EECE416 Microcomputer Fundamentals
Dr. Charles Kim

Assignment 3 (100 points) – ARM Coding Assignment

A. Questions

Problems
1. Write a code which calculates the average of the following 10 word-size data and stores it in the memory location of 0x40002000: 507, 750, 3500, 504,909, 177, 281, 490, 182, 3900. For division (for average calculation), use the **div** routine we discussed in the class, which is based on successive subtraction.
2. Write a code which (a)finds Roman numerals (M, D, C, L, X, V, and I) from a given sentence written in all uppercase, (b) convert each to a regular Arabic number, and then (c) add them all. (EX) KIMMEL IS A DOCTOR → 1 (from I) + 1000 (from M) + 1000 (from M) + 50 (from L) + 1 (from I) + 500 (from D) and +100 (from C) = 2652.   Use your own selected sentence in the code.

B. Code
(a) Write the two codes separately.
(b) For each code, add comments which sufficiently explain your coding design, allocation of registers to variables, etc.
(c) Do not get help from others (web sources, tutors, etc.). Write your own code yourself. Remember "Howard student code of conduct" and 0 point for borrowed and lending works.

C. Score Distribution and Scoring Rubric: Total points = 120

	Applies to Problems 1 and 2
50 pts	Code is written with comments which sufficiently indicate the coding design, register allocation, and variable declaration. The code works reliably.
40 pts	Code is written with minimal amount comments which thus insufficiently indicate the coding design, register allocation, and variable declaration. The code works reliably.
20 pts	Code is written with comments which sufficiently indicate the coding design, register allocation, and variable declaration. The code does NOT work reliably.
0 pts	(a) No submission. (b)If two codes are almost identical with same register allocation and/or the same order of code sequence, etc.

D. Submission: Write two codes separately in the CUPlator, run, and save them as **416Assign3_Lastname_1.s** and **416Assign3_Lastname_2.s**, respectively, submit them via email.

D. Submission due: Check the webpage

E. Point Deduction on Late Submission (or **Maximum score by submission time**)

Submission Time/Date		Maximum score
By 5:00pm submission date	(Fri)	100
By 5:00pm submission date + 3	(Mon)	70
By 5:00pm submission date + 4	(Tue)	50
By 5:00pm submission date + 5	(Wed)	30
After the above		0