

Follow the submission guideline to be awarded points for this Assignment.

Goal of this assignment is to create four tasks, 1) ADC task (AD0), 2) UART display task, 3) PWM task (DIO7), and 4) Heartbeat function (RED LED/DIO6). The project should use the joystick with the CC1352 Launchpad. The heartbeat function is performed throughout the execution of the program. Each task will be executed in order specified above every 15 ms. Connect the Joystick x-axis to the ADC pin A0. Also initialize a PWM signal to the GREEN LED (DIO7). Initial value of the PWM duty cycle is set to 0. Create a timer 0/1/2 timerCallback for every 1 ms, at 5th instance of timerCallback the task ADC is performed, at 10th instance of timerCallback the task UART displays the current value ADC in the terminal, and at 15th instance of timerCallback the update the current value of duty cycle of the PWM signal based on the ADC value. Note that the duty cycle of the PWM and UART adc value reflects dynamic the value of the ADC. Use semaphores to switch between the tasks during the respective

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Submit the following for all Labs:

- In the document, for each task submit the modified or included code (only) with highlights and justifications of the modifications. Also include the comments.
- Create a private Github repository with a random name (no CPE/403, Lastname, First-name). Place all labs under the root folder TIVAC, sub-folder named Assignment1, with one document and one video link file for each lab, place modified c files named as cc1352_main.c, cc1352_tirtos.c, cc1352_tirtos.cfg, and cc1352_tirtos.syscfg.
- If multiple c files or other libraries are used, create a folder asng1_t01 and place these files inside the folder.
- The folder should have a) Word document (see template), b) source code file(s) with startup_ccs.c and other include files, c) text file with youtube video links (see template).
- Submit the doc file in canvas before the due date. The root folder of the github assignment directory should have the documentation and the text file with youtube video links.
- Organize your youtube videos as playlist under the name “cpe403”. The playlist should have the video sequence arranged as submission or due dates.