# C291 – System Programming in C and UNIX

## Assignment 2

### Task:

Write a c program to perform octal addition and multiplication on given two numbers using functions.

1. User inputs will be in decimal format
2. User will select which operation to perform, either addition or multiplication
3. Convert decimal numbers to octal numbers
4. Perform addition or multiplication on octal numbers
5. Convert the result into binary
6. Output the result in binary

Caution: Do not perform multiplication or addition operations on decimal numbers. It should be only on octal numbers.

You are required to achieve function reusability. Use one function to convert any number from one base to another base.

HINT: To convert number from one base to another base, first convert it into decimal and then convert the decimal number to another base.

For example, if you are required to convert from hexadecimal to octal, first convert the hexadecimal to decimal number and the convert the decimal number to octal.

Reference:

<http://www.binaryhexconverter.com/hex-to-decimal-converter>

<http://www.robotroom.com/NumberSystems3.html>

**NOTE: You are required to code only in open terminal. You should not use any IDE.**

Due Date:

The submission is due on Sunday 05/29/2016 11:59 PM. Late submission allowed until 05/30/2016 11:59 PM with 20% penalty.

What to turn in:

Upload .c file in github. We’ll grade whatever version you’ve put there at 11:59PM on the due date.

Academic Integrity:

You may discuss the assignment with other people at a high level, e.g. discussing general strategies to solve the problem. You may also consult printed and/or online references, including books, tutorials, etc., but you must cite these materials in report. However, if you are submitting the code, then it must be your own work, which you personally designed and wrote. You may not share written code with any other students, nor may you possess code written by another student either in whole or in part, regardless of format. The professor and AI’s are always available to help, so reach out through canvas if you need one!

### Rubric:

* You will get 50% of total marks on successful compilation of program without any errors
* You will get 70% of total marks on successful execution of program
* You will get 90% of total marks on passing all test cases
* You will get 100% of total marks based on your code clarity
* The following falls under clean code
  + Proper names for variables.
  + Follow camel case patterns.
  + Comment where ever needed
  + Output unambiguous & user friendly messages