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# Introduction and objectives

In this assignment, our group is tasked to implement a fitness tracking system, **FitNUS**. The main purpose of **FitNUS** is to boost daily workouts and make them easier to achieve. **FitNUS** detects acceleration/deceleration, light and temperature changes. **FitNUS** sends data periodically to a server known as **FiTrackX**.

# Flowcharts describing the system design and processes

# Detailed implementation

Summary of **FitNUS**: There are 3 modes in our **FitNUS** system: INITIALIZATION Mode, CLIMB Mode and EMERGENCY Mode.

* INITIALIZATION Mode is the mode that will be active when the FitNUS system is first switched ON.
  + The OLED should display “Initialization mode. Press TOGGLE to climb” and a message “Start” should be sent once to **FiTrackX**.
  + Sensors would not be reading any data (Temperature, Light and Accelerometer).
  + No UART transmission would be sent to **FitNUS**.
* CLIMB Mode would be active when MODE\_TOGGLE is activated
* EMERGENCY Mode

# Enhancement

If you have implemented any enhancement, give a detailed description. You might consider including several photos of your working board at some special steps. This will help to distinguish your system and report from others.

* 7 Segment Inverting using FB(Dp)C AGED, 7 segment is active low -> 0 when lit up
* Utilize additional peripherals (joystick, rotary) as interrupts
* Flag

# Significant problems encountered and solutions proposed

What did you learn? What are the significant problems you encountered and how did you solve them in this assignment? If your code did not work in the lab, explain why.

Green RGB conflicts with OLED, PIO1\_10, Port 2 Pin one used by RGB\_GREEN and OLED

Changing of jumper positions from default value

1. Remove j28 for sw4 to work
2. Remove j23 to turn off green\_led

# Issues or suggestions

These feedbacks, whether positive or negative, will not affect your marks in any way, but will make the report more complete.

As this is the first hardware programming project we did on LPC, there were many times when we got stuck, baffled by lines of codes that seems to work but did not. Fortunately, we were able to readily consult the various teachers, lab staff, and graduate assistances who are not only very knowledgeable, spotting our errors instantly, but also extremely patient when explaining the concepts to us. And we are very grateful for you all!

# Conclusion