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CSCI 331 Database Systems
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Homework 3
Queens College

Database Creation:

```
CREATE TABLE CUSTOMER(  
    CID NUMBER(4,0) PRIMARY KEY,  
    CFIRST VARCHAR(20) NOT NULL,  
    CLAST VARCHAR(20) NOT NULL,  
    CNUMBER CHAR(12) NOT NULL,  
    CEMAIL VARCHAR(40) NOT NULL,  
    CSTREET VARCHAR(60) NOT NULL,  
    CCITY VARCHAR(20) NOT NULL,  
    CSTATE VARCHAR(2) NOT NULL,  
    CZIP NUMBER(5) NOT NULL  
);  
  
CREATE TABLE STORE(  
    STOREID NUMBER(4,0) PRIMARY KEY,  
    STORENUMBER CHAR(12) NOT NULL,  
    STORESTREET VARCHAR(60) NOT NULL,  
    STORECITY VARCHAR(20) NOT NULL,  
    STORESTATE VARCHAR(2) NOT NULL,  
    STOREZIP NUMBER(5) NOT NULL  
);  
  
CREATE TABLE STAFF(  
    STAFFID NUMBER(4,0) PRIMARY KEY,  
    STAFFFIRST VARCHAR(20) NOT NULL,  
    STAFFLAST VARCHAR(20) NOT NULL,  
    STAFFNUMBER CHAR(12) NOT NULL,  
    STAFFEMAIL VARCHAR(40) NOT NULL,  
    STAFFSTREET VARCHAR(60) NOT NULL,  
    STAFFCITY VARCHAR(20) NOT NULL,  
    STAFFSTATE VARCHAR(2) NOT NULL,  
    STAFFZIP NUMBER(5) NOT NULL,  
    STOREID NUMBER(4) NOT NULL,
```

```
FOREIGN KEY (STOREID) REFERENCES STORE (STOREID)  
);
```

```
CREATE TABLE PRODUCT (  
    PID NUMBER(4,0) PRIMARY KEY,  
    PNAME VARCHAR(20) NOT NULL  
);
```

```
CREATE TABLE PPRICE (  
    PRICEID NUMBER(4, 0) PRIMARY KEY,  
    STOREID NUMBER(4) NOT NULL,  
    FOREIGN KEY (STOREID) REFERENCES STORE (STOREID),  
    PID NUMBER(4) NOT NULL,  
    FOREIGN KEY (PID) REFERENCES PRODUCT (PID),  
    PRICE NUMBER(7,2) NOT NULL  
);
```

```
CREATE TABLE TRANSACTION (  
    TID NUMBER(4,0) PRIMARY KEY,  
    CID NUMBER(4,0) NOT NULL,  
    STOREID NUMBER(4,0) NOT NULL,  
    STAFFID NUMBER(4,0) NOT NULL,  
    PID NUMBER(4,0) NOT NULL,  
    TDATE DATE NOT NULL,  
    FOREIGN KEY (STAFFID) REFERENCES STAFF (STAFFID),  
    FOREIGN KEY (STOREID) REFERENCES STORE (STOREID),  
    FOREIGN KEY (CID) REFERENCES CUSTOMER (CID),  
    FOREIGN KEY (PID) REFERENCES PRODUCT (PID)  
);
```

Sequence Creation:

```
CREATE SEQUENCE DRUGS  
  
START WITH 1  
  
INCREMENT BY 1;
```

```
CREATE SEQUENCE TRANS  
  
START WITH 1  
  
INCREMENT BY 1;
```

Inserting Data into Database:

```
INSERT INTO CUSTOMER(CID, CFIRST, CLAST, CNUMBER, CEMAIL, CSTREET, CCITY,  
CSTATE, CZIP)
```

VALUES

```
(1, 'JAMES', 'SMITH', '845-590-9481', 'JOHNSMITH12@YAHOO.COM', '85 SE. PENN  
CIRCLE', 'BRONX', 'NY', 10465);
```

```
INSERT INTO STORE(STOREID, STORENUMBER, STORESTREET, STORECITY, STORESTATE,  
STOREZIP)
```

VALUES

```
(1, '718-696-1958' , '3215 BAINBRIDGE AVE', 'BRONX', 'NY', 10467);
```

```
INSERT INTO STAFF(STAFFID, STAFFFIRST, STAFFLAST, STAFFNUMBER, STAFFEMAIL,  
STAFFSTREET, STAFFCITY, STAFFSTATE, STAFFZIP, STOREID)
```

VALUES

```
(1, 'AMY', 'RIOS', '646-888-4215', 'RIOS3716@HOTMAIL.COM', '173 CHAPEL ST',  
'FLUSHING', 'NY', 11354, 1);
```

```
INSERT INTO PRODUCT(PID, PNAME)
```

VALUES

```
(DRUGS.NEXTVAL, 'DIETHYL ETHER');
```

```
INSERT INTO PPRICE(PRICEID, STOREID, PID, PRICE)
```

VALUES

```
(1, 1, 1, 1.99);
```

```
INSERT INTO TRANSACTION(TID, CID, STOREID, STAFFID, PID, TDATE)
```

VALUES

```
(TRANS.NEXTVAL, 1, 1, 1, 3, '01/17/2018');
```

Data:

At least 5 customer:

```
SELECT * FROM CUSTOMER
```

CID	CFIRST	CLAST	CNUMBER	CEMAIL	CSTREET	CCITY	CSTATE	CZIP
1	JAMES	SMITH	845-590-9481	JOHNSMITH12@YAHOO.COM	85 SE. PENN CIRCLE	BRONX	NY	10465
2	WILBERT	TRACY	615-560-2742	WILBERTTRACY33@GMAIL.COM	616 ASPEN CIRCLE	ASTORIA	NY	11106
3	SHANE	RUFFIN	919-929-5085	SHANERUFFIN@YAHOO.COM	377 1ST AVE	BROOKLYN	NY	11223
4	SHAWN	HANSEN	347-175-8887	SHAWN32@GMAIL.COM	9789 NORTH YORK	EAST ELMHURST	NY	11370
5	JUAN	GONZALEZ	718-548-7771	GONZALEZ91@YAHOO.COM	17 NEWPORT ST	FLUSHING	NY	11355

At least 2 purchases for each customer:

```
select * from transaction  
order by cid
```

TID	CID	STOREID	STAFFID	PID	TDATE
1	1	1	1	3	01/17/2018
2	1	1	2	7	04/21/2018
3	2	1	2	10	05/19/2018
4	2	1	2	4	03/27/2018
5	3	1	1	10	11/10/2017
6	3	2	3	1	03/15/2018
7	4	2	4	2	05/17/2018
8	4	2	5	8	05/19/2018
9	5	2	3	6	02/14/2018
10	5	2	5	9	04/20/2018

At least 10 drugs:

```
select * from product
```

PID	PNAME
1	DIETHYL ETHER
2	DEXTROMETHORPHAN
3	DOXYLAMINE
4	TRAMADOL
5	ACETAMINOPHEN
6	KRATOM
7	DIPHENHYDRAMINE
8	DIMENHYDRINATE
9	PROPYLHEXEDRINE
10	LORATADINE

At lease 2 stores:

```
select * from store
```

STOREID	STORENUMBER	STORESTREET	STORECITY	STORESTATE	STOREZIP
1	718-696-1958	3215 BAINBRIDGE AVE	BRONX	NY	10467
2	718-361-6014	4108 QUEENS BLVD	SUNNYSIDE	NY	11104

Query:

1. Increase the price of “Tramadol” by 10% for only stores in the Bronx. Identify the SQL required to implement. Display the price before and after the price increase.

Price of Tramadol before 10% increase:

PID	PNAME	STOREID	PRICE
4	TRAMADOL	1	\$2.25

```
UPDATE PPRICE
SET PRICE = PRICE * 1.10
WHERE
    STOREID = (SELECT STOREID FROM STORE WHERE STORECITY = 'BRONX')
AND
    PID = (SELECT PID FROM PRODUCT WHERE PNAME = 'TRAMADOL')
```

PID	PNAME	STOREID	PRICE
4	TRAMADOL	1	\$2.48

2. Identify drugs that have not been purchased this week. Display the drug name. Use a nested select to answer this question.

```
SELECT PRODUCT.PNAME DRUGNAME FROM
PRODUCT, TRANSACTION
WHERE PRODUCT.PID = TRANSACTION.PID
AND TRANSACTION.TDATE NOT BETWEEN '05/14/2018' AND '05/21/2018' SELECT
```

DRUGNAME
DIETHYL ETHER
DOXYLAMINE
TRAMADOL
KRATOM
DIPHENHYDRAMINE
PROPYLHEXEDRINE
LORATADINE

3. Reassign employee Amy Rios from the Bronx store to the Sunnyside store. Identify the SQL required to implement.

FIRST	LAST	STORECITY
AMY	RIOS	BRONX

```
UPDATE STAFF
SET STOREID = (SELECT STOREID FROM STORE WHERE STORECITY = 'SUNNYSIDE')
WHERE
STAFFFIRST = 'AMY'
AND
STAFFLAST = 'RIOS'
```

FIRST	LAST	STORECITY
AMY	RIOS	SUNNYSIDE

4. The drug 'Katom' will no longer be sold at any store. Identify the SQL required to implement.

PID	PNAME
1	DIETHYL ETHER
2	DEXTROMETHORPHAN
3	DOXYLAMINE
4	TRAMADOL
5	ACETAMINOPHEN
6	KRATOM
7	DIPHENHYDRAMINE
8	DIMENHYDRINATE
9	PROPYLHEXEDRINE
10	LORATADINE

```
DELETE FROM TRANSACTION
WHERE PID = (SELECT PID FROM PRODUCT WHERE PNAME = 'KRATOM')
```

```
DELETE FROM PPRICE
WHERE PID = (SELECT PID FROM PRODUCT WHERE PNAME = 'KRATOM')
```

```
DELETE FROM PRODUCT
WHERE PNAME = 'KRATOM'
```

PID	PNAME
1	DIETHYL ETHER
2	DEXTROMETHORPHAN
3	DOXYLAMINE
4	TRAMADOL
5	ACETAMINOPHEN
7	DIPHENHYDRAMINE
8	DIMENHYDRINATE
9	PROPYLHEXEDRINE
10	LORATADINE

5. In one SQL window, change the address of CVS employee 'Amy Rios'. Don't commit. In another SQL window, change the first name for CVS employee Joe Smith. Don't commit. Explain your results. Resolve the problem. Disable the auto commit flag at the top of the window before performing this operation.

The SQL server is in deadlock and it cannot progress any further. Both instances are trying to go inside and change the at once and thus causing deadlock and making the browser crash.

```
UPDATE STAFF
SET STAFFFIRST = 'AMANDA'
WHERE STAFFLAST = 'RIOS'
```

Results Explain Describe Saved SQL History

SQL Statement Running

```
UPDATE STAFF
SET STAFFSTREET = '1234 RIVERDALE'
WHERE STAFFLAST = 'RIOS'
```

Results Explain Describe Saved SQL History

SQL Statement Running

The lock is released once we Commit or Rollback. These commands basically tells the other instance that it is done doing its job and therefore releases the lock so others can obtain it and do their job.

```
UPDATE STAFF
SET STAFFFIRST = 'AMANDA'
WHERE STAFFLAST = 'RIOS' ;
```

Results Explain Describe Saved SQL History

1 row(s) updated.

0.00 seconds

```
COMMIT;
```

Results Explain Describe Saved SQL History

Statement processed.

0.01 seconds

- Since to delete all the products I have to delete all the child product instances if I do it concurrently it works. Since I'm not changing the same table I am allowed to update the price however for me to delete all the products I have to delete the instances of each product to be succesful.

- ```
UPDATE STAFF
SET SALARY = 50000
WHERE STAFFFIRST = 'ALEX'
AND STAFFLAST = 'CHARLES'
```

| STAFFID | STAFFFIRST | STAFFLAST | STAFFNUMBER  | STAFFEMAIL      | STAFFSTREET | STAFFCITY | STAFFSTATE | STAFFZIP | STOREID | SALARY |
|---------|------------|-----------|--------------|-----------------|-------------|-----------|------------|----------|---------|--------|
| 2       | ALEX       | CHARLES   | 646-547-5587 | ALEXC@YAHOO.COM | 21 2ND AVE  | NEW YORK  | NY         | 10034    | 1       | 50000  |

8.

[illegible]

[illegible]

| Table        | Column             | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|--------------|--------------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| <u>STAFF</u> | <u>STAFFID</u>     | NUMBER    | -      | 4         | 0     | 1           | -        | -       | -       |
|              | <u>STAFFFIRST</u>  | VARCHAR2  | 20     | -         | -     | -           | -        | -       | -       |
|              | <u>STAFFLAST</u>   | VARCHAR2  | 20     | -         | -     | -           | -        | -       | -       |
|              | <u>STAFFNUMBER</u> | CHAR      | 12     | -         | -     | -           | -        | -       | -       |
|              | <u>STAFFEMAIL</u>  | VARCHAR2  | 40     | -         | -     | -           | -        | -       | -       |
|              | <u>STAFFSTREET</u> | VARCHAR2  | 60     | -         | -     | -           | -        | -       | -       |
|              | <u>STAFFCITY</u>   | VARCHAR2  | 20     | -         | -     | -           | -        | -       | -       |
|              | <u>STAFFSTATE</u>  | VARCHAR2  | 2      | -         | -     | -           | -        | -       | -       |
|              | <u>STAFFZIP</u>    | NUMBER    | -      | 5         | 0     | -           | -        | -       | -       |
|              | <u>STOREID</u>     | NUMBER    | -      | 4         | 0     | -           | -        | -       | -       |
|              | <u>SALARY</u>      | NUMBER    | -      | 7         | 2     | -           | ✓        | -       | -       |

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| Table   | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|---------|--------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| PRODUCT | PID    | NUMBER    | -      | 4         | 0     | 1           | -        | -       | -       |
|         | PNAME  | VARCHAR2  | 20     | -         | -     | -           | -        | -       | -       |
|         | 1 - 2  |           |        |           |       |             |          |         |         |

[illegible]

Transaction:

| Table              | Column         | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|--------------------|----------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| <u>TRANSACTION</u> | <u>TID</u>     | NUMBER    | -      | 4         | 0     | 1           | -        | -       | -       |
|                    | <u>CID</u>     | NUMBER    | -      | 4         | 0     | -           | -        | -       | -       |
|                    | <u>STOREID</u> | NUMBER    | -      | 4         | 0     | -           | -        | -       | -       |
|                    | <u>STAFFID</u> | NUMBER    | -      | 4         | 0     | -           | -        | -       | -       |
|                    | <u>PID</u>     | NUMBER    | -      | 4         | 0     | -           | -        | -       | -       |
|                    | <u>TDATE</u>   | DATE      | 7      | -         | -     | -           | -        | -       | -       |
|                    |                |           |        |           |       |             |          |         | 1 - 6   |

9.

| PRODUCT                             | VERSION    | STATUS           |
|-------------------------------------|------------|------------------|
| NLSRTL                              | 11.2.0.2.0 | Production       |
| Oracle Database 11g Express Edition | 11.2.0.2.0 | 64bit Production |
| PL/SQL                              | 11.2.0.2.0 | Production       |
| TNS for 64-bit Windows:             | 11.2.0.2.0 | Production       |