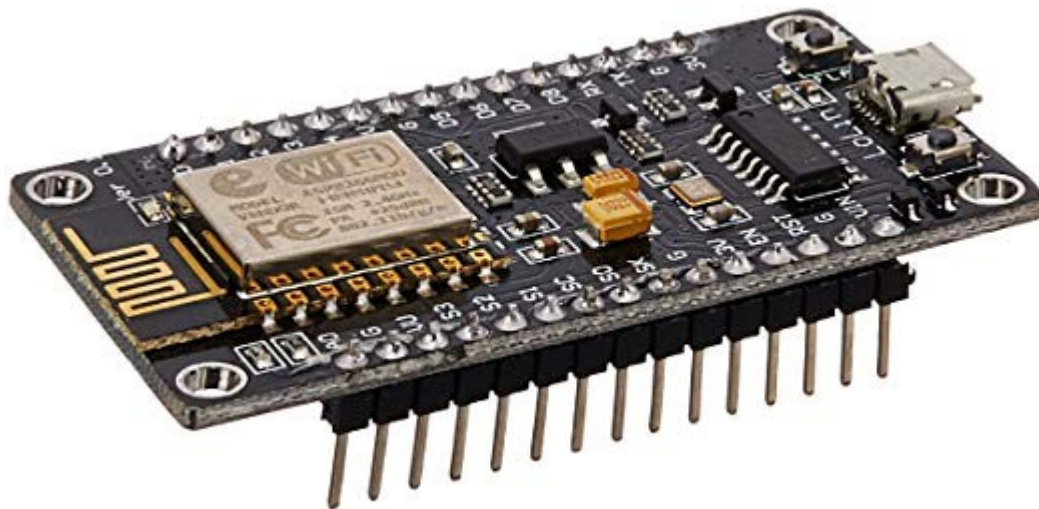# INTERNET *of* THINGS

SESSION-2

- Introduction to ESP 8266 Node MCU

- Setting up the Arduino IDE

- Introduction to TUNIOT

- Connecting the NodeMCU to a WiFi Network

- Switching the LED

ESP 8266 Node MCU

- NodeMCU is an open source IoT platform. It includes firmware which runs on the ESP8266 Wi-Fi SoC from Espressif Systems, and hardware which is based on the ESP-12 module.

- ESP8266 is a low-cost, WiFi Module chip that can be configured to connect to the Internet for Internet of Things(IoT) and similar Technology Projects.

- Basically, Your normal Electrical and Mechanical equipments cannot connect to the Internet on their own. They don't have the in-built setup to do so.

- You can setup ESP8266 with these equipments and do amazing stuff. Controlling, Monitoring, Analysis and much more.

Recollect 2.1
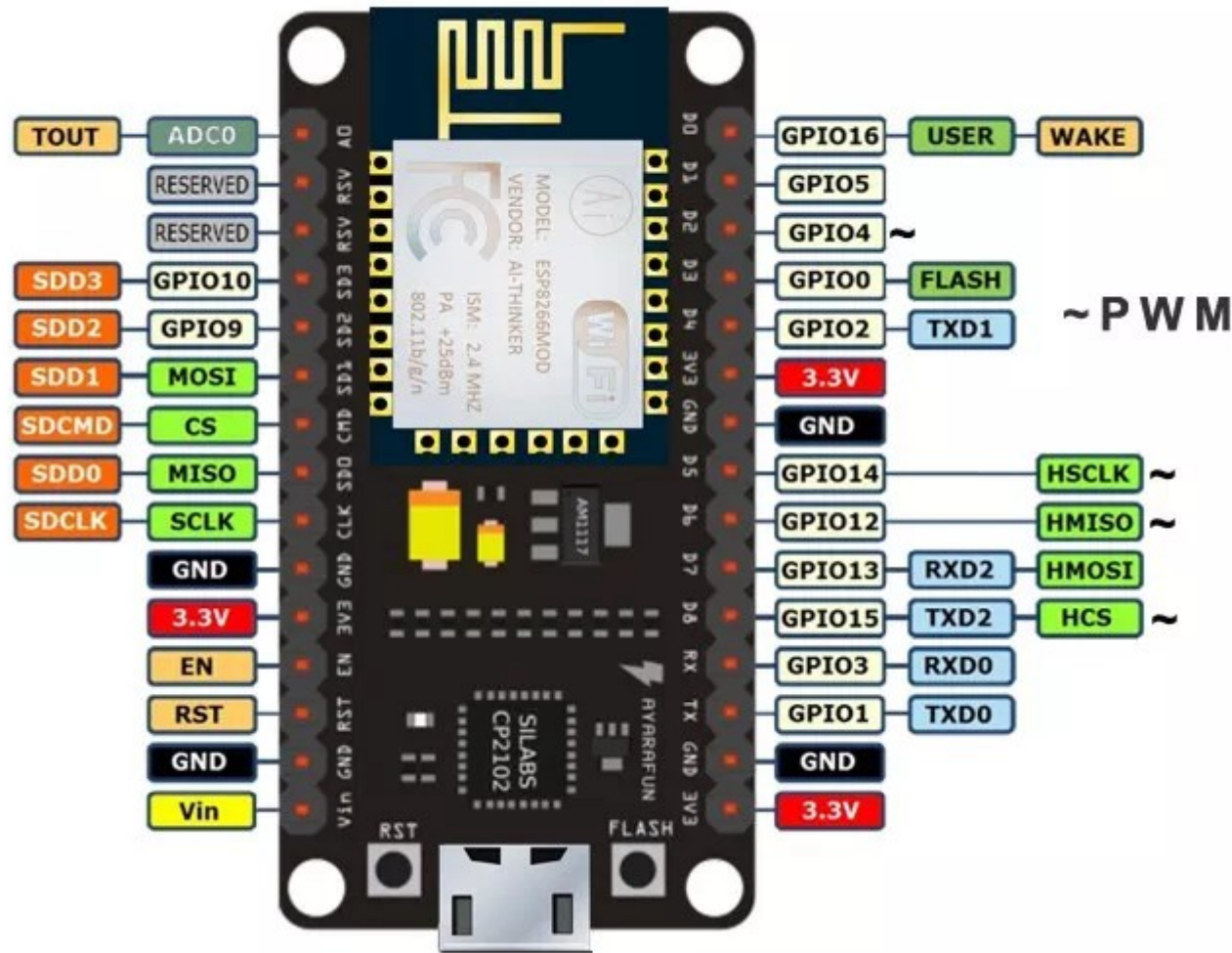
The Node MCU does not have conventional numbering for the pins like the Arduino UNO board. Remember to use the pin out diagram as refernce while programming this board.
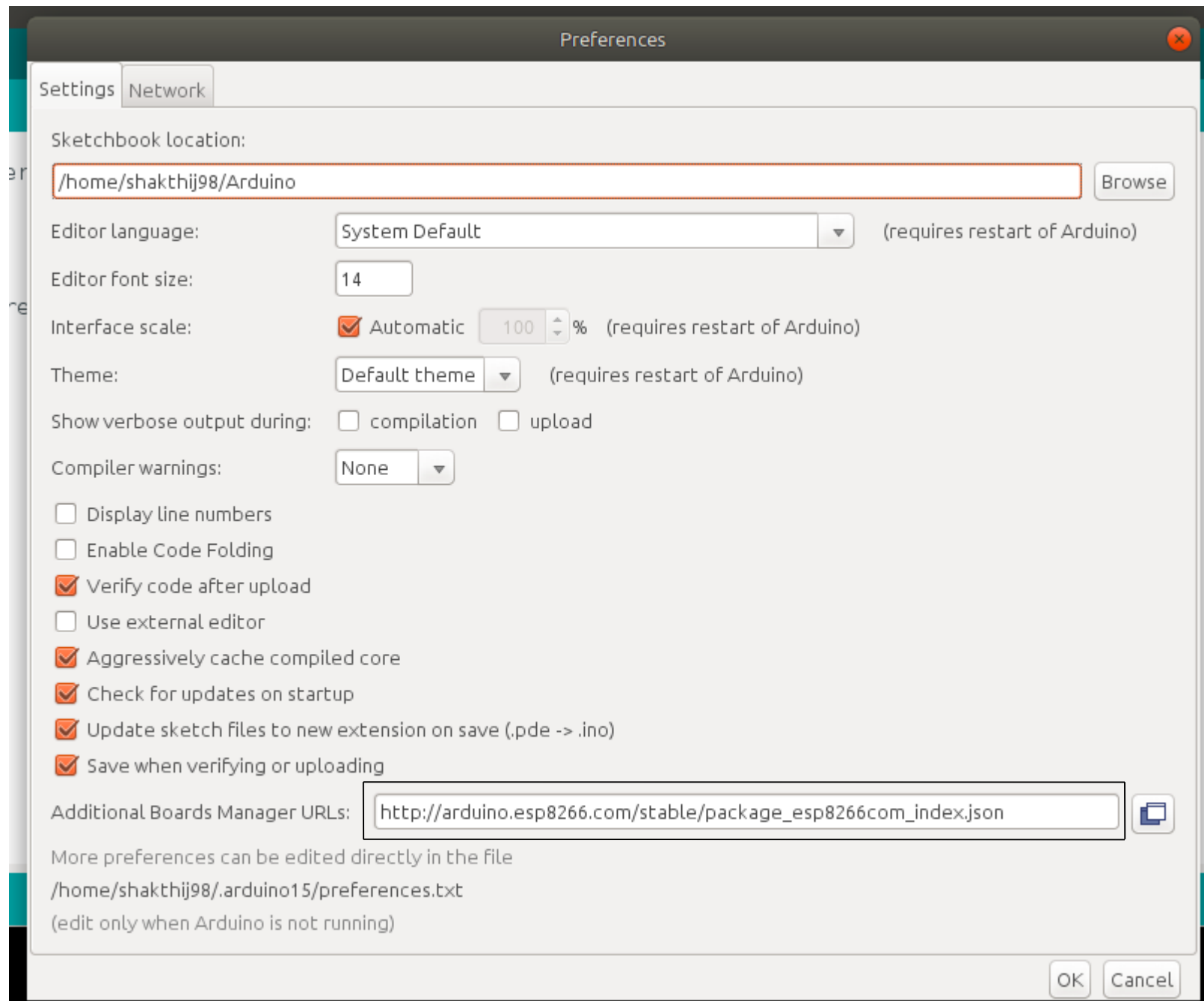
Getting Started . . .

- Install the latest version of Arduino IDE (1.8.8 for windows) from https://www.arduino.cc/en/Main/Software

- Download , extract and run the setup file.

- Open Arduino IDE and have a glance.

- Click File ⟶ Preferences . In the Additional Board Manager URLs box, copy paste the following link and **click "OK".**
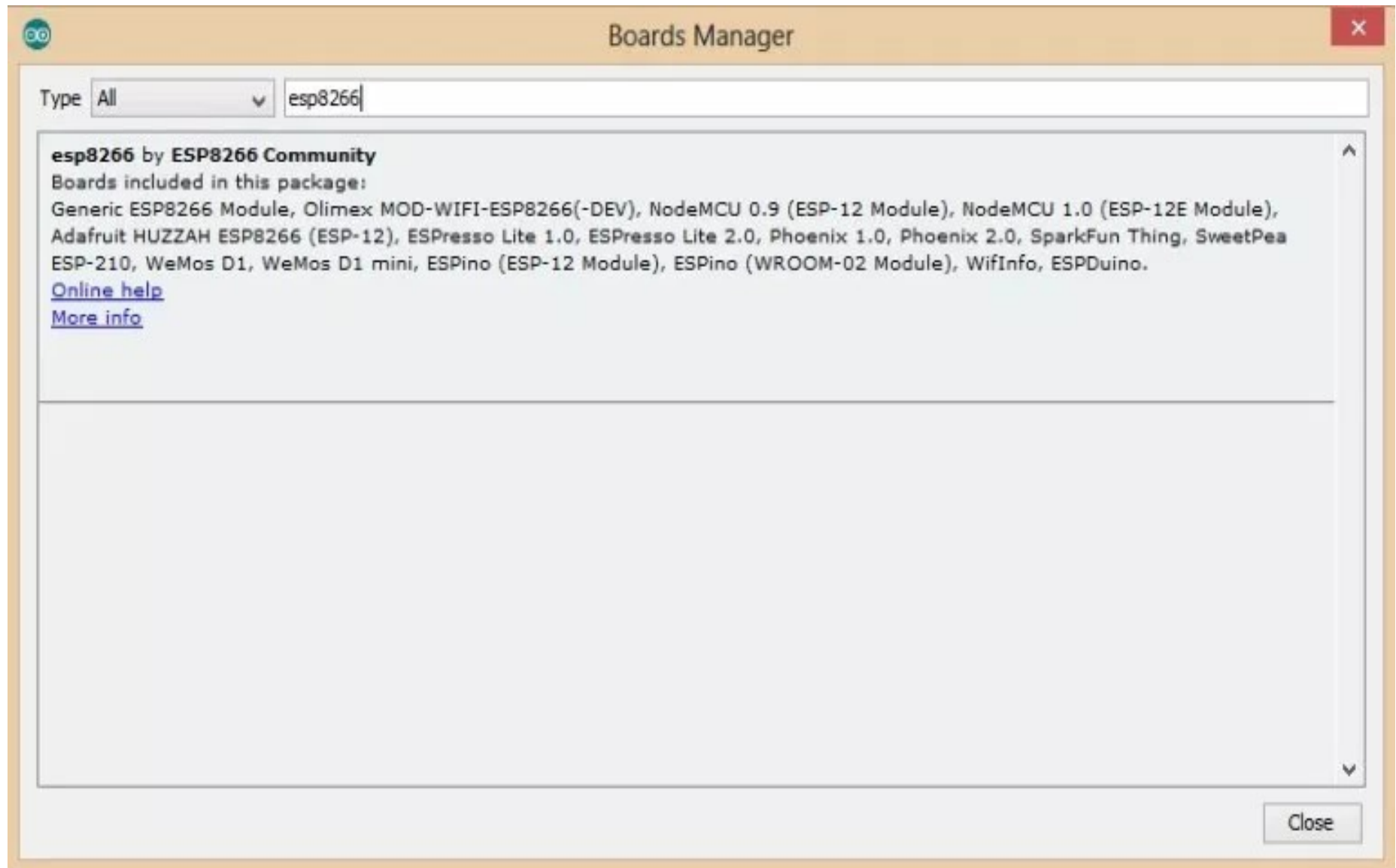
http://arduino.esp8266.com/stable/package_esp8266com_index.json

- Close the Arduino IDE and open it again.

- Make sure you have a good internet connection

- Click Tools ⟶ Boards ⟶ Board Manager.

- In the search box, type esp, and then click and install the latest version available.

- After the download, choose Tools ⟶ Boards ⟶ NodeMCU 12E module.

Getting Started . . .

Getting Started . . .

Getting Started . . .

- Once the procedure is complete, you will be able to select the com port from the arduino IDE.

- If you still can't select the Com port, your laptop is lacking the driver required. Try to install the driver required or get back to us.
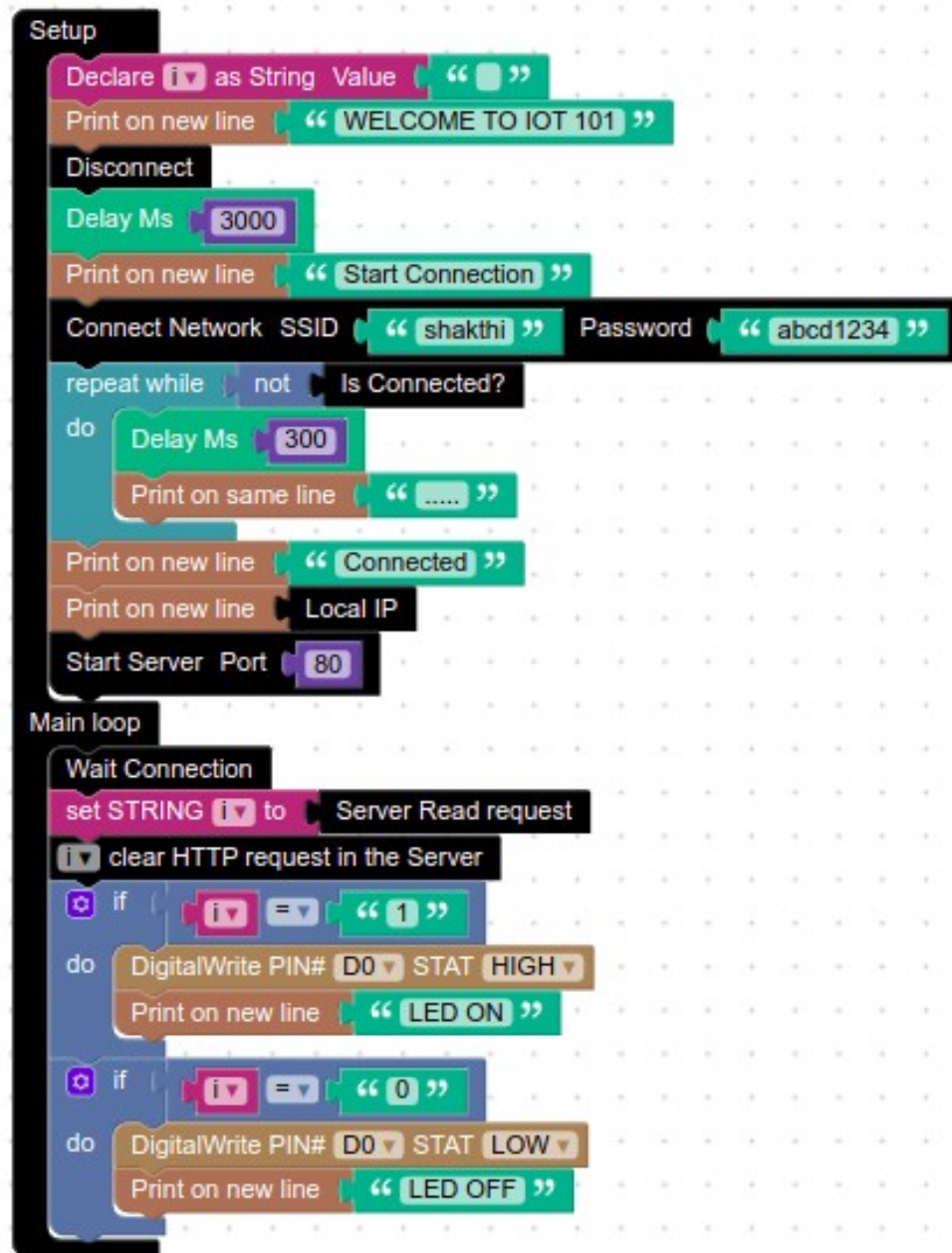
Recollect 2.2

- Significance of Baud Rate and Upload Speed.
- Siginificance of Serial Monitor.
- Magic number = 115200 for esp upload
- Magic number = 9600 for Serial monitor
- (Obviously every other number will work. We are accustomed to these numbers though.

TUNIOT

- Use www.easycoding.tn to use tuniot.
- Do not mug up random codes.
- Remember the procedure and apply the logic wherever you go.
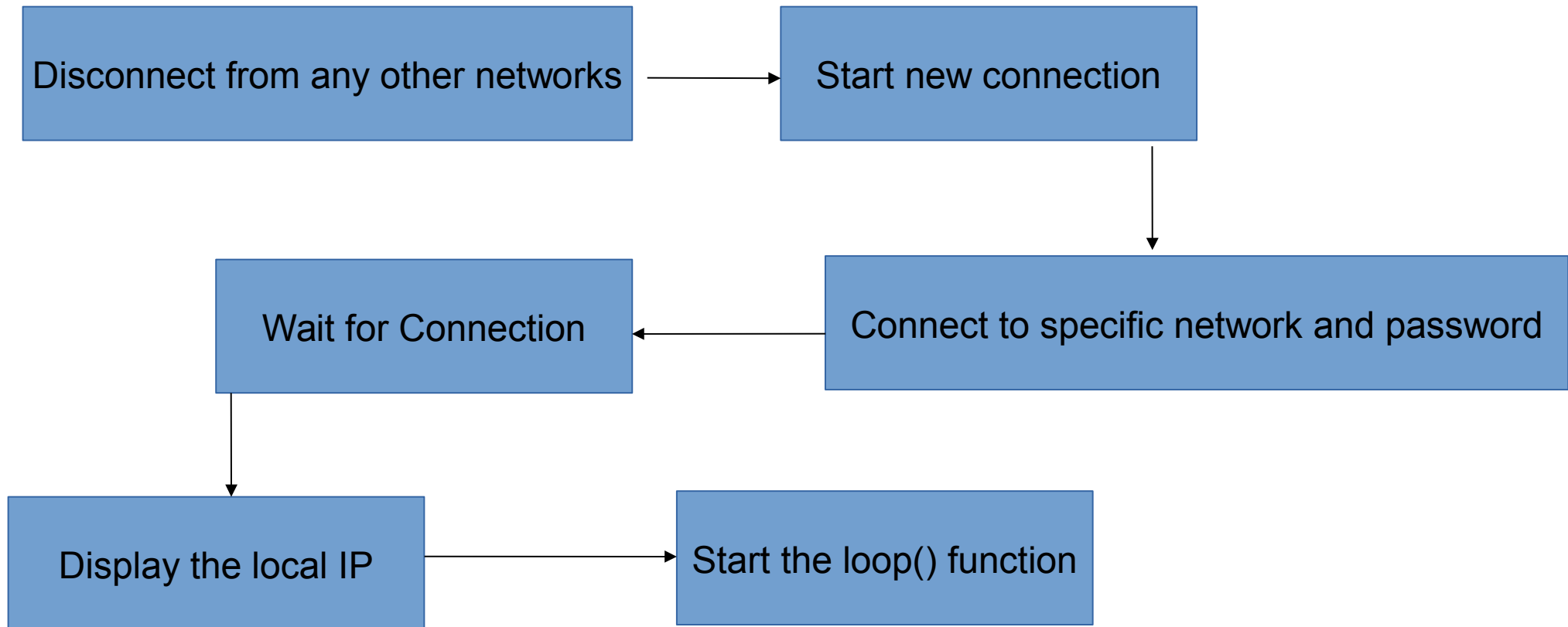
TUNIOT Blocks

Recollect 2.3

XML file is of prime importance.
You can always save your project as an xml file and load it back again whenever you want.
Save the basic templates for future use.

Also, the tuniot interface already provides four basic demo setup structures that you can use.

English ▼

easycoding.tn

Template

Exercise – 2.1

Build the blocks and generate a code for the scenario discussed in class.

The code must listen to information relayed from the app.

This information is to be checked in a simple if block and acted upon.

LED_BUILTIN for the amica esp8266 nodeMCU is pin 16. Please check.

This exercise is a part of your validation. Complete this and show the proof of concept along with the app.