DBMS LAB TEST Questions

1. Suppose a movie_studio has several film crews. The crews might be designated by a given studio as crew1, crew2, and so on. However, other studios might use the same designations for crews, so the attribute crew_number is not a key for crews. Movie_studio holds the information like name, branch and several locations. Each crew holds information like sector, and strength.
   a. Establish the database by normalising up to 3NF and considering all schema level constraints.
   b. Write SQL insertion query to insert few tuples to all the relations.
   c. List all movies studios which are not used a single crews.
   d. Retrieve the movie_studio which uses highest strength crew.
   e. Write a before insert trigger to check maximum number of crews to any studio is limited to 5.
   f. Write a procedure retrieve all crews used by specific studio.

2. The production company is organised into different studios. We store each studio's name, branch and location; every studio must own at least one movie. We store each movie's title, censor_number and year of production. Star may act in any number of movies and we store each actors name and address.
a. Establish the database by normalising up to 3NF and considering all schema level constraints.
b. Write SQL insertion query to insert few tuples to all the relations.
c. List all the studios of the movie "xyz".
d. List all the actors, acted in a movie "xyz".
e. Write a procedure to list all movies produced during the specific year.
f. Write a deletion trigger, does not allow to deleting the current year movies.

3. The production company is organised into different studios. We store each studio's name, branch and location; a studio own any number of cartoon-serials. We store each cartoon-serials's title, censor_number and year of production. star may do voices in any number of cartoon-serials and we store each actors name and address.
a. Establish the database by normalising up to 3NF and considering all schema level constraints.
b. Write SQL insertion query to insert few tuples to all the relations.
c. Find total no. of actors, do voiced in a cartoon-serials "xyz".
d. Retrieve name of studio, location and cartoon-serials title in which star "abc' is voiced.
e. Write a procedure to list all cartoon-serials produced during the specific year.
f. Write a deletion trigger, does not allow to deleting the current year cartoon-serials.

4. Car marketing company wants keep track of marketed cars and their owner. Each car must be associated with a single owner and owner may have any number of cars. We store car's registration number, model & colour and owner's name, address & SSN. We also store date of purchase of each car.
a. Establish the database by normalising up to 3NF and considering all schema level constraints.
b. Write SQL insertion query to insert few tuples to all the relations.
c. Find a person who owns highest number of cars.
d. Retrieve persons and cars information purchased on day dd/mm/yyyy.
e. Write a procedure to list all cars and owner information purchased during the specific year.
f. Write a insertion trigger to check date of purchase must be less than current date (must use system date).

5. Puppy pet shop wants to keep track of dogs and their owners. The person can buy maximum three pet dogs. we store person's name, SSN and address and dog's name, date of purchase and sex. The owner of the pet dogs will be identified by SSN since the dog's names are not distinct.

a. Establish the database by normalising up to 3NF and considering all schema level constraints.

b. Write SQL insertion query to insert few tuples to all the relations.

c. List all pets owned by a person "abhiman".

d. List all the persons who do not own a single pet.

e. Write a trigger to check the constraints that person can buy maximum three pet dogs.

f. Write a procedure to list all dogs and owner details purchased on the specific date.

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6. Education institute is managing the online course enrolment system. Students can enrol maximum of six courses of their choice and a maximum student to be enrolled to any course is 60. We store student details like name, USN, semester and several addresses, course details like unique title, unique id and credits.

a. Establish the database by normalising up to 3NF and considering all schema level constraints.

b. Write SQL insertion query to insert few tuples to all the relations.

c. Find number of students enrolled for the course 'DBMS'.

d. Retrieve student names that are enrolled for data structure course but not enrolled for logic design.

e. Write a trigger to establish the constraint that the students can enrol maximum of six course of their choice.

f. Write a procedure to list all the courses enrolled by the seventh semester students.

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7. The commercial bank wants to keep track of the customer's account information. Each customer may have any number of accounts and account can be shared by any number of customers. The system will keep track of the date of last transaction. We store the following details:

i. account: unique account number, type and balance.

ii. customer: unique customer id, name and several addresses composed of street, city and state.

a. Establish the database by normalising up to 3NF and considering all schema level constraints.

b. Write SQL insertion query to insert few tuples to all the relations.

c. Add 3% interest to th   e customer who have less than 10000 balances and 6% interest to remaining customers.

d. List joint accounts involving more than three customers.

e. Write an insertion trigger to allow only current date for date of last transaction field.

f. Write a procedure to find the customer who has highest number of accounts, the customer who has lowest balance, the customer who involved in most of joint accounts.

8. The commercial bank wants to keep track of the customer's loan information. Each customer can take any number of loans from the bank and loan will not be shared. The system will keep track of the date of last transaction. We store the following details:

i. loan: unique loan number, type and amount.

ii. customer: unique customer id, name, annual income and several addresses composed of street, city and state.

a. Establish the database by normalising up to 3NF and considering all schema level constraints.

b. Write SQL insertion query to insert few tuples to all the relations.

c. Add 12% interest to the customer who have less than 50000 amount and 14% interest to remaining customers.

d. Retrieve the customers who have single loan in a bank.

e. Write a insertion trigger to loan, that does not allow if the loan amount is more than two times of customers annual income.

f. Write a procedure to retrieve all the loans of a specific customer.

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9. The xyz book shop wants keep track of orders of the book. The book is composed of unique id, title, year of publication, single author and single publisher. Each order will be uniquely identified by order-id and may have any number of books. We keep track of quantity of each book ordered. We store the following details:

i. author: unique author-id, name, city, country.

ii. Publisher: unique publisher-id, name, city, country.

a. Establish the database by normalising up to 3NF and considering all schema level constraints.

b. Write SQL insertion query to insert few tuples to all the relations.

c. Find the author who has published highest number of books.

d. List the books published by specific publisher during the year 2011.

e. Write a insertion trigger to book to check year of publication should allow current year only.

f. Write a procedure to list all books published by a specific author during the specific year.