main.py

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```python
import numpy as np

A = np.array([10, 20, 30, 40, 50])
B = np.array([5, 4, 3, 2, 1])

addition = A + B
subtraction = A - B
multiplication = A * B
division = A / B

print("Addition:", addition)
print("Subtraction:", subtraction)
print("Multiplication:", multiplication)
print("Division:", division)

mean_A = np.mean(A)
max_A = np.max(A)
min_A = np.min(A)
dot_product = np.dot(A, B)
reshaped_A = A.reshape(5, 1)

print("\nMean of A:", mean_A)
print("Max of A:", max_A)
print("Min of A:", min_A)
print("Dot Product:", dot_product)
print("Reshaped A:\n", reshaped A)
```

Output

Clear

```
Addition: [15 24 33 42 51]
Subtraction: [ 5 16 27 38 49]
Multiplication: [50 80 90 80 50]
Division: [ 2.  5. 10. 20. 50.]

Mean of A: 30.0
Max of A: 50
Min of A: 10
Dot Product: 350
Reshaped A:
 [[10]
 [20]
 [30]
 [40]
 [50]]
```

```python
import pandas as pd

students_data = pd.DataFrame({
    "Name": ["Alice", "Bob", "Charlie", "David", "Eva"],
    "Age": [20, 22, 19, 21, 20],
    "Grade": ["A", "B", "A", "C", "B"],
    "Marks": [85, 78, 92, 65, 74]
})

first_three_rows = students_data.head(3)
name_marks = students_data[["Name", "Marks"]]
grade_A_students = students_data[students_data["Grade"] == "A"]

print("\nFirst 3 Rows:\n", first_three_rows)
print("\nName & Marks Columns:\n", name_marks)
print("\nStudents with Grade A:\n", grade_A_students)
```

```
First 3 Rows:
      Name  Age Grade  Marks
0    Alice   20     A     85
1      Bob   22     B     78
2  Charlie   19     A     92

Name & Marks Columns:
      Name  Marks
0    Alice     85
1      Bob     78
2  Charlie     92
3    David     65
4      Eva     74

Students with Grade A:
      Name  Age Grade  Marks
0    Alice   20     A     85
2  Charlie   19     A     92

=== Code Execution Successful ===
```