

# NC 812/ESD 812: Internet of Things

## Lab 1

**Complete by Jan 31<sup>st</sup> No Submission**

1. Get familiar with the Raspberry Pi board available in lab.  
Read about the board components like its pins, ports, memory slots etc. and their functions and locate them on the board you will be working with.
2. Set up your Raspberry Pi.
  - Depending on whether your machine runs on Linux or Windows, download and write the OS image on your Raspberry Pi memory card.
  - Configure your Raspberry Pi for SSH control through your laptop.
  - Configure the GPIO pins of the Pi using python library.
3. Program your Raspberry Pi.  
Develop an application for blinking two LEDs connected to the GPIO pins of the Pi.  
The LEDs should blink in sequence shown below:

| Time Axis                                     | LED 1 | LED 2 |
|---|-------|-------|
| 0 <sup>th</sup> second –<br>Start application | ON    | OFF   |
| 15 <sup>th</sup> second                       | OFF   | ON    |
| 30 <sup>th</sup> second                       | ON    | ON    |
| 45 <sup>th</sup> – Stop application           | OFF   | OFF   |

References:

[https://stab-iitb.org/electronics-club/tutorials/r\\_pi/](https://stab-iitb.org/electronics-club/tutorials/r_pi/)