[redacted] Energy Service Engineering Analyst Evaluation

Welcome to the Analyst Evaluation. This is an equivalent set of tasks to those you will be expected to perform as part of the Energy Service Engineering Infrastructure and Analytics team. Please complete these exercises using python with pandas and present your results in a jupyter notebook.

In this hypothetical, we are investigating a subset of the fleet of Superchargers to review possible temperature issues in the handles in March 2022.

Please reach out to your recruiter to be provided with a link to the files needed for this exercise, and reach out if you have any questions

1. Using the signals_data files, provide a list of components that have an average temperature above 90 degrees during any 30 second period. Perform this analysis for all temperature signals in the dataset.
1. Provide the maximum power (given by the LM_PowerLimit signal) that occurs during any 30 second period when a component experiences an average temperature of 90 degrees over that period.
1. Provide the average power and temperature when a temperature related alert fires (see alerts_data for the alerts information and timestamps). Detail your method for aligning the alert timestamps with the signal timestamps, and your method for determining the value of the signal that occurs when the alert fires.
1. Create exploratory data visualizations that indicate the general power, temperature and alert trends of the sites, assets and components in the data. Also provide visualizations that allow for items that are concerning and need investigation to be easily identified for further follow up. Hypothetical audience for these visualizations would be engineering stakeholders who are looking to understand any trends or correlations in the provided signals / alerts that could indicate poorly performing equipment and possible causes. You can use any tool or platform you wish, but please present the results with some explanations in the Jupyter notebook submission. Please note that providing an individual temperature graph for every asset, site and component does not achieve these goals."