**EECE 237 Spring 2016**

**Lab 1 assignment – LED-button operation**

Assignment:

Create an assembly language program that lights three different LED patterns on the board. The program should light up all LEDs at startup. When the blue button is pressed, the pattern changes to odd numbered LED's for one second. Then the pattern changes to even numbered LED's. (The definition of even and odd number is by the GPIOA pin number) for one second. Then the pattern changes to all LED's. The cycle continues in an infinite loop.

Here are the details:

1. Download LED\_test.s file posted on BbLearn. Save it as EECE237\_S16\_Lab1.s inside STM32F3Base folder.
2. Modify the program and save in EECE237\_S16\_Lab1.s file.
3. Debug and run the program to observe the Discovery Kit functions as expected.

Deliverables:

1. Submit EECE237+S16\_Lab1.s file to BbLearn page. (Do not submit other project files).
2. The first line of the .s file should have a comment with your full name and Student ID.
3. The program should be commented enough to be easy to read (1 comment for every 3 assembly instructions for example)

Due Date:

March 13th, 2016 – Assignment must be submitted by 11:59pm.

Hint:

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AREA EECE237\_S16\_Lab1, CODE, READONLY

ENTRY

EXPORT \_\_main

\_\_main B start

RCC\_BASE EQU 0x40021000

RCC\_AHBENR\_OFF EQU 0x14

RCC\_AHBENR\_GPIOAE EQU 0x0220000

GPIOE\_BASE EQU 0X48001000

MODER\_OFFSET EQU 0x00

IDR\_OFFSET EQU 0x10

ODR\_OFFSET EQU 0x14

start

BL configure rcc ;Enable GPIOA adn GPIOE

BL configure gpioa ;configure the button port

BL config\_gpioe ;Configure LED port

BL led\_on\_all

BL read\_button ;wait till the button is pressed.

main\_loop

BL led\_on\_even

BL delay ;wait for one second.

BL led\_on\_odd

BL delay

B main\_loop ;Infinite loop