Programming task

Time Series Forecasting Task:

- Load a time series dataset (e.g., stock prices, weather data).
- Build a recurrent neural network (RNN) or LSTM model using Keras.
- Train the model to forecast future values based on historical data.
- Evaluate the model's performance using appropriate metrics (e.g., MAE, RMSE).

Image Classification Task:

- Load the MNIST dataset.
- Build a simple convolutional neural network (CNN) using Keras Sequential model.
- Train the CNN model on the MNIST dataset.
- Evaluate the model's performance on a test set and report accuracy.
- Use grid search to optimize hyperparameters such as learning rate, batch size, and optimizer choice.
- Use Callback functions to automate training process like “ReduceLROnPlateau” and keep check on validation loss. Also use history object for result visualization.