Description:

The team has been tasked to submit a report to the executives about operation profile of an equipment in the fleet. The team needs to prepare a report with following information:

1. A table/chart showing how many hours did the equipment operate at different temperature ranges in every quarter of every year when it was online.
    - The team is only interested in highlighting this information for temperatures above 1000°F at increments of 50°F, for example, 1000-1050°F, 1050-1100°F, etc.
    - There is no point of showing data if the equipment operated in a certain temperature range for 5 hours or less in a quarter.
2. A chart showing Enthalpy over time, colored by the temperature ranges when the equipment was online at temperatures above 1000°F and operating in steady state. The temperature ranges should be at increments of 10°F, for example, 1050-1060°F, 1060-1070°F, etc.
    - Enthalpy can be calculated using iapws97 module in iapws package available in PyPi.
    - Here is a link to the documentation: iapws_documentation
    - Enthalpy = steam.h * 0.4299226

      where,

        - steam = IAPWS97(P=Press_MPa, T=Temp_degK)
        - Press_MPa = Press_psia * 6894.76 / 1E6
        - Temp_degK = (Temp_degF - 32) * 5 / 9 + 273.15
        - Press_psia = Press (psig) + 14.7
        - Temp_degF = Temp (°F)
        - Press (psig) is available in operation data provided
        - Temp (°F) is available in operation data provided

Deliverable:

- Write well-documented python code that can be used to help the team for preparing the report with requirements mentioned above.
- It is very important that the code should be portable and executable on any team member's computer.
    - You are free to use any library/package, but keep in mind that some team members may only have a bare installation of python.

Note:

- The equipment is online if the Power (MW) is greater than 30 MW.
- The equipment is operating in steady state when PowerSwing (MW) is at most 3 MW.