**User Guide for Time Series Forecasting Code**

This guide will help you understand how to modify key parameters and choose between different models in the provided time series forecasting code.

**1. Datasets**

* **Purpose**: The code is designed to work with various datasets, allowing you to experiment with different types of time series data.
* **Tested Datasets**:
  + **ETTm1** and **ETTm2**: Pre-configured datasets that can be easily switched by changing the DATASET parameter.
  + **AAPL Stock Data**: To use AAPL stock data, you need to uncomment the relevant section that uses the yfinance library

**2. Sequence Length**

* **Purpose**: Sequence length determines the amount of historical data the model uses to make predictions.
* **Default Setting**: The sequence length is set to 48.
* **How to Modify**: If you need a different sequence length, modify the SEQUENCE\_LENGTH parameter.

**3. Forecast Length**

* **Purpose**: Forecast length specifies how many future time steps the model predicts.
* **How to Modify**: Adjust the FORECAST\_LENGTH parameter to change the forecast horizon.
* **Range**: The tested range of forecast lengths are (1, 12, 24, 48).

**4. Models**

* **Purpose**: The code supports several models, each suited for different forecasting tasks.
* **Model Options**:
  + **MLP (Multi-Layer Perceptron)**
  + **KAN (Kolmogorov-Arnold Network)**
  + **TCN (Temporal Convolutional Network)**
  + **TCKAN (Temporal Convolutional Kolmogorov-Arnold Network)**
  + **Transformer**
  + **KANTransformer (Kolmogorov-Arnold Network Transformer)**
* **How to Modify**: Change the model parameter to select the desired model, available and tested models are commented out.

**Additional Notes:**

* **Device Configuration**: The code automatically selects the best available device (GPU or CPU) for computation.
* **Data Loading**: Datasets are pre-processed, and only the necessary parameter changes are required to switch between them or alter the model settings.

This guide provides an overview of how to customize the forecast length, dataset, and model in your time series forecasting tasks. Select the model, dataset and parameters that are tested to reproduce the results.

**User Guide for PINN Code**

**1. Dataset**

* **Dataset**:
  + **AAPL Options chain with multiple different expiration dates**

**2. Running**

* **Select model**: Uncomment out the code relating to the definition of the model parameter to change the model. Pick between MLP or KAN

This guide provides an overview of how to run the notebook. Select the model and run to reproduce the results.