizeroo.net/index.php?q=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnL3dpa2kvUm9tYW5fbnVtZXJhbHMjY2l0ZV9ub3RlLW1hcnRlbGxpLTQ)

Roman numerals for large numbers are nowadays seen mainly in the form of year numbers (other uses are detailed later in this article), as in these examples:

* 1776 (M+DCC+LXX+VI) = **MDCCLXXVI** (the date written on the book held by the [Statue of Liberty](http://www.wikizeroo.net/index.php?q=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnL3dpa2kvU3RhdHVlX29mX0xpYmVydHk)).[[5]](http://www.wikizeroo.net/index.php?q=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnL3dpa2kvUm9tYW5fbnVtZXJhbHMjY2l0ZV9ub3RlLTU)
* 1954 (M+CM+L+IV) = **MCMLIV** (as in the [trailer](http://www.wikizeroo.net/index.php?q=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnL3dpa2kvVHJhaWxlcl8oZmlsbSk) for the movie [*The Last Time I Saw Paris*](http://www.wikizeroo.net/index.php?q=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnL3dpa2kvVGhlX0xhc3RfVGltZV9JX1Nhd19QYXJpcw))[[6]](http://www.wikizeroo.net/index.php?q=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnL3dpa2kvUm9tYW5fbnVtZXJhbHMjY2l0ZV9ub3RlLTY)
* 1990 (M+CM+XC) = **MCMXC** (used as the title of musical project [Enigma](http://www.wikizeroo.net/index.php?q=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnL3dpa2kvRW5pZ21hXyhtdXNpY2FsX3Byb2plY3Qp)'s debut album [*MCMXC a.D.*](http://www.wikizeroo.net/index.php?q=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnL3dpa2kvTUNNWENfYS5ELg), named after the year of its release).
* 2014 (MM+X+IV) = **MMXIV** (the year of the games of the XXII (22nd) [Olympic Winter Games](http://www.wikizeroo.net/index.php?q=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnL3dpa2kvV2ludGVyX09seW1waWNfR2FtZXM) (in [Sochi](http://www.wikizeroo.net/index.php?q=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnL3dpa2kvMjAxNF9XaW50ZXJfT2x5bXBpY3M))
* The current year (2019) is **MMXIX**.

For more information about Roman numerals you can refer to <http://www.wikizeroo.net/index.php?q=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnL3dpa2kvUm9tYW5fbnVtZXJhbHM>

Your code will take a file name to retrieve the list of strings from and display the required output on the console. (e.g. void processFile(String fileName))

Test input (input.txt):

apple is I

orange is V

carrot is XII

tomato is L

apple apple potato is 17

potato carrot strawberry is 102

orange strawberry peach is 3800

what is the price of tomato potato strawberry?

what is the price of peach apple carrot?

what is the price of tomato peach apple carrot?

what is the price of orange potato cheese?

Test Output:

tomato potato strawberry is 140

peach apple carrot is 3733

tomato peach apple carrot is 3783

invalid input

You are required to submit a working code including all class(es) and a user manual explaining how to test the code. Make sure that your solution handles invalid inputs as well.