

Each multiple-choice quiz problem is based on a "root question," from which the system generates different correct and incorrect choices each time you take the quiz. Thus, you can test yourself on the same material multiple times. We strongly urge you to continue testing on each topic until you complete the quiz with a perfect score at least once. Simply click the "Reset" button at the bottom of the page for a new variant of the quiz.

After submitting your selections, the system will score your quiz, and for incorrect answers will provide an "explanation" (sometimes for correct ones too). These explanations should help you get the right answer the next time around. To prevent rapid-fire guessing, the system enforces a minimum of 10 minutes between each submission of solutions.

Multiple Choice

3/3 points (graded)

[Q1] Consider the following base tables. Capitalized attributes are primary keys. All non-key attributes are permitted to be NULL.

```
MovieStar(NAME, address, gender, birthdate)
MovieExecutive(LICENSE#, name, address, netWorth)
Studio(NAME, address, presidentLicense#)
```

Each of the choices describes, in English, a view that could be created with a query on these tables. Which one can be written as a SQL view that is updatable according to the SQL standard?

- ☐ A view "RichExecInfo" containing the name, address, and net worth of all executives with a net worth of at least \$10,000,000.
- ☐ A view "GenderBalance" containing the number of male and number of female movie stars.
- ☐ A view "NewYorkWealth" containing the average net worth of movie executives whose address contains "New York".
- ☒ A view "StudioPres" containing the license number, name, address, of all executives who are studio presidents.

Answer-Selection Feedback

Although views with more than one table in their top-level FROM clause are not updatable, we can write this view using one table in the top-level FROM clause and a subquery on a different table in the WHERE clause. Also, although net worth is omitted from the view, it is permitted to be NULL.

[Q2] Consider the following schema:

```
Book(ISBN, title, year) // ISBN and title cannot be NULL
Author(ISBN, name) // ISBN and name cannot be NULL
```

and the following view definition over this schema:

```
Create View V as
  Select Book.ISBN, count(*)
  From Book, Author
  Where Book.ISBN = Author.ISBN
  And Author.name Like 'A%'
  And Book.year > 2000
  Group By Book.ISBN
```

This view is not updatable according to the SQL standard, for a number of reasons. Which of the following is a valid reason for the view being non-updatable according to the standard?

- ☐ The condition Author.name Like 'A%'
- ☒ NULL values are not permitted in Book.title
- ☐ Book.year is omitted from the view
- ☐ The condition Book.year > 2000

Answer-Selection Feedback

Attributes not permitted to have NULLs must be retained in updatable views.

[Q3] Suppose a table T(A,B,C) has the following tuples: (1,1,3), (1,2,3), (2,1,4), (2,3,5), (2,4,1), (3,2,4), and (3,3,6). Consider the following view definition:

```
Create View V as
  Select A+B as D, C
  From T
```

Consider the following query over view V:

```
Select D, sum(C)
  From V
 Group By D
 Having Count(*) <> 1
```

Which of the following tuples is in the query result?

☐ (2,3)

☒ (5,9)

☐ (6,9)

☐ (5,7)

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