COSE321 Computer Systems Design

Assignment #5

No late turn-in accepted

Write your own debugging macro in ARM assembly. The macro prints out all the registers (R0~R15) and CPSR in the current mode to the UART terminal (Tera Term). So, it can be used for debugging purposes by inserting it to suspicious places in your assembly program.

An example output from the macro is shown below;

```
---------------------------------------------------------------------------------------
r0  = 0x1000_0123,  r1 = 0xffee_0112,   r2  = 0x9800_ab00, r3 = 0xfe03_0010
r4  = 0xffff_1000,     r5 = 0xc123_0112,   r6  = 0x1800_1100, r7 = 0xbe10_0030
r8  = 0x2200_0140,  r9 = 0x55ee_0112,    r10 = 0x1200_1200, r11 = 0x9803_2210
r12 = 0x3300_0100,  r13 = 0xccee_0112,   r14 = 0x3400_ab00, r15 = 0x0010_0304
cpsr = nZCv,  IF, ARM mode, current mode = SVC ( =0x6000_00d3)
------------------------------------------------------------------------------------
```

Taking your sorting program you did in the assignment #2 as an example, insert your debugging macro at at least 10 different places in the sorting program, and show that your sorting program works fine.

What and How to submit:
1. Upload your assembly code (sorting and debugging macro) to Blackboard.
2. Upload video clip (3-min?) to Blackboard. Your video clip should have **at least** the following contents:
   - Your smiling face
   - Understandable explanation of your macro assembly code
   - Demo on Zedboard with Tera Term terminal

Note: This is an individual assignment. You are welcome to discuss, but DO NOT COPY solutions. If you are found to copy solutions from others or slightly modify the solutions from others, both of you will be given 0 credits.