The driving databases contain two types of data, GPS data ($GPRMC,235944.99,V,5000.5629,N,11039.2075,W,0.00,0.0,050180,,,N*62) and also fuel data ($Fuel,0,642,710,2_CLOSED) This document describes the parsing of the fuel data and represents fuel economy readings from the diagnostic port of a vehicle in the following format:

Speed (Km/h), RPM, MAF, status

Example: 26,1268,1920,2_CLOSED

Where

- Speed = 26 Km/h
- Engine RPM = 1268
- MAF (Mass Air Flow) = 1920
- Status = 2_Closed which means good

Where MAF=Mass Air Flow and is a measure of the amount of air being consumed and is used for the fuel economy calculations as follows:

MAF is gm/sec of air weight, convert to litres of fuel per hour

Liters per hour = MAF *

1 100 *

1 Kg 1000 gm * 3600 sec 1 hr *

1 $litre$ .756 Kg

This can be simplified to LPH = MAF * .00325267

Km/litre =

$km\ hr\ litres\ hr$

Then 100/(km/litre) for litres per 100km

Having said all that, here is the sample code to get you started. Your input variables are MAF and SPEED from each line of the database but be careful of when the MAF is zero (engine not running)

FuelEcon = MAF * 0.00325267 If FuelEcon > 0 Then FuelEcon = Speed / FuelEcon If FuelEcon > 0 Then FuelEcon = 100 / FuelEcon

FuelEcon is your output and is now in litres per 100 km

For Example: For the above example of “26,1268,1920,2_CLOSED” the fuel economy would be 24L/100Km

But, be careful, because if the engine is not yet running, it will return the following with missing values “,,704,2_CLOSED”

Your task is to create a function that converts this data from string form to fuel economy and plot to a 3 series chart showing Speed, RPM and Fuel Economy

Use the following data for your testing

44,1251,2335,2_CLOSED
44,1251,1857,2_CLOSED
49,1251,1857,2_CLOSED
49,1251,1764,2_CLOSED
51,1251,1764,2_CLOSED
51,1251,1604,2_CLOSED
51,1251,1441,2_CLOSED
51,1251,1462,2_CLOSED
51,1070,1446,2_CLOSED
52,1070,1414,2_CLOSED