**Name:**

**CSCE A342**

**Assignment #5a**

**Due 4/12/18**

In this assignment, we will create a circuit that stores numbers into RAM as well as displays a single word from RAM on the seven segment display. The goal is to implement a circuit that implements the below behavior. You will only need to write/alter the sevenSegmentRamAssignment module in your project.

A **16x16 bit RAM module** is used for memory.

**led[3:0]** – shows the current address of RAM for reading/writing

**seven segment display** – shows the decimal value of the number currently stored at the selected RAM address

**sw[15:0]** – corresponds to the number to be written into RAM (in binary)

**top button** – when pressed, the ram address selected should increment

**bottom button** – when pressed, the ram address selected should decrement

**center button** – when pressed, the value given by sw[15:0] should be written into the selected RAM address. The seven segment display should immediately update to reflect this new stored value.

All buttons should be **conditioned** (i.e. synchronized and debounced).

In addition to uploading the project source files, demonstrate the circuit in class or upload a video of your FPGA to Blackboard to verify functionality.