D1 – A data Project  
  
An Arduino Uno / Wifi KIT

Micro SD Reader / MiCRO SD / LCD / Sensor

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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 runing the SSD1305DrawingDemo application or another applcation

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 gingle D1 board using a program combining their functionality

* Examples of programs and projects you can find on Arduino.cc and youtube