CMPE1250 – LCD String Functions, Dynamic Output.

Now that you have a nearly complete LCD library, it's time for you to create a program that uses `sprintf` to create some formatted, programmatic output.

Create a standard program that includes all libraries and is PLL active.

Maintain a loop iteration count as a float that will increase by 0.1 each 100ms. Display this on the upper line of the LCD in the format "`Count: 00000.0`" where the output is always displayed as one decimal point of precision, to 6 digits as shown. Only update this line when the contents change.

Centered on the bottom line of the display, show a 16-bit binary number. The cursor will start off, but blinking, at the LSB. Using the left and right switches will permit movement over the binary number on switch transitions. Pressing the center button will toggle the bit the cursor is over.

Display the 16-bit value on the 2nd line as "`DEC: 00000`" as an unsigned decimal value.

Display the 16-bit value on the 3rd line as "`HEX: 0000`" as an unsigned hexadecimal value.

You will only redisplay the output when the source binary number changes.

The binary number will be all zeroes initially and it and all conversions will be displayed at program startup.

Build incrementally, and test thoroughly.