EECS 140: Prelab10

Scrolling Display

Morgan Bergen

KUID: 3073682

Date submitted: 11/16/2022

1. (Current Lab) What components will be used in completing this lab?

we will be using a clock_divider, 4-bit counter, 4 display_drivers, LEDdisplay.vhd, Toplevel.vhd, and toplevel.xdc

2. How many connections (signals) will connect the counter to the display driver?

The counter will have four connections to the display driver. The following is the architecture that demonstrates this fact

```
begin
process (clock, clear_n)
begin
architecture Behavioral of counter is
signal counter_signal:std_logic_vector(3 downto 0) :="0000";
if clear_n='0' then
counter_signal <= (others=>'0');
else if (clock'event and clock='1') then
if load_n = '0' then
counter_signal <=initial_value;
else
if enable ='1' then
counter_signal <= counter_signal +1;
else
counter_signal <= counter_signal;
end if;
end if;
end if;
end process;
counter_output <= counter_signal;
end Behavioral;
```

3. How will we test the result of this lab?

The test will be conducted by ensuring that each of the constraints are declared and that the LED output functions to the correct port that is mapped to the seg_outs and anodes. We will make sure that a scrolling phrase up to 16 characters long on the 7-segment display.