Course 2 : Advanced Electronics

Chapter3 : Microcontrollers in Electronics

1/ **Introduction to Microcontrollers**:

- Popular options: Arduino, ESP32, STM32.
- Basic peripherals: GPIO, ADC, PWM.

2/ Programming :

- Use an Arduino to read a sensor and control an actuator.
- Example: Temperature-controlled fan using LM35 and a relay.

3/ Advanced Digital Electronics

1. **Flip-Flops**:
   1. SR, D, JK, and T flip-flops.
   2. Applications in counters and memory storage.
2. **Counters and Registers**:
   1. Ripple counters, shift registers.
   2. Practical application: Build a 4-bit counter circuit.