**You have this week to finish this coding competition. Result will be announced on Monday.**

**Problem Statement:**

You have been given a dataset which includes three files in the data folder. The data folder has three folders and each folder have one file.

Apnea -> mesa-sleep-0001-profusion.xml

Flow -> mesa-sleep-0001.edf

Stage -> mesa-sleep-0001-nsrr.xml

data/apnea folder contains a file which has a label if apnea occurs to a patient at some time. It is coded inside the .xml file in the form of Hypopnea. You need to make a .csv file based on Hypopnea event start time and total duration. A sample file has been given in the output folder. Open mesa-sleep-0001-profusion.xml.csv to understand the above sentence. Your code should produce a file like this.

data/flow folder contains various sleep data, visit https://sleepdata.org/datasets/mesa to understand sleep data in detail. data/flow contain a .edf file, try to open this file in a .edf reader to see on the computer console. Then write a python code to convert .edf into .csv file. Once you convert it, open it in Excel to see it if it is converted correctly. Then you need to choose flow column, you might get confused since in CSV file it is not written which column is flow. Therefore, try to make an analogy from .edf file to understand which column is flow. Flow data is sampled at 32 samples per second and the few data is sampled at 256 samples per second. Moreover, it is also a part of the test to see how much do you understand from a set of data if full information is not available. Once you complete the conversion add the first column as time or Epoch. Time should start from 0 with consecutive steps of 1/32 second. See output/mesa-sleep-0001.edf.csv to understand the output file requirement.

data/stage folder contains sleep stage file mesa-sleep-0001-nsrr.xml. You need to export label/EventType Stages|Stages which has a stage, startTime, and duration of a stage. See file output/mesa-sleep.xml.csv to understand the output file format.

Then combine all these three files together in one file like output/combined/mesa-sleep-0001.csv, this is example file for only first 500 seconds. This file contains Time, Flow, Apnea, and Stage together. So here you need to take care of start time and duration of Apnea and Stage while combining with the flow data.

**You can make one single python file which does the tasks one by one. There is no need to write many python files for doing each task. In case if you need help to understand the problem statement you can call me anytime at 9647902540 between 10 AM to 11.30 PM or mail me directly anytime at** [**laxmimerit@mbreath.com**](mailto:laxmimerit@mbreath.com)**.**

Dataset Link: https://drive.google.com/drive/folders/1-\_kUgpaTvjgf3\_lqYqxioVlpUR8Z7ny-?usp=sharing