

Matrix operations in Python

Example 1: Matrix Addition

```
import numpy as np

# Define two matrices
A = np.array([[1, 2], [3, 4]])
B = np.array([[5, 6], [7, 8]])

# Matrix addition
C = A + B
print("Matrix Addition:\n", C)
```

Example 2: Matrix Subtraction

```
import numpy as np

# Define two matrices
A = np.array([[9, 8], [7, 6]])
B = np.array([[1, 2], [3, 4]])

# Matrix subtraction
C = A - B
print("Matrix Subtraction:\n", C)
```

Example 3: Matrix Multiplication

```
import numpy as np

# Define two matrices
A = np.array([[1, 2], [3, 4]])
B = np.array([[5, 6], [7, 8]])
```

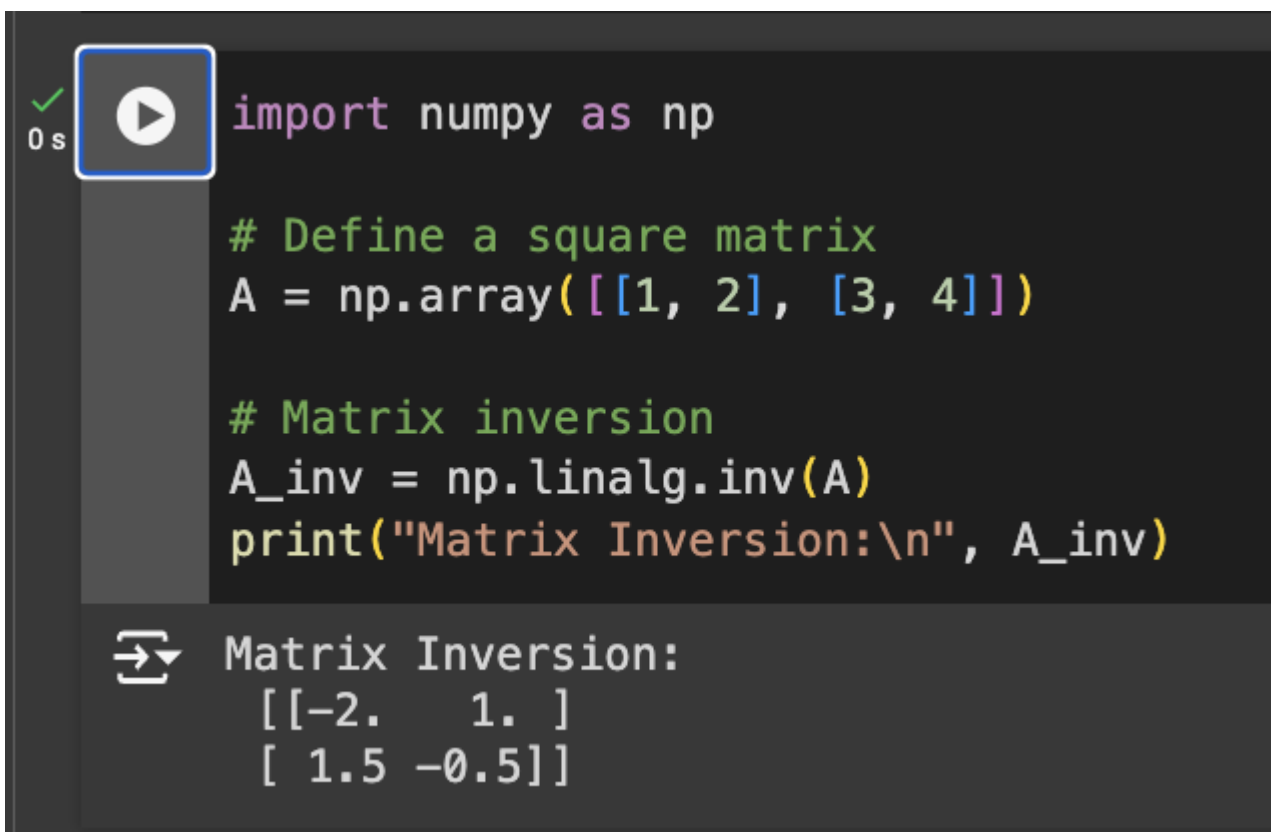
```
# Matrix multiplication
C = np.dot(A, B)
print("Matrix Multiplication:\n", C)
```

Example 4: Matrix Inversion

```
import numpy as np

# Define a square matrix
A = np.array([[1, 2], [3, 4]])

# Matrix inversion
A_inv = np.linalg.inv(A)
print("Matrix Inversion:\n", A_inv)
```



The image shows a Jupyter Notebook interface. On the left, there is a vertical toolbar with a green checkmark and '0 s' indicating execution time, and a play button icon. The main area contains the following Python code:

```
import numpy as np

# Define a square matrix
A = np.array([[1, 2], [3, 4]])

# Matrix inversion
A_inv = np.linalg.inv(A)
print("Matrix Inversion:\n", A_inv)
```

Below the code, the output of the print statement is displayed:

```
Matrix Inversion:
[[-2.   1. ]
 [ 1.5 -0.5]]
```

✓
0 s



```
import numpy as np

# Define two matrices
A = np.array([[1, 2], [3, 4]])
B = np.array([[5, 6], [7, 8]])

# Matrix multiplication
C = np.dot(A, B)
print("Matrix Multiplication:\n", C)
```



```
Matrix Multiplication:
[[19 22]
 [43 50]]
```

✓
0 s



```
import numpy as np

# Define two matrices
A = np.array([[9, 8], [7, 6]])
B = np.array([[1, 2], [3, 4]])

# Matrix subtraction
C = A - B
print("Matrix Subtraction:\n", C)
```



```
Matrix Subtraction:
[[8 6]
 [4 2]]
```

✓
0 s



```
import numpy as np

# Define two matrices
A = np.array([[1, 2], [3, 4]])
B = np.array([[5, 6], [7, 8]])

# Matrix addition
C = A + B
print("Matrix Addition:\n", C)
```



```
Matrix Addition:
[[ 6  8]
 [10 12]]
```