

# CC1352 TIRTOS ASSIGNMENT

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## Objective

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 MKII Educational BoosterPack 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-Horizontal to the ADC pin A0. If using the MKII EBP A0 (DIO23) is connected to the JS-H pin. Also initialize a PWM signal to the GREEN LED (DIO7). Initial value of the PWM dutycycle is set to 0. Create a timer 0/1/2 timerCallback for every 1 ms, at 5<sup>th</sup> instance of timerCallback the task ADC is performed, at 10<sup>th</sup> instance of timerCallback the task UART displays the current value ADC in the terminal, and at 15<sup>th</sup> instance of timerCallback the update the current value of dutycycle of the PWM signal based on the ADC value. Note that the dutycycle of the PWM and UART adcvalue reflects dynamic the value of the ADC. Use semaphores to switch between the tasks during the respective

## Submit the following:

- Demo (Video link text file), Document, and Code.
- Documentation: Submit the midterm report with 1) Goal, 2) Detailed Implementation, 3) Schematics, 4) Video links, 5) Screenshots, and 6) Conclusions (tasks completed).

## Marks are awarded based on the following criteria:

Requirements:

- C - Code submitted with comments and project support materials (30%)
- D - Documentation with comments, variations for tasks, schematics (30%)
- V - Video Demo in txt file, I - Image Screenshots in Document or links (40%)

## Follow the submission guideline to be awarded points for this Project.

Submit the following for all Labs:

- In the existing Github submission repository, place all assignment files under the root folder CC1352-TIRTOS, subdirectory TIRTOS-Assignment with one document and one video link file for each sub-task, place modified c files named as cc1352\_main.c, cc1352\_tirtos.c, cc1352\_tirtos.cfg, and cc1352\_tirtos.syscfg.
- The folder should have a) Word document (see template), b) source code file(s) with cfg and all '.c' files and other include files, c) text file with youtube video links (see template).