AIN SHAMS UNIVERSITY
FACULTY OF ENGINEERING
MECHATRONICS ENGINEERING DEPARTMENT
CREDIT HOURS PROGRAM

Spring Semester, 2023

CSE411: Embedded Systems

Lab Report

- This report will be submitted individually:

1- Create two **non-blocking** tasks by declaring only one task function to perform the below two tasks:
   - The first task toggles the red led and has a priority of 1.
   - The second task toggles the blue led and has a priority of 1.

   Answer the following questions:

   a- Sketch the timing diagram of the tasks.
   b- Change the priority of the second task to 2 and draw the timing diagram again.

2- Create two **separate non-blocking** tasks:
   - The first task toggles the red led and has a priority of 1.
   - The second task toggles the blue led and has a priority of 2.

   Answer the following questions:

   a- Use the API **vTaskDelay()** in the second task, and sketch the timing diagram.
   b- Create an idle Hook that deletes the second task and draw the timing diagram again.(***Notice that the first task is nonblocking function***)
   c- Use also the API **vTaskDelay()** in the first task, ***now the two tasks are blocking***, and sketch again the timing diagram.(***retain the idle hook created in b***)

3- What is the difference between vTaskDelay() and vTaskDelayUntil()?
4- What are the arguments of the below API.s:
   a- uxTaskPriorityGet
   b- vTaskPrioritySet

- Deadline is the end of ***1st April,2023***
- Make a cover that includes (Subject Code + your name + your ID+ Major)
- Late submissions are not accepted.
- Hand sketches and writing are needed.
- You are going to deliver one PDF that includes your solutions to the above questions.