

## **Topic 1: Microcontroller and their role in Internet of Things (IoT),**

### **Abstract**

The internet of things, or IoT, is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers (UIDs) and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction. It is estimated that there will be more than 20 billion IoT devices connected in the next decade. This workshop uses hands-on examples to show the working of an embedded processor and its function in the IoT. The ESP32 board from Espressif is used for this workshop. The chip includes Wi-Fi and Bluetooth capabilities. During the workshop the chip architecture and capabilities will be explained. Also, an introduction to Arduino language, which will be used to program the chip, will be also be provided. During the workshop detailed and step by step hands-on experiments will be presented. The experiments will introduce the attendees to IoT technology and how it is applied in real world.