CSE 114 - Fundamentals of Computer Programming
Assignment 3
Due: 02.04.2021, 11:59 PM

In this assignment, you are going to implement a C program that converts decimal numbers between 1 and 89 (both inclusive) to roman numerals. The program will consist of a main function and printRoman function. You are not allowed to implement additional functions for this assignment.

Note that, a symbol placed after another of equal or greater value adds its value; e.g., II = 2 and LX = 60. A symbol placed before one of greater value subtracts its value; e.g., IV = 4 and XL = 40. You can see the table showing roman numerals with corresponding decimal numbers below.

Decimal	Roman	Decimal	Roman	Decimal	Roman
1	I	31	XXXI	61	LXI
2	II	32	XXXII	62	LXII
3	III	33	XXXIII	63	LXIII
4	IV	34	XXXIV	64	LXIV
5	V	35	XXXV	65	LXV
6	VI	36	XXXVI	66	LXVI
7	VII	37	XXXVII	67	LXVII
8	VIII	38	XXXVIII	68	LXVIII
9	IX	39	XXXIX	69	LXIX
10	X	40	XL	70	LXX
11	XI	41	XLI	71	LXXI
12	XII	42	XLII	72	LXXII
13	XIII	43	XLIII	73	LXXIII
14	XIV	44	XLIV	74	LXXIV
15	XV	45	XLV	75	LXXV
16	XVI	46	XLVI	76	LXXVI
17	XVII	47	XLVII	77	LXXVII
18	XVIII	48	XLVIII	78	LXXVIII
19	XIX	49	XLIX	79	LXXIX
20	XX	50	L	80	LXXX
21	XXI	51	LI	81	LXXXI
22	XXII	52	LII	82	LXXXII
23	XXIII	53	LIII	83	LXXXIII
24	XXIV	54	LIV	84	LXXXIV
25	XXV	55	LV	85	LXXXV
26	XXVI	56	LVI	86	LXXXVI
27	XXVII	57	LVII	87	LXXXVII
28	XXVIII	58	LVIII	88	LXXXVIII
29	XXIX	59	LIX	89	LXXXIX
30	XXX	60	LX		

- **Function 1:**
  - **Name of the function:** printRoman
  - **Return type of the function:** void
  - It takes 1 int parameter
  - The function should contain a while loop
  - You should find out the pattern in roman numerals, print proper characters and update the number in the while loop
  - In the while loop, **only one character** can be printed at each iteration. That means, to print the roman numerals of the number in this function, you have to use the following while loop with the given condition:

    while(number > 0) { … loop body … }
    With the restriction that, at each iteration of the loop, **you can print only one numeral!**

    For example, if you need to print “XL” on the screen, you cannot do it as printf(“XL”);
    X should be printed on one iteration and L should be printed on the next run of your loop.

    Be aware that this means that all your calls to printf(...) should print only one char on the screen.

- **In the main function:**
  - Repeatedly ask a number from the user
  - If user enters 0, exit
  - If user enters a number lower than 0 or greater than 89, print “Invalid number” and ask another number
  - If user enters a number between 1 and 89 (both inclusive), call function 1 to print the corresponding roman numeral and continue asking number from the user until getting 0.

WARNING:

- **DO YOUR OWN WORK.**
- Submit only the source file in the format **assignment3_name_surname.c**
- Be sure the extension of your file is **.c**. If you do not know how to check the extension please look at the file (“How to run your code?”) on the COADSYS.
- Do not use any library other than stdio.
- Do not use any array structure.

Input/output example:

```
Enter a number between 1 and 89, Enter 0 to quit:
-4
Invalid number!
Enter a number between 1 and 89, Enter 0 to quit:
112
Invalid number!
Enter a number between 1 and 89, Enter 0 to quit:
-42
Invalid number!
Enter a number between 1 and 89, Enter 0 to quit:
118
Invalid number!
Enter a number between 1 and 89, Enter 0 to quit:
66

LXVI

Enter a number between 1 and 89, Enter 0 to quit:
32

XXXII

Enter a number between 1 and 89, Enter 0 to quit:
63

LXIII

Enter a number between 1 and 89, Enter 0 to quit:
12

XII

Enter a number between 1 and 89, Enter 0 to quit:
27

XXVII

Enter a number between 1 and 89, Enter 0 to quit:
0
Goodbye!
```