Lab 1

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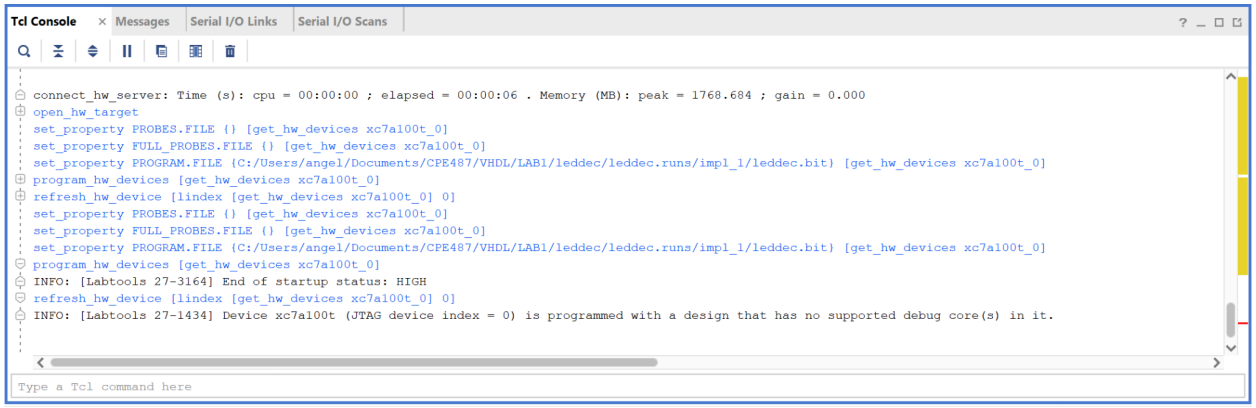
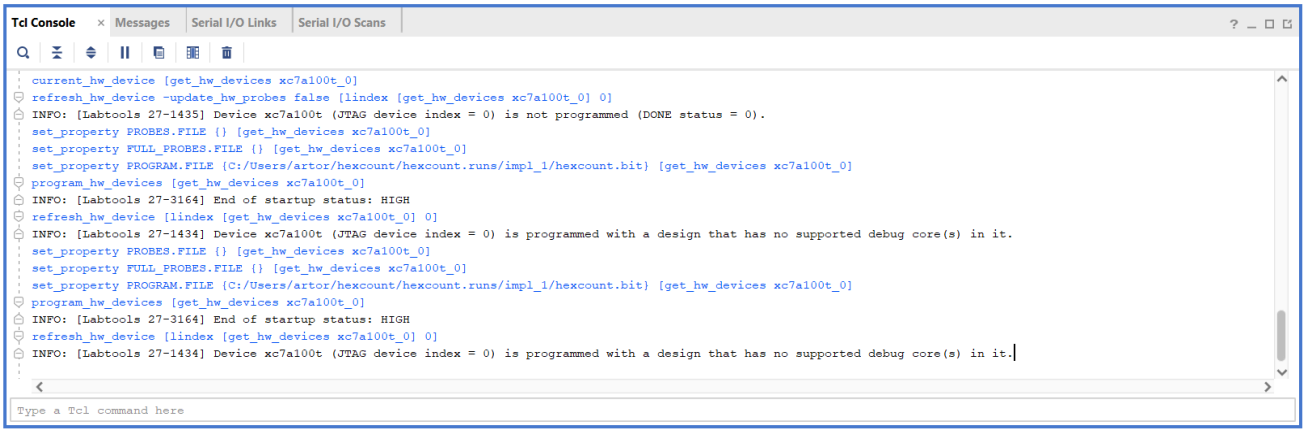
Project 1



Video of Gray Code on the board for Project 1:
https://youtu.be/kbMog1i682I
no code modifications were necessary for Project 1, but I did make instructions on how to get the gray code to display one step at a time: 0 up, 1 up, 0 down, 2 up, 0 up, 1 down, 0 down, 3 up, 0 up, 1 up, 0 down, 2 down, 0 up, 1 down, 0 down,

Project 2




```
PROCESS (clk)
BEGIN
    IF clk'EVENT AND clk = '1' THEN -- on rising edge of clock
        cnt <= cnt + 3;
    END IF;
```

The counter in *counter.vhd* has been increased from 1 to 3 to increase the speed.

```
    anode <= "11111110" WHEN data = "0000" ELSE -- 0
             "11111101" WHEN data = "0001" ELSE -- 1
             "11111011" WHEN data = "0010" ELSE -- 2
             "11110111" WHEN data = "0011" ELSE -- 3
             "11101111" WHEN data = "0100" ELSE -- 4
             "11011111" WHEN data = "0101" ELSE -- 5
             "10111111" WHEN data = "0110" ELSE -- 6
             "01111111" WHEN data = "0111" ELSE -- 7
             "11111110" WHEN data = "1000" ELSE -- 8
             "11111101" WHEN data = "1001" ELSE -- 9
             "11111011" WHEN data = "1010" ELSE -- A
             "11110111" WHEN data = "1011" ELSE -- B
             "11101111" WHEN data = "1100" ELSE -- C
             "11011111" WHEN data = "1101" ELSE -- D
             "10111111" WHEN data = "1110" ELSE -- E
             "01111111" WHEN data = "1111" ELSE -- F
  "11111111";
```

The LED Segment Code has been changed in *leddec.vhd* so the hex position movies up after each hex digit

Video of the board working:
https://youtube.com/shorts/vFzK-gRC8S0