

CS4.301: Data and Applications (Monsoon 2022)

Quiz - 1

Time: 30 minutes

Maximum Marks: 21

1. Consider that you have to design a database for IIIT Hyderabad's Inter-House Sports Competition. The database is expected to maintain information regarding the players, matches, houses, and any other required entities and relationships. Based on the aforementioned scenario, draw an ER diagram for your database design which must have the following.
 - a. 5 entity types
 - b. 5 relations
 - c. At least one **ternary** relationship
 - d. Appropriate demarcation of entity types, relationship types, primary and partial keys, derived attributes, multivalued attributes, etc.
 - e. At least 1 strong and 1 weak entity
 - f. Structural Participation constraints [following the "(min,max)" notation]

(2.5+2.5+1+3+2+3)

2. Briefly describe how you would apply the three schema architecture to the previous database design.

(3)

3. Briefly explain the third ACID database principle “Isolation” and provide an example of a problem caused by violating the “Isolation” principle in your database.

(2)

4. Below is a Schema for a University which shows the tables. What does it not show?
What information do you think is missing while describing the tables?

STUDENT

Name	Student_number	Class	Major
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Figure 2.1

Schema diagram for the
database in Figure 1.2.

COURSE

Course_name	Course_number	Credit_hours	Department
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PREREQUISITE

Course_number	Prerequisite_number
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SECTION

Section_identifier	Course_number	Semester	Year	Instructor
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GRADE_REPORT

Student_number	Section_identifier	Grade
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(2)

5. What is the best breakfast option for class and why?

(0)