**Internet of Things**

**Lab Report 1**

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**Section-7A2**

**Introduction to IoT**

**and**

**Development Boards**

**INTRODUCTION:**

IoT is a dynamic global network infrastructure of physical and virtual objects having unique identities, which are embedded with software, sensors, actuators, electronic and network connectivity to facilitate intelligent applications by collecting and exchanging data.The internet of things helps people live and work smarter, as well as gain complete control over their lives. In addition to offering smart devices to automate homes, IoT is essential to business.

**OBJECTIVES:**

To learn about IoT (Internet of Things)

To learn about Microcontrollers and development boards

**Application:**

The IOT applications run on IOT devices and can be created to be specific to almost every industry and vertical, including healthcare, industrial automation, smart homes and buildings, automotive, and wearable technology. Increasingly, IOT applications are using AI and machine learning to add intelligence to devices.

**Issues:**

As this our first lab which is based on introduction, we never find any issue regarding this lab.

**Conclusion:**

In this lab we understand about IoT (Internet of Things) , Microcontrollers and development boards.

Question:

List down the items that you think they could be an IoT device.

Smart Mobiles, smart refrigerators, smartwatches, smart fire alarms, smart door locks, smart bicycles, medical sensors, fitness trackers, smart security system, etc

Question:

Identify and analyze a device that is an IoT device now, but in the past was a non-IoTdevice. Describe and list the features of the device. Compare the functions of the device in the past to the functions of the device now.

Many more home devices such as refrigerators, window blinds, Tv, and most appliances such as Air conditioners and Washing Machine etc are available as IoT device. Inside our bodies Pacemakers are now Wi-Fi enabled.

Question:

Describe the difference between Microprocessor and Microcontroller.

Microprocessor consists of only a Central Processing Unit, whereas Micro Controller contains a CPU, Memory, I/O all integrated into one chip.Microprocessor is used in Personal Computers whereas Micro Controller is used in an embedded system .Microprocessor uses an external bus to interface to RAM, ROM, and other peripherals, on the other hand, Microcontroller uses an internal controlling bus .Microprocessors are based on Von Neumann model Micro controllers are based on Harvard architecture .Microprocessor is complicated and expensive, with a large number of instructions to process but Microcontroller is inexpensive and straightforward with fewer instructions to process.