

A database table named as Loan_Records is given below.

Borrower	Bank_Manager	Loan_Amount
Ramesh	Sunderajan	10000.00
Suresh	Ramgopal	5000.00
Mahesh	Sunderajan	7000.00

What is the output of the following SQL query?

```
SELECT Count(*)  
FROM ( (SELECT Borrower, Bank_Manager  
       FROM Loan_Records) AS S  
     NATURAL JOIN (SELECT Bank_Manager,  
                   Loan_Amount  
                  FROM Loan_Records) AS T );
```

Ans A. 3

Explanation: This will result in a single table with three rows. Hence count three. The natural join is a type of equi join, equi joins creates joins on matching columns. In case of natural join the join is made on equal column and columns with the same name of associated tables will appear once only.

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4 Which type of join is needed when you wish to include rows that do not have matching values ?
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A. Non of the above
B. Natural Join
C. Full Outer Join
D. Inner join
E. Equi Join

Ans c. outer join

Explanation: The outer join clause will join tables irrespective of whether the rows contain matching values or not against a specified column.

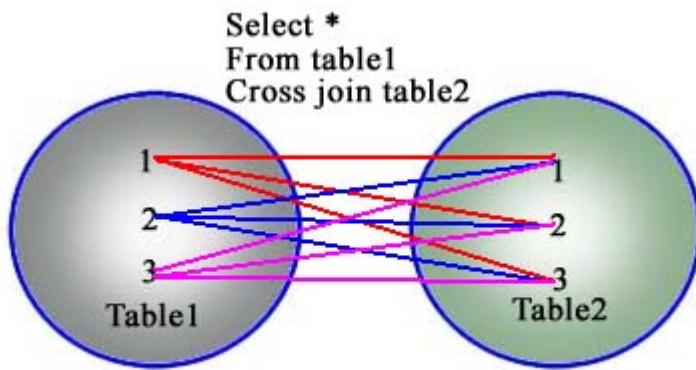
Relation R1 has 10 tuples and 5 attributes. Relation R2 has 0 tuples and 7 attributes. When a CROSS JOIN is achieved between R1 and R2, how many tuples would the resultant set have?

- A. 10
- B. 35
- C. 28
- D. 0

Ans D. 0

When a cross join is achieved between R1 and R2 the resultant set will have 0 tuples.

When you Cross join you will get a cartesian product. Each row in the first table is matched with every row in the second table.



In cross joins, each row from first table joins with all the the rows of another table.
If 1st table contain x rows and y rows in 2nd one the result set will be $x \times y$ rows.

Since the R2 relation has 0 tuples the resultant will be 0.

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QID: 467 [1 Mark]

A shared lock allows which of the following types of transactions to occur?

- A. Insert
- B. Delete
- C. Update
- D. Read

Ans D. Read

Shared lock is also called read lock, used for reading data items only.

Shared locks support read integrity. They ensure that a record is not in process of being updated during a read-only request. Shared locks can also be used to prevent any kind of updates of record.

Which of the following is the preferred way to recover a database after a transaction in progress terminates abnormally?

- A. Rollforward
- B. Switch to duplicate database
- C. Rollback
- D. Reprocess transactions

Ans c. Rollback

PostgreSQL ROLLBACK command is used to undo the changes done in transactions

A CASE statement is which of the following ?

- A. IF-THEN-ELSE
- B. None of the Above
- C. Data Definition syntax
- D. All of the above
- E. Loop in SQL

Ans a. IF-THEN-ELSE

Case statement sql is used for conditional nesting.

Outer join is same as equi join except one of the duplicate columns is eliminated in the result table.

- A. FALSE
- B. TRUE

Ans A. FALSE

In the outer join duplicate columns are not eliminated.

Suppose `tbl_1` is a table consisting of 8 rows and `tbl_2` is a table consisting of 6 rows, the number of combinations through which the search is performed is _____

```
SELECT tbl_1.i1, tbl_2.i2  
FROM tbl_1 INNER JOIN tbl_2  
WHERE tbl_1.i1 = tbl_2.i2;
```

- A. 1
- B. 14
- C. 48
- D. 2

Ans c. 48

In MySQL, when the tables are unindexed, the searches are run through all the possible combinations. In this case, the search space is $8 \times 6 = 48$, the product of the number of rows.

If a column contains 7 values and 6 distinct values, the cardinality is _____

- A. 13
- B. 7
- C. 6
- D. 1

Ans c.6

In MySQL, the cardinality of a column is the number of distinct values that it contains. A column that contains the values 1, 2, 3, 4, 4, 5, 6 has a cardinality of six and not seven.

Is the following index a good fit for the query?

```
CREATE INDEX tbl_idx ON tbl (text)

SELECT *
FROM tbl
WHERE text LIKE 'TJ%'
```

- A. Good fit: No need to change anything
- B. Bad fit: Changing the index or query could improve performance

Ans A. Good fit. No need to change anything

Although like expressions starting with a wild card character (%) or (_) cannot use this index efficiently, a pattern that has the wild card character at the very end can! Even if the wild card character is in the middle, the index is still useful.

Which of the following statements are TRUE about an SQL query?

- P : An SQL query can contain a HAVING clause even if it does not have a GROUP BY clause
- Q : An SQL query can contain a HAVING clause only if it has a GROUP BY clause
- R : All attributes used in the GROUP BY clause must appear in the SELECT clause
- S : Not all attributes used in the GROUP BY clause need to appear in the SELECT clause

A. Q and S

B. Q and R

C. P and S

D. P and R

Ans A. Q and S

Say you're building a web forum application, where users can create accounts and post messages on forums about a variety of subjects. What might your relational DB schema look like?

- A. The schema will likely have a "users" table with info on each registered user (name, password hash, etc), and a "forums" table with info on each forum (like forum name). A "messages" table can then have the text of each message, a foreign key to the users table, and a foreign key to the forums table.
- B. The schema will probably feature a "posts" table with the text of every message posted, the name of the user who posted it, e.g. "John Smith", and the name of the forum to which it was posted.
- C. It's most flexible to use a stored procedure to pull together the data we need dynamically.
- D. A good schema is to have a "messages" table that contains the text of every message, and a "forums" table for each forum. Because we need a many-to-many relationship between messages and forums, we'll also need an association table between the two (message-postings) associating messages to forums.

Ans A.

Does AWS Redshift use SQL? If so what is the type of SQL it uses

- A. Postgresql
- B. PL SQL
- C. None of the above
- D. MS SQL
- E. No SQL

Ans. A. Postgresql

AWS redshift is based on postgresql.

Triggers are stored blocks of code that have to be called in order to operate

- A. FALSE
- B. TRUE

Ans B.True

Consider the following relation

Cinema (theater, address, capacity)

Which of the following options will be needed at the end of the SQL query

```
SELECT P1.address  
FROM Cinema P1
```

Such that it always finds the addresses of theaters with maximum capacity?

- A. WHERE P1.capacity >= Any (select P2.capacity from Cinema P2)
- B. WHERE P1.capacity >= All (select P2.capacity from Cinema P2)
- C. WHERE P1.capacity > All (select max(P2.capacity) from Cinema P2)
- D. WHERE P1.capacity > Any (select max(P2.capacity) from Cinema P2)

Ans B

The transaction log includes which of the following?

- A. The before-image of a record
- B. The after-image of a record
- C. The essential data of the record
- D. The before and after-image of a record

Ans. C

Concurrency control is important for which of the following reasons?

- A. To ensure data integrity when updates occur to the database in a multiuser environment
- B. To ensure data integrity while reading data occurs to the database in a multiuser environment
- C. To ensure data integrity when updates occur to the database in a single-user environment
- D. To ensure data integrity while reading data occurs to the database in a single-user environment

Ans A

Subqueries can be nested multiple times

- A. FALSE
- B. TRUE

Ans A.

Which statement(S) is/are incorrect

- A. Function has only IN parameter.
- B. Stored procedure has IN and OUT parameter.
- C. Try and Catch can be used with both stored procedure and function
- D. Stored procedure may return a value and function must return a value
- E. All of the above

Ans C

SQL allows duplicate tuples in relations, and correspondingly defines the multiplicity of tuples in the result of joins. Which one of the following queries always gives the same answer as the nested query shown below:

select * from R where a in (select S.a from S)

- A. select R.* from R,(select distinct a from S) as S1 where R.a=S1.a
- B. select R.* from R,S where R.a=S.a and is unique R
- C. select R.* from R, S where R.a=S.a
- D. select distinct R.* from R,S where R.a=S.a

Ans A

Solution:

<https://testbook.com/question-answer/sql-allows-duplicate-tuples-in-relations-and-corr--5f131e8cbe07880d0d29d975#:~:text=SQL%20allows%20duplicate%20tuples%20in%20relations%2C%20and%20correspondingly%20defines%20the.in%20the%20result%20of%20joins>