IN4343 – Lab 1

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# Part 1

## Basic questions

The timer frequency is 1024 Hz.

The periods of the tasks are:

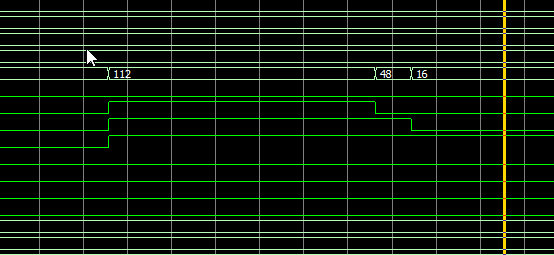
* BlinkYellow 1024
* BlinkGreen 512
* BlinkRed 0

The yellow and the green led are actually toggled (Port 5-6 and Port 5-5).

The green blink function delays every 4 four times. Otherwise all handlers are equal.

## Start-up behavior

The LED on Port 5 pin 6, probably Yellow, is changed first (to ON, after the init).



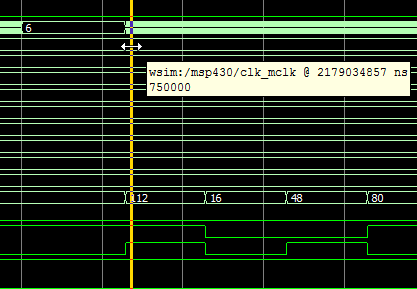
Yellow  
Green  
Red

The BlinkRed function is discarded, the E\_WRONGPAR value is returned by RegisterTask.

In my trace the BlinkGreen function is triggered after 1500ms, as seen in the interrupt numbers.

The execution does not fit in one Timer period.

There can be 255 pending interrupts, the rest is discarded. (intr\_num is 8 bits).



intr\_num

Yellow  
Green  
Red

# Part 2

Yellow is changed first, due to the highest prio.

BlinkRed is indeed discarded.

Startup takes 3.5 ms.

Difference between the first two intr\_num high parts is 0.577 ms – 0.455 ms = 0.122.

The time used for an “empty” interrupt handler, is 0.455 ms. This means about 47% is spent on timer interrupt processing.

The measured jitter (stddev) is 8.5 us. The clock inaccuracies come from system functions.

The execution time of CountDelay(60000) is about 0.6398 seconds.

C\_ih> (n+1)\*T\_clk

About 654 interrupts are lost.