Introduction to ESP32

A Powerful Microcontroller with Wi-Fi and Bluetooth Capabilities

Introduction

- Brief introduction to ESP32
- Overview of its capabilities and applications

Features

- - Dual-core processor
- - Wi-Fi and Bluetooth integration
- - Low power consumption
- - Rich set of peripherals (ADC, DAC, SPI, I2C, UART, PWM, etc.)

Technical Specifications

- - CPU: Xtensa dual-core 32-bit LX6
- - Clock speed: up to 240 MHz
- - Flash memory: up to 16 MB
- - RAM: up to 520 KB
- - GPIO pins: 34
- - Operating voltage: 3.3V

Development Tools

- - ESP-IDF (Espressif IoT Development Framework)
- - Arduino IDE
- - PlatformIO
- - MicroPython

Getting Started

- - Installing the Arduino IDE
- - Setting up the ESP32 board in the Arduino IDE
- - Writing your first program (Blink LED example)

Wi-Fi Capabilities

- - Connecting to a Wi-Fi network
- - Setting up a web server
- - Sending data to the cloud

Bluetooth Capabilities

- - Bluetooth Classic vs. Bluetooth Low Energy (BLE)
- - Setting up BLE
- - Communicating with a smartphone

Practical Applications

- - Home automation
- - IoT devices
- - Wearables
- - Robotics

Projects and Examples

- - Weather station
- - Smart light control
- - Remote sensor monitoring

Resources and Community

- - Official Espressif website
- - GitHub repositories
- - Online forums and communities
- - Tutorials and courses

Q&A

- Open floor for questions and answers

Thank You

- Thank you for attending!
- Contact information