CPE/EE 421/521: Laboratory Assignment 2

**Purpose:** to study the 68000 instructions set, the Easy68K simulator, and the M68000 C cross-compiler.

**Assignment #1:**
Redo the laboratory assignment #1 using subroutines. The main program should provide an interface as described in the assignment #1 and call the corresponding subroutines.

**Assignment #2:**
Write a C function that calculates the Fibonacci sequence of a 16-bit unsigned integer, declared as `int fibo(int n)`. Write the main program that calls the function with n=7. Compile the program using M68000 cross-compiler.
Show the known content of the stack during execution, when it reaches its maximum size.

**Assignment #3:**
(a) Write a C subroutine that copies string1 to string2
```
void string_copy(char *source, char *destination).
```
(b) Write a C subroutine that will parse a string and replace each lower case character (‘a’-‘z’) with the corresponding upper case character (‘A’-‘Z’).
(c) Write a main program in Easy68K that will test your procedures from (a) and (b).

**Notes:**
1. M68000 cross compiler is available on the CD that accompanies the textbook.
2. To compile your program type in the following (read documentation files):
   `<Your_Path>\I2DEMO\ITOOLS\X\C68332.EXE fact.c -S <Your_path>\I2DEMO\ITOOLS\INC -no -i -q`
3. The assembly program generated by the compiler can be used with minor modifications with Easy68K simulator.

**Submission:** Check lab submission policy at the course Web site: [http://www.ece.uah.edu/~milenka/cpe323-07F/](http://www.ece.uah.edu/~milenka/cpe323-07F/).