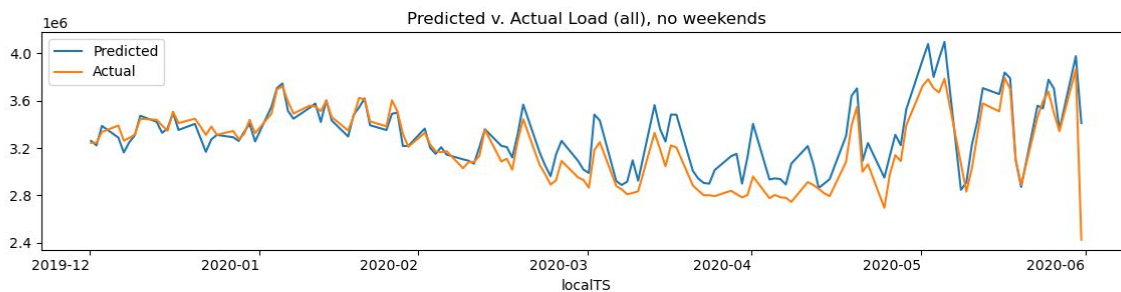


**Project title:** The effect of COVID-19 on the energy consumption in Fort Collins, CO.

**Description:** We want to observe the difference between the energy consumption before and after the start of the pandemic in different premises, such as commercial, residential, and industrial in the city of Fort Collins.

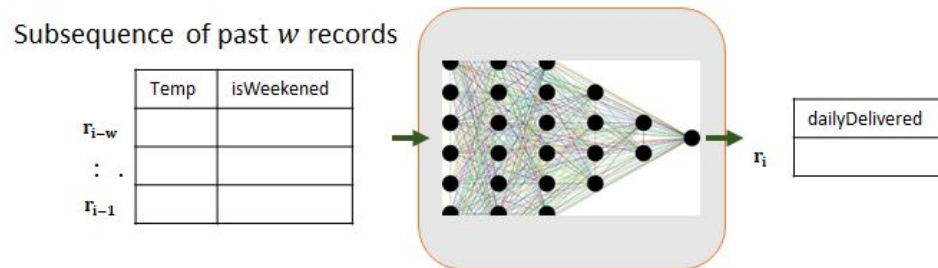
We want to design a model that predicts the value of the energy delivered to each type of premises based on other factors, such as temperature. The following figure is the outputs of a prediction model (i.e., the expected values) versus the actual values of *dailyDelivered* for residential premises. You can obviously see an increase in the Energy consumption by the residential premises after the pandemic (compare it with the expected values).



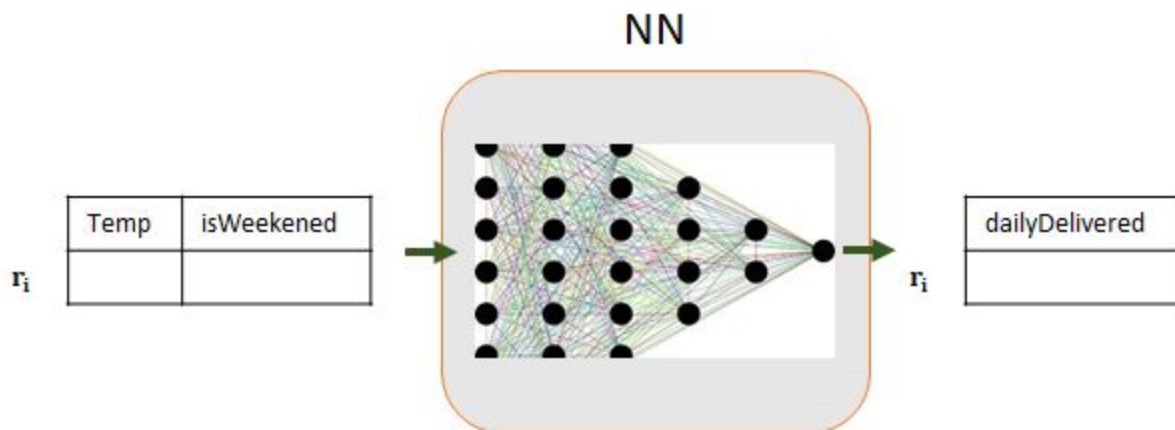
**Dataset:** For each type of premise, we have a dataset with three attributes (features): *Temp*, *dailyDelivered*, and *isWeekend*.

Attribute	Data type	Description
Temp	Float	Temperature
dailyDelivered	Float	KwH
isWeekened	Boolean	

**So far:** We have implemented three temporal prediction models based on LSTM. You can see the code and the results in [this](#) GitHub repository. The following figure shows one of the models. This model takes a subsequence of past *w* records to predict the value of *dailyDelivered* of the next record.



**Task:** Implement a non-temporal machine learning model, such as a neural network or SVM, that predicts the value of *dailyDelivered* based on *Temp* and *isWeekened*. For example, in the following figure, the network has a data record with two features as input and has a single-value output. You can train this network on the pre-covid data and test it against the post-covid data. The output should be a predicted vs. actual values plot (like the one in the previous page) and the mean square error value.



I have added a “working\_branch” on the same GitHub repository, where you can start adding your code. I attached a sample dataset for the residential premises.