Montage und Programmierung eines Roboters für ROBOCUP JUNIOR RESCUE mit Elegoo Car Kit

Teil 1.1: AtmelStudio und Arduino

Von Charlotte und Andreas

sketch_may26a | Arduino 1.8.12

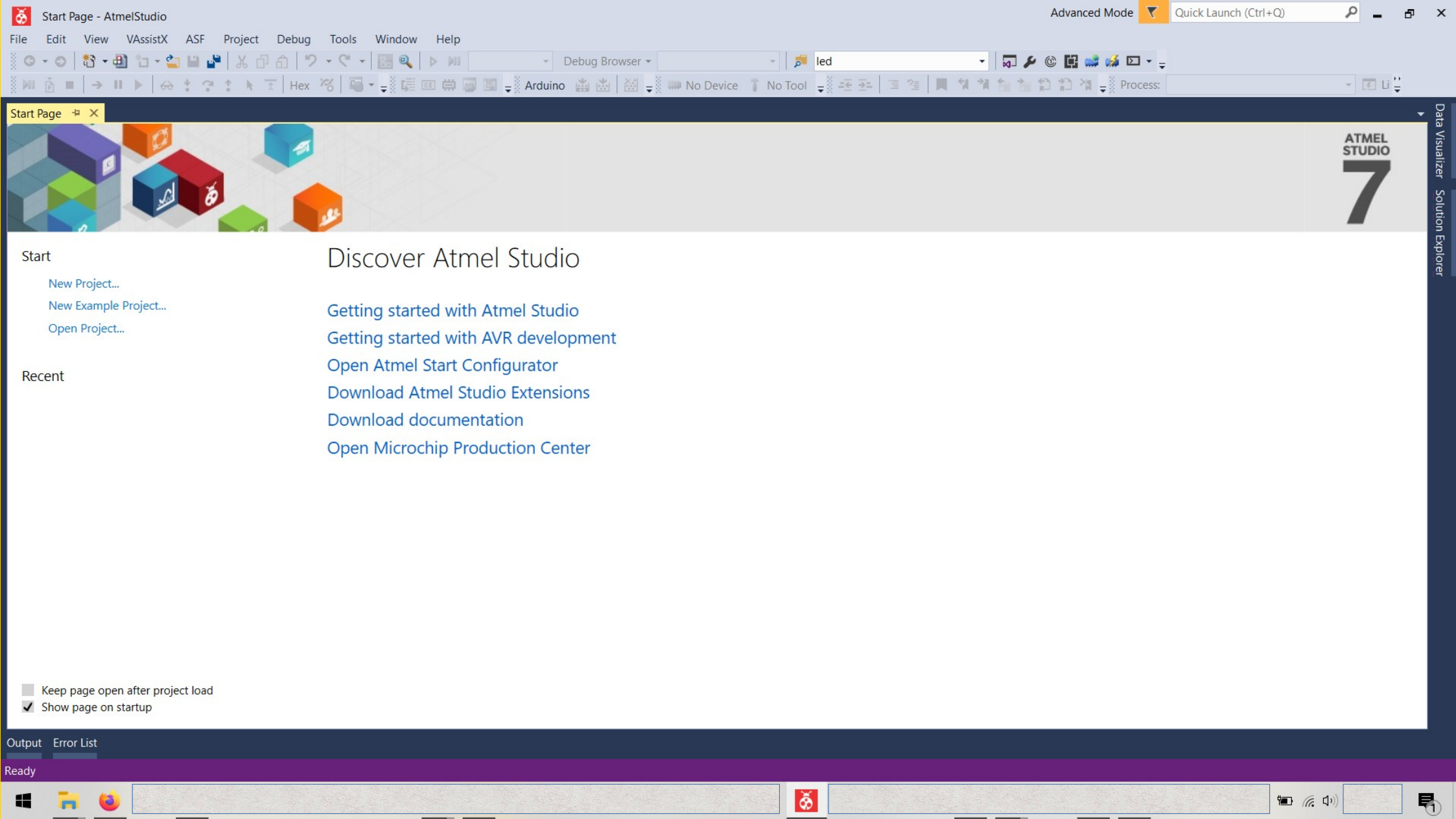
Datei Bearbeiten Sketch Werkzeuge Hilfe

sketch_may26a

```
void setup() {
  // put your setup code here, to run once:

}

void loop() {
  // put your main code here, to run repeatedly:

}
```

1

Arduino Uno auf COM3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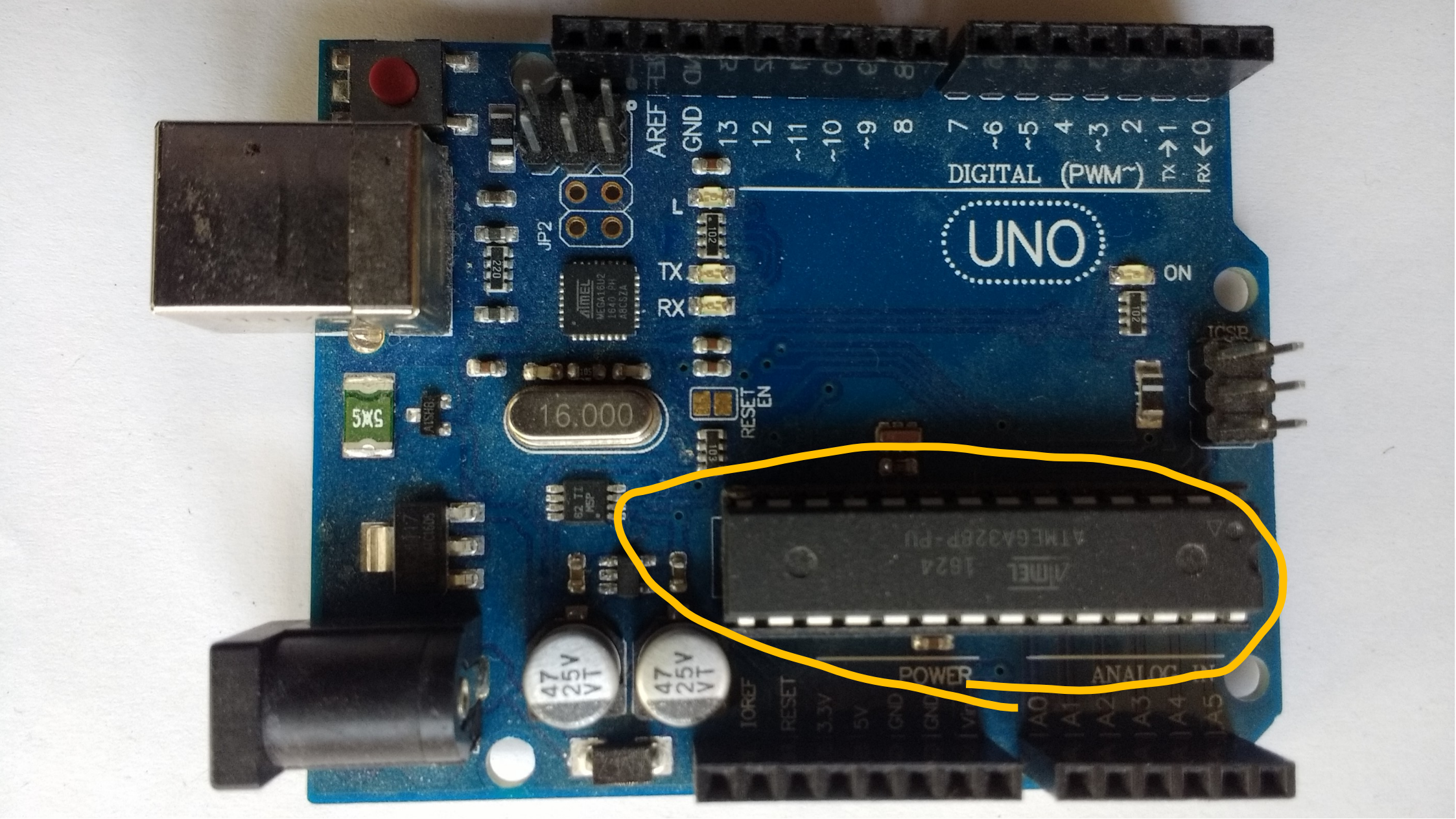
AREF
GND
13
12
~11
~10
~9
8
7
~6
~5
4
~3
2
TX→1
RX←0
DIGITAL (PWM~)
UNO
ON
JP2
TX
RX
RESET
EN
16.000
ICSP
POWER
ANALOG IN
IOREF
RESET
3.3V
5V
GND
GND
Vin
A0
A1
A2
A3
A4
A5

Windows (x86/x64)

Atmel Studio 7.0 (build 2397) web installer (recommended) -
This installer contains Atmel Studio 7.0 with Advanced Software Framework 3.47 and Toolchains. Use this installer if you have Internet access while installing.

October 2019 2.5 MB

Atmel Studio 7.0 (build 2397) offline installer -
This installer contains Atmel Studio 7.0 with Advanced Software Framework 3.47 and Toolchains. Use this installer if you do not have Internet access while installing.

SHA1: 8797e8e81ae0438459809fa0552f4f27998e46d1

Version number: 7.0.2397

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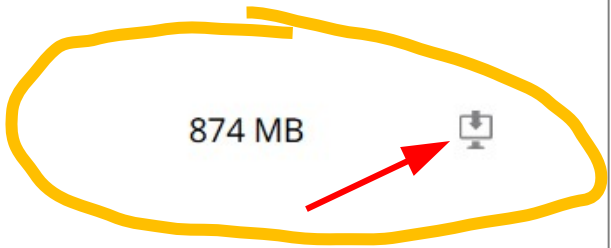

Release Notes

Atmel Studio 7.0 Release Notes -

October 2019 377 KB


https://www.arduino.cc/en/main/software#
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Download the Arduino IDE
ARDUINO 1.8.12
The open-source Arduino Software (IDE) makes it easy to write code and upload it to the board. It runs on Windows, Mac OS X, and Linux. The environment is written in Java and based on Processing and other open-source software.
This software can be used with any Arduino board.
Refer to the Getting Started page for Installation instructions.
oder
Windows Installer, for Windows 7 and up
Windows ZIP file for non admin install
Windows app Requires Win 8.1 or 10
Get
Mac OS X 10.10 or newer
Linux 32 bits
Linux 64 bits
Linux ARM 32 bits
Linux ARM 64 bits
Release Notes
Source Code
Checksums (sha512)

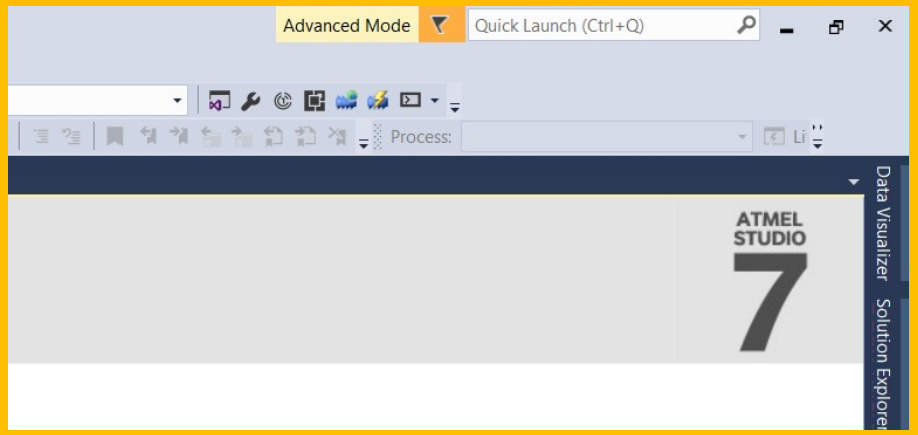
Einrichten des Atmel Studio zum Programmieren eines bootloaders.

1. Schritt

Um mit Atmel Studio einen bootloader zu programmieren wie es z.B. beim Arduino der Fall ist. Benötigen wir zuerst die

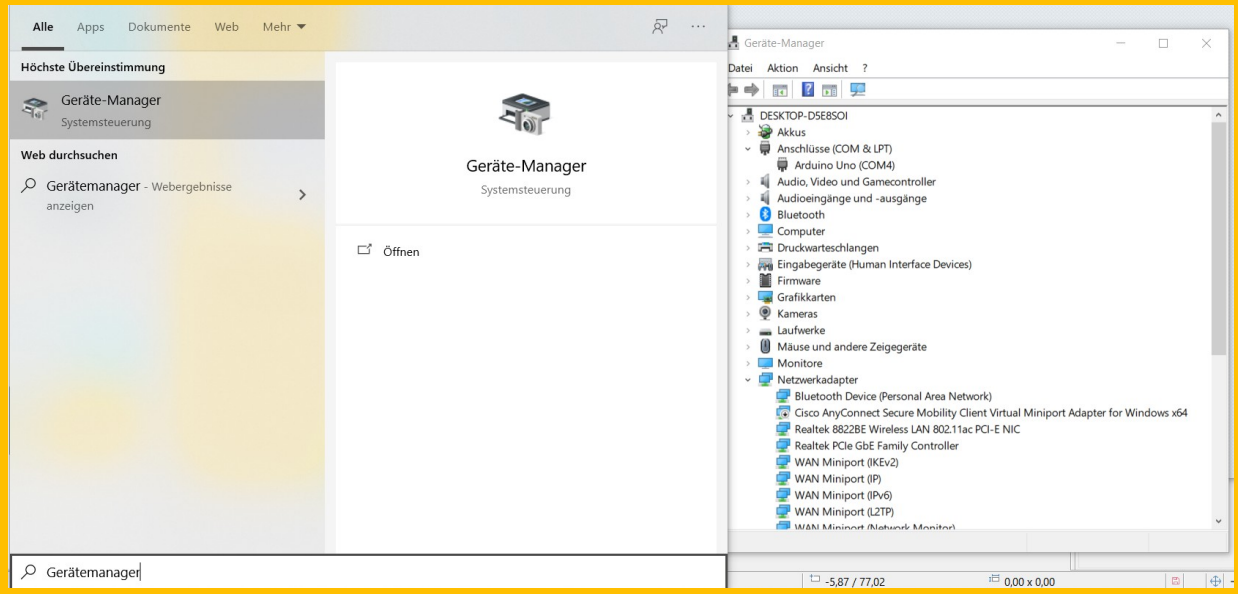
Homepage von Ron Hiestermann:

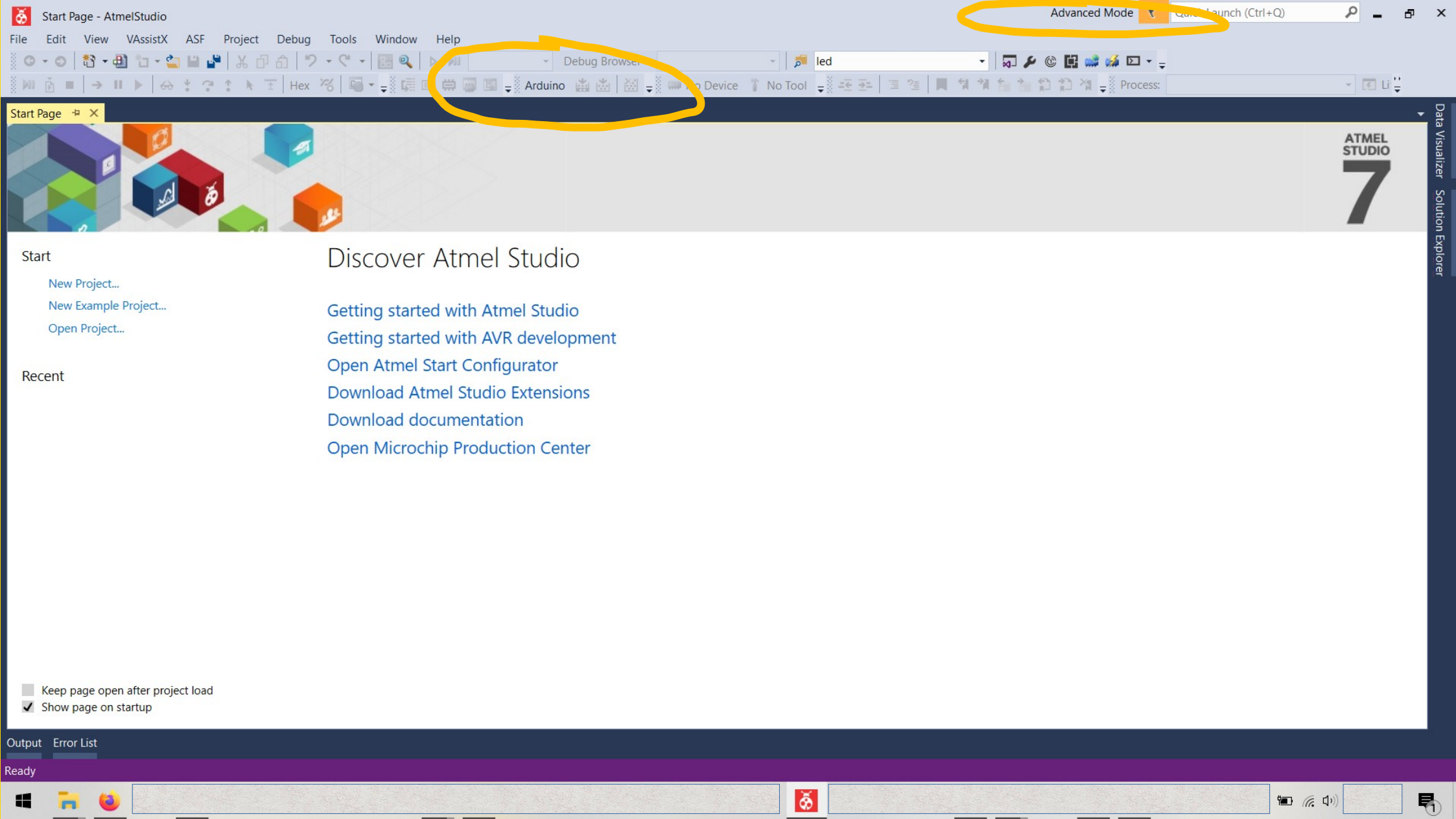
Ergänzung 2. Schritt:



Ergänzung 3. Schritt:

Um den benutzten COM-Port heraus zu bekommen, reicht es, den Arduino Baustein an den Computer anzuschließen und in Win 10, entweder die „Windows-Taste“ drücken oder das Windows Symbol unten links anzuklicken.
Dann in, das sich öffnende, Fenster Gerätemanager eingeben und auf Anschlüsse doppelklicken.
Bei mir steht da: **Arduino Uno (COM4)**

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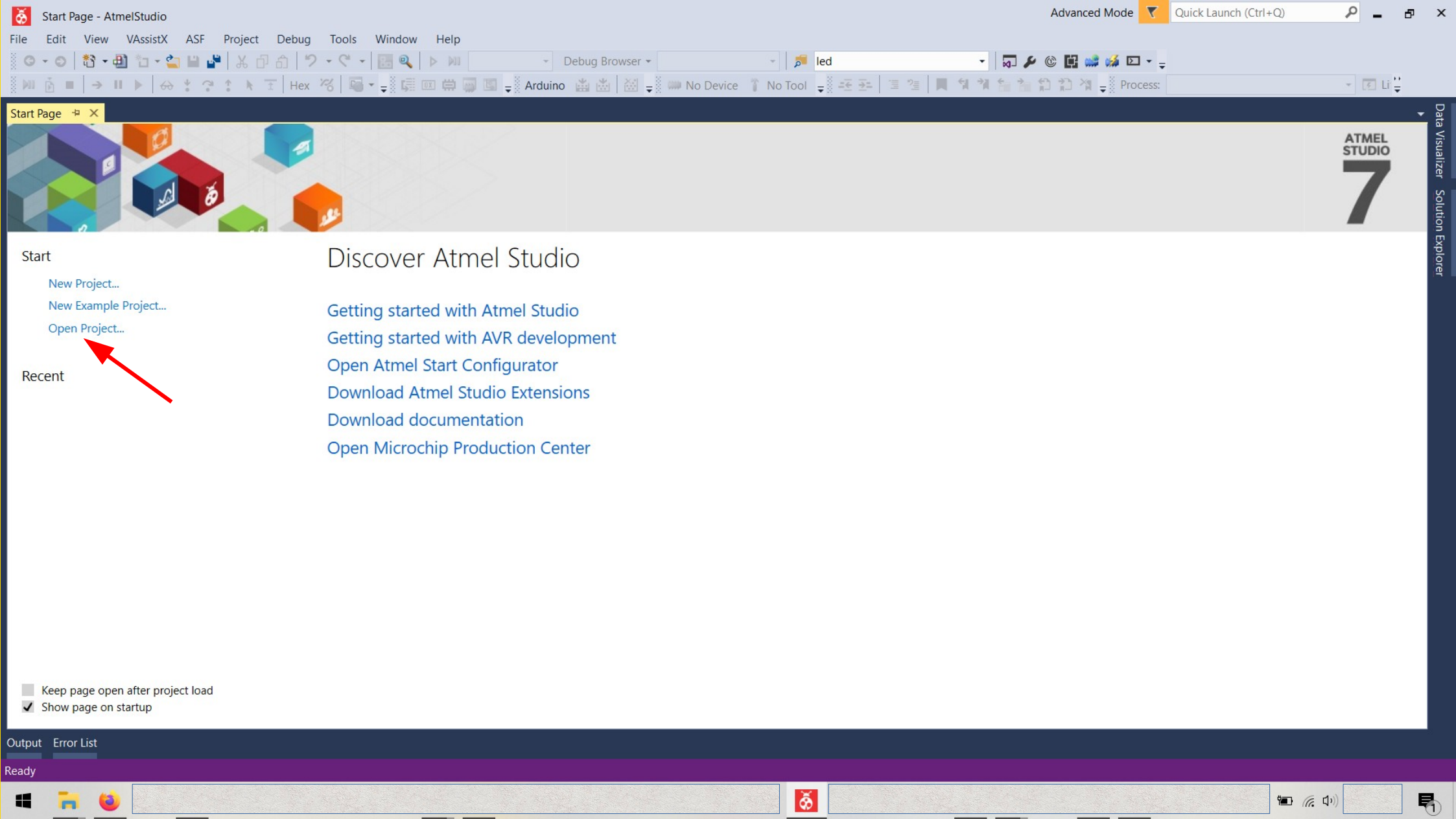
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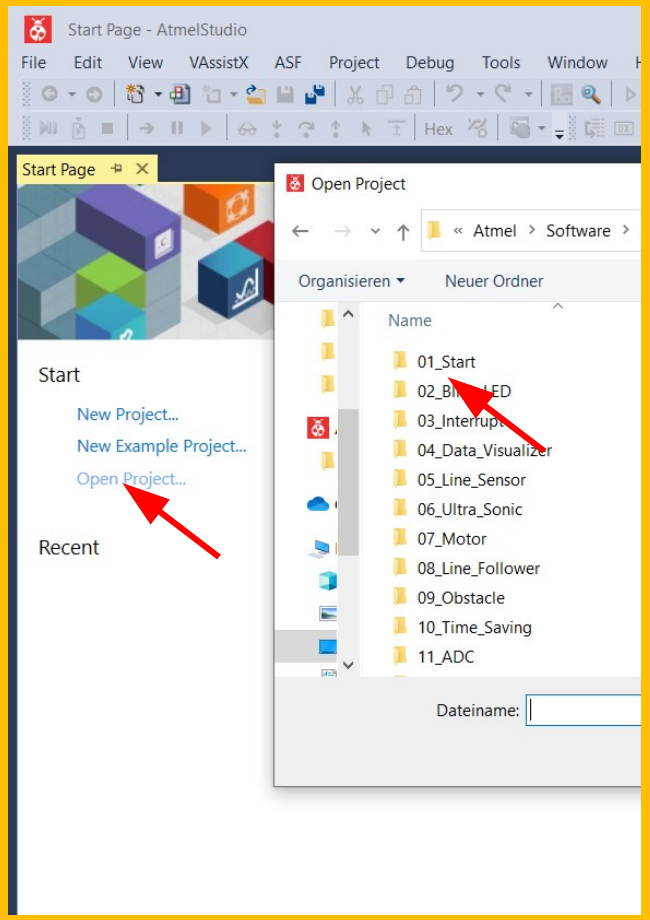
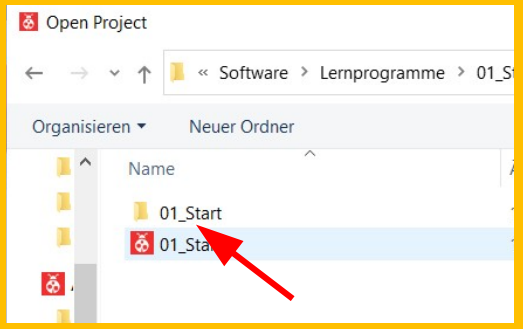
Ready

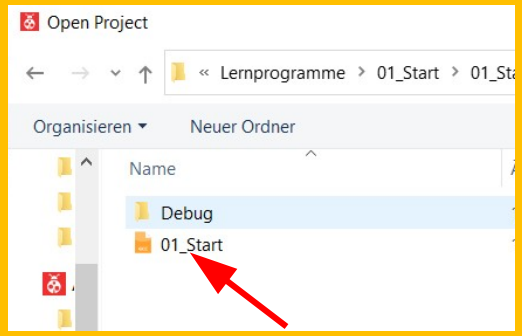
1.) Klick auf:
Open Project

2.) Doppelklick auf:
01_Start

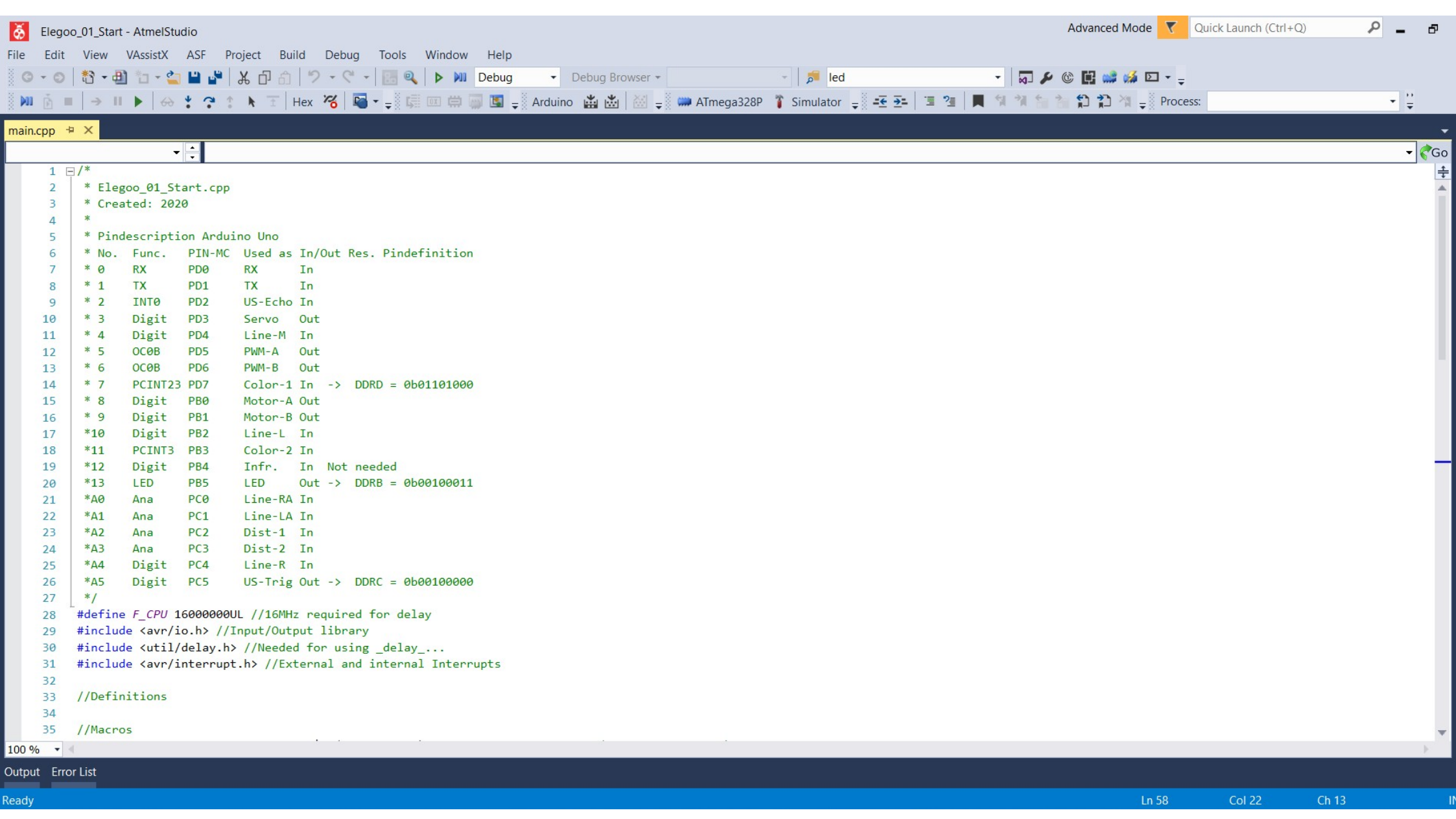


3.) Doppelklick auf:
01_Start





4.) Doppelklick auf:
01_Start


Elegoo_01_Start - AtmelStudio
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ATmega328P
Simulator
Process:
main.cpp
Go
/*
* Elegoo_01_Start.cpp
* Created: 2020
*
* Pindescription Arduino Uno
* No. Func. PIN-MC Used as In/Out Res. Pindefinition
* 0 RX PD0 RX In
* 1 TX PD1 TX In
* 2 INT0 PD2 US-Echo In
* 3 Digit PD3 Servo Out
* 4 Digit PD4 Line-M In
* 5 OC0B PD5 PWM-A Out
* 6 OC0B PD6 PWM-B Out
* 7 PCINT23 PD7 Color-1 In -> DDRD = 0b01101000
* 8 Digit PB0 Motor-A Out
* 9 Digit PB1 Motor-B Out
*10 Digit PB2 Line-L In
*11 PCINT3 PB3 Color-2 In
*12 Digit PB4 Infr. In Not needed
*13 LED PB5 LED Out -> DDRB = 0b00100011
*A0 Ana PC0 Line-RA In
*A1 Ana PC1 Line-LA In
*A2 Ana PC2 Dist-1 In
*A3 Ana PC3 Dist-2 In
*A4 Digit PC4 Line-R In
*A5 Digit PC5 US-Trig Out -> DDRC = 0b00100000
*/
#define F_CPU 16000000UL //16MHz required for delay
#include <avr/io.h> //Input/Output library
#include <util/delay.h> //Needed for using _delay_...
#include <avr/interrupt.h> //External and internal Interrupts
//Definitions
//Macros
100 %
Output Error List
Ready
Ln 58 Col 22 Ch 13

Montage und Programmierung eines Roboters für ROBOCUP JUNIOR RESCUE mit Elegoo Car Kit Teil 2.0: Hello World

Von Charlotte und Andreas