# CSCI3170 Short Assignment #2

## (Deadline: Nov 9 23:59)

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Consider the following relation schema and functional dependency:

R(A,B,C)

F = {A $\rightarrow$ C, C $\rightarrow$ A}

1. Find $A^+$, $B^+$, $C^+$, $AB^+$, and $BC^+$

$$A^+ = A C$$

$$B^+ = B$$

$$C^+ = A C$$

$$AB^+ = ABC$$

$$BC^+ = ABC$$

2. List all the candidate keys of the relation.

AB,  BC

3.  Is the relation in BCNF? Briefly explain your answer.

No, dependency A -> C violate BC NF
Since A is not superkey, and it is
not trivial relation.

4.  Is the relation in 3NF? Briefly explain your answer

Yes, dependency A -> C does not violate 3NF
requirement. C is part of candidate key BC.
Dependency C -> A does not violate 3NF requirement,
A is also part of candidate key AB.