

Based on 16.8.2 “Tapping Detection”

When we tap an object, the force introduces “spikes” in acceleration. With an accelerometer, the tapping can be detected and used as an input.

In this lab, you will use taps as an input to turn the LEDs on and off. This can be achieved as follows:

- Derive a program to capture the acceleration value during a “tapping event.” For example, send the value of the accelerometer over the UART whenever it changes.
- Record the values generated by tapping several times and derive a pattern for the tapping.
- Once you figure out the tapping pattern in the x, y, and z directions, derive a program that lights up the LEDs depending on how hard a tap is.
- A very light tap should light up 1 LED (i.e. LED0)
- A medium tap should light up a few LEDs (between LED0 and LED14)
- A very strong tap should light up all 16 LEDs (LED0 to LED15).