

DATABASE & Management

SYSTEM

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20K-0477

Question # 01 :

CANDIDATE KEYS

Branch : postcode
 Staff : ~~post~~ -
 PropertyForRent : postcode
 Client : telno, email
 PrivateOwner : telno, email
 Viewing : -
 Registration : -

Question # 02:

TABLE	FOREIGN KEYS	Referenced Table
Staff	branchNo	Branch
PropertyForRent	ownerNo, staffNo, branchNo	privateOwner, Staff, Branch
Viewing	clientNo, PropertyNo	Client, PropertyForRent
Registration	clientNo, branchNo, staffNo	client, Branch, Staff

Question #03

Insert <SA9, 'Scott', 'Telt', 'Clerk', 1, '1977-10-01', 58000,
 8007 into Staff.

- SA9 'already exist', entity integrity constraint
- sex is string column, domain constraint
- date format dont match, domain constraint

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Insert $\langle CR56, ', ', '1990-12-07' \rangle$ into Registration

- CR56 already exist, entity integrity constraint
- date format doesn't match, domain constraint
- ', ' doesn't exist in Branch table.

Delete Branch tuple with Branch No = 'B002'

- No Violation of constraint

Delete Private Owner with name = 'Tony Show'

- Owner No is referencing to staff table and propertyForRent table.

Modify the ClientNo of viewing tuple with ClientNo = 'CR62' to 'CR97'

- CR97 doesn't exist, Referential integrity constraint.

Modify the propertyNo attribute of propertyForRent tuple with propertyNo = 'PA14' to 'PA16'

- PA14 reference to a record in viewing table, Referential integrity constraint

Modify the branchNo attribute of propertyForRent tuple with branchNo = 'B007' to NULL

- No violations

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Question # 04

Staff:

```
CREATE TABLE Staff (  
  staffNo VARCHAR(4) PRIMARY KEY NOT NULL,  
  fName VARCHAR2(20) NOT NULL,  
  lName VARCHAR2(10) NOT NULL,  
  position VARCHAR2(10) NOT NULL,  
  DOB DATE NOT NULL CHECK (DOB BETWEEN DATE  
    '1 NOV 1960' AND SYSDATE),  
  salary NUMBER NOT NULL CHECK (salary BETWEEN 9000 ✓  
    AND 30000),  
  branchNo VARCHAR2(4) NOT NULL FOREIGN KEY (branchNo)  
    REFERENCES Branch (branchNo));
```

Property For Rent:

```
CREATE TABLE propertyForRent (  
  propertyNo VARCHAR2(4) PRIMARY KEY,  
  street VARCHAR2(10),  
  city VARCHAR2(6),  
  postCode VARCHAR2(10),  
  type VARCHAR2(15) default 'Home',  
  room NUMBER CHECK (room > 3),  
  ownerNo VARCHAR2(4),  
  staffNo VARCHAR2(4),  
  branchNo VARCHAR2(4),  
  FOREIGN KEY (branchNo) REFERENCES Branch (branchNo),  
  FOREIGN KEY (staffNo) REFERENCES Staff (staffNo));
```

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Private Owner:

```
CREATE TABLE PrivateOwner (
  ownerNo VARCHAR2(4) PRIMARY KEY,
  fName VARCHAR2(10),
  lName VARCHAR2(20),
  address VARCHAR2(25),
  telNo VARCHAR2(11) UNIQUE,
  email VARCHAR2(15) UNIQUE,
  password VARCHAR2(15));
```

Question #05

(a)

```
SELECT propertyNo
FROM propertyForRent
WHERE staffNo IN (SELECT staffNo
                  FROM Staff
                  WHERE sex = 'F');
```

(b)

```
SELECT *
FROM privateOwner
WHERE ownerNo IN (SELECT ownerNo
                  FROM propertyForRent
                  WHERE type = 'House');
```

(c)

```
SELECT 1.15 * salary
FROM Staff
WHERE branchNo IN (SELECT branchNo
                   FROM Branch
                   WHERE city = 'London');
```

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(d)

```
SELECT *  
FROM PropertyForRent  
WHERE propertyNo IN (SELECT propertyNo  
FROM Viewing  
WHERE viewdate BETWEEN  
'1-May-2013' AND  
'31-May-2013')
```

(e)

```
SELECT *  
FROM Staff  
WHERE fName LIKE 'D%' OR  
LName LIKE 'W%';
```