

**I can guide you through the general steps to load and preprocess a dataset for stock price prediction, but I can't directly access external websites or download data. Here's a high-level overview of the process:**

## **1. \*\*Data Collection:\*\***



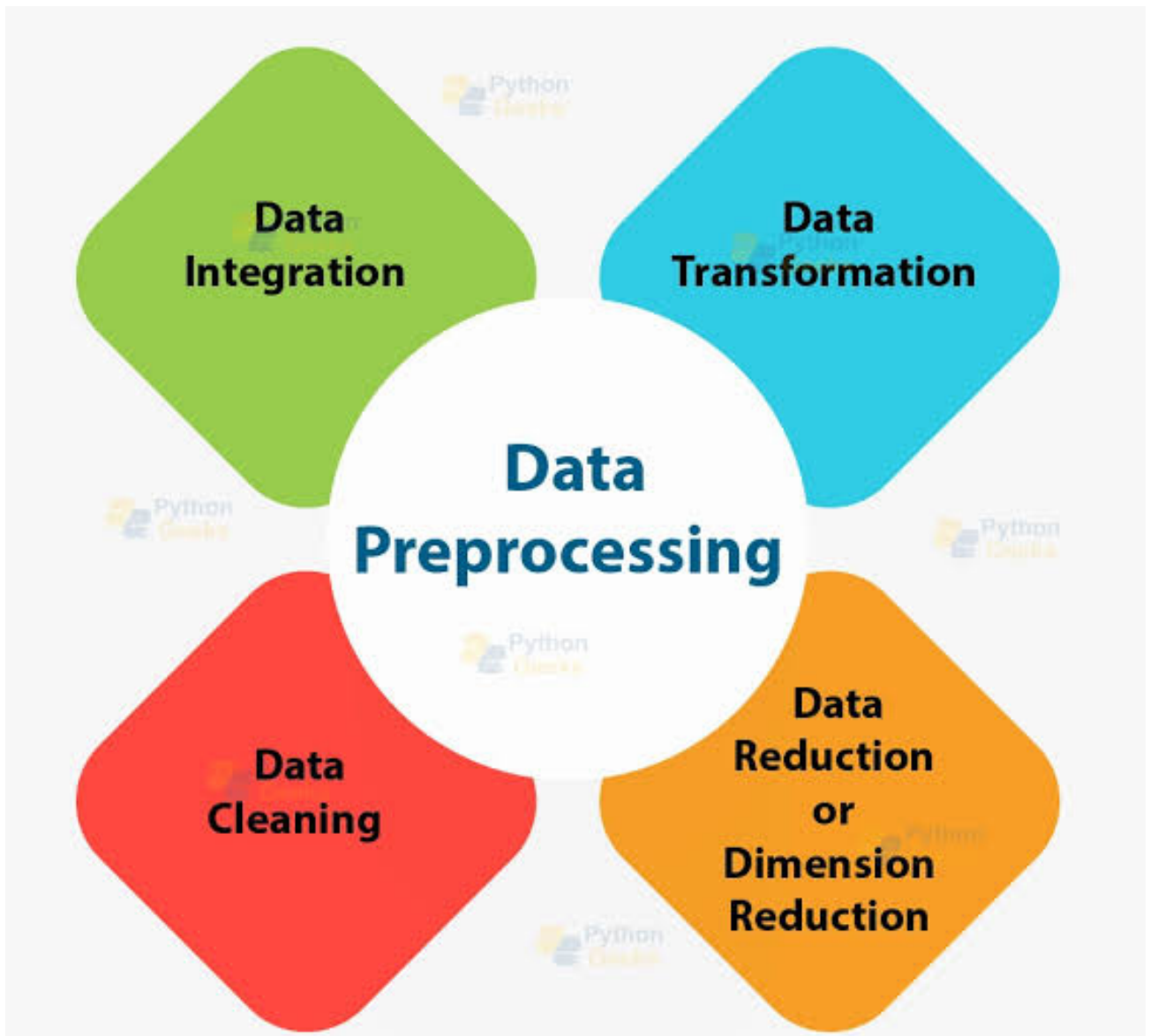
- Download the dataset from Kaggle  
(<https://www.kaggle.com/datasets/prasoonkottarathil/microsoft-lifetime-stocks-dataset>).

## 2. **\*\*Data Inspection:\*\***



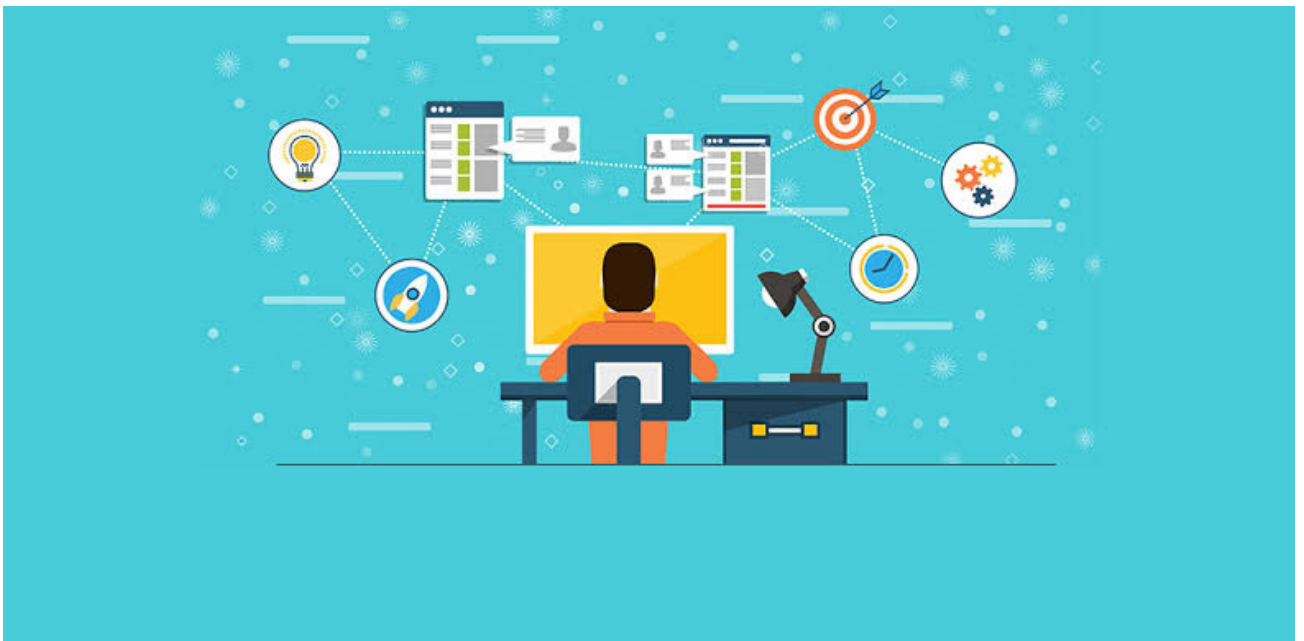
- Check the dataset for any missing values or anomalies.
- Examine the structure of the data to understand its features.

### 3. **\*\*Data Preprocessing:\*\***



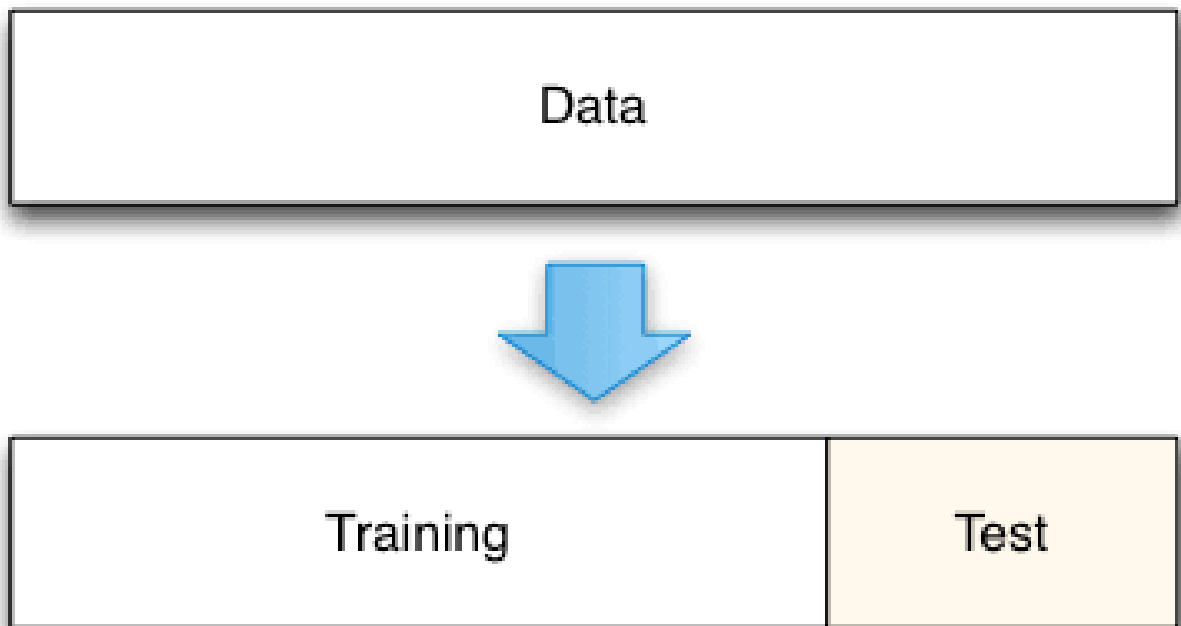
- Convert date columns to datetime objects.
- Sort the data by date in chronological order.
- Handle missing data, such as filling or removing missing values.

## 4. **\*\*Feature Engineering:\*\***



- Create additional features that could be relevant for your prediction, like moving averages, technical indicators, or sentiment analysis scores.

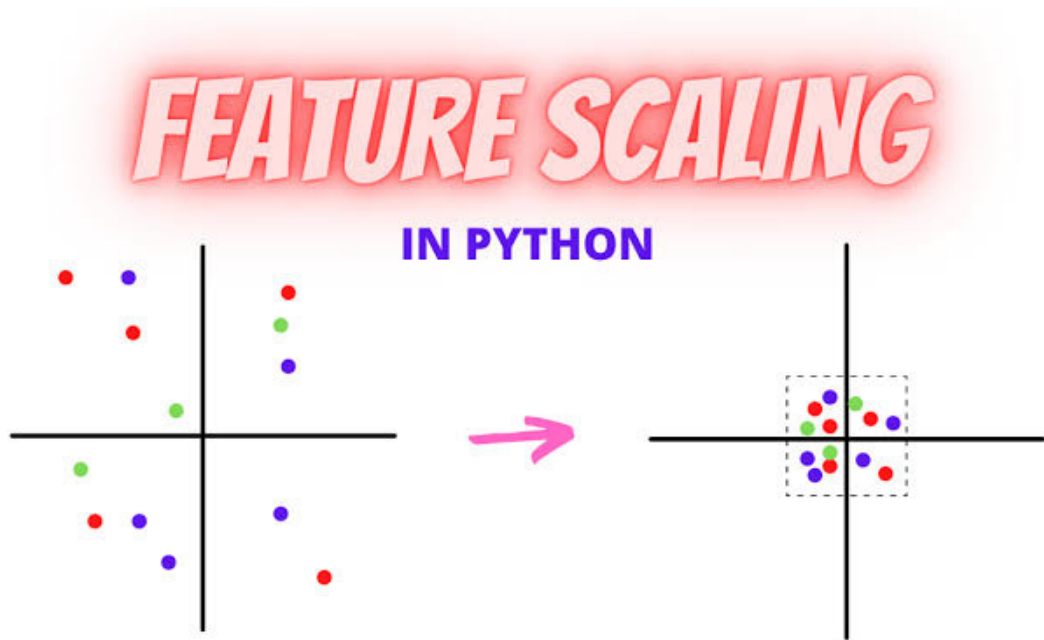
## 5. **\*\*Split Data:\*\***



- Split the data into training, validation, and test sets for model

evaluation.

## 6. **\*\*Scaling:\*\***



- Normalize or scale the numerical features if needed. This is often crucial for deep learning models.

## 7. **\*\*Model Building:\*\***

### Phases of Data Science – Model Building

This slide describes the data modeling phase of the data science and the various tools that could help in data modeling such as SAS enterprise miner, SPCS modeler, MATLAB, Alpine miner, and statistica.



Employees will create datasets for training and testing purposes and to check if the existing tools are sufficient for running data models or need more strong platforms

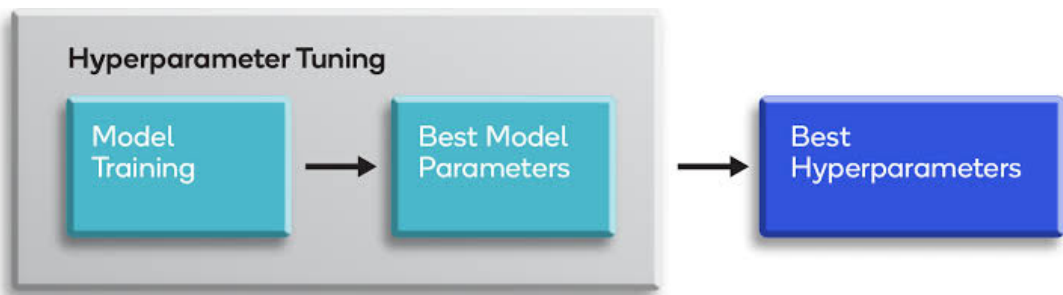
Staff will analyze various techniques such as classification, association, and clustering to build the data models

Tools that can be used for data modeling are Weka, SAS enterprise miner, SPCS modeler, MATLAB, Alpine miner and statistical

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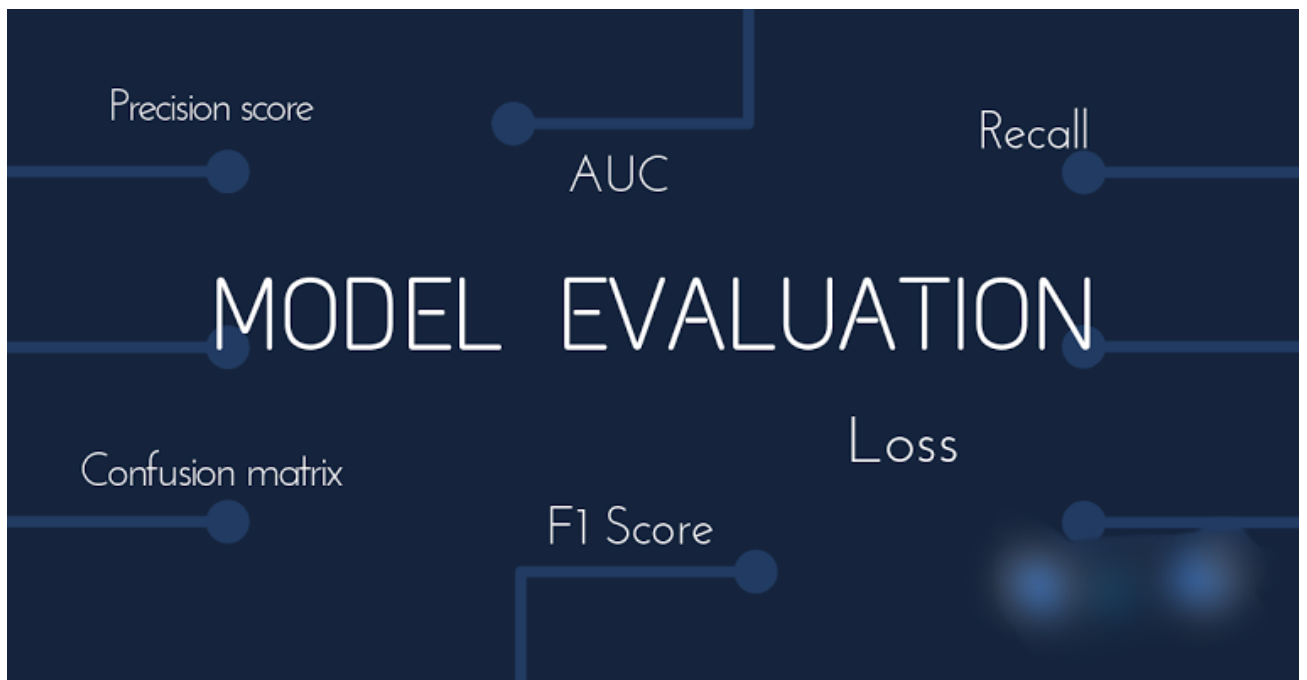
- Start building your stock price prediction model, such as a time series forecasting model (e.g., LSTM, GRU) or other regression models (e.g., linear regression).

## 8. **\*\*Model Training:\*\***



- Train your model on the training data.

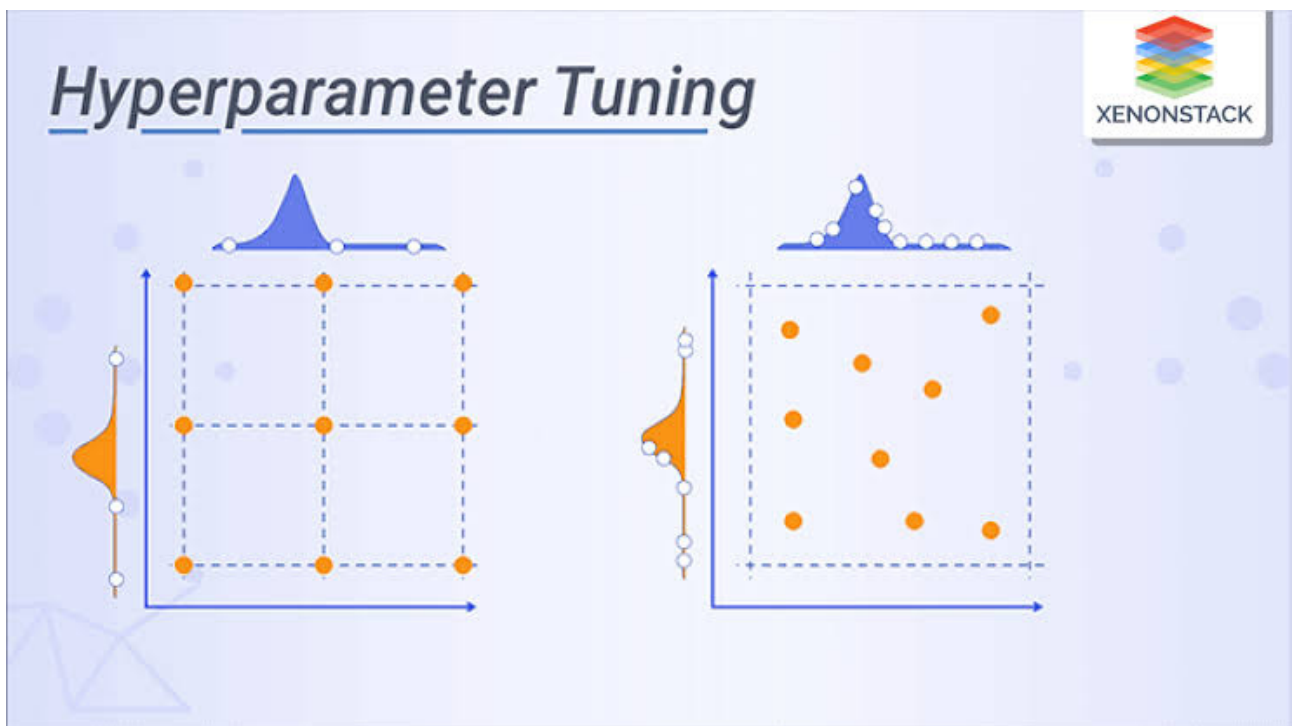
## 9. **\*\*Model Evaluation:\*\***





- Evaluate the model's performance on the validation set using appropriate metrics like Mean Squared Error (MSE), Root Mean Squared Error (RMSE), or others.

## 10. **\*\*Hyperparameter Tuning:\*\***



- Fine-tune your model by adjusting hyperparameters for better performance.

## 11. **\*\*Testing:\*\***



- Assess the model's performance on the test set to see

**how well it generalizes to unseen data.**

## **12. \*\*Deployment (if applicable):\*\***



**- If you plan to deploy the model, prepare it for production use.**