Embedded Systems I

Lab 6: Getting Started w/ ESP32

HOCHSCHULE HAMM-LIPPSTADT

Description

In this lab you will learn how to place an Arduino Nano ESP32 development board with an ESP32. In this first lab we will setup the Arduino toolchain and start with simple examples. For our labs and the ease of programming we will use the Arduino IDE with the ESP-core.

Tasks

1. Set up Arduino IDE with the ESP-core (**only if the Arduino Board is not found automatically**)

    a. Start the Arduino IDE and add following URL in "Datei/Voreinstellungen":

    ```
    https://dl.espressif.com/dl/package_esp32_index.json
    ```

    Remark: If there are already URLs listed, add this one seperated by a comma at the end.

    b. Go to "Werkzeuge/Board:[..]/Boardverwalter", search for "Nano ESP32" and install the corresponding core.

    c. For the following projects, choose the "Arduino Nano ESP32" in the menu "Werkzeuge/Board". (In some cases, the Arduino IDE needs to be restarted to make changes effective.)

2. Blinking LED

    We'll now create a simple project to flash the internal LED on the ESP board.

    a. Connect the ESP via USB-C to the PC.

    b. In the menu "file/examples" open "Blink". Compile and test your board and configuration.

    Remark: Sometimes, the speed of the serial interface needs to be decreased in order to prevent failures during transmission.

3. Hausautomation: Übertragen Sie die Projekte vom Labor 3 (Hausautomation – Teil 1) auf den ESP. Beachten Sie dabei, dass der ESP über die GPIO nur 3.3V steuern kann. Außer dem Mikro-USB-Anschluss dürfen Sie daher nur 3.3V als Spannungsversorgung für Ihre Aufbauten verwenden!