Homework 2

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1. **Query the data**
2. **Find the average length of all CDs**  
   SELECT AVG(Cdlength)

FROM CD

1. **Find the average length of all CDs made by ‘The Beatles’**SELECT AVG(Cdlength)

FROM CD

WHERE artist = 'The Beatles'

1. **Find the average length of all CDs that come from supplier ‘B’**SELECT AVG(Cdlength)

FROM CD

WHERE PID IN (SELECT PID FROM Product$ WHERE supplier='B')

1. **Find all suppliers that sell CDs that have at least 100 minutes of music**SELECT supplier

FROM Product

WHERE PID IN (SELECT PID FROM CD$ WHERE Cdlength>=100)

1. **For each supplier, find the average DVD length**  
   SELECT supplier, AVG(length) AS Avg

FROM Product,DVD

WHERE Product.PID =DVD.PID GROUP BY supplier

1. **Find the songs that can be found on more than one CD**SELECT name

FROM song

GROUP BY name HAVING COUNT(name)>1

1. **Find all books that have the word ‘hundred’ in the title**SELECT title

FROM Book$

WHERE title LIKE '%hundred%'

1. **Find all suppliers that sell books but not CDs**SELECT supplier

FROM Product

WHERE type='Book'

Group by supplier

EXCEPT

SELECT supplier

FROM Product

WHERE type='CD'

Group by supplier

1. **Find the average price of all books and DVDs made by supplier ‘B’**

SELECT AVG(price),type

FROM Product

WHERE supplier='B' AND type <> 'CD'

GROUP BY type

1. **Find suppliers that sell at least two different products (book or DVD) that were made in 2011**

SELECT supplier

FROM Product

WHERE type = 'Book' OR type = 'DVD' AND PID IN

(

(

SELECT PID

FROM Book

WHERE YearPub = '2011'

)

UNION

(

SELECT PID

FROM DVD

WHERE yearmade = '2011'

)

)

GROUP BY supplier

HAVING COUNT(type) >1;

1. **Find manufacturers who sell at least three different DVDs**

SELECT DISTINCT studio,count(studio)

FROM DVD

GROUP BY studio

HAVING count(studio) > 2

1. **Find the book with the highest price**

SELECT Book.title

FROM Book

WHERE Book.PID IN (SELECT Product.PID FROM Product

WHERE price IN (SELECT Max(price) from Product WHERE type='Book'))

1. **For each author, list the number of books that are available for sale**

SELECT author,Count(PID)

FROM Book

GROUP BY author

1. **Find all the suppliers that sell DVDs with ‘Rebel Wilson’**

SELECT supplier

FROM Product

WHERE Product.PID IN(SELECT DVD.PID FROM DVD$ WHERE DVD.PID IN (SELECT Actor.movie FROM Actor$ WHERE Actor.[Name]='Rebel Wilson'))

1. **Update the data**
2. **Add key constraints to the tables according to the data definitions**

ALTER TABLE Product

ADD PRIMARY KEY (PID)

ALTER TABLE Book

ADD PRIMARY KEY (PID)

ALTER TABLE Book

ADD CONSTRAINT FK\_BooK\_Product FOREIGN KEY (PID) REFERENCES Product$ (PID)

ALTER TABLE CD

ADD PRIMARY KEY (PID)

ALTER TABLE CD

ADD CONSTRAINT FK\_CD\_Product FOREIGN KEY (PID) REFERENCES Product (PID)

ALTER TABLE DVD

ADD PRIMARY KEY (PID)

ALTER TABLE DVD

ADD CONSTRAINT FK\_DVD\_Product FOREIGN KEY (PID) REFERENCES Product (PID)

ALTER TABLE Song

ADD PRIMARY KEY (SID)

ALTER TABLE Song

ADD CONSTRAINT FK\_song\_CD FOREIGN KEY (album) REFERENCES CD (PID)

ALTER TABLE Actor

ADD PRIMARY KEY (AID)

ALTER TABLE Actor

ADD CONSTRAINT FK\_Actor\_dvd FOREIGN KEY (movie) REFERENCES DVD (PID)

1. **Add to the database the movie ‘Stardust’ from supplier C that was made by Paramount in 2007 (use two insert statements)**

INSERT INTO DVD(PID, title, studio, yearmade, length)

VALUES (7777, 'Stardust', 'Paramount',2007,127)

INSERT INTO Product(PID ,type, supplier, price)

VALUES (7777, 'DVD', 'C', 800)

1. **Supplier C buys manufacturer B. Change all the products made by B so they are listed as made by C**

UPDATE Product

SET supplier = 'C'

WHERE supplier = 'B'

1. **For each CD made by ‘Sting’, add five minutes to the length of the CD**

UPDATE CD

SET Cdlength = Cdlength + 5

WHERE artist = 'Sting'

1. **For each book sold by supplier B, add 1 to the edition**

UPDATE Book

SET edition = edition + 1

WHERE PID IN (SELECT Product.PID FROM Product WHERE Product.supplier = 'B')

1. **Delete all books that were published before 1980**

SELECT PID INTO temp

FROM Book

WHERE YearPub < 1980

BEGIN TRANSACTION

DELETE FROM Book

WHERE PID IN (SELECT PID FROM temp)

DELETE FROM Product

WHERE PID IN (SELECT PID FROM temp)

COMMIT

1. **Delete all books sold by a supplier that does not sell CDs**

SELECT PID INTO temp FROM Product WHERE supplier IN

(SELECT supplier

FROM Product

EXCEPT

SELECT supplier

FROM Product WHERE type='CD')

BEGIN TRANSACTION

DELETE FROM Book

WHERE PID IN (SELECT PID FROM temp)

DELETE FROM Product

WHERE PID IN (SELECT PID FROM temp)

COMMIT