JOINT INSTITUTE
交大密西根学院

Ve373 Microprocessor Based System Design

Lab 2 Timer & Timer Interrupt

OBJECTIVE

- Develop an embedded application using **timer** and **GPIO**.

PROJECT DESCRIPTION

Use the STM32F103C8T6 developing board to generate two square waves of 0.5 Hz frequency by toggling the output voltage on GPIOs (i.e., high voltage for 1 second and low voltage for 1 second). Detailed requirements are as follows:

1) The voltage outputs should be controlled by a timer interrupt, instead of the while loop in main function.
2) Use one GPIO to drive an LED. In the STM32F103C8T6 lab kit, GPIO PB14/PB15 are connected to two LEDs. Please program an LED to blink at 0.5Hz.
3) Measure the output wave form of another GPIO by an oscilloscope.

DELIVERABLES

- On-site Demonstration: A blinking LED and an output waveform.
- Group Assignment:
  1) Report. Briefly describe the mechanism of timer interrupt and codes you wrote, with a photo of oscilloscope wave form attached.
  2) Source file.
- Individual Assignment:
  1) Peer evaluation.

Name	Contribution percentage	Responsibilities
xxx	x	
xxx	y	
xxx	(100% - x – y)	

GRADING

Total point for this lab is 100. The lab will be graded as follows:

Report	20%
Source File	20%
Demonstration	50%
Peer Evaluation	10%

Late penalty for demonstration is 20% per day after the lab session day.

DUE DATE

10.25 for demonstration, 10.27 23:59 for file submission.