**Stock Price Prediction - Data Preprocessing**

**0.Importing the required libraries:**

**A screenshot of a computer program

Description automatically generated**

All the above libraries are to be used to perform stock price predictions on the given dataset and hence they are imported to be used in this notebook

**1. Importing the Dataset**

In this step we are going to import the dataset that is going to be used across this project

A screen shot of a computer code

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Using the panadas library we are able to read data from the dataset with the title “TSLA.csv” and this is then saved to the “df” variable for further use, which yields the following output.

A table with numbers and letters

Description automatically generated

**2. Dataset Summary**

This step provides a quick statistical summary of the dataset, including count, mean, standard deviation, minimum, and maximum values for each column. Following is the code snippet of this section.

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With the following output:

A screenshot of a computer screen

Description automatically generated

**3. Date Column Data Type Conversion**

This step converts the 'Date' column to a datetime datatype, which is important for time series analysis.Following is the code snippet of this section.

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With the following output:A screen shot of a computer

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**4. Checking for Missing Values**

This step helps identify and handle missing values in the dataset. Depending on the amount and nature of missing data, you may choose to remove or impute missing values.Following is the code snippet of this section:

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With the following output:

A screen shot of a computer

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**5. Data Splitting**

This step splits the dataset into training and testing sets. The exact splitting ratio (here, 800 data points for training) can be adjusted to suit your needs. Following is the code snippet of this section:

A screen shot of numbers

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**6. Data Scaling with Min-Max Scaling**

This step scales the data to a range between 0 and 1. LSTM models often perform better when data is scaled to a specific range, as they are sensitive to input scale. Following is the code snippet of this section:

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These are the preprocessing steps applied to the dataset to prepare it for stock price prediction using an LSTM model. Additional steps related to model development, training, and evaluation can be performed after these preprocessing steps.