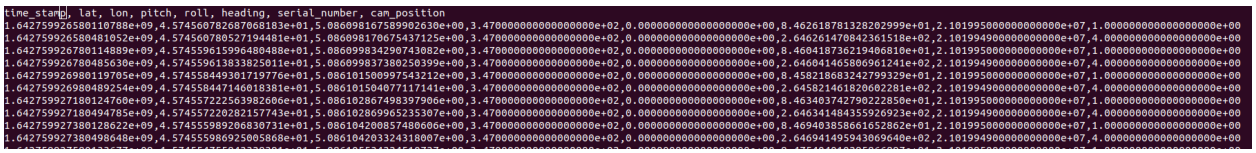
Python data analysis test

Here is a csv file that contains a lot of information. It corresponds to one inspection of our system. The header of the csv file looks like this:



Thus it has 8 columns in total:
time_stamp : The timestamp in second, given by python time.time().
lat : The latitude value.
lon : The longitude value.
pitch: Not useful
roll : Not useful
heading: Not useful
serial_number: The serial number of each camera
cam_position : The number of camera.

What you are going to use is the column time_stamp in second and serial number. The time stamp is the time when we take an image and the serial number labels the camera. The number of cameras equals the number of serial_number, those values are correlated.

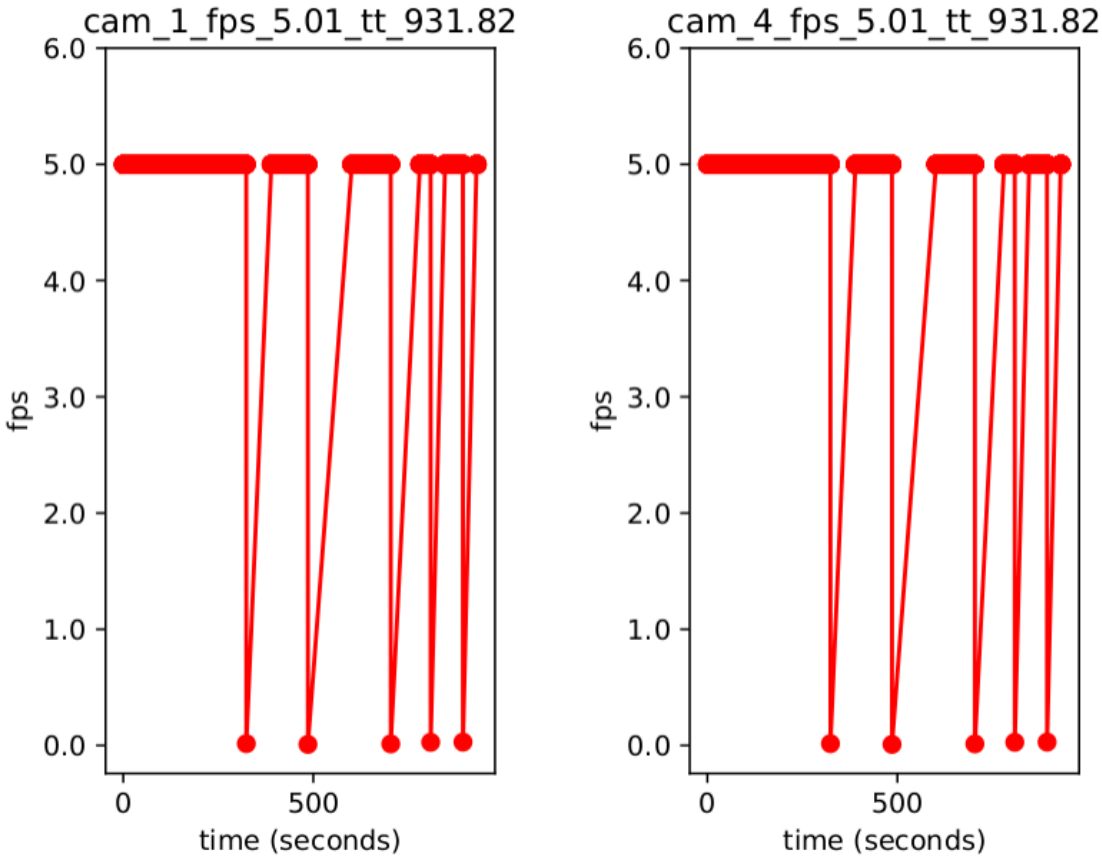
For the implementation, the suggestion is the PANDAS package, but you can use numpy if you prefer or any other packages.

Please finish the following questions in 3 hours. Send the script, and a report with asked plots to: tao.li@flyinstinct.com

If you have any questions, do not hesitate to contact me with 0629167329.

Q1:

Load the csv, then for each camera (or serial_number), calculate the “FPS (the number of images per second)” for each frame. Attached there is one example plot about the FPS.



Q2:

In addition to this fps plot, make a bar plot whose x-axis is the camera serial number, and the y-axis is the number of images we have in this meta.csv file for that camera.

Q3:

Mine and plot some other useful / valuable informations from the metadata file and explain them.