**262**

**Scrolling LED with Pattern Change**

NAME: POSSIBLE POINTS: 10

STUDENT ID:

COURSE DATE & TIME:

OBJECTIVE:

* To add one more push button switch that changes the pattern.
* To adjust your hardcoded delays to be more accurate by measuring on the oscilloscope

OPERATION:

A 2nd pushbutton BTN1 will be added on your breadboard. This BTN1 will change the pattern on the LEDs. When the pushbutton is not pressed, the original pattern from the previous lab will be used, when BTN1 is held down a pattern of 0xFE should scroll from right to left and once 7 shifts has occurred, the pattern should shift to the right 7 times. In other words, the previous lab had all LEDs off with only 1 lit and that single lit would shift left and right. In this lab while the added BTN1 is pressed, all LEDs will be on and 1 off LED will shift left and right.

LAB WRITE-UP:

* The lab write-up will include this page as the cover sheet and all materials in one document submitted on canvas.
* Any questions answered
* The source code
* A picture of your physical prototype including the dev board and the added breadboard.
* 4 Oscilloscope Waveform Captures, 2 Captures of the 1sec speed, before modifying the delay and after modifying. And 2 Captures of the 0.5sec speed, before modifying the delay and after modifying one. All 4 images should show the cursors taking a measurement of how long the LED was ON for

DEMO:

When your project is ready, you will demonstrate the functionality to the instructor.