Introduction to IoT

Welcome to Day 1 of our IoT Workshop! Today, we introduced the basics of IoT through presentations and hands-on activities, covering topics from setting up your development environment to hardware essentials and soldering.

1. IoT Intro Presentation

2. Setup Development Environment

- Install Arduino IDE, for more information see the Official documentation
  - Installing ESP8266 NodeMCU Board in Arduino IDE 2.0
- How to install CH340 driver - Driver Download Section

3. Hardware Review

- Dev Board: Wemos D1 Mini
- Microcontroller: ESP8266 12-E Chip ESP8266 hardware review

4. Soldering

Here it gets practical! You need to solder the microcontroller and some of the sensors, which you will need in the next session.



Fig. 1: In Action at UNICAES

5. Coding Warm-up

Now let's check if your Microcontroller works. Also, you will learn how to upload your first sketch. Basic Blink example:

Blink.ino

```
void setup() {
  // initialize digital pin LED_BUILTIN as an output.
  pinMode(LED_BUILTIN, OUTPUT);
}

// the loop function runs over and over again forever
void loop() {
  digitalWrite(LED_BUILTIN, HIGH);  // turn the LED on (HIGH is the
voltage level)
  delay(1000);                      // wait for a second
  digitalWrite(LED_BUILTIN, LOW);   // turn the LED off by making the
voltage LOW
  delay(1000);                      // wait for a second
}
```

Additional information

Additional information: Introduction to IoT - Sensors and Data processing

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