Pandas Graphs and Exercises - Teaching Material

**1. Plotting Graphs with Pandas**

You need to install matplotlib before using graphing features:

***pip install matplotlib***

**Example 1: Line Plot**

import pandas as pd  
import matplotlib.pyplot as plt  
  
data = {'Year': [2018, 2019, 2020, 2021], 'Sales': [200, 250, 300, 400]}  
df = pd.DataFrame(data)  
df.plot(x='Year', y='Sales', kind='line', title='Yearly Sales')  
plt.show()

**Example 2: Bar Chart**

import pandas as pd  
import matplotlib.pyplot as plt  
  
data = {'Product': ['A', 'B', 'C'], 'Revenue': [1000, 1500, 1200]}  
df = pd.DataFrame(data)  
df.plot(x='Product', y='Revenue', kind='bar', title='Product Revenue')  
plt.show()

**Example 3: Pie Chart**

import pandas as pd  
import matplotlib.pyplot as plt  
  
data = {'Category': ['Food', 'Transport', 'Rent'], 'Expense': [300, 100, 600]}  
df = pd.DataFrame(data)  
plt.pie(df['Expense'], labels=df['Category'], autopct='%1.1f%%')  
plt.title('Monthly Expenses')  
plt.show()

**2. Exercises for Students**

Try these exercises after going through the examples:

**Exercise 1: Sales Over Years**

Create a DataFrame with two columns: 'Year' and 'Profit'.  
Years: 2015, 2016, 2017, 2018, 2019  
Profit: 100, 150, 200, 250, 300  
Plot a line chart to show the change in profit over years.

**Exercise 2: Bar Chart of Students' Marks**

Create a DataFrame with student names and their marks in Math.  
Students: Ravi, Priya, Arjun, Meera  
Marks: 80, 95, 78, 88  
Plot a bar chart showing each student’s marks.