ECE 250 Homework 2

1. MIPS Instruction Set
   1. 0000 0010 0010 0010 0100 1000 0010 0110 = ?
      1. 000000…100110 means XOR
      2. 10001 = $17 = $s1, 00010 = $2 = $v0, and 01001 = $9 = $t1
      3. shamt = 0
      4. 0000 0010 0010 0010 0100 1000 0010 0110 = XOR $t1, $s1, $v0
   2. lw $t3, 8($s1) = ?
      1. lw = 100011, $t3 = $11, 8\*4 = 32, and $s1 = $17
      2. lw $t3, 8($s1) = 1000 1110 0010 1011 0000 0000 0010 0000
2. C compilation and MIPS
   1. The -O0 version has 66 lines of instructions and the -O3 version has 33 lines of code.
   2. The -O0 version has 18 load/stores while the -O3 version has 6 load/stores.
   3. The -O3 version uses more registers than the -O0 version uses.
   4. One strategy that comes to mind is to use more registers so that there is less saving and loading registers.