Week 3 Check-in
Describe model architecture decisions for baseline model and deep learning model

● Based on your data exploration from last week, examine various model architectures
We will use a time series forecasting model as our baseline model. We decided to cut our UK load profile data to a one year period (2012-11 to 2013-11) since for this time period there are the most number of unique households with all 48 target values. The data contains power usage at 30 minute granularity for more than 5000 unique households. We shall build a baseline model that makes year-long prediction of power consumption for these 5000 households.

● Start with a baseline model. This can be a non-deep learning method or an existing published model you'll compare your model to
For our baseline model, we will use a time series forecasting model using an auto-ARIMA (which automatically chooses hyperparameters) SARIMA model, which is not based on deep-learning. Our data has seasonality, making this a good candidate for a baseline model.

We could also use baseline models used in the paper (https://arxiv.org/pdf/2405.02180) as our baseline.

● Compare different deep learning techniques. Discussions can consider expected performance level, compute needed, inference time, and past research
Example: if you're doing NLP, what is most promising for your purposes and why: RNN, LSTM, transformers

We will implement deep learning flow-based generative models developed in the following paper: https://arxiv.org/pdf/2405.02180.