

From Rome to Arabia

Summer 2018

Write a correct program in MIPS - QtSpim assembly language that:

- 1) Reads input Roman Numerals as upper case ASCII text characters.
- 2) Calculates the equivalent decimal value.
- 3) Writes the calculated value as Arabic Numerals (integer) to the QtSpim display screen with the appropriate commentary text.
- 4) The program must correctly calculate the values of these seven Roman Numeral digits:

I V X L C D M

- 5) Calculate the value, and display the result of these Roman Numerals:

- MCDXCII
- CDIX
- MCMXLVIII

You do not need to check for 'valid' Roman numbers, but you do need to calculate a consistent decimal value. For example, while VIIII is not considered 'valid', you should none the less calculate the value as 9. Commonly, IV = 4; IX = 9; XL=40; CM=900 And also IC=99; ID=499; VM=995; XM=990.

Use the System Service calls on page A-44 of the textbook for the input and output.

Your program should display a message when it stops.

A loop to allow testing would be helpful.

The work products of this assignment are:

- 1) A copy of the source program text file. (.txt; or .asm; or .s)
- 2) Screen captures showing the multiple test case output results.

[150 points]

January 2018