Exercise 1. *Deadline: 9 March 2009.*

COURSE OF C++ PROGRAMMING LANGUAGE

ROMAN NUMBERS

University of Wrocław
Institute of Computer Science *Paweł Rzechonek*

Exercise

Write a program, which will convert an arabic number to the corresponding roman number. Read the arabic number n of type `int` from the standard input stream `cin`. The roman representation of n place into the `string` object and write it to the standard output stream `cout`.

Check whether $n \in \{1 \ldots 9999\}$. If n is outside of the interval than write proper message to the standard output stream for error `cerr`.

Suggestion

Define a function `convert()`, whitch will convert the binary representation of a number (type `int`) into the roman representation (type `string`):

```
string convert (int x);
```

Use initialized array:

```
struct BinRom
{
    int value;
    string roman;
};
BinRom tab[] =
{
    {1000,"M"},
    {900,"CM"},
    {500,"D"},
    {400,"CD"},
    {100,"C"},
    // ...
    {1,"I"}
};
```

Partition your code into the header file and source files. Place the function `convert()` into namespace `MyCalculations`.

Reminder:

roman digit	arabic number
I	1
V	5
X	10
L	50
C	100
D	500
M	1000

Hint

Roman numerals are a very popular in Europe numeral system based on letters of the alphabet. Some information about roman numerals can be found on the webpage:

`http://en.wikipedia.org/wiki/Roman_numerals`