

## Step-1

Suppose  $A$  is an invertible matrix and exchange the first two rows of the matrix  $A$ .

Now we have to verify whether the new matrix is invertible or not.

## Step-2

$$A = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

Let the matrix

Then  $A$  is invertible.

Now the exchange the first rows of  $A$ , we get a new matrix  $B$  as

$$B = \begin{bmatrix} 0 & 1 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

It is clear that  $B$  is also invertible since  $B$  is a permutation matrix and that have an inverse.

## Step-3

Now we have to explain how we find  $B^{-1}$  from  $A^{-1}$ .

We got  $B$  by exchanging the first two rows of  $A$ .

So  $B^{-1}$  is obtained by exchanging the first two columns of  $A^{-1}$ .