

Assignment 1

Deadline (14.05.2023)

Suppose that you are developing a management system database related to health sector (a hospital, a health care center, etc).

- a. Describe the user requirements. (5 pts)
- b. Draw the E-R diagram. (25 pts)
 - a. Must be more complex than the one in the slides.
 - b. Must include a weak entity.
 - c. Must have Total and partial completeness constraint. (Both of them.)
 - d. At least one of the relationship must have a role.
 - e. Must include one ternary relationship.
 - f. Must include an inheritance. (inheriting from "person" entity will not be accepted as an answer.)
- c. List the functional dependencies. (5 pts)
- d. Give the proofs of 3 tables showing if they are BCNF or 3NF. You must use the definitions of normalisation in the book. Other kind of normalization definitions other than the ones in the course slides will not be graded even if they are correct. (5 pts)
- e. Create 3 different SQL functions needed for the management system.
 - a. One must be a table SQL function. (5 pts)
 - b. One must include a for loop. (10 pts)
 - c. One must have a variable as input, a temporary variable and return a variable as an output. (5 pts)
- f. Create 4 triggers needed for the management system.
 - a. One must use "referencing old row as" and "referencing new row as" together. (5 pts)
 - b. One must have "when" or "if". (10 pts)
 - c. One must have "for each row". (5 pts)
 - d. One must have "for each case". (5 pts)
 - e. Write the statement in SQL to drop a trigger. Write the statement in SQL to show triggers. (5 pts)
- g. Create 2 atomic transactions needed for the management system. They must be different with the previous questions. (10 pts)