Experiment-1

**Aim:** To perform basic operations on matrices (like addition, subtraction, multiplication) and display specific rows or columns of the matrix.

**Software used:** Python

**Theory:**

Listed below are the inbuilt functions used for matrix manipulation:

1. Addition: np.add
2. Subtraction: np.subtract
3. Multiplication: np.multiply
4. Transpose: arr.transpose
5. Dot multiplication: np.dot
6. Slicing a section: arr[a:b,c:d] (where a, b, c and d are integers as per user’s choice)

**Program:**

(Notebook is present in the folder.)

**Results:**

Enter matrix A:

1 2 3

4 5 6

7 8 9

Enter matrix B:

1 2 0

3 4 2

4 7 8

Matrix A:

[[1 2 3]

[4 5 6]

[7 8 9]]

Matrix B:

[[1 2 3]

[4 5 6]

[7 8 9]]

After addition:

[[ 2 4 3]

[ 7 9 8]

[11 15 17]]

After subtraction:

[[0 0 3]

[1 1 4]

[3 1 1]]

After element by element multiplication:

[[ 1 4 0]

[12 20 12]

[28 56 72]]

After transpose matrix A:

[[1 4 7]

[2 5 8]

[3 6 9]]

After transpose matrix B:

[[1 3 4]

[2 4 7]

[0 2 8]]

After dot multiplication:

[[ 19 31 28]

[ 43 70 58]

[ 67 109 88]]

A section of matrix A:

[[5 6]

[8 9]]