Aim: To find the sum of two matrices and transpose of a matrix

Tools: Python

Theory: As long as the dimensions of two matrices are the same, we can add and subtract them much like we add and subtract numbers.

The transpose of a matrix is obtained by changing its rows into columns and its columns into rows.

$$\mathbf{A}+\mathbf{B}=\begin{bmatrix}4 & 8\\ 3 & 7\end{bmatrix}+\begin{bmatrix}1 & 0\\ 5 & 2\end{bmatrix}$$

$$=\begin{bmatrix}4+1 & 8+0\\ 3+5 & 7+2\end{bmatrix}$$

$$=\begin{bmatrix}5 & 8\\ 8 & 9\end{bmatrix}$$

Addition of matrices

$$A=\begin{bmatrix}a & b & c\\ d & e & f\end{bmatrix}_{2\times 3} \qquad A^{T}=\begin{bmatrix}a & d\\ b & e\\ c & f\end{bmatrix}_{3\times 2}$$

Transpose of a matrix