

From Rome to Arabia

Summer 2017

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

- 1) Reads input Roman Numerals as 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 need to let the user know whether the input must be UPPER case or lower case.

You do not need to check for 'valid' Roman numbers, but you do need to calculate a consistent decimal value. For example, while VIII is not considered 'valid', you should none the less calculate the value as 8. Commonly, IV = 4; IX = 9; XL=40; CM=900

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.
- 2) Screen captures showing the multiple test output results.

[150 points]

May 2017