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CS 447

Lab #8

**1.**

findPC(specifiedSpeed, specifiedRam){

SET TRANSACTION READ ONLY;

SET TRANSACTION ISOLALTION LEVEL SERIALZABLE;

BEGIN TRANSACTION

result = SELECT \* FROM PC where speed = specifiedSpeed AND ram = specifiedRam;

for each row in result print(model, speed, ram, hd, price);

COMMIT;

}

**2.**

deleteModel(byModel){

SET TRANSACTION ISOLATION LEVEL SERIALIZABLE;

BEGIN TRANSACTION

DELETE FROM Product where model = byModel;

DELETE FROM PC where model = byModel;

COMMIT;

}

**3.**

changePrice(byModel, newPrice){

SET TRANSACTION ISOLATION LEVEL READ COMMITTED;

BEGIN TRANSACTION

UPDATE PC SET price = newPrice WHERE model = byModel;

COMMIT;

}

**4.**

addNewPC(newManufacturer, newModel, newSpeed, newRam, newHD, newPrice){

SET TRANSACTION ISOLATION LEVEL READ SERIALIZABLE;

BEGIN TRANSACTION

result = SELECT \* FROM PC WHERE model = newModel;

IF result isEmpty THEN

INSERT INTO PC(model, speed, ram, hd, price) VALUES(newModel, newSpeed, newRam, newHD, newPrice);

INSERT INTO Product(newManufacturer, newModel, ‘pc’);

ELSE

print(“Already Exist!”);

COMMIT;

}

**5.**

Primary Key is model for all relations,

Foreign Key from Laptop, PC, and Printer to Product is model

Create table Laptop(

model int PRIMARY KEY,

speed float,

ram int,

hd int,

screen float,

price int,

FOREIGN KEY (model) REFERENCES Product (model));

Create table PC(

model int PRIMARY KEY,

speed float,

ram int,

hd int,

price int,

FOREIGN KEY (model) REFERENCES Product (model));

Create table Printer(

model int PRIMARY KEY,

color tinyint,

ptype varchar(16),

price int,

FOREIGN KEY (model) REFERENCES Product(model));

Create table Product(

manufacturer char(1),

model int PRIMARY KEY,

type varchar(16));

**6.**

Using EV database

Create table Motorcycles(model varchar(16) PRIMARY KEY, distance int, battery\_size double, top\_speed int, FOREIGN KEY (distance) REFERENCES Tesla (distance));

Create table Tesla(model varchar(16) PRIMARY KEY, distance int, year int, FOREIGN KEY (distance) REFERENCES Motorcycles(distance));

**7.**

Alter table Laptop CHECK (speed >= 2.0);

**8.**

Alter table Printer CHECK (ptype IN (‘laser’, ‘ink-jet’, ‘bubble-jet’));

**9.**

Alter table Product CHECK (type IN (‘pc’, ‘laptop’, ‘printer’));

**10.**

Alter table PC CONSTRAINT noZero CHECK (hd > 0);