

SQL quiz

B.

What does the SQL keyword "DISTINCT" do in a SELECT statement?

- ☐ A. Filters rows based on a specified condition
- ☐ B. Removes duplicate rows from the result set
- ☐ C. Sorts the result set in ascending order
- ☐ D. Performs a case-insensitive search

~~B.C.~~

ADE

Which of the following is/are wrong about primary key and unique key?

- ☐ A. Only one primary key is allowed in a database. X
- ☐ B. Unique key allows NULLs but primary key does not. ✓
- ☐ C. A column with a foreign key can reference another column with a unique key or a primary key. ✓
- ☐ D. Only one unique key is allowed in a table. X
- ☐ E. Primary key allows NULLs but unique key does not. X

Given the relation below:

staff

name (varchar(100))	email (varchar(100))	age (int)
Wesley Huang	w.huang@abc.com	27
Sam Shaw	s.shaw@abc.com	31
Chris Lee	c.lee@def.com	47
Steve Shen	s.shen@def.com	22
Craig Johnson	c.johns@gkd.com	51

The degree of this table is 3, the cardinality is 5.

After executing "DELETE FROM staff WHERE age > 30 and age < 40;"

the degree of this table becomes 3 and the cardinality becomes 4.

SQL stands for:

- ☐ A. Synchronized Query Language
- ☐ B. Standard Query Language
- ☐ C. Sequential Query Language
- ☐ D. Structured Query Language

b.c.d

Instead of using NULL, sometimes special values are used to represent missing information. For example, 0 is used when the age of someone is unknown. Which of the following statement(s) is/are correct about these special values?

- ☐ a. Special values can replace NULL in all situations. X
- ☐ b. One advantage of using special values over NULL is that they can indicate different types of missing information. ✓
- ☐ c. Special values need to be taken care of whenever WHERE clauses are involved. ✓
- ☐ d. Special values may increase the complexity of update operations because they can be updated accidentally ✓
- ☐ e. Special values reduces the complexity of delete operations because less conditions need to be considered. X

Given two tables x and y:

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x

a	b
4	6
3	4
9	9
8	1
2	12

y

a	b
6	6
4	7
6	8
2	4
8	11

$x.b + y.a$
8
7
7

The result of query "SELECT x.b + y.a FROM x, y WHERE x.a = y.a + 2;" contains 3 rows.
The maximum value is 8 and the minimum value is 7.

What is the PRIMARY purpose of Entity-Relationship (ER) modeling in database design?

- ☐ A. To define the data types for columns in database tables X
- ☐ B. To optimize SQL queries for database performance
- ☐ C. To visualize and define the structure of a database ✓
- ☐ D. To create user interfaces for database applications

Given two tables x and y:

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x

a	b
1	10
2	11
3	12
4	13
5	14

(1, 10)
(2, 11)
(3, 12)
(5, 14)

y

a	b
3	1
4	1
5	2
6	5
7	3

The result of query "SELECT * FROM x WHERE EXISTS (SELECT * FROM y WHERE b = x.a);" contains 4 rows. The sum of column 'a' of the query result is 11.

C. You are querying a database and want to find all records where a certain column is not NULL. Which SQL clause should you use?

- ☐ A. WHERE column IS NULL X
- ☐ B. WHERE column = NULL X
- ☐ C. WHERE column NOT NULL
- ☐ D. WHERE column <> NULL

F. Given tables x (a, b) and y (c, d). Assume that columns a and c are primary keys and the following foreign key:

CONSTRAINT FOREIGN KEY (d) REFERENCES x (a) ON DELETE RESTRICT ON UPDATE CASCADE

Which of the following statements is/are correct?

- ☐ A. Changing values in column d into other values will cause the database to automatically update values in a. X
- ☐ B. Changing values in column d into NULL will cause the database to automatically update values in a. X
- ☐ C. Changing all values in column a into 1 will cause the database to automatically update values in d. X
- ☐ D. DELETE rows in table x will cause the database to automatically delete rows in y. X
- ☐ E. If both tables contain non-null values, "DROP TABLE y" will cause errors. X
- ☐ F. If both tables contain non-null values, "DROP TABLE x" will cause errors. ✓
- ☐ G. DELETE rows in table y will cause the database to automatically delete rows in x. X

Given the relation below:

Time left 0:19:10

staff

name (varchar(100))	email (varchar(100))	age (int)
Wesley Huang	w.huang@abc.com	27
Sam Shaw	s.shaw@abc.com	31
Chris Lee	c.lee@def.com	47
Steve Shen	s.shen@def.com	22
Craig Johnson	c.johns@gkd.com	51

Null

x@abc.com

28

ype

a

m

m

m

e

m

After executing all of the following instructions in exactly the same order:

```
INSERT INTO staff VALUES (NULL, 'x@abc.com', 28);
```

```
ALTER TABLE staff ADD COLUMN type VARCHAR(10);
```

```
UPDATE staff SET type = 'employee' WHERE age < age + 1;
```

```
UPDATE staff SET type = 'manager' WHERE name NOT LIKE '%g%';
```

There will be manager(s) and employee(s). The whole table will have tuples in total.

If the query

```
SELECT * FROM staff
```

```
WHERE name NOT IN (
```

```
  SELECT name FROM staff WHERE email LIKE '%@def.com'
```

```
);
```

is executed on the final table, the query results contain employee(s) and manager(s) in total.

~~A-C~~
B-C

Which of the following questions are correct about normalisation?

- ☐ A. Both transitive dependency and partial dependency must involve primary key columns ✓ transitive dependency 不涉及主键.
- ☐ B. An 1NF table without partial dependencies may also be in 3NF ↑
- ☐ C. A table in 2NF is also in 3NF if no transitive dependencies are found ✓
- ☐ D. A table in 1NF is also in 3NF if it does not have no transitive dependencies X

~~A-C-E~~

Given a table T (a, b, c, d, e, f, g) with (a, b, c) being the primary key and the following additional functional dependencies:

b, c → d, e, f

e → d

g → c

(a b c g) (e d)
(b c e f)

After normalizing this table to 3NF, which of the following tables are NOT in the final result?

- ☐ A. Table (d, e) with primary key (d) X
- ☐ B. Table (b, c, e, f) with primary key (b, c) ✓
- ☐ C. Table (a, b, g) with primary key (g) X
- ☐ D. Table (a, b, c, g) with primary key (a, b, c) ✓
- ☐ E. Table (c, g) with primary key (g) X

Question 1

Not yet answered

Marked out of 8.00

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Given tables r and s shown below.

Time left 0:39:27

r

a	b
3	2
8	4
2	1

b c d
null null null
2 4 4
null null null

3 1 9

t

b	c	d
2	4	6
4	2	4
5	3	9

In the result of query:

```
SELECT * FROM r LEFT OUTER JOIN (SELECT b c, c b, d FROM s) t ON (r.b > t.b);
```

There are tuples and NULLs.The maximum value of column c is .For column a, the number appeared more than once.

?

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A.

Which SQL JOIN type returns all rows from both tables, filling in NULL values for non-matching rows?

- ☐ A. FULL OUTER JOIN
- ☐ B. RIGHT OUTER JOIN
- ☐ C. INNER JOIN
- ☐ D. LEFT OUTER JOIN