ECE 0142 Computer Organization Homework 6

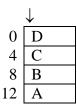
Assigned: 2/18/16 Due: 2/26/2016 (Friday before recitation)

1. Given the following initial memory state, and MIPS code, write down the changed register or memory value for each instruction, and derive the final memory state.

| 0 | 6 | Addi | \$s0, \$0, 4 |
|----|---|------|------------------|
| 4 | 4 | Lw | \$t0, 4(\$s0) |
| 8 | 3 | Lw | \$t1, 8(\$s0) |
| 12 | 2 | Sub | \$s1, \$t0, \$t1 |
| 16 | 0 | Sw | \$s1, 12(\$s0) |

2. Write MIPS code to reverse a string "ABCD" stored in the following memory region.

| 0 | A |
|----|---|
| 4 | В |
| 8 | C |
| 12 | D |
| | |



3. Write the MIPS assembly code for the following C snippet

result =
$$A[0] + A[1] + A[2] + A[3]$$
;

assuming that the address of A[] is in \$a0, **result** is a variable stored in memory, and its address is in \$a1.