E-JUST
الجامعة المصرية اليابانية للعلوم والتكنولوجيا
エジプト日本科学 技術大学

CSE 313 – Advanced Programming

Programming Quiz / Challenge

Problem Description

You are required to writ ae python program to read the dump file from a data logger. Your program should read the file and decode the data to extract different channels. Then plot the channels following the format below. Each line of data is a packet of data from different sensors.

You are required to do the following:

1- Read the included text file.

The data format is in Hex (Excluding time, date and text_id).

2- Convert hex values to decimal

3- Extract different channels from each line using the packet format below.

4- Plot the data in subplots vs time

sub plot 1 include: yoc_temp, yoc_SP, yoc_SP,yoc_h_adc, yoc_h1,yoc_h2,

sub plot 2 include: yoc_p1 till yoc_p5, yoc_i_adc,

sub plot 3 include: yoc_filter,yoc_h1 ,yoc_h2, yoc_i_adc

5- Write the processed data into a new csv file

Packet Format:

each row consists of the following

```
{
    Date,
    Time:
     text_id,
    yoc_temp,  // Current Temperature
    yoc_SP,      // Target Temperature
    yoc_p1,      // Device 1 state Off=0, LOW speed=1,on=2
    yoc_p2,      // Device 2 state Off=0, on=2
    yoc_p3,            // Device 3 state Off=0, on=2
    yoc_p4,      // Device 4 state Off=0, on=2
    yoc_p5,      // Device 5 state Off=0, on=2
    yoc_bl1,     // External Device 1 state Off=0, on=2
    yoc_bl2,     // External Device 2 state Off=0, on=2
    yoc_lights, // Lights 1 state Off=0, on=1
    yoc_stereo, // Stereo state Off=0, on=1
    yoc_h1,       //H-Device 1 state Off=0, start-up routine=1, running=2,exit_routine
    yoc_h2,       //H-Device2 state Off=0, start-up routine=1, running=2,exit_routine
    yoc_filter,    // filter Stages from 0 to 7
    yoc_bl3,       // External Device 3 state Off=0, on=1
    yoc_bl4,        // External Device 4 state Off=0, on=1
    yoc_bl5,       // External Device 5 state Off=0, on=1
    yoc_bl6,      // External Device 6 state Off=0, on=1
    yoc_h_adc,  // Internal Temperature
    yoc_bl7,      // External Device 7 state Off=0, on=1
    yoc_econ,   // power saving state Off=0, on=1
    yoc_i_adc,  // current
    yoc_all_on, // alarm Off=0, on=1
    yoc_bl8,      // External Device 8 state Off=0, on=1
    yoc_bl9,    // External Device 9 state Off=0, on=1
    yoc_bl10,   // External Device 10 state Off=0, on=1
}
```