Self-Study Laboratory Exercise 4

Laboratory Demo: 204:237 (Bentley), Miri: Consult with your lecturer

Equipment Required:

1 × MSP-EXP430FR5739 Experimenter's Board
1 × PC with latest version of Code Compose Studio (CCS) installed

1. Exercise

This is a code porting exercise and an open problem. Your task is to study the original TimeTest.h and TimeTest.c codes provided for the CLIC3 boards and port into the CCS environment. Additional optional features can be added to extend your library implementation as you see fit.

- Implement your own TimeTest.h and TimeTest.c to provide the basic TimeTestStart and TimeTestEnd functions.
- Provide a callback function implementation to your library to execute a user function periodically according to a setInterval function or timeout period.

The above two dot points are the bare minimum required for this self-study exercise. Demonstrate the use of your TimeTest library by writing a test code in main() to show that your library implementation behaves correctly.

Optional Challenge: For those who have object orientation background may write using C++ techniques to include *public* and *private* implementation. Additionally, you may provide functionality for multiple timers derived from a timer source (see Long/Multiple Timers lecture). Think about what function and features are to be provided for people using your library. Encapsulate the low level MCU register setup by using layer of abstraction which makes it easy for people using your library. It is important to properly define all function interfaces.