

Homework 7

CS430 and CS630
100 points

Due Date: **Sun, Dec 18, 2022, before 8:30pm**

INSTRUCTIONS (please read carefully):

All submissions must have one **PDF file (submitted on Gradescope in the Homework 7 assignment)** **MUST** be submitted before the due date following these instructions:

- **The PDF file will contain answers for Question 1** and has to be **uploaded on Gradescope in Homework 2 assignment** before the due date.

No submission after the due date (Sun, Dec 18, 2022 before 8:30 pm) will be accepted. Homework must be typed (no handwritten homework will be accepted).

Submissions that do not follow the instructions from above and are not provided before the deadline will not be accepted and will receive no credit.

All the exercises are for both CS430 and CS630 students.

Question 1) (100 points)

Given the relation with the following attributes ACFSBDM.

Note that C is the key. This relation has this set of functional dependencies: $FS \rightarrow B$, $A \rightarrow D$.

- a) Explain why this relation is not in BCNF. (20 points possible)
- b) Decompose this relation into BCNF. (80 points possible)