Mahindra University Hyderabad

École Centrale School of Engineering

Minor–I

Program: B. Tech. Branch: CSE/AI/ECM/CM Year: III Semester: I

Subject: Database Management Systems (CS/AI 3103)

Date: 12/09/2024 **Start Time: 10.00 AM**

Time Duration: 1.5 Hours **Max. Marks: 50 Marks**

Instructions:

1) All parts of a question should be answered consecutively.

2) Mobile phones and computers of any kind should not be brought inside the exam hall.

3) Use of any unfair means will result in severe disciplinary action.

Q1. ER Diagrams **[2*5=10M]**

1.1. Give an E/R diagram for a database recording information about teams, players and their fans, including:

a) For each team, its name, its players, its team captain (one of its players), and the colors of its uniform
b) For each player, his/her name.
c) For each fan, his/her name, favorite teams, favorite players, and favorite color.

Remember that a set of colors is not a suitable attribute type for teams. How can you get around this restriction?

1.2. Suppose we wish to add to the schema of 1.1. above, a relationship Led-by among two players and a team. The intention is that this relationship set consists of triples (player1, player2, team). Such that player1 played on the team at a time when some other player2 was the team captain.

a) Draw the modification to the E/R diagram
b) Replace your ternary relationship with a new entity set and binary relationships.

Note: That we assume the two players are different i.e., the team captain is not self-led.

Q2. SQL Queries **[10*2=20M]**

Consider the following database the primary key and discriminatory are represented with a underline and a dashed line.

Jobs(job_id, job_title, min_salary, max_salary)
Employees(employee_id, first_name, last_name, email, phone_number, hire_date, job_id, salary, manager_id, department_id)
Dependents(dependent_id, first_name, last_name, relationship, employee_id)
Departments(department_id, department_name, location_id)
Locations(location_id, street_address, postal_code, city, state_province, country_id)
Countries(country_id, country_name, region_id)
Regions(region_id, region_name)

2.1. Write the sql queries for creating Dependents and Employees table.

2.2. Write the sql query for inserting the following data (1, 'Ivan', 'Jhons', 'Son', 25) into dependents table.

2.3. Write the sql query for updating name of employees having employee_id =25 from Alex to Ravi

2.4. Write the sql query to delete the details of dependent having dependent_id= 16.

2.5. Write a single sql query to drop the regions, countries, and location tables.

2.6. Write the sql query to truncate the table departments.

2.7. Write the sql query to update the salary of the employee from 10000 to 20000.

2.8. Write the sql query to upadte the first_name and last_name with "Alex" and "Jhons" for dependent_id=2.

2.9. Write the sql query to drop the existing primary key from the table Jobs.

2.10 Write the sql query to change the data type of the column country_id to integer of size 10 in countries table.

Q3. Answer the following. Write only the option in the answer sheet. [10*1=10M]

3.1. _____ is a set of one or more attribute taken collectively to uniquely identify a record.
(A) Primary Key (B) Foreign Key (C) Super Key (D) Candidate Key

3.2. Which of the following set should be associated with weak entity to be meaningful?
(A) Neighbor set (B) Strong entity set (C) Owner set (D) Identifying set

3.3. Which of the following is not a type of database?
(A) Hierarchical (B) Network
(C) Distributed (D) Decentralized

3.4. Which of the following is a component of the DBMS?
(A) Data (B) Data Languages (C) Data Manager (D) All of the above.

3.5. Which of the following is known as a set of entities of the same type that share same properties, or attributes?
(A) Relation Set (B) Tuples (C) Entity set (D) Entity Relation Model

3.6. The values appearing in given attributes of any tuple in the referencing relation must likewise occur in specified attributes of at least one tuple in the referenced relation, according to _____ integrity constraint.
(A) Referential (B) Primary (C) Referencing. (D) Specific

3.7. The ability to query data, as well as insert, delete, and alter tuples, is offered by _____
(A) Transaction Control Languauge (B) Data Control Language (C) Data Definition Langauge (D) Data Manipulation Langauge

3.8. Which is the lowest level of abstraction that describe how the data are actually stored?
(A) Physical (B) Abstract (C) View (D) User

3.9. Select the correct command to modify a column in a table
(A) Update (B) Alter (C) Drop (D) Set

3.10. A relational database developer refers to a record as?
(A) Attribute. (B) Tuple (C) Relation (D) None

Q4. [2*5=10M]

4.1. Explain all the users of DBMS Architecture and mention example for each of the users.

4.2. What is the different level of data abstraction? Explain each of them with proper diagram?

****ALL THE BEST****