CSC 134-02 Database Management Systems (Spring 2022) Assignment 5 (100 points)

Database Normalization and Disk Structure

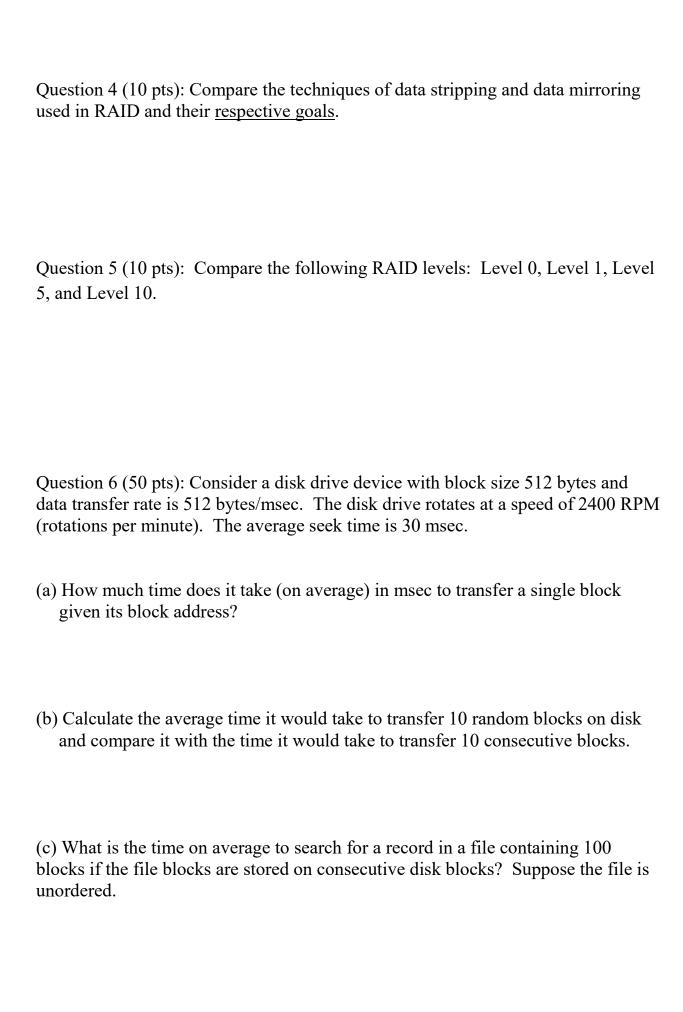
Due at 11:59 pm, Thursday May 5, 2022

Question 1 (10 pts): Please define 1NF, 2NF, 3NF and BCNF, respectively.

Question 2 (10 pts): Please explain what the DB normalization process is.

Question 3 (10 pts): Consider a relation R(A, B, C, D, E) with the following functional dependencies:

Identify the key and explain your answer.



(d) What is the time to read/write an entire file containing 1000 blocks if the file blocks are stored on consecutive disk blocks?
(e) What is the time to read/write an entire file containing 1000 blocks if we distribute the file blocks evenly over 10 disks using data stripping?
Deliverables 1. A doc or pdf file containing all your answers.
Requirements on deliverables

- 1. Your deliverable should be **FLastname A5.doc** or **FLastname A5.pdf** where F indicates first letter, in uppercase, of your firstname and Lastname indicates your last name where first letter is in uppercase. Please exactly follow the naming rule described above. You will be deducted 5 points for incorrect naming.
- 2. On the first page, clearly state your name, ID, course title, assignment number, and due date.
- 3. Submit your doc or pdf file via Canvas.
- 4. No late submission will be accepted.
- 5. When grades are returned to you on Canvas, you have 7 days to meet with the instructor for grade changes. Issues and/or disagreements concerning your grade must be resolved in such 7 days window. After 7 days, the grades are written in stone and can't be changed after that point, for whatever reason.