Arduino Cheatsheet

<https://forum.arduino.cc/t/notepad-user-defined-language-for-arduino/137760>  
 Extend C++ markup for arduino stuff.   
 Also put this in Instruction word: String bool Adafruit\_SHT4x LiquidCrystal\_I2C SPIClass NTPClient

if (var = 0) { ... } else { ... }

for (int i = 0; i<10; i++) { ... }

funtions: returnType funcName(paramType paramname) { ... }

Print variables

Serial.print("Sensor1:"); // use a colon (and no space) after the label:

Serial.print(var1);

Serial.print(",");

Serial.print("Sensor2:");

Serial.println(var2);

void setup() {

   Serial.begin(9600);

   Serial.println("var1:,var2:,var3:"); //setup label once at the beggining

 }

void loop() {

   Serial.print(sensorValue1);

   Serial.print(",");

   Serial.print(sensorValue2);

   Serial.print(",");

   Serial.println(sensorValue3);

 }

Add a ‘min’ and ‘max’ line to disable auto scaling

Serial.println("Min:0,Max:1023");

Scale variables to keep plotter axis, just for waveform

Serial.print(map(variable1,0,1023,0,100));

ESP32 supports “Serial.printf ”

Serial.printf("%.2f %.2f %d \n", myFloat1, myFloat2, myInteger);

%d ≡ %i for int; %lu for long unsigned int; %f for float; %g for exp not, %s?

printf("%3d", 12) outputs “ 12”, with a width of 3

%[parameter][flags][width][.precision][length]type

Inventario arduino

SHT 40: rosa

BMP 180: Azul

Communicacao digital: (LCD I2C, SHT, ...)  
D21: SDA  
D22: SCL

mq303b: sensor de alcool melhorado

SD Card

* 5V is more reliable than 3.3V
* Got an error if i didn’t connect MISO, even if i was not reading data
* Apparently PINs are somewhat predefined, use SPI.begin(18, 19, 23, 5); // SCK, MISO, MOSI, CS

Matlab

if exist('equipment','var') == 0 %To allow other codes to overwrite

var = load(“path”);  
Alternative: open

var(1:end, 1) to access

fprintf(“var = %.5g”, var)

saveas(gcf, ['Comparison\_' Fahrmanoever '.png']); % Save the figure as PNG

save(['ComparisonResults\_' Fahrmanoever '.mat'], 'absoluteError', 'relativeError', 'maxAbsError', 'meanAbsError', 'stdAbsError');

% Doesnt clear if is imported by another script

script\_metadata = dbstack;

script\_caller = script\_metadata(end).name;

if strcmp(script\_caller, mfilename), clc; clear; close all; end

var.(field) % To access a struct field usind a variable

figure(16)

clf

hold on

plot(t, yValues, 'MarkerIndices',1:10:length(yValues))

title('Combined braking strategy')

xlabel('Time [s]')

ylabel('Desired torque [Nm]')

yscale log

legend('input', 'Fric, hysteresis= '+string(hysteresis), 'output no hysteresis, RMSE= '+string(RMSE\_nh), RMSE= '+string(RMSE\_h), Location =” best”)

grid on

axis padded

hold off

close

%To make axis adimentional. I dont like it.

%Maybe try to divide by max(T)/100

yticklabels(linspace(-120,0,7)+"%")

ylabel('Braking force constituents [%]')

xticklabels(linspace(0,100,11)+"%")

xlabel('Time [%]')