Homework 1

Programming Part

$$A = \begin{pmatrix} 1 & 1 & 2 \\ 1 & -1 & 1 \\ 0 & -1 & 3 \end{pmatrix} \quad B = \begin{pmatrix} 1 & 2 & 3 \\ 3 & 1 & 2 \\ 2 & 3 & 1 \end{pmatrix}$$

Write a program in Python, where you

1. Find the transpose matrices of A and B using **numpy.matrix.transpose** function.
2. Calculate the sum of matrices: $A + B$
3. Calculate the product of matrices: AB using Python function **numpy.matmul**
4. Determine if these matrices are invertible. If the matrix is invertible, print "Matrix (name of matrix) is invertible ". If - not, print "Matrix (name of matrix) is not invertible ".
5. If the matrix is invertible, find its inverse matrix using **numpy.linalg.inv** function.