D1 – A DATA PROJECT

AN ARDUINO UNO / WIFI KIT

MICRO SD READER / MICRO SD / LCD / SENSOR

AlbaElektronica

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Required hardware & software

Connect D1 with computer / Raspberry Pi either by wired cable / Wifi

A phone / pad using an Arduino application (not all phones supports)

The Arduino app / software / IoT

Inside the box

Arduino Uno R3	D1 board with WiFi	
Charger Arduino	micro USB / USB	
Liquid Crystical Display	OLED Display 12864 module	
Connectors	male-female / male-male (x 12)	
Micro SD card	32 G (x1)	
Sensor	Photosensitive resistor module (x1)	
MicroSD card adapter	Mini TF card reader / writer	
Manual	Description / Tips	
USB / USBC adapter	USB to USB C adapter	

D1 = Arduino Uno / Wifi

➔ ***Uses the pinout of Arduino Uno!***

➔ Download software from Arduino.cc; Install
➔ Install the D1 board using the Esp8266 library
➔ Select the board *Wemos D1 R2*
➔ Select the port of the connection

OLED Display 12864 module

The OLED display has a 128x64 resolution and a I2C SSD1306 LCD interface

➔ Connect the pins Arduino ←→ I2C LCD module with male / female connectors
➔ Install the Arduino library ESP8266 and ESP32 OLED driver for SSD1306 displays
➔ Test the module by running the SSD1305DrawingDemo application or another application.

Tips

➔ Follow the advise for the pinout from the demo file:
GNC ←→ GNC, Vcc←→ 5V, SDA ←→ D3, SCL ← → D5
➔ There are a number of libraries for the OLED displays which you could try out

Micro SD card adapter

The MicroSD card adapter has a mini TF card reader module and uses a SPI Interface with level converter

➔ Connect the Arduino with the MicroSD card module with the male / female connectors
➔ Insert the MicroSD card
➔ Test the module by running one of the examples of the SD library

Tips

➔ Follow the advice for the pinout from the demo file, for example, the read / write file

➔ GND ←→ GND, Vcc←→ 5V, MOSI ←→ D11, MISO ← → D12, CLK ←→ D13, CS ←→ D4
➔ SD uses the SPI interface and is integrated in Arduino

A simple sensor

The KY-018 sensor module has a photosensitive resistor to detect light and intensity

➔ Connect the sensor to the Arduino board using the signal on an analog pin, for example A5
➔ Use the extra 5V and GND slots from D1 to connect the other two pins S ←→ A5, + ←→ +5V, -←→ GND
➔ Test with a simple program reading the analog input A5

Putting all together

The three modules, naming the MicroSD card, OLED display and the sensor, function on a single D1 board using a program combining their functionality

➔ Examples of programs and projects you can find on Arduino.