**Task 3**

Create a "Matrix Operations Tool" using Python and the NumPy library. The application should allow users to input matrices and perform operations like addition, subtraction, multiplication, transpose, and determinant calculation. Include an interactive interface to display results in a structured format.

**Colab Link:**

https://colab.research.google.com/drive/1K6XpKhAQl82TtgEIR3VxGPYfalnX7PQq?usp=sharing

**Code:**

```
import numpy as np

def input_matrix():
    r = int(input("Rows: "))
    c = int(input("Cols: "))
    print("Enter values:")
    return np.array([[int(input()) for _ in range(c)] for _ in
range(r)])

A = input_matrix()
B = input_matrix()

print("\nAddition:\n", A + B)
print("\nSubtraction:\n", A - B)
print("\nMultiplication:\n", A @ B)
print("\nTranspose A:\n", A.T)

if A.shape[0] == A.shape[1]:
    print("\nDeterminant of A:", np.linalg.det(A))
```

**Output:**

```
Rows: 2
Cols: 2
Enter values:
1
2
3
4
Rows: 2
Cols: 2
Enter values:
5
6
7
8

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

Subtraction:
 [[-4 -4]
 [-4 -4]]

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

Transpose A:
 [[1 3]
 [2 4]]

Determinant of A: -2.0000000000000004
78
```