$$\mathbf{M}_R = \begin{bmatrix} 1 & 0 & 1 \\ 1 & 1 & 0 \\ 0 & 0 & 0 \end{bmatrix} \quad \mathbf{M}_S = \begin{bmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ 1 & 0 & 1 \end{bmatrix}$$

$$\mathbf{M}_{S \circ R} = \mathbf{M}_R \odot \mathbf{M}_S = \begin{bmatrix} 1 & 1 & 1 \\ 0 & 1 & 1 \\ 0 & 0 & 0 \end{bmatrix}$$

Calculating SoR

It is an OR(AND) operation. First you need to take the AND operation then you need to take or operation

Eg:

MSR11= (MR11 AND MS11) OR (MR12 AND MS21) OR (MR13 AND MS31) = ((1 AND 0) OR (0 AND 0) OR (1 AND 1))=1.

MSR12= (MR11 AND MS12) OR (MR12 AND MS22) OR (MR13 AND MS32) = ((1 AND 1) OR (0 AND 0) OR (1 AND 0))=1.

MSR13= (MR11 AND MS13) OR (MR12 AND MS23) OR (MR13 AND MS33) = ((1 AND 0) OR (0 AND 1) OR (1 AND 1))=1.

MSR21= (MR21 AND MS11) OR (MR22 AND MS21) OR (MR23 AND MS31) = ((1 AND 0) OR (1 AND 0) OR (0 AND 1))=0.

MSR22= (MR21 AND MS12) OR (MR22 AND MS22) OR (MR23 AND MS32) = ((1 AND 0) OR (1 AND 0) OR (0 AND 1))=0.

MSR23= (MR21 AND MS13) OR (MR22 AND MS23) OR (MR23 AND MS33) = ((1 AND 0) OR (1 AND 1) OR (0 AND 1))=1.

ALL THE OTHER VALUES WILL BE ZERO.

Likewise you can do R^2, R^3 etc for finding transitive closure

Note : If you have any further doubts feel free to ask directly or mail me. My mail id is Jereesh@cusat.ac.in