

DSC450
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HW 5

Part 1: SQL Code:

-- drop tables

DROP TABLE EMPLOYEE CASCADE CONSTRAINTS;
DROP TABLE DEPARTMENT CASCADE CONSTRAINTS;
DROP TABLE PROJECT CASCADE CONSTRAINTS;
DROP TABLE WORKS_ON CASCADE CONSTRAINTS;

-- create and populate tables

CREATE TABLE EMPLOYEE

(
 Fname VARCHAR(20),
 Minit CHAR(1),
 Lname VARCHAR(20),
 Ssn CHAR(9),
 Bdate DATE,
 Address VARCHAR(30),
 Sex CHAR(1),
 Salary NUMBER(5),
 Super_Ssn CHAR(9),
 Dno NUMBER(1),

 PRIMARY KEY (Ssn),

 FOREIGN KEY (Super_ssn)
 REFERENCES EMPLOYEE (Ssn)

);

INSERT INTO EMPLOYEE VALUES ('James', 'E', 'Borg', '888665555', DATE '1937-11-10', '450
Stone, Houston, TX', 'M', 55000, NULL, 1);
INSERT INTO EMPLOYEE VALUES ('Jennifer', 'S', 'Wallace', '987654321', DATE '1941-06-20', '291
Berry, Bellaire, Tx', 'F', 37000, '888665555', 4);
INSERT INTO EMPLOYEE VALUES ('Franklin', 'T', 'Wong', '333445555', DATE '1955-12-08', '638
Voss, Houston, TX', 'M', 40000, '888665555', 5);
INSERT INTO EMPLOYEE VALUES ('John', 'B', 'Smith', '123456789', DATE '1965-01-09', '731
Fondren, Houston, TX', 'M', 30000, '333445555', 5);
INSERT INTO EMPLOYEE VALUES ('Alicia', 'J', 'Zelaya', '999887777', DATE '1968-01-19', '3321
castle, Spring, TX', 'F', 25000, '987654321', 4);

```

INSERT INTO EMPLOYEE VALUES ('Ramesh', 'K', 'Narayan', '666884444', DATE '1920-09-15', '975
Fire Oak, Humble, TX', 'M', 38000, '333445555', 5);
INSERT INTO EMPLOYEE VALUES ('Joyce', 'A', 'English', '453453453', DATE '1972-07-31', '5631
Rice, Houston, TX', 'F', 25000, '333445555', 5);
INSERT INTO EMPLOYEE VALUES ('Ahmad', 'V', 'Jabbar', '987987987', DATE '1969-03-29', '980
Dallas, Houston, TX', 'M', 22000, '987654321', 4);
INSERT INTO EMPLOYEE VALUES ('Melissa', 'M', 'Jones', '808080808', DATE '1970-07-10', '1001
Western, Houston, TX', 'F', 27500, '333445555', 5);

```

```

CREATE TABLE DEPARTMENT
(
    Dname          VARCHAR(20),
    Dnumber        NUMBER(1),
    Mgr_ssn        CHAR(9),
    Mgr_start_date DATE,

    PRIMARY KEY (Dnumber),

    FOREIGN KEY (Mgr_ssn)
        REFERENCES EMPLOYEE (Ssn)
);

```

```

INSERT INTO DEPARTMENT VALUES ('Research', 5, '333445555', DATE '1988-05-22');
INSERT INTO DEPARTMENT VALUES ('Administration', 4, '987654321', DATE '1995-01-01');
INSERT INTO DEPARTMENT VALUES ('Headquarters', 1, '888665555', DATE '1981-06-19');

```

-- this alter is here because Employee table was created first

```

ALTER TABLE EMPLOYEE ADD FOREIGN KEY (Dno) REFERENCES DEPARTMENT (Dnumber);

```

```

CREATE TABLE PROJECT
(
    Pname          VARCHAR(20),
    Pnumber        NUMBER(2),
    Plocation      VARCHAR(20),
    Dnum           NUMBER(1),

    PRIMARY KEY (Pnumber)
);

```

```

INSERT INTO PROJECT VALUES ('ProductX', 1, 'Bellaire', 5);
INSERT INTO PROJECT VALUES ('ProductY', 2, 'Sugarland', 5);
INSERT INTO PROJECT VALUES ('ProductZ', 3, 'Houston', 5);
INSERT INTO PROJECT VALUES ('Computerization', 10, 'Stafford', 4);

```

```
INSERT INTO PROJECT VALUES ('Reorganization', 20, 'Houston', 1);
INSERT INTO PROJECT VALUES ('Newbenefits', 30, 'Stafford', 4);
```

```
CREATE TABLE WORKS_ON
(
    Essn          CHAR(9),
    Pno           NUMBER(2),
    Hours         NUMBER(3,1),

    PRIMARY KEY (Essn, Pno),

    FOREIGN KEY (Essn)
        REFERENCES EMPLOYEE (Ssn),

    FOREIGN KEY (Pno)
        REFERENCES PROJECT(Pnumber)
);
```

```
INSERT INTO WORKS_ON VALUES ('123456789', 1, 32.0);
INSERT INTO WORKS_ON VALUES ('123456789', 2, 8.0);
INSERT INTO WORKS_ON VALUES ('453453453', 1, 20.0);
INSERT INTO WORKS_ON VALUES ('453453453', 2, 20.0);
INSERT INTO WORKS_ON VALUES ('333445555', 1, 10.0);
INSERT INTO WORKS_ON VALUES ('333445555', 2, 10.0);
INSERT INTO WORKS_ON VALUES ('333445555', 3, 5.0);
INSERT INTO WORKS_ON VALUES ('333445555', 10, 10.0);
INSERT INTO WORKS_ON VALUES ('333445555', 20, 10.0);
INSERT INTO WORKS_ON VALUES ('333445555', 30, 5.0);
INSERT INTO WORKS_ON VALUES ('999887777', 30, 30.0);
INSERT INTO WORKS_ON VALUES ('999887777', 10, 10.0);
INSERT INTO WORKS_ON VALUES ('987987987', 10, 35.0);
INSERT INTO WORKS_ON VALUES ('987987987', 30, 5.0);
INSERT INTO WORKS_ON VALUES ('987654321', 30, 20.0);
INSERT INTO WORKS_ON VALUES ('987654321', 20, 15.0);
INSERT INTO WORKS_ON VALUES ('888665555', 20, 10.0);
```

-- display contents of tables

```
SELECT * FROM EMPLOYEE;
SELECT * FROM DEPARTMENT;
SELECT * FROM PROJECT;
SELECT * FROM WORKS_ON;
```

```
SELECT Fname, Lname
FROM EMPLOYEE
WHERE DNO = '5' AND FNAME != 'Franklin';
```

```
CREATE VIEW Temp AS
SELECT *
FROM Works_on, Project
WHERE works_on.pno = Project.Pnumber;
```

```
SELECT SUM(Hours), Pno, PName
FROM Temp
GROUP BY Pno, Pname;
```

```
CREATE VIEW Temp2 AS
SELECT *
FROM Department, Employee
WHERE Department.Dnumber = Employee.Dno;
```

```
SELECT AVG(SALARY), Dname, Dno
FROM Temp2
GROUP BY Dname, Dno;
```

```
SELECT AVG(SALARY)
FROM EMPLOYEE
WHERE SEX = 'F';
```

```
CREATE VIEW temp3 AS
SELECT *
FROM Employee, Department
WHERE Employee.dno = Department.Dnumber;
```

```
SELECT DISTINCT Dname, Count(dno)
FROM Department INNER JOIN Employee ON
Department.Dnumber = Employee.Dno
GROUP BY Dname
HAVING AVG(SALARY) > 42000;
```

```
SELECT Fname, LName
FROM Employee
WHERE SALARY >= 33000;
```

```
SELECT *
FROM EMPLOYEE
```

```
WHERE SEX = 'M';
```

```
SELECT *  
FROM EMPLOYEE  
WHERE SSN IN (SELECT SSN  
              FROM EMPLOYEE  
              WHERE SEX = 'M');
```

```
SELECT *  
FROM Employee  
MINUS  
SELECT Fname, Minit, Lname, SSN, Bdate, Address, SEX, Salary, Super_ssn, dno FROM  
Employee, Works_On  
WHERE SSN = ESSN;
```

Part 2:

```
import sqlite3  
conn = sqlite3.connect('dsc450_HW5_2.db')  
c = conn.cursor()
```

```
conn.commit()
```

```
Chauf = '''CREATE TABLE Chauff1  
(  
    LicenseNum NUMBER(7),  
    Renewed VARCHAR(6),  
    Status VARCHAR2(10),  
    StatusDate VARCHAR2(12),  
    DriverType VARCHAR2(15),  
    LicenseType VARCHAR2(15),  
    OrigIssueDate VARCHAR2(12),  
    Name VARCHAR2(32),  
    Sex VARCHAR2(10),  
    City VARCHAR2(25),  
    State VARCHAR2(4),  
    RecordNo VARCHAR2(15),  
  
    CONSTRAINT Chauff_PK  
        PRIMARY KEY(RecordNo)  
); '''
```

```
c.execute(Chauf)
```

```
import csv
```

```

fd = open('Public_Chauffeurs_Short_hw3.csv', 'r')
reader = csv.reader(fd)
c.executemany('INSERT INTO Chauff1 VALUES (?, ?, ?, ?, ?, ?, ?, ?, ?, ?)', reader)
c.execute('SELECT * FROM Chauff1')
rows = c.fetchall()
for row in rows:
    print(row)

```

PART 3:

```

import json
import sqlite3
conn = sqlite3.connect('dsc450_HW5_4.db')
c = conn.cursor()

```

```

conn.commit()

```

```

file = open('Assignment4.txt')
y = file.read()
x = y.split('EndOfTweet')
print(x)

```

```

tweets = '''CREATE TABLE tweet1
(
    created_at VARCHAR2(45),
    id_str NUMBER(20),
    text VARCHAR2(140),
    source VARCHAR2(75),
    in_reply_to_user_id VARCHAR2(25),
    in_reply_to_screen_name VARCHAR2(25),
    in_reply_to_status_id VARCHAR2(25),
    retweet_count NUMBER(5),
    contributors VARCHAR2(25),

    CONSTRAINT tweet_PK
        PRIMARY KEY(id_str)
); '''

```

```

c.execute(tweets)

```

```

tweets = []
for line in x:
    tweets.append(json.loads(line))
    tweets1 = json.loads(line)
    createdat = tweets1['created_at']

```

```

id_str = tweets1['id_str']
text = tweets1['text']
source = tweets1['source']
replyuserid = tweets1['in_reply_to_user_id']
replyscreenname = tweets1['in_reply_to_screen_name']
replystatusid = tweets1['in_reply_to_status_id']
retweet = tweets1['retweet_count']
contributors = tweets1['contributors']
tweetList = [createdat, id_str, text, source, replyuserid, replyscreenname, replystatusid,
retweet, contributors]
    c.executemany("INSERT INTO tweet1 VALUES(?,?,?,?,?,?,?,?,?)", (tweetList,))

c.execute('SELECT * FROM tweet1')
rows = c.fetchall()
for row in rows:
    print(row)

```