Assignment -3

COMP-462 Embedded Systems

Input/Output, Shift, and Logic Operations in C

1) Read the textbook sections 1.12, 2.4, and 2.5
2) Review Lec3.ppt

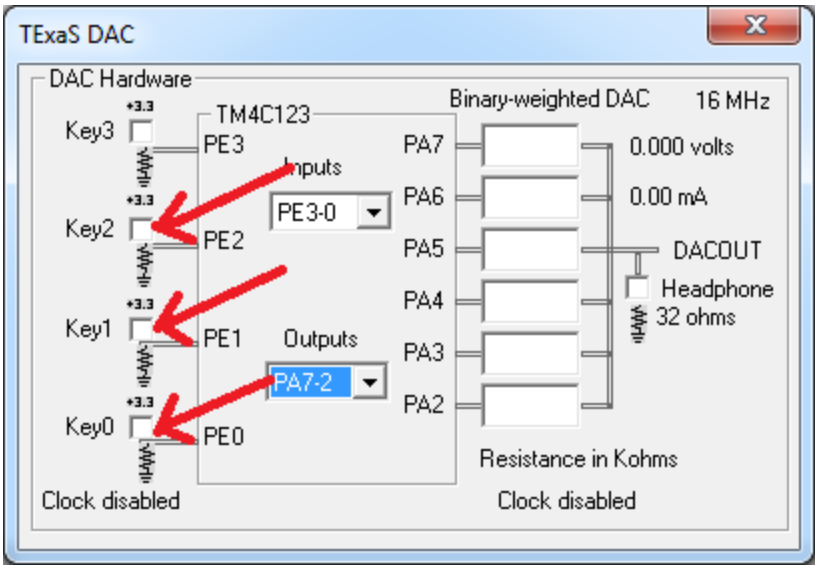
Problem 3.1: Solve a problem similar to Lab 1 in C. HW3 starter project is in the original EE319K install. Develop your main program. You only need to edit HW3.C file. Update the input arguments of the initialization function in this file as:

Grader_Init("your students ID","Fall 2019")

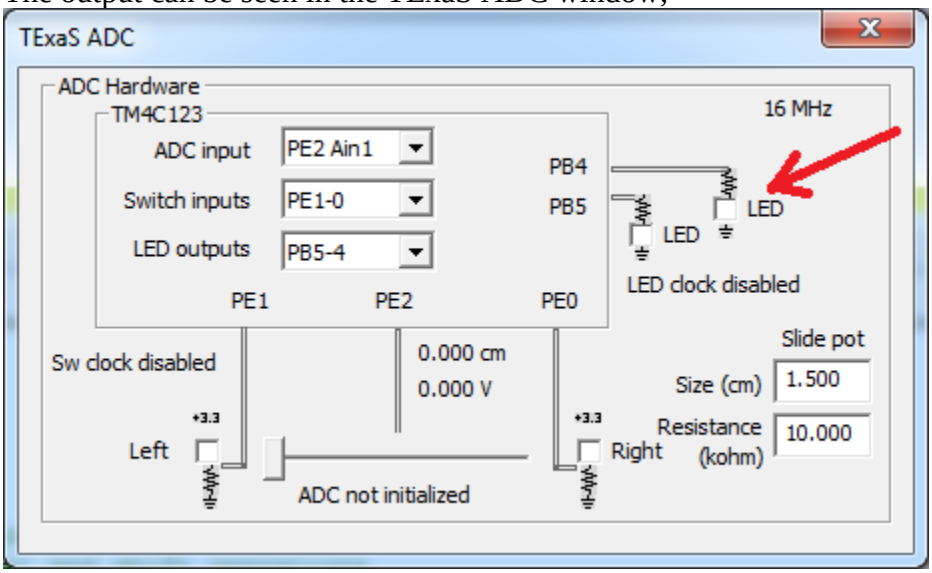
The objective of this system is to implement an odd-bit detection system. There are three bits of inputs and one bit of output. The output is in positive logic: outputing a 1 will turn on the LED, outputing a 0 will turn off the LED. Inputs are positive logic: meaning if the switch pressed the input is 1, if the switch is not pressed the input is 0.

- PE0 is an input
- PE1 is an input
- PE2 is an input
- PB4 is the output

This project runs with the **-dLaunchPadDLL** simulation. Debug your code. The inputs are simulated in the TExaS DAC window



The output can be seen in the TExaS ADC window,



The specific operation of this system

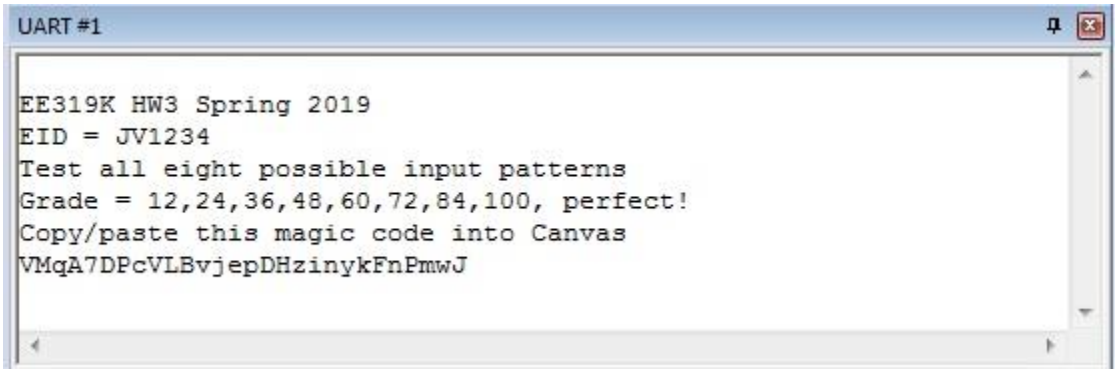
- Initialize Port E to make PE0,PE1,PE2 inputs and PB4 an output
- Over and over, read the inputs, calculate the result and set the output

Notice in HW3 both inputs and outputs are in positive logic. The following table illustrates the expected behavior relative to output PB4 as a function of inputs PE0,PE1,PE2

PE2 PE1 PE0 PB4

0	0	0	0	even number of 1's
0	0	1	1	odd number of 1's
0	1	0	1	odd number of 1's
0	1	1	0	even number of 1's
1	0	0	1	odd number of 1's
1	0	1	0	even number of 1's
1	1	0	0	even number of 1's
1	1	1	1	odd number of 1's

You will have to set/clear the three inputs so all eight possible input patterns are tested.



Save the contents of this window as a text file and upload the text file to Canvas.