**EXPERIMENT:03 -WORKING WITH THE NUMPY ARRAY**

**PROGRAM:**

import numpy as np

import pandas as pd

import matplotlib.pyplot as plt

print("NumPy Operations:")

arr = np.array([10, 20, 30, 40, 50])

print("Original array:", arr)

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

print("Array squared:", arr \*\* 2)

print("\nPandas DataFrame Operations:")

data = {

'Name': ['san', 'rags', 'nith', 'poos','nive'],

'Math': [99, 99, 98, 92,97],

'Science': [88, 76, 93, 85,89]

}

df = pd.DataFrame(data)

print("\nDataFrame:")

print(df)

df['Average'] = (df['Math'] + df['Science']) / 2

print("\nWith Average Column:")

print(df)

print("\nGenerating Plots...")

plt.figure(figsize=(8, 4))

plt.bar(df['Name'], df['Math'], color='blue')

plt.title("Math Scores")

plt.xlabel("Students")

plt.ylabel("Marks")

plt.show()

plt.figure(figsize=(8, 4))

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

plt.plot(df['Name'], df['Science'], marker='s', label='Science')

plt.title("Scores in Math and Science")

plt.xlabel("Students")

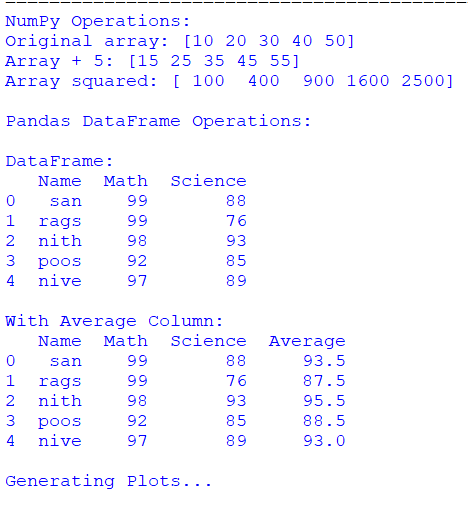
plt.ylabel("Marks")

plt.legend()

plt.grid(True)

plt.show()

**OUTPUT:**

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A screenshot of a graph

AI-generated content may be incorrect.

A graph with orange and blue lines

AI-generated content may be incorrect.