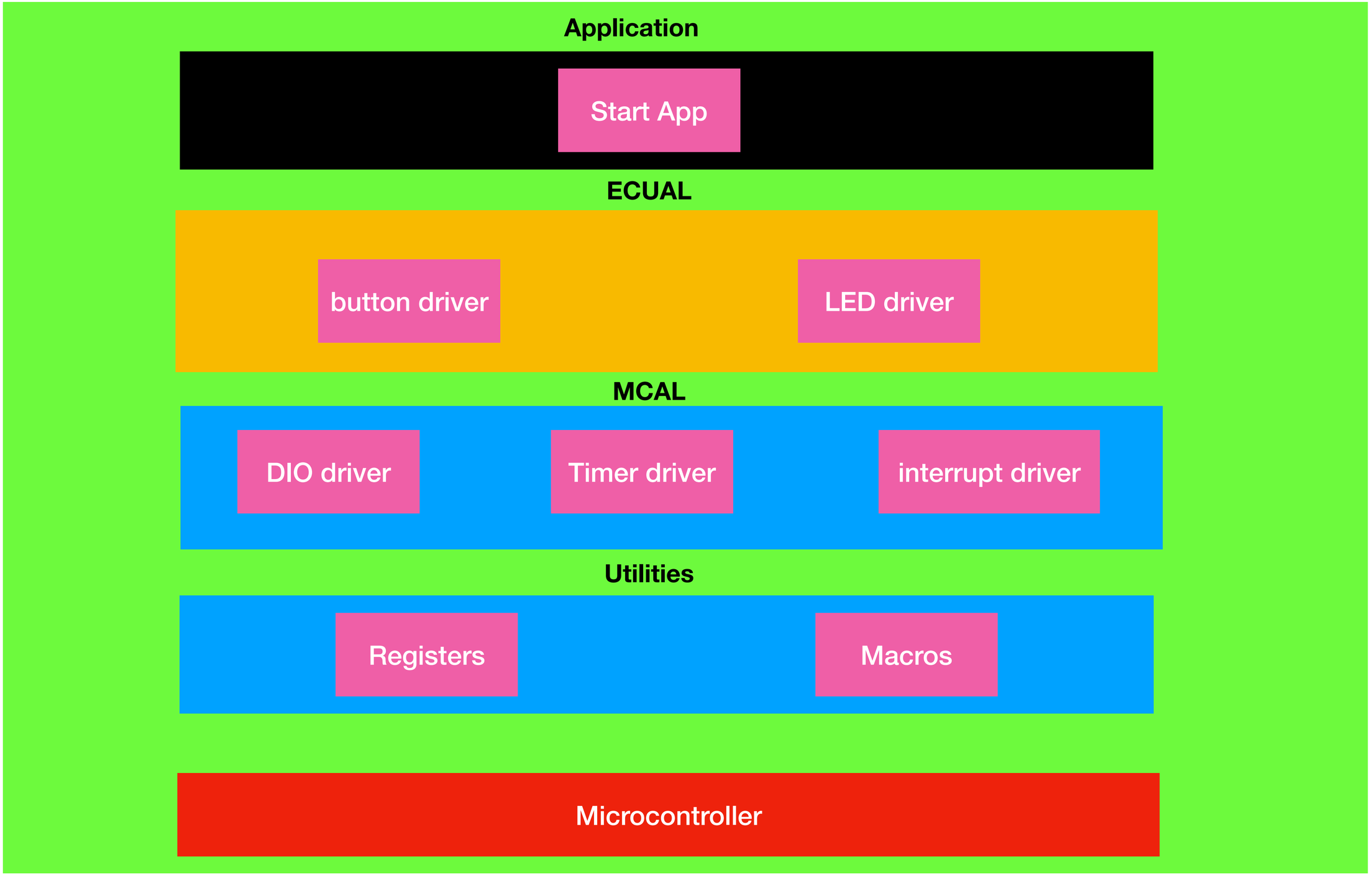
System constraints:

- Short and long press on push button (pedestrian request):
    - Short and long press issues are fixed by using a rising edge interrupt for button. So, interrupt will be only triggered at the beginning of the press.

- Double click on the same phase for pedestrian request, can be fixed by using a flag value to check if the BTN pressed before or not.

system description:

- Microcontroller layer
- MCAL Layer:
    1. DIO Driver:
       Driver can be used to controller pins input/output. Driver can be used to initialize, read, write, toggle pins.
    2. Interrupt Driver:
       Driver can be used to enabling global interrupt, enabling external interrupt 0 with rising edge, enabling Timer0 overflow interrupt.
    3. Timer Driver:
       Driver can be used to initialize, set initial value, start, stop, reset, delay Timer0.
- ECUAL Layer:
    1. BTN Driver:
       Driver can initialize, read pin.
    2. LED Driver:
       Driver can initialize, set Haigh, low, toggle pin.
- Application Layer:
    1. Driver can initialize registers and running app.


Application
Start App
ECUAL
button driver
LED driver
MCAL
DIO driver
Timer driver
interrupt driver
Utilities
Registers
Macros
Microcontroller