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Subject : Advanced
database
management
Systems

Digital Assignment - II

SET - I

1)

i) Type of database required :-

Since the software required to deal with time, Temporal database is apt for this requirement.

Reason & Justification

* The attributes are
  ↳ purchased time
  ↳ Occupied time
  ↳ sold out time

encompasses the detail in-time, Temporal database will handle this effectively rather than relational Database. (R-DB$_s$)

* Temporal databases are the ones which have certains features that supports time sensitive status for entries.

* Temporal databases supports the exclusive Data types are
  ↳ Date
  ↳ Timest amp
      etc . . . .

* This relation captures both the history in reality owner(s) of property over time (valid time), as well as the sequence of database states, denoting the Transactions applied to this table.

* This application requires is bi temporal database.

Database Design

Query :-

```
CREATE MULTISET TABLE Real Estate (
   owner _ name    VARCHAR(50)
   customer _ number INTEGER,
   property _ number INTEGER,
   property _ purchased _ VST  DATE
                       NOT NULL AS VALID TIME
property _ sold _ time _ VET    DATE
                 NOT NULL AS VALID TIME
property _ occupied _ time _ VT
   PERIOD (DATE) NOT NULL AS VALID TIME
property _ π PERIOD(TIME STAMP(6)
              WITH TIME ZONE)
           NOT NULL 'AS' TRANSACTION TIME)
   PRIMARY INDEX (property - number);
```

Description:

NAME	NULL	TYPE
Owner_name		VARCHAR2(50)
Customer_number		INT
property_number		INT
property_purchased_VST	Not null	DATE
property_sold_time_VET	Not null	DATE
property_occupied_time_VT	not null	DATE(PERIOD)
property_TT	not null	DATE (PERIOD)

ii) Properties are or were owned by the customer who owned cat the same time period property 7797

```
SELECT  R₂ property_number
FROM    Real_Estate As R₁, Real_Estate
                                    As R₂
WHERE   R₁ property_number = 7797
        AND R₂. property_number <> R₁ property
                                        number
        AND R₁ customer_number = R₂ customer
                                        number
        AND R₁ occupied_time_VT OVERLAPS
                                R₂. occupied_
                                    time_VT
```

iii) Time-recorded that a property is or was owned by the customer who owned at the same time property 7 7972

```
SEQUENCED VALIDTIME AND
NON SEQUENCED TRANSACTION TIME
SELECT R₂. property - number, BEGIN
(R₂. property - T T) AS recorded_start
FROM Realestate AS R₁, Real_Estate AS R₂
WHERE R₁. property - number = 7 797
AND    R₂. property - number <>
                R₁. property - number
AND    R₁. customer - number =
                R₂. customer_number
AND    R₁. property_TT OVERLAPS
                R₂. property_TT
```

2)

Manager creates a table item (chid, name, rating, price) and inserts values in it.

SQL Queries

a) Manager allows supervisor to do inserts and updates and supervisor further allows other users with these operations as well

Query: Grant INSERT, UPDATE, DELETE an item to supervisor

When we grant permissions/privilege to supervisor, that granted supervisor can able to permit other users to do the operations on that relation.

note:- Since in this question and in the following question, they only mentioned operations like insert, update and delete, so that 3 privileges are given to the supervisor.

b) Manager gets back the permission given to delete records in the relation item from supervisor.

To get back the permissions, REVOKE statement will be used.

Query: REVOKE DELETE on item from supervisor.

* When a privilege is revoked from particular user U, then the privileges granted to all other users by user U will be revoked

* So revoking permission from supervisor, will remove the privilege given to all the users, granted by supervisor.

c) Manager allows clerk to visualize only frame and lid on the relation item

Query for view creation: CREATE VIEW view, AS SELECT l_name, lid FROM item

This will create virtual table contains only these two attributes (columns)
To grant permission for that view to clerk
Query: GRANT SELECT, SHOW VIEW ON Item. view
This privilege will only the allow to visualize those two attributes to clerk.