# INTRO TO PYTHON

Task – Write code that analyzes data to take a date as input and return a price for past and future estimates.

# Commodity Price Analysis Script

## This code demonstrates:

* I/O operations with pandas
* Data analysis (calculating average, finding max and min)
* data visualization with matplotlib
* Use of functions to organize code
* Working with dates in pandas

# CODE

import pandas as pd

import matplotlib.pyplot as plt

# Load the data

def load\_data(filename):

data = pd.read\_csv(filename)

data['Date'] = pd.to\_datetime(data['Date'])

return data

# Calculate average price

def calculate\_average\_price(data):

return data['Price'].mean()

# Find the highest and lowest prices

def find\_price\_extremes(data):

highest\_price = data['Price'].max()

lowest\_price = data['Price'].min()

return highest\_price, lowest\_price

# Plot the price data

def plot\_price\_data(data):

plt.figure(figsize=(10, 6))

plt.plot(data['Date'], data['Price'])

plt.title('Commodity Price Over Time')

plt.xlabel('Date')

plt.ylabel('Price')

plt.xticks(rotation=45)

plt.tight\_layout()

plt.show()

# Main function

def main():

# Load the data

filename = 'commodity\_prices.csv' # You'll need to create this CSV file

data = load\_data(filename)

# Calculate and print the average price

avg\_price = calculate\_average\_price(data)

print(f"The average price is: ${avg\_price:.2f}")

# Find and print the highest and lowest prices

highest, lowest = find\_price\_extremes(data)

print(f"The highest price is: ${highest:.2f}")

print(f"The lowest price is: ${lowest:.2f}")

# Plot the data

plot\_price\_data(data)

if \_\_name\_\_ == "\_\_main\_\_":

main()