

# Mbed week1 report

## 1. Discussion

By setting the semaphore initial value to 1, we're able to run the led thread at the very beginning, so the corresponding led starts flickering. One thing worth bringing up is that if the initial button\_switch value remains -1, then the if condition in both led threads may work awkwardly, leading to unexpected behavior.

## 2. What is the effect or the meaning of the initial value of the semaphore?

If the initial value = 1, the semaphore can be acquired as soon as the program is uploaded to the board, else, the semaphore is unavailable until the button is pressed, and the semaphore is released.

## 3. What is the purpose of the C keyword volatile in the program?

The volatile tells the compiler to assign the variable an address in main memory instead of register, so that the true value of the variable will always be updated and synchronized for every thread.

## 4. What are the roles played by the parameters of methods fall() and rise() in class InterruptIn?

They are callback functions that are registered or bonded to the falling and rising event. When the button is pressed or released, the corresponding functions will be executed in ISR.

hw1 code:

<https://github.com/stanthe-maker/EmbeddedSystem/blob/main/hw1/main.cpp>