

CS 33007 Introduction to Database System Design, Spring 2020

Homework5

Total points: 100

Due Date: April 15th, Wednesday 11:59 PM

Notes:

- No submission will be accepted after the solution posted.
- If you submit handwritten answers, please make sure that everything is readable. Otherwise, you might lose points.

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1. The computer science department has three entity sets *instructors*(*i_id*, name, salary), *courses*(*course_id*, course_title, credit_hours) and *reference_books*(*book_id*, book_title, first_author).
 - a. Draw an ER diagram for these entity sets. Please note that each course must have at least one reference book. [15 points]
 - b. Convert the ER diagram to non-redundant relation schemas. [10 points]
 2. For an E-commerce system, you want to store information about the customers, products, the orders, and the customer comments/feedback about each product.
 - a. Model the database using ER diagram [25 points]
 - b. Convert the ER diagram to non-redundant relation schemas. [10 points]
 3. For a hospital, we want to store information about patients, doctors. We also would like to keep records of various tests conducted for each patient.
 - a. Model the database using ER diagram [25 points]
 - b. Convert the ER diagram to non-redundant relation schemas. [15 points]

Notes: 1. please make sure you correctly decide about entity sets and relationship sets

2. Don't forget to underline the primary keys for entity sets as well as relationship sets(after reduction to relational schemas)