Quiz 5: Relational Algebra Quiz

Due Feb 19 at 2:59am

Points 100

Questions 18

Available Feb 7 at 2:59am - Feb 25 at 2:59am 18 days

Time Limit None

Allowed Attempts Unlimited

Instructions Instructions

A self check on basic relational algebra concepts.



Take the Quiz Again

Attempt History

| | Attempt | Time | Score | |
|--------|-----------|-------------|---------------|--|
| KEPT | Attempt 7 | 6 minutes | 95 out of 100 | |
| LATEST | Attempt 7 | 6 minutes | 95 out of 100 | |
| | Attempt 6 | 10 minutes | 80 out of 100 | |
| | Attempt 5 | 5 minutes | 85 out of 100 | |
| | Attempt 4 | 13 minutes | 85 out of 100 | |
| | Attempt 3 | 96 minutes | 65 out of 100 | |
| | Attempt 2 | 4 minutes | 20 out of 100 | |
| | Attempt 1 | 299 minutes | 15 out of 100 | |
| | | | | |

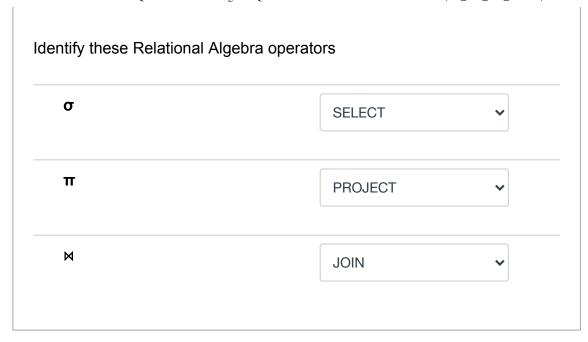
(!) Correct answers are hidden.

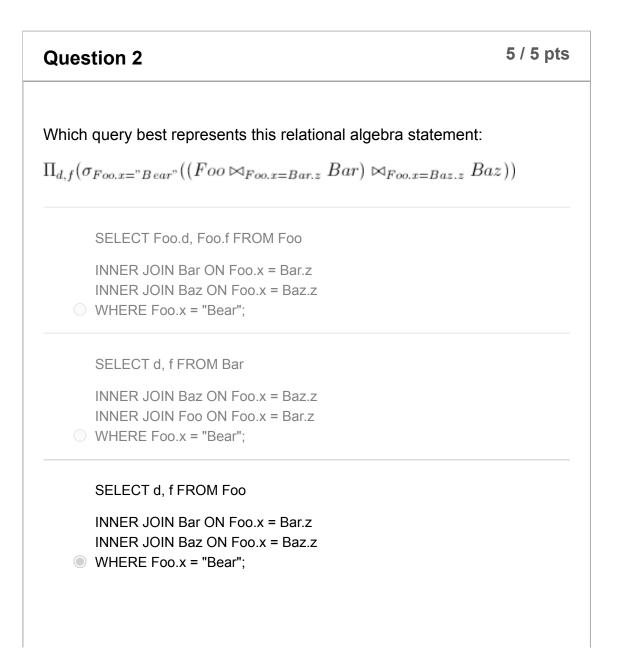
Score for this attempt: 95 out of 100

Submitted Feb 18 at 4:19pm This attempt took 6 minutes.

Question 1

15 / 15 pts





SELECT * FROM Bar

INNER JOIN Baz ON Foo.x = Baz.z INNER JOIN Foo ON Foo.x = Bar.z

WHERE Foo.x = "Bear";

Question 3 5 / 5 pts

Which query best represents this relational algebra statement:

 $\sigma_{Foo.a < 100} (Foo \bowtie_{Foo.b = Bar.c} Bar)$

SELECT Foo.a FROM Foo

INNER JOIN Bar ON Foo.b = Bar.c

WHERE Foo.a < 100;</p>

SELECT a FROM Foo

INNER JOIN Bar

WHERE Foo.a < 100;</p>

SELECT Foo.a FROM Foo

INNER JOIN Bar

WHERE Foo.a < 100;</p>

SELECT * FROM Foo

INNER JOIN Bar ON Foo.b = Bar.c

WHERE Foo.a < 100;</p>

Question 4 5 / 5 pts

Which relational algebra command creates a new table where only certain columns are to be included?

| PROJECT | | |
|-----------|--|--|
| SELECT | | |
| ODELETE | | |
| O PROGRAM | | |

| Question 5 | 5 / 5 pts |
|-------------------------------------------------------------------|-------------|
| Which command contains all rows that are similar in two different | ent tables? |
| INTERSECT | |
| O JOIN | |
| ODIFFERENCE | |
| UNION | |

| Question 6 | 5 / 5 pts |
|-----------------------------------------------|----------------------------------------------------------------|
| Two tables are of columns with the same types | compatible if they have the same number of corresponding data? |
| INTERSECTION | |
| JOIN | |
| ODIFFERENCE | |
| UNION | |

Jnanswered

Question 7 0 / 5 pts

Based on this table:

Vehicle(vehicle_id, year, make_id, model_id)

Which command will list all information from Vehicle with the vehicle_id of the value '3'?

- SELECT Vehicle '3' GIVING Answer
- SELECT Vehicle WHERE vehicle_id=3 GIVING Answer
- SELECT Vehicle GIVING Answer WHERE vehicle_id='3'
- SELECT Vehicle WHERE vehicle_id='3' RESULTS Answer

Question 8 5 / 5 pts

Based on the table:

Vehicle(vehicle_id, year, make_id, model_id)

Which command creates a new table named 'Make' that contains the fields 'make_id' and 'year'?

| JOIN Vehicle WITH (make_id, year) GIVING Make INNER JOIN Vehicle FROM Make WITH (make_id, year) PROJECT Vehicle OVER (make_id, year) GIVING Make SELECT Vehicle OVER (make_id, year) GIVING Make |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PROJECT Vehicle OVER (make_id, year) GIVING Make |
| |
| SELECT Vehicle OVER (make_id, year) GIVING Make |
| |

Question 9 5 / 5 pts

Based on the following tables:

Vehicle(vehicle_id, year, make_id, year, model_id)

Make(make_id, make_name, country)

Which command creates a new table named Inventory that combines Vehicle and Make tables based on make_id?

JOIN Vehicle Make WHERE Vehicle.make_id=Make.make_id GIVING Inventory

SELECT Vehicle Make WHERE Vehicle.make_id=Make.make_id MAKING Inventory

| UNION Vehicle Make Inventory | ; JOIN Vehicle.make_i | d=Make.make_id GIVING |
|---------------------------------|-----------------------|-----------------------|
| PROJECT Vehicle M | ake WHERE Vehicle.n | nake_id=Make.make_id |
| MAKING IIIVEILOIY | | |

Question 10 5 / 5 pts

Which query below will return a number of row(s) where make_id field contains '1' from Vehicle and provides a total of the price field?

- SELECT COUNT(*), SUM(price) FROM Vehicle WHERE make_id='1';
- SELECT FROM Vehicle SUM(price) WHERE make_id='1' COUNT(*);
- SELECT FROM Vehicle COUNT(price) SUM(*) WHERE make_id='1';
- SELECT COUNT(*) WHERE make_id='1' SUM(price) FROM Vehicle;

Question 11 5 / 5 pts

Which query will return the row(s) with the make_id field containing '1' from the table Vehicle?

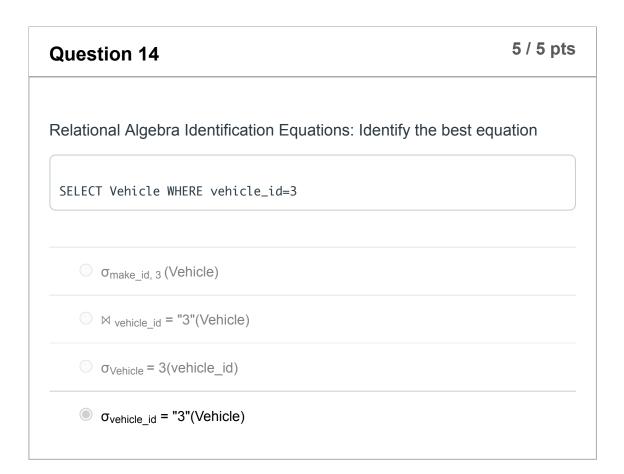
SELECT FROM Vehicle COUNT(*) WHERE make_id='1';

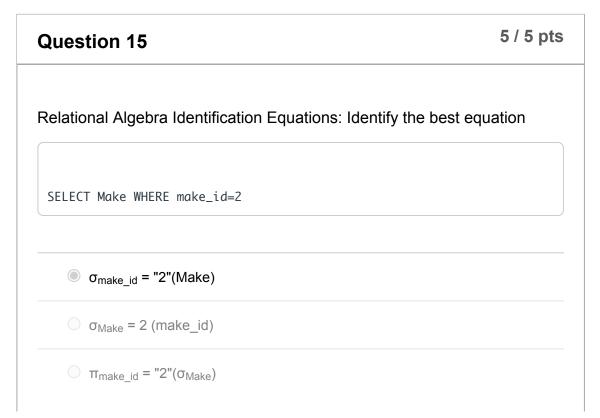
| - | | | |
|------------------------|----------------|--------------|--|
| SELECT COUNT(*) WHERE | make_id='1' FR | ROM Vehicle; | |
| SELECT COUNT(*) FROM | /ehicle WHERE | make_id='1'; | |
| SELECT FROM Vehicle WH | ERE make_id='1 | ' COUNT(*); | |
| | | | |

| Question 12 | 5 / 5 pts |
|-----------------------------------------------------------------------------------|-----------|
| When using SQL, the SELECT condition is typically specified in clause of a query? | n which |
| WHERE | |
| ○ IF | |
| FROM | |
| O NOT | |

| Question 13 | 5 / 5 pts |
|--------------------------------------------------------------------------|-----------|
| Relational Algebra Identification Equations: Identify the best equations | uation |
| PROJECT Vehicle OVER (make_id, year) | |
| π _{Vehicle} (make_id, year) | |
| π _{make_id, year} (Vehicle) | |
| $\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $ | |

o_{make_id, year} π_{Vehicle}





 $\bigcirc \ \sigma_{make_id} \bowtie 2(Make)$

| Question 16 | 5 / 5 pts |
|-------------------------------------------------------------------|-----------|
| Relational Algebra Identification Equations: Identify the best eq | uation |
| PROJECT Inventory WHERE price is less than 8500 | |
| π ((price < 8500)σInventory) | |
| π (σ (price < 8500)Inventory) | |
| π (σInventory (price < 8500)) | |
| π _{Inventory} (σprice < 8500) | |

| Question 17 | 5 / 5 pts |
|--------------------------------------------------------------------|-----------|
| Relational Algebra Identification Equations: Identify the best equ | ıation |
| JOIN make_id (Vehicle, Make) NEW MakeInfo | |
| | |
| MakeInfo = σVehicle ⋈ σMake | |
| ○ Vehicle ⋈ Make πMakeInfo | |
| \bigcirc Vehicle \bowtie Make $\pi_{MakeInfo}$ | |

■ MakeInfo:= Vehicle ⋈ Make

Question 18 5 / 5 pts

If we wanted to retrieve data from an employee database for all employees that work in department # 5.

Which single relational algebra expression would be best matched to display the employees first name, last name, and total salary using the following EMPLOYEE table headings?

| empid | lastname | firstname | department | salaryrate | salary |
|---------------|--------------------|----------------------|------------|------------|--------|
| | | | | | |
| | | | | | |
| | | | | | |
| σ firs | $tname,\ lastname$ | $me,\ salary(\pi$ | department | = 5 (EMPL | OYEE)) |
| | | | | | |
| $\pi~firs$ | $tname,\ lastname$ | $me,\ salary(\sigma$ | department | =5 (EMPL | OYEE)) |
| | | | | | |
| Θ firs | $stname,\ lastna$ | $me,\ salary$ (o | department | = 5 (EMPL | OYEE)) |

 π firstname, lastname, salary (σ EMPLOYEE, department = 5)

Quiz Score: 95 out of 100