Iteration 4: Homework 3

- Finish the Trigger Module
    - Trigger_OnBitState
    - Trigger_OnSequence
    - Trigger_OnTimeStamp
- Develop our LED Status Feature
    - LED1
        - Blink when waiting to be Armed.
        - Solid when Armed.
    - LED2
        - Blink when waiting on Trigger.
        - Solid when Triggered.
    - LED3
        - Blink when Capturing.
        - Solid when Capture Complete.
    - LED4
        - Blink when Capture Complete

- BONUS - If you'd like to create your own UnityHelper function, try your hand at STATUS_T.

NOTE: The following pages contain more detailed notes on developing these tasks. We wouldn't recommend opening these pages until you've tried it yourself.

Trigger Modes

- Trigger On Bit State
    - This is really just a specialized version of Trigger On Sequence
    - Did you verify that the Mask is applied to both sides?
    - Did you verify it will Trigger if detected on the first or on later checks?
- Trigger On Sequence
    - Are you checking single byte sequences and maximum (8-byte) sequences?
    - Did you verify that the system can stay at a particular state for awhile without restarting the sequence?
    - Did you verify that the system will restart the sequence if a different value is read than what is expected?
    - Did you verify extra readings before the sequence do not matter?
- Trigger On Timestamp
    - Did you verify the exact timestamp Triggers, if read immediately or after some time?
    - Did you verify that skipping a timestamp also Triggers, because we've effectively passed it already.
    - NOTE: We ignore wraparound for this application, assuming that the timestamp will be SET before use.

LED Feature Hints

- The LED states reflect Arm, Trigger, and Capture status. Therefore you have a few options for where to add this logic:
  - Drive LED State Changes from Capture Module
  - Have the LED module request state info from Trigger and Capture modules
  - Add a new UI module which requests state info from Trigger and Capture modules
- We'd choose the third option, as the purpose of the Capture module is to capture… and the purpose of the LED module is to set LED's.
- The LED module will need to learn to blink. It's Exec function is perfect for this. Since the main tick is called periodically, we can just COUNT ticks here for each transition.