IOT Exp - 1

Title :- Study of IoT Microcontroller kits
e.g Raspberry PI 3

Aim :- To Study IoT Microcontroller kit's like Raspberry PI 3 and Arduino.

Theory :- Internet of things

The IoT is the concept of connecting any device to the internet & to other connected devices. The IoT is a giant network of connected things and people - all of which collect and share data about the way they are used & about the environment around them.

Microcontroller :- A ~~&~~ microcontroller is a compact integrated circuit designated to govern a specific operation in an embedded system. A typical microprocessor controller includes a processor, sometimes referred to as an embedded controller or microcontroller unit (MCU).

Types of Microcontroller kits :

1. Arduino :- Arduino is the most popular open-source electronics prototyping platform to create interactive electric applications :-
   (i) Arduino UNO.
   (ii) LilyPad Arduino.

2. Raspberry Pi 3 Model B+ Development Board :-
   (I) Raspberry Pi 3 Model B+ :-
   Raspberry Pi is a Credit-card sized single-board computer designed and manufactured by the Raspberry Pi foundation in the U.K.

Components :-

Model A & Model B. The only real differences are the addition of Ethernet & an extra USB port on the more expensive Model B.

ARM CPU / GPU :- This is a Broadcom BCM 2835 system on a chip (SoC) that's made up of an ARM ~~cor~~ CPU & a videocore 4 graphics processing unit (GPU).

- GPIO
- RCA
- Audio out
- LED's
- USB
- HDMI
- Power
- SD cardslot.
- Ethernet

Linux Distributions for Raspberry Pi

① Raspbian Wheezy
② Soft-float Debian Wheezy
③ Arch Linux ARM
④ Qton Pi

3. The BeagleBone Black Development Board.

The BeagleBone Black is one of the popular open source computer. Now it comes with built-in wireless networking capability.

Features :-

- Processor : AM335x 1GHz ARM Cortex - A8.
- 512 MB DDR3 RAM.

- 2 GB 8-bit eMMC on-board flash storage
- NEON floating-point accelerator
- 2 x PRU 32-bit microcontrollers
- 3D graphics accelerator.

Conclusion :- Thus we have studied various microcontroller boards which are used in IOT.