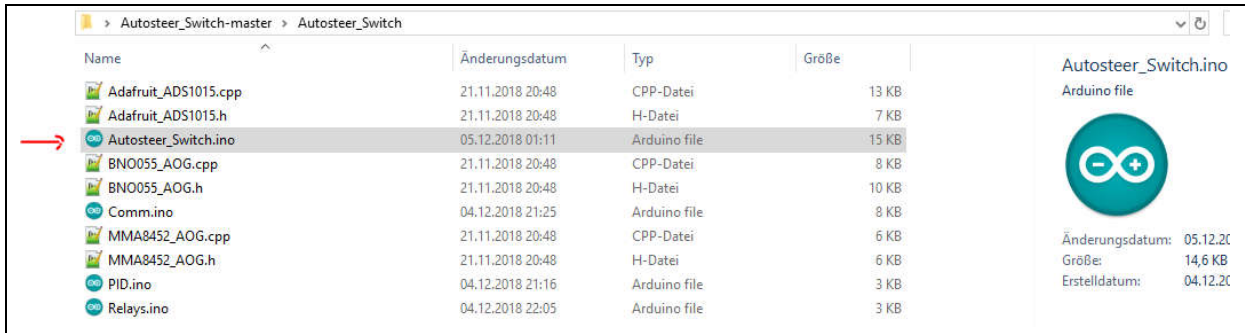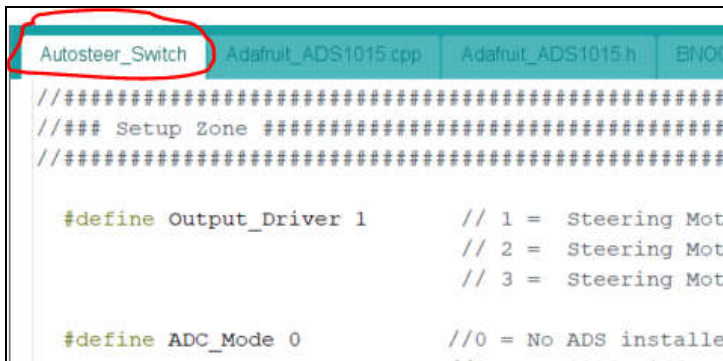# !!! How to prepare the Sketch for Upload: !!!
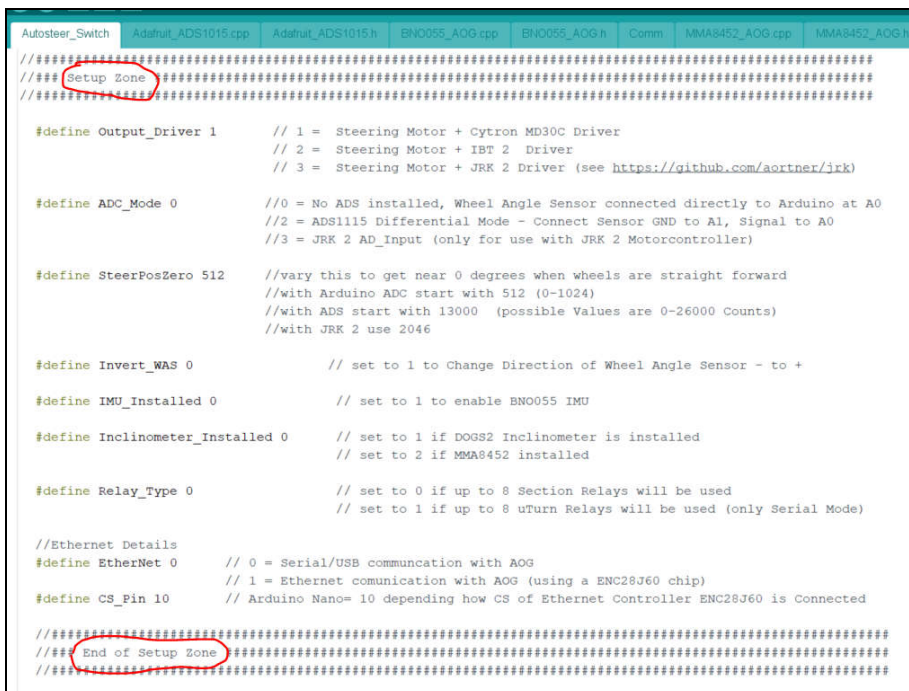
1. Open the file "AutoSteer_Switch.ino" with the Arduino IDE

2. Switch to tab AutoSteer_AIO_Switch

3. Scroll down to Setup Zone

4. Edit the Settings according to your configuration

4.1 First set your Output Driver:

```
#define Output_Driver 1      // 1 =  Steering Motor + Cytron MD30C Driver
                             // 2 =  Steering Motor + IBT 2  Driver
                             // 3 =  Steering Motor + JRK 2 Driver (see https://github.com/aortner/jrk)
```

Enter the matching number according to the description at the right side

4.2 Select how you connect your Wheel Angle Sensor

```
#define ADC_Mode 0         //0 = No ADS installed, Wheel Angle Sensor connected directly to Arduino at A0
                           //2 = ADS1115 Differential Mode - Connect Sensor GND to A1, Signal to A0
                           //3 = JRK 2 AD_Input (only for use with JRK 2 Motorcontroller)
```

Enter the matching number according to the description at the right side

4.3 SteerPosZero

```
#define SteerPosZero 512    //vary this to get near 0 degrees when wheels are straight forward
                            //with Arduino ADC start with 512 (0-1024)
                            //with ADS start with 13000   (possible Values are 0-26000 Counts)
                            //with JRK 2 use 2046
```

Enter the center point of your Wheel Angle Sensor with the start value of your ADC!

If you can't reach zero degree at AOG ->here:

Steer Actual, Steer SetPoint, Heading, Roll, Switch
0.00,0.00,624.9,624.9,0

If Zero is unreachable with this

Steer Angle Sensor Zero >0<
0   Slider,

 go back here and increase/decrease the SteerPosZero value until you get zero degree steering angle, while the wheels shows straight ahead.

4.4 Invert Wheel Angle Sensor

```
#define Invert_WAS 0             // set to 1 to Change Direction of Wheel Angle Sensor - to +
```

Make sure if you turn your wheels to the left, the Wheel Angle at AGopenGPS goes negative like

Steer Actual, Steer SetPoint, Heading, Roll, Switch
-6.01,0.00,624.9,624.9,0

4.5 IMU = Compass

```
#define IMU_Installed 0                // set to 1 to enable BNO055 IMU
```

For now, only the BNO055 could be selected or not with 1 or 0

4.6 Inclinometer = Roll of the vehicle

```
#define Inclinometer_Installed 0 // set to 1 if DOGS2 Inclinometer is installed
                                 // set to 2 if MMA8452 installed
```

Enter either 0 for not installed , 1 for the DOGS2 Inclinometer or 2 for the MMA8452 Inlinometer

4.7 Relay type

```
#define Relay_Type 0                // set to 0 if up to 8 Section Relays will be used
                                    // set to 1 if up to 8 uTurn Relays will be used (only Serial Mode)
```

Decide if you want to do "Section Control" with the connected Relays or "uTurn Mode" (=Headland Management while turning over) , if there are no relays installed left it unchanged.

4.8 Ethernet or USB - Communication with AOG

```
//Ethernet Details
#define EtherNet 0      // 0 = Serial/USB communcation with AOG
                        // 1 = Ethernet comunication with AOG (using a ENC28J60 chip)
#define CS_Pin 10       // Arduino Nano= 10 depending how CS of Ethernet Controller ENC28J60 is Connected
```
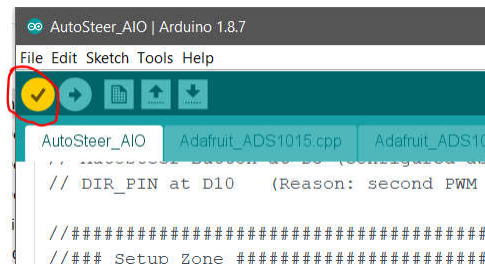
Select your apropriate connection to AOG either 0 = Serial/USB or 1 = Ethernet

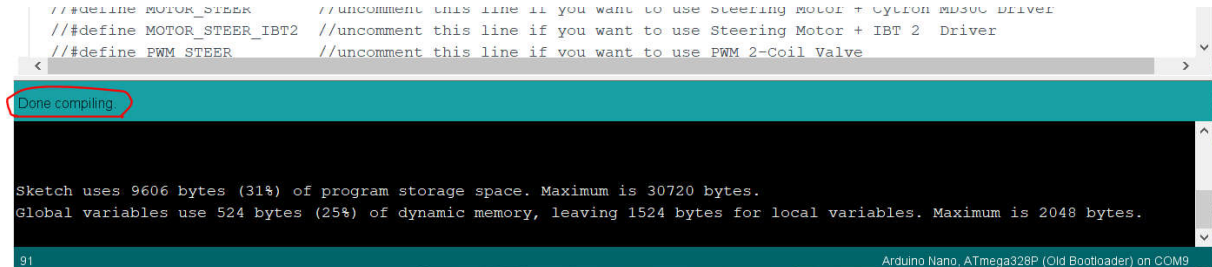## 5. Finally compile and upload your Sketch

5.1 Make sure you have selected your appropriate Arduino Board at the Tools Menu and also the used Com Port of the Arduino:
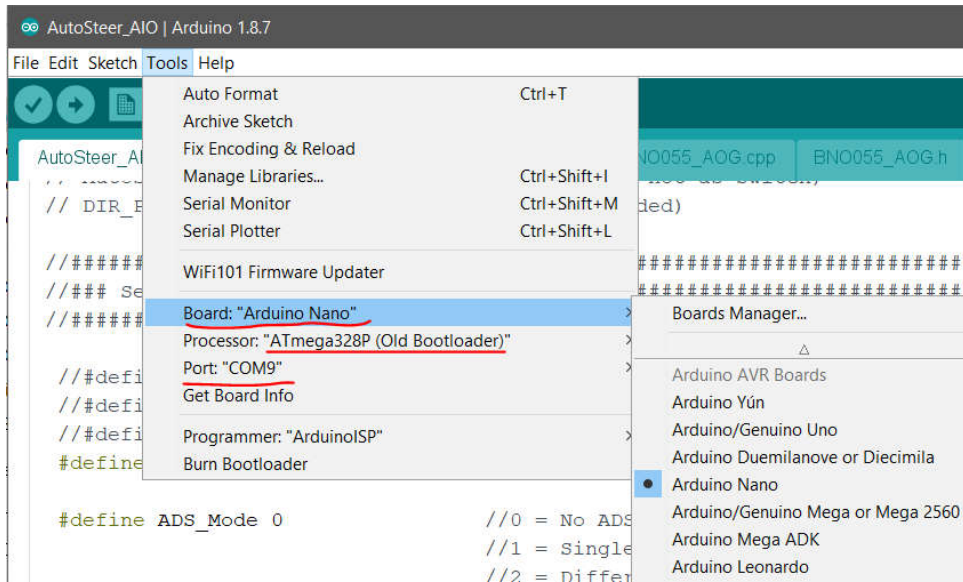
5.2 Next step is to Compile the Sketch with a click on the Compile Button:
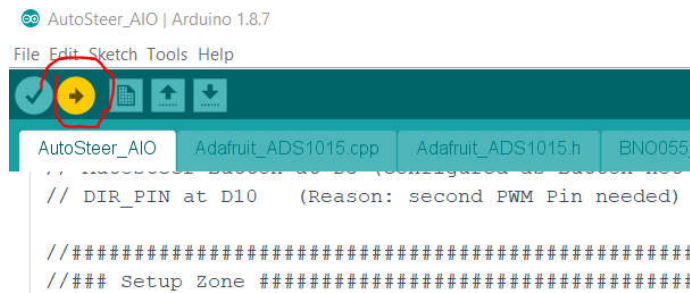

At the lower side of the Arduino IDE you get the result, it should look like "Done compiling":
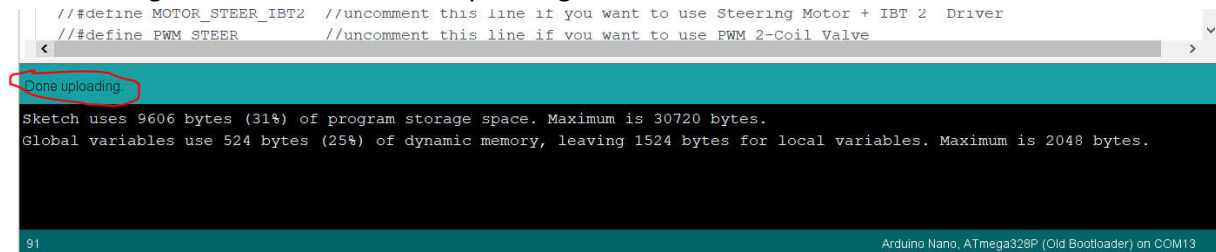

If there appears orange failures, recheck your modifications precisely!

5.3 Upload your compiled Sketch to your Arduino Board with the upload Button:

You should get an answer like "Done uploading"

Otherwise check your Serial Port where the Arduino is connected trough!

Congratulations , now your Arduino Board should work as expected and you can do the further Setup at AGopenGPS inside the Auto Steer Configuration Page

!! Good Luck !!