

CS 201: DISCRETE STRUCTURES
SECTION G
Assignment 07
DUE: Tuesday October 16, 2018.

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Problem 1

Given the Warshall's algorithm from Rosen's book:

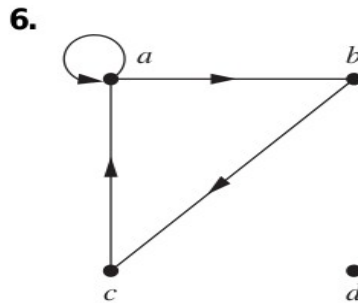
```

procedure Warshall (MR : n × n zero-one matrix)
W := MR
for k := 1 to n
    for i := 1 to n
        for j := 1 to n
            wij := wij ∨ (wik ∧ wkj)
return W {W = [wij] is MR* }

```

Dry run Warshall's algorithm on the following matrices. Show how the above algorithm works by writing down the 4 matrices when $z=1,2,3$ and 4 and check your answer from book for the first matrix.

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



Problem 2

Read section 2.3 and read about increasing and strictly increasing functions and also decreasing and strictly decreasing functions.

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