

Questions

1. Define database schema, schema diagram, database state, valid state, schema evolution. 5\*2=10

2. a) Modern Database packages are modular in design. Identify the advantages of modular DBMS evolution over monolithic architecture. (5)

2 b) Consider the command truncate and delete. Identify the db language the commands belong to. Illustrate with example, how these commands work. (5)

3. A customer places an order for an item through online and uses net banking to pay the amount. The perspective of the system from the customer view is as shown below

Enter Customer ID :

Enter OrderID :

Enter Total Amount :

The perspective of DBA who administers the db is as shown below.

Create table customer (CustID int(10), OrderID int(10), Amount int(10))

The storage details of the db is as shown below

CustID Type = byte(10), offset = 0

OrderID Type = byte(10), offset = 10

Amount Type = byte(10), offset = 20

Apply Suitable architecture to support different user's view, schemas and storage details using appropriate diagram (6+4)

4 a) A publishing company produces books on various subjects. The books written by authors who specializes in one particular subject.

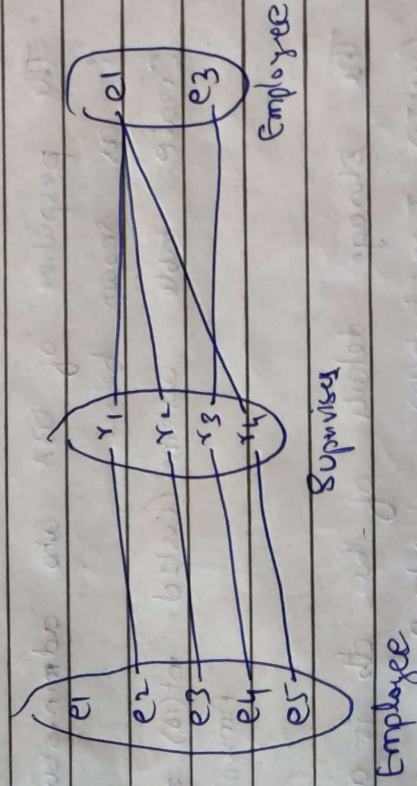
Analyze the cardinality constraint and participation constraint for all possible relationship type identified and justify for the same (5)

4 b) In the given below diagram

(i) Identify the ~~Entity~~ Entity types, Entity instances, Entity set, Relationship type, relationship instances

(ii) How many instances are there in the identified entity types and relationship types.

(iii) Analyze the structural constraints





- 5) Rashid Peter owns and operates a used car business named Peter's Auto sales. Her operation has grown substantially over the years, and she wants to automate the process she uses to track the vehicles she buys and sells. Some of her vehicles come from other dealers and some come to her as trade-in vehicles from non-dealers customers. Rashid wants to keep track of the same for each vehicle along with the vehicle identification no., make, model, year and price paid for the vehicle. Additionally she wants to keep track of what maintenance repairs are done to each vehicle before the vehicle is resold, which technician performed the work and the associated cost of each repair. Finally, Rashid wants to keep track of who purchased each car, their contact info and the price paid  $5+5$

Analyse the data requirements and design ER model for the above stated Problem Scenario. Write the necessary assumption considered.