If we want to retain all duplicates, we must write _____ in place of union.
a) Union all

_____ is an abstraction through which relationships are treated as higher level entities
Aggregation

The rule that a value of a foreign key must appear as a value of some specific table is called a

Referential constraint.

The _____ operator takes the results of two queries and returns only rows that appear in both result sets.

Intersect

A table joined with itself is called
Join

The common column is eliminated in

natural join

Which of the following relational algebra operations do not require the participating tables to be union-compatible?

Join

Prior to 1970, all data was stored in separate files, which were mostly stored on reels of magnetic tape.

True

the clause in sql that specifies that the query result should be sorted in ascending or descending order based on the values of one or more columns is ?

order by

Which of the following operations need the participating relations to be union compatible?

All of these

Tree structures are used to store data in

Hierarchical model

Which of the following is true of a network structure?

it allows a many-to-many relationship

Which of the following statement on the view concept in SQL is invalid?

The definition of a view should not have GROUP BY clause in it.

The union operation automatically _____, unlike the select clause.

Eliminates duplicate

_____ produces the relation that has attributes of R1 and R2.

Cartesian product

The keyword to eliminate duplicate rows from the query result in SQL is

UNIQUE

The language that requires a user to specify the data to be retrieved without specifying exactly how to get it is

Non-Procedural DML.

As per equivalence rules for query transformation, selection operation distributes over

All of the above.

SELECT name ____ instructor name, course id
FROM instructor, teaches
WHERE instructor.ID= teaches.ID;

Which keyword must be used here to rename the field name?

As

SELECT instructor.*

FROM instructor, teaches

WHERE instructor.ID= teaches.ID;

This query does which of the following operation?

All attributes of instructor are selected on the given condition

Relational Algebra does not have

Aggregation operators

Primary key should be chosen such that its attribute values are never

Changed

Which of the following is a comparison operator in SQL?

=

The _____ is essentially used to search for patterns in target string.

Like Predicate

An advantage of the database management approach is,

the DBMS helps to create an environment in which end users have better access to more and better-managed data.

It is better to use files than a DBMS when there are

Multiple users wish to access the data.

Conceptual design

involves modelling independent of the dbms.

An attribute A of datatype varchar(20) has the value “Avi” . The attribute B of datatype char(20) has value ”Reed” .Here attribute A has ____ spaces and attribute B has ____ spaces .

3,20

Which of the following is a legal expression in SQL?

SELECT NAME FROM EMPLOYEE;

A primary key if combined with a foreign key creates

Parent-Child relationship between the tables that connect them

Enterprise Resource Planning(ERP) is an example of a single user database

False

Database applications are seldom intended for use by a single user.

false

Minimal Superkeys are called

Candidate keys

The result of the UNION operation between R1 and R2 is a relation that includes

all the tuples of R1 and R2 which have common columns

In SQL the spaces at the end of the string are removed by _____ function.

Trim

Use of UNIQUE while defining an attribute of a table in SQL means that the attribute values are

both (A) & (B)

Which of the following is not true for a view?

A view definition is permanently stored as part of the database

What is the full form of RDBMS?

Relational Database Management System (RDBMS)

Which are the two ways in which entities can participate in a relationship?

Total and partial

The division operator divides a dividend A of degree m+n by a divisor relation B of degree n and produces a result of degree

m

The _____ operator is used to compare a value to a list of literals values that have been specified.

BETWEEN

Which of the following aggregate functions does not ignore nulls in its results?.

COUNT (*)

A database design may be based on existing data.

True

The relational model feature is that there

is much more data independence than some other database models.

A transaction is in state after the final statement has been executed.

Committed

The natural join is equal to

Combination of projection and Cartesian product

A database has a built-in capability to create, process and administer itself.

False

Which of the following is an advantage of view?

All of the above

Which one is correct statement Logical data independence provides following without changing application programs:
I. Changes in access methods.
II. Adding new entities in database
III. Splitting an existing record into two or more records
IV. Changing storage medium

(ii) and (iii)

If two relations R and S are joined, then the non matching tuples of both R and S are ignored in

inner join

Which of the following is not a property of transactions?

Atomicity

Manager's salary details are hidden from the employee. This is ?

External level data hiding

By default, the order by clause lists items in _____ order.
SELECT name

FROM instructor

WHERE dept name = 'Physics'

ORDER BY name;

Ascending

The property/properties of a database is/are -----

All of the above

Which one of the following is a procedural language ?

Relational algebra

Logical design of database, is known to be
Database Schema

In SQL the statement select * from R, S is equivalent to

Select * from R cross join S

The XML family of standards is very important in database processing today.

True

What is a relationship called when it is maintained between two entities?

Binary

Which is a unary operation:

Generalized selection

Which of the following is a fundamental operation in relational algebra?

none of the mentioned

A logical schema

is a standard way of organizing information into accessible parts

In SQL, testing whether a subquery is empty is done using

EXISTS

Which is the false statement from the following ?

a. A veiw is a named derived table b. A name relation is variable c. A veiw is a named reation and is virtual d. None of these

None of these

Key to represent relationship between tables is called

Primary key

A DBMS query language is designed to

- all of the above

In SQL the word ‘natural’ can be used with

inner join

A data dictionary is a special file that contains

All of the above

The users who use easy-to-use menu are called

Naive users

The operation which is not considered a basic operation of relational algebra is

Join

An instance of relational Schema R(A,B,C) has distinct values of A including NULL values.

Which one of the following is true?

A is candidate Key

DBMS helps achieve

Both a and b

What is data integrity
It is the data contained in database that is accurate and consistent

Which of the following is not Unary operation?

Union

Relational Algebra is -------- Query language

Procedural

Data independence means

both b and c.

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. P and R
B. P and S
C. Q and R
D. Q and S

P and S

Contents of a relation instance may change with time as relation:

Updated

Consider Join of a relation R with a relation S. If R has m tuples and S has n tuples, then maximum and minimum sizes of the Join respectively are

mn and 0

In a relational Database a referential integrity constraint cab be specified with the help of

Foreign Key.

A database is called "self-describing" because it contains a description of itself.

True

A domain is if elements of the domain are considered to be

indivisible units.

Query language is a language in whicha user

Requests

SELECT * FROM employee WHERE dept_name="Comp Sci";

In the SQL given above there is an error . Identify the error .

“Comp Sci”

The relational model is concerned with ?

Data structure and Data integrity

A RDBMS consists a collection of Tables.

In relational model, the row of table is known to be ?

Tuple

One of the reasons why OODBMSs have not been widely used for business information systems is that OOP is obsolete.

False

To display the salary from greater to smaller and name in ascending order which of the following options should be used ?
SELECT *

FROM instructor

ORDER BY salary ____, name ___;

Desc, Asc

The_____ operation allows the combining of two relations by merging pairs of tuples, one from each relation, into a single tuple.

Join

A database has data and relationships.

True

'_ _ _ ' matches any string of _____ three characters. '_ _ _ %' matches any string of at _____ three characters.

Exactly, Atleast

In a database, data is stored in spreadsheets which have rows and columns.

False

In an enterprise-class database system, business users interact directly with database applications, which directly access the database data.

False

The purpose of a database is to help people stop using spreadsheets.

False

Applications are programs that interact directly with the database.

False

For select operation the _____ appear in the subscript and the _____ argumentappears in the paranthesis after the sigmA:)

Predicates, relation

A table is a collection of relationships, there is a close correspondence between concept of

Tables and relations

Microsoft Access is an enterprise-class database product.

False

Structured Query Language (SQL) is an internationally recognized standard language that is understood by all commercial database management system products.

True

Query languages used in practice includes:

Elements

Which of the following in not Outer join?

all of the options

_____ operator is used for appending two strings.

||

The _____operation performs a set union of two “similarly structured” tables

Union

The union of primary keys of the related entity sets becomes a ---------- of the relation ?

Super Key

_____ clause is an additional filter that is applied to the result.

Having

The _____ operation, denoted by –, allows us to find tuples that are in one relation but are not in another.

Set-difference

Internal data describes what data are actually stored in the database

False

Address field of a person should not be part of primary key, since it is likely to ?

Change

Logical data independence implies that application programs need not be changed if fields are added to existing record

True

The data model is one part of the conceptual design process.

True

Which of the following is not a characteristic of a relational database model?

Treelike structure

1. Given the following schema: employees (emp-id, first-name, last-name, hire-date, deptid, salary)
   departments (dept-id, dept-name, manager-id, location-id)
   You want to display the last names and hire dates of all latest hires in their respective departments in the location ID 1700. You issue the following query:
   SQL > SELECT last-name, hire-date
   FROM employees
   WHERE (dept-id, hire-date) IN
   (SELECT dept-id, MAX (hire-date)
   FROM employees JOIN departments USING (dept-id)
   WHERE location-id = 1700
   GROUP BY dept-id),
   What is the outcome?

   A. It executes but does not give the correct result.

   B. It executes and gives the correct result.

   C. It generates an error because of pairwise comparison.

   D. It generates an error because the GROUP BY clause cannot be used with table joins in a subquery.

Correct Option: B
It executes and gives the correct result.

SQL allows 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, S where R.a=S.a (D)

b. select distinct R.* from R,S where R.a=S.a

c. select R.* from R,(select distinct a from S) as S1 where R.a=S1.a

d. select R.* from R,S where R.a=S.a and is unique R

Answer: select R.* from R,(select distinct a from S) as S1 where R.a=S1.a

S1: A foreign key declaration can always be replaced by an equivalent check assertion in SQL.
S2: Given the table R(a,b,c) where a and b together form the primary key, the following is a valid table definition.
CREATE TABLE S (
a INTEGER,
d INTEGER,
e INTEGER,
PRIMARY KEY (d),
FOREIGN KEY (a) references R)

Which one of the following statements is CORRECT?

- a)

S1 is TRUE and S2 is FALSE.

- b)

Both S1 and S2 are TRUE.

- c)

S1 is FALSE and S2 is TRUE.

- d)

Both S1 and S2 are FALSE.

Correct answer is option 'D'.

Which of the following isn't a property of transactions?

Concurrency

In SQL the word 'natural' can be used with

Inner Join

Which of the following aggregate functions does not ignore nulls in its results?.

Count(*)

Union Operator is a

Binary Operator

The intersection operator is used to get the _____ tuples.

Common

The term attribute refers to a __________ of a table.

Column

Which one of the following has to be added into the blank to select the dept_name which has Computer Science as its ending string ?

SELECT emp_name

FROM department

WHERE dept_name LIKE ' _____ Computer Science';

%

Which is a join condition contains an equality operator:

Equijoin

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

1) P and R

2) P and S

3) Q and R

4) Q and S

Q and R

What do you understand by data independence what are its two types?

Data independence is the ability to modify schema definition in one level without affecting schema of that definition in the next higher level. There are two levels of data independence, they are Physical data independence and Logical data independence.

- Physical Data Independence: It modifies the schema at the physical level without affecting the schema at the conceptual level.

- Logical Data Independence: It modifies the schema at the conceptual level without affecting or causing changes in the schema at the view level.

Define the relationship between view and data independence?

The view level or external level of abstraction describes the application which the users use to retrieve the information from the database.

While data independence is the ability to modify schema definition in one level without affecting schema of that definition in the next higher level

Enlist three commands for DDL,DML, DCL, define DML compiler, what is DDL interpreter?

Data Definition Language (DDL) commands:

- CREATE to create a new table or database.
- DROP to drop a table.
- RENAME to rename a table.

Data Manipulation Language (DML) commands:

- INSERT to insert a new row.
- UPDATE to update an existing row.
- DELETE to delete a row.

Data Control Language (DCL) commands:

- COMMIT to permanently save.
- ROLLBACK to undo the change.
- SAVEPOINT to save temporarily.

DML Compiler: Translates DML statements in a query language within low level instructions understandable through the query evaluation engine

DDL Interpreter interprets the DDL statements and records the generated statements in the table containing metadata

What do you understand by E-R Model Define Entity, Entity type, Entity set, and Weak Entity set.

Entity Relationship Model (ER Modeling) is a graphical approach to database design. It is a high-level data model that defines data elements and their relationship for a specified software system. An ER model is used to represent real-world objects.

Database entity is a thing, person, place, unit, object or any item about which the data should be captured and stored in the form of properties, workflow and tables.

The entity type is the fundamental building block for describing the structure of data with the Entity Data Model (EDM).

Entity set: An entity set is a collection or set of all entities of a particular entity type at any point in time.

Weak entity sets: The entity sets which do not have sufficient attributes to form a primary key.

What is Database Normalization? Explain types of it.

Normalization is the process of organizing data into a related table; it also eliminates redundancy and increases the integrity which improves performance of the query.

It's types:

First Normal Form:

A table is considered to be in 1NF if all the fields contain only scalar values (as opposed to list of values).

Second Normal Form:

For a table to be in 2NF, there are two requirements

a. The database is in first normal form

b. All nonkey attributes in the table must be functionally dependent on the entire primary key

Third Normal Form:

For a table to be in 3NF, there are two requirements

a. The table should be second normal form

b. No attribute is transitively dependent on the primary key

Boyce-Codd Normal Form:

BCNF does not allow dependencies between attributes that belong to candidate keys.

Fourth Normal Form:

For a table to be in 4NF, there are two requirements

a. A relation must first be in Boyce-Codd Normal Form.

b. A given relation may not contain more than one multi-valued attribute.

Fifth Normal Form:

Fifth normal form is satisfied when all tables are broken into as many tables as possible in order to avoid redundancy. Once it is in fifth normal form it cannot be broken into smaller relations without changing the facts or the meaning.

Domain Key Normal Form:

The relation is in DKNF when there can be no insertion or deletion anomalies in the database.

Made by:

Shandaweely