DATA EXPLORATION AND VISUALIZATION

EXPERIMENT – 3 WORKING WITH NUMPY, PANDAS AND MATPLOTLIB

import numpy as np

arr1 = np.array([1, 2, 3, 4, 5])

arr2 = np.array([[1, 2, 3], [4, 5, 6]])

print("Original Array:", arr1)

print("Array + 5:", arr1 + 5)

print("Sliced Array:", arr1[1:4])

print("Reshaped 2D Array:\n", arr2.reshape(3, 2))

import pandas as pd

data = {

'Name': ['Alice', 'Bob', 'Charlie'],

'Age': [25, 30, 35],

'Score': [85, 90, 88]

}

df = pd.DataFrame(data)

print("\nDataFrame:")

print(df)

print("\nDataFrame Info:")

print(df.info())

print("\nStatistics:")

print(df.describe())

import matplotlib.pyplot as plt

plt.figure()

plt.plot(df['Name'], df['Score'], marker='o')

plt.title('Scores of Students')

plt.xlabel('Name')

plt.ylabel('Score')

plt.grid(True)

plt.show()

plt.figure()

plt.bar(df['Name'], df['Age'], color='orange')

plt.title('Age of Students')

plt.xlabel('Name')

plt.ylabel('Age')

plt.show()

plt.figure()

plt.pie(df['Score'], labels=df['Name'], autopct='%1.1f%%', startangle=90)

plt.title('Score Distribution')

plt.show()

OUTPUT:



