

CSC343 Worksheet 6 Solution

June 21, 2020

1. Exercise 8.1.1:

```
a) CREATE VIEW RichExec AS
2   SELECT * FROM MovieExec
3   WHERE netWorth >= 100000000;
4
```

Notes:

- Virtual Views
 - **Syntax:** CREATE VIEW < view-name > AS < view-definition >
 - Contrasts to database that exists in physical storage
 - Exists in RAM
 - Is created using query
 - can be used like a relation

Notes:

```
1   CREATE VIEW ParamountMovies AS
2   SELECT title, year
3   FROM Movies
4   WHERE studioName = 'Paramount';
5
```

```
b) CREATE VIEW StudioPres AS
2   SELECT * FROM Movies
3   INNER JOIN Studio ON cert# = presC#;
4
```

```
c) CREATE VIEW ExecutiveStar AS
2   SELECT * FROM MovieExec
3   NATURAL JOIN MovieStar;
4
```

2. Exercise 8.1.2:

a) `SELECT name, gender FROM ExecutiveStar;`
2

b) `SELECT name FROM RichExec WHERE netWorth > 10000000;`
2

c) `SELECT name FROM StudioPres`
2 `NATURAL JOIN ExecutiveStar`
3 `WHERE netWorth > 50000000`
4

3. Exercise 8.2.1:

RichExec is updatable.

Notes:

- Updatable View Conditions
 - The WHERE clause in CREATE VIEW must not be a subquery
 - The FROM clause has only one occurrence of R
 - The SELECT clause must include enough attributes
 - NOT NULL attributes must have default values
 - * A solution to this is by including the attribute without default value in CREATE VIEW

Example:

```
1  Movies(title, year, length, genre, studioName, producerC#)
2  Suppose studioName is NOT NULL but has no default value.
   Then, a fix is:
3
4  CREATE VIEW Paramount AS
5      SELECT studioName, title, year
6      FROM Movies
7      WHERE studioName = 'Paramount';
8
```

4. Exercise 8.2.2:

a) No. It is not updatable. Since,

1. studioName attribute in Movies is NOT NULL without default value

```

b)  CREATE TRIGGER DisneyComediesInsert
    2  INSTEAD OF INSERT ON DisneyComedies
    3  REFERENCING
    4      NEW ROW AS NewTuple
    5  FOR EACH ROW
    6  INSERT INTO Movies(title, year, length, genre, studioName)
    7  VALUES(NewTuple.title, NewTuple.year, NewTuple.length, 'comedy',
    8  'Disney');

```

Notes:

- Using Trigger in VIEW
 - Uses INSTEAD OF in place of BEFORE or AFTER
 - When event causes the trigger, the trigger is done instead of the event

Example:

```

1  CREATE VIEW ParamountMovies AS
2  SELECT title, year
3  FROM Movies
4  WHERE studioName = 'paramount';
5
6  CREATE TRIGGER ParamountInsert
7  INSTEAD OF INSERT ON ParamountMovies
8  REFERENCING NEW ROW AS NewRow
9  FOR EACH ROW
10 INSERT INTO Movies(title, year, studioName)
11 VALUES(NewRow.title, NewRow.year, 'Paramount');
12

```

```

c)  CREATE TRIGGER DisneyComediesInsert
    2  INSTEAD OF INSERT ON DisneyComedies
    3  REFERENCING
    4      NEW ROW AS NewTuple
    5      OLD ROW AS OldTuple
    6  FOR EACH ROW
    7  UPDATE Movies
    8  SET length=NewTuple.length
    9  WHERE title=OldTuple.title AND year=OldTuple.year;
10

```

5. Exercise 8.2.3

- a) No. the view is not updatable. Because for it to be updatable, only one relation must exist in FROM

```

b)  CREATE TRIGGER NewPCInsert
    2  INSTEAD OF INSERT ON NewPC
    3  REFERENCING

```

```
4      NEW ROW AS NewTuple
5      OLD ROW AS OldTuple
6  FOR EACH ROW
7      INSERT INTO PC(model speed, ram, hd ,price)
8      VALUES (NewTuple.model, NewTuple.speed, NewTuple.ram, NewTuple.hd
, NewTuple.price);
9
10     INSERT INTO Product(maker, model, type)
11     VALUES (NewTuple.maker, NewTuple.model, 'pc');
12
```

```
c) CREATE TRIGGER NewPCUpdate
2  INSTEAD OF INSERT ON NewPC
3  REFERENCING
4      NEW ROW AS NewTuple
5  FOR EACH ROW
6  UPDATE PC
7  SET model=NewTuple.model
8      speed=NewTuple.speed,
9      ram=NewTuple.ram,
10     hd=NewTuple.hd,
11     price=NewTuple.price;
12
13  UPDATE Product
14  SET maker=NewTuple.maker,
15     model=NewTuple.model,
16     type='pc';
17
```