



SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

23AMB201 - MACHINE LEARNING

II YEAR IV SEM

UNIT II - SUPERVISED LEARNING ALGORITHMS

Program 2: Implement Stock Price Prediction
based on Scikit Learn [May use
appropriate library]

Stock prediction/ML/S.Rajarajeswari/AP/AIML

Redesigning Common Mind & Business Towards Excellence



Build an Entrepreneurial Mindset Through Our Design Thinking FrameWork



```
import pandas as pd
```

```
# Sample stock data (Date and Close price)
```

```
data = {  
    'Date': pd.date_range(start='2023-01-01', periods=10, freq='D'),  
    'Close': [100, 101, 102, 105, 107, 106, 108, 110, 112, 115]  
}
```

```
df = pd.DataFrame(data)  
print(df)
```

1. This creates a **fake stock dataset** with 10 days of prices.
2. Date is from Jan 1 to Jan 10.
3. Close represents the closing stock price on each day.



```
import numpy as np
```

```
# Convert dates to day count (e.g., 0, 1, 2, ...)  
df['Day'] = np.arange(len(df))
```

```
# Features and Labels
```

```
X = df[['Day']]    # Independent variable  
y = df['Close']    # Dependent variable (target)
```

1. ML models work with numbers, not dates.
2. So, we convert dates to day numbers: 0, 1, 2, ..., 9.
3. X (feature): what we give to the model to learn (day numbers).
4. y (label): what we want the model to predict (stock prices).



```
from sklearn.linear_model import LinearRegression
```

```
model = LinearRegression()
```

```
model.fit(X, y)
```

```
future_days = np.arange(len(df), len(df) + 5).reshape(-1, 1)
```

```
future_predictions = model.predict(future_days)
```

```
print("Predicted Prices for next 5 days:")
```

```
for day, price in zip(future_days.flatten(), future_predictions):
```

```
    print(f"Day {day}: ${price:.2f}")
```

1. We ask the model to predict prices for the next 5 days (Day 10 to Day 14).
2. predict() uses the trend it learned to estimate future prices.



```
import matplotlib.pyplot as plt  
plt.figure(figsize=(10, 5))  
plt.plot(df['Day'], y, label='Actual Prices', marker='o')  
plt.plot(future_days, future_predictions, label='Predicted Prices', linestyle='--',  
marker='x')  
plt.title('Stock Price Prediction')  
plt.xlabel('Day')  
plt.ylabel('Price')  
plt.legend()  
plt.grid(True)  
plt.show()
```