EECE.3170: Microprocessor Systems Design I
Fall 2019

Homework 3
Due **Monday, 10/21/19**

Notes:
- All of your work should be submitted using the appropriate link in Blackboard.
- While typed solutions are preferred, handwritten solutions are acceptable. However, your handwritten work must be scanned and submitted electronically.
- Your submission must be in a single file. <u>Archive files will not be accepted—if you're scanning handwritten pages, combine all pages in a Word document or PDF file.</u>
- This assignment is worth 100 points.

Assume the initial state of an x86 processor's registers, memory, and carry flag are:

Initial state:
EAX: 0x0000B496
EBX: 0x000027A9
ECX: 0x00000003
EDX: 0x00002EA5
CF: 0

Address	Lo			Hi
0x31700	04	00	08	00
0x31704	83	00	01	01
0x31708	05	01	71	31
0x3170C	20	40	60	80
0x31710	02	00	AA	0F

What is the result of each of the instructions listed below? Assume that the instructions execute in sequence—in other words, the result of each instruction may depend on the results of earlier instructions. Correctly evaluating each instruction will earn you **10 points**.

Note that you may assume any constant values shown using less than 32 bits are zero-extended to 32 bits if necessary (for example, 0x000F = 0x0000000F).

```
XOR    AX, BX

SHR    AX, 6

AND    AH, BYTE PTR [0x31712]

ROL    AH, CL

NOT    EDX

SAR    DX, 8

BTR    AL, 7

RCR    AL, 3

BTC    AL, 2

BSR    BX, DX
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