CS2318 Summer 2108 Prof. Tamir	Assignment 3 Due 07-05-2018	07-02-2018

Submission Instructions:

1. Please submit your work directly in TRACS (using the TRACS editor) or as a text/MS-word/PDF attachment by the due date/time.
2. Please use only zip for compression.
3. Please write your name in the assignment header and as a part of the file name of any file attached
4. It must be your own work – a penalty of at least one grade in your final grade and a report to the Dean of Students will result from sharing work or using other people work.
5. Please do not submit your assignment via email. If you miss the deadline, then please submit it on TRACS and send me an email notification.
6. A penalty of 10% per day will be assessed for late submission. In addition, it will be graded only at the end of the semester.

Assignment Instructions:

1) The Factorial

The factorial of a non-negative integer n, denoted by $n!$, is the product of all positive integers less than or equal to n. The textbook has an example of a recursive MIPS implementation of factorial. Additionally, a simplified version of the MIPS assembly language recursive implementation of the factorial function is attached. Trace the factorial example carefully using QTSPIM

2) Recursive definition of multiplication

The function $rmult(a, b)$ for two positive integers $1 \leq a$, and $1 \leq b$, is defined as the following:

$$rmult(a, 1) = a; \quad rmult(a, b) = a + rmult(a, b - 1)$$

Write a recursive version of $rmult()$ in C or C++ and a pseudo C program (based on chapter 2 in the book) then use these programs to develop a MIPS program that gets as input two integers $0 < a \leq 255$, and $0 < b \leq 255$, and returns the result of $rmult(a, b)$ in $v1.

Your deliverable should be the pseudo C and the assembly level function