Setup for Task 2

Outline: This is a prerequisite for **Task 2 - Automating irrigation system.** In this task we get our Raspberry PI up and running to get started with Task-2. To complete this task the following components are required, and to aid in the completion of the task, step-by-step instructions are provided, along with necessary tutorials.

Components required:

- Raspberry Pi 3 (RPi)

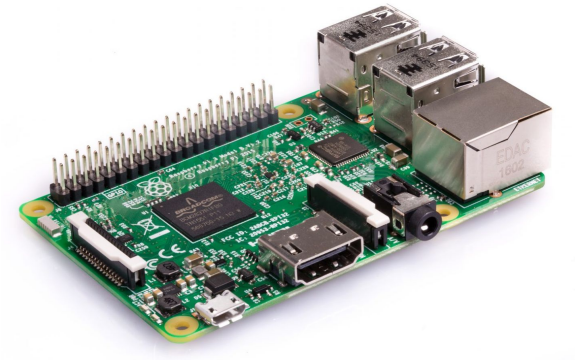

Figure 1 : Raspberry Pi 3

- SD card (image provided online)
- LAN cable
- Wireless Router (If wireless network is not available)

1. Setting up RPi Internet of things (IoT) Dashboard (Checkpoint 1)

- Burn provided Raspbian OS on SD card using this tutorial (Linux, Windows)
- Power on RPi and use the LAN cable to connect RPi with desktop/laptop
- RPi has two interfacing modes for accessing internet, one is through wired ethernet port and another one is through WiFi. Due to this RPi will have two addresses corresponding to two interfaces.
- By default, the wired LAN IP address of RPi is set to be **192.168.0.100**
- To communicate with RPi, we need to configure your desktop/laptop LAN settings
- SSH (Linux, Windows) into RPi using LAN IP to enable connection with WiFi network
- Set SSID and password of the WiFi router with which RPi connects
    - We need to navigate to ***/etc/wpa_supplicant*** on RPi
    - Here you will find ***wpa_supplicant.conf*** if the file does not exist type:
        - ***touch wpa_supplicant.conf***
    - Make changes to ***wpa_supplicant.conf*** using a suitable editor so that it looks like this:

```
ctrl_interface=DIR=/var/run/wpa_supplicant GROUP=netdev
update_config=1
country=GB

network1={
        ssid="Your first router SSID"
        psk="Password for first router"
        key_mgmt=WPA-PSK
}
```

```
network2={
        ssid="Your second router SSID"
        psk="Password for second router"
        key_mgmt=WPA-PSK
}
```

- Restart RPi to apply changes

2. Setting WiFi router

- Find the IP address of RPi from the router web interface
- Reserve IP address of RPi for setting static IP (**If help required please contact your system admin**)
- Note down the wireless LAN IP address of the RPi, this will be used for your future reference.

3. Launching RPi server

- There is already installed and running IoT dashboard on the RPi image provided to you.
- **Important:** To access the dashboard you need to be on the same network as the RPi.
- On your Desktop/Laptop on the same network, type on the browser, the IP address of RPi with port 9091
    - *eg: **rpi_ip_address:9091***
- If everything went well you should see a login page on your browser, and use the following credentials to login:
    - Login: **efsi@e-yantra.org**
    - Password: **Efsi@2017**

The task is considered complete when e-Yantra receives screenshots of the setup and the browser after your logging into the IoT dashboard.

On completion of this task the college receives *two valves*, to automate their irrigation system, the procedure to automate is issued as part of Task-2

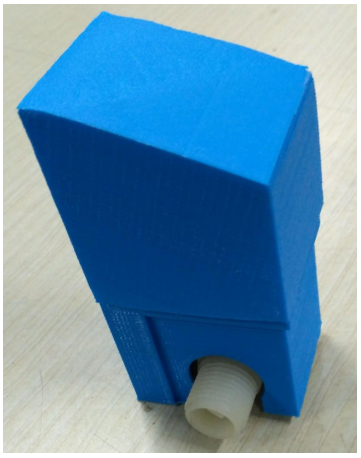

Figure 2 : wireless valve