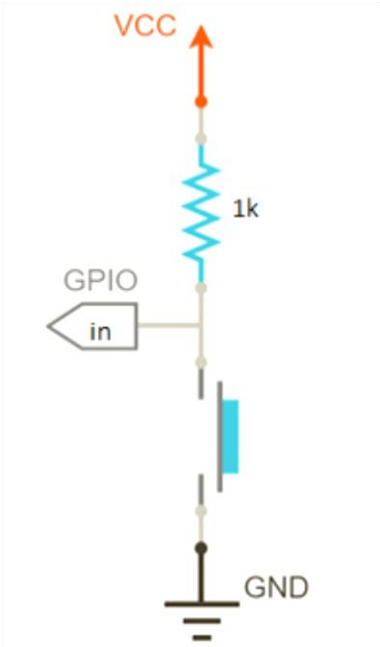
CSE2037 Lab - 7, Section B

Pins: PA11,12 and PB12 can be used as outputs for green, yellow and red LEDs.

Pins: PB13, 14, 15 can be used as **interrupt** inputs for three push buttons.



Task: We will perform the previous experiment tasks (not all are the same neccesarily) using interrupts in this lab work.

a. In the main loop all three LEDs toggle in sequence with 100 msec intervals. Here, you should use the HAL_Delay function within the main loop.
b. This procedure goes indefinitely.
c. Three buttons (as interrupt sources) and three LEDs will operate independent of each other.
d. External interrupt buttons must be pulled up and NVIC must be enabled.
e. In the external interrupt callback function, use below loop for delays instead of using HAL_Delay function.

```
for (int c=1; c<200000; c++);
```

I. If button 1 is pressed, only the green LED will blink 5 times with c=100000.
II. If button 2 is pressed, only the yellow LED will blink 4 times with c=150000.
III. If button 3 is pressed, only the red LED will blink 3 times with c=200000.

Note: We provide the document early. Hence, the students can solve the problem before the lab. This does not mean that they can cheat. Therefore, the student understands that "honor system is observed" while preparing the lab solutions. He or she will sign the returned lab sheet by writing the below phrase.

"Honor system is observed while preparing this solution. I did not get help from anybody beside my lab partner. I did not help anybody beside my lab partner. I did not allow anybody to violate the honor system."

Date / Signature of the Student