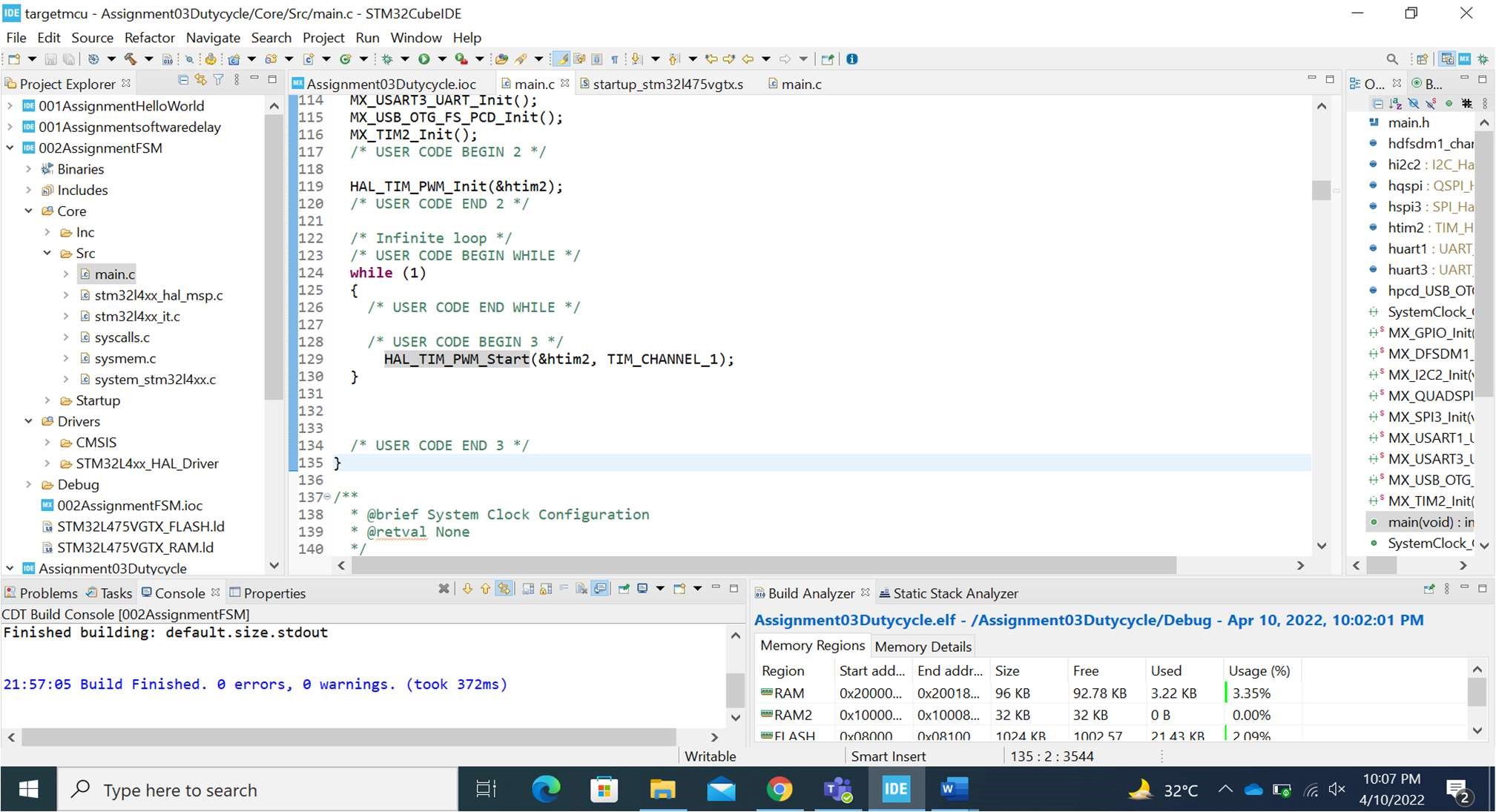
ASSIGNMENT 03

Timers are very good peripherals to generate clock pulses of varying frequency.

Duty Cycle describes the “On Time” for a pulsed signal. We can report duty cycle in units of time, but usually as a percentage. Like Pulse Width and Repetition Frequency, a signal’s duty cycle is a calculated value; not directly measured. To calculate a signal’s duty cycle, we need to know the signal’s pulse width and repetition frequency. Use this equation for calculating a signal’s duty cycle as a percentage of the repetition frequency:

Duty Cycle = Pulse Width (sec) \* Repetition Frequency (Hz) \* 100

Challenge: Generate a duty cycle of 40% on Timer 1 (TIM1) and verify it with logic analyzer.



CODE:

HAL\_TIM\_PWM\_Init(&htim2);

/\* USER CODE END 2 \*/

/\* Infinite loop \*/ /\* USER CODE BEGIN WHILE \*/ while (1)

{

/\* USER CODE END WHILE \*/

/\* USER CODE BEGIN 3 \*/

HAL\_TIM\_PWM\_Start(&htim2, TIM\_CHANNEL\_1);

}

/\* USER CODE END 3 \*/

}