ECE 4401 (Fall 2014)
Lab 3 – Design of a Vending Machine

Specifications:

1- The vending machine should be able to accept two types of coins, 5 cents and 10 cents
2- Push buttons should be used to enter the two coins.
   a. Use 1 button for 5-cent coin.
   b. Use 1 button for 10-cent coin.
   c. Use 1 button for Reset.
3- Use an LED to indicate that the customer has entered 20 cents and the item is released.
4- The 7-segement displays should display the amount of money entered.

Notes:

- Buttons can cause multiple pulses, so they must be debounced.
- Prolonged pressing of a button can be translated as multiple coin inputs by the system. To avoid that, you need to use an edge detector, which generates only 1 pulse for a single arbitrarily long press of a button.
- You will need a 2 ms clock for the debounce module.
- The library modules you need for this lab are,
   o clock_divider
   o debounce
   o word2leds (which uses hex2led and char_led_control)
   o oneshot (pulse generator)