HW 2 Nawras Rawas Qalaji

1.)

CREATE TABLE Test\_Info

( FAA\_no INTEGER,

reg\_no INTEGER,

SSN INTEGER

date DATE,

score REAL,

hours INTEGER,

PRIMARY KEY (FAA\_no, reg\_no, SSN)

FOREIGN KEY (FAA\_no) REFERENCES Test,

FOREIGN KEY (SSN) REFERENCES Technician,

FOREIGN KEY (reg\_no) REFERENCES Plane

)

CREATE TABLE Type

(reg\_no INTEGER NOT NULL,

model\_no INTEGER,

PRIMARY KEY (reg\_no),

FOREIGN KEY (model\_no) REFERENCES Model,

FOREIGN KEY (reg\_no) REFERENCES Plane

)

CREATE TABLE Expert

(SSN INTEGER,

model\_no INTEGER,

PRIMARY KEY (model\_no, SSN),

FOREIGN KEY (model\_no) REFERENCES Model,

FOREIGN KEY (SSN) REFERENCES Technician

)

CREATE TABLE Employees

(union\_mem\_no INTEGER,

SSN INTEGER,

PRIMARY KEY (SSN)

)

CREATE TABLE Technician

(SSN INTEGER,

salary INTEGER,

name CHAR(30),

phone\_num INTEGER,

address CHAR(30),

PRIMARY KEY (SSN),

FOREIGN KEY (SSN) REFERENCES Employees

)

CREATE TABLE Traffic\_control

(SSN INTEGER,

exam\_date DATE,

PRIMARY KEY (SSN),

FOREIGN KEY (SSN) REFERENCES Employees

)

CREATE TABLE Model

(model\_no INTEGER,

capacity REAL,

weight REAL,

PRIMARY KEY (model\_no)

)

CREATE TABLE Plane

(reg\_no INTEGER NOT NULL,

PRIMARY KEY (reg\_no),

)

CREATE TABLE Test

(FAA\_no INTEGER,

name CHAR(30),

score INTEGER,

PRIMARY KEY (FAA\_no)

)

Everything can be captured in the translation

2.a) Prints all the part names that are in catalog C

2.b)

SELECT S.sname

FROM Suppliers S

WHERE NOT EXISTS ((SELECT P.pid

FROM Parts P

WHERE NOT EXISTS (SELECT C.cid

FROM Catalog C

WHERE C.cid = P.pid AND C.cid = S.sid))

2.c) Prints the names of suppliers who supply all red parts

2.d)

SELECT P.pname

FROM Suppliers S Parts P, Catalog C

WHERE S.sname = “Acme Widget Suppliers” AND C.pid = P.pid AND C.sid = S.sid

2.e) Every distinct supplier id who supplies a part that is higher than the average cost of that part

2.f) For each unique part it will find the name of the supplier who is selling it for the highest price and what part id it is

2.g)

SELECT DISTINCT C.sid

FROM Catalog C

WHERE NOT EXISTS ( SELECT \*

FROM Parts P

WHERE P.pid = C.pid AND P.color <> “red”)

2.h) Returns supplier id who supply both Red parts and Green parts

2.i)

SELECT DISTINCT C.sid  
FROM Catalog C, Parts P   
WHERE C.pid = P.pid AND P.color = ‘Red’   
UNION   
SELECT DISTINCT C1.sid   
FROM Catalog C1, Parts P1   
WHERE C1.pid = P1.pid AND P1.color = ‘Green’

2.j)

Prints the supplier name and the number of green parts she sells for everyone that only supplies green parts

2.k)

SELECT P.pname, MAX(C.cost) as maxCost

FROM Parts P, Catalog C, Supplier S

GROUP BY S.sname, S.sid

HAVING ANY (P.color = “green”) AND ANY (P.color = “red”)

3.a)

CREATE TABLE Emp

(eid INTEGER,

ename CHAR(15),

age INTEGER,

salary REAL,

PRIMARY KEY (eid),

CHECK (salary >= 20000)

)

3.b)

CREATE ASSERTION managerAlsoEmployee

CHECK ((Select COUNT (\*)

FROM Dept D

WHERE D.managerid NOT IN (SELECT \* FROM Emp)) = 0)

3.c)

CREATE TABLE Works

(eid INTEGER,

did INTEGER,

pct\_time INTEGER,

PRIMARY KEY (eid, did),

CHECK (pct\_time < 100)

)

3.d)

CREATE ASSERTION mSalaryHigherE

CHECK ((SELECT E.eid

FROM Emp E

WHERE MAX(E.salary))

=

(SELECT D.managerid

FROM Dept D)

)

3.e)

CREATE TRIGGER IncrManagerSalary

AFTER INSERT ON Emp

FOR EACH STATEMENT

UPDATE Emp

Set E.salary = E1.salary

FROM Emp E, Emp E1, Dept D

WHERE E.salary > E1.salary AND E1.eid = D.managerid