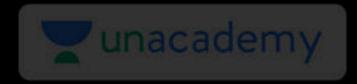




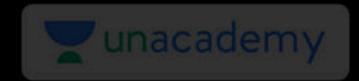
SQL PYQ Discussion: Part 1

Special class



Which of the following is/are correct?

- A. An SQL query automatically eliminates duplicates
- B. An SQL query will not work if there are no indexes on the relations
- C. SQL permits attribute names to be repeated in the same relation
- D. None of the above



Consider the set of relations

- EMP (Employee-no. Dept-no, Employee-name, Salary)
- DEPT (Dept-no. Dept-name, Location)

Write an SQL query to:

a)Find all employees names who work in departments located at 'Calcutta' and whose salary is greater than Rs.50,000.

b)Calculate, for each department number, the number of employees with a salary greater than Rs. 1,00,000.



Given relations r(w, x) and s(y, z) the result of

```
select distinct w, x from r, s
```

is guaranteed to be same as r, provided.

A. r has no duplicates and s is non-empty
 C. s has no duplicates and r is non-empty

B. r and s have no duplicates

D. r and s have the same number of tuples

In SQL, relations can contain null values, and comparisons with null values are treated as unknown. Suppose all comparisons with a null value are treated as false. Which of the following pairs is not equivalent?

A.
$$x = 5$$
 $not(not(x = 5))$

C.
$$x \neq 5$$
 $not(x = 5)$

B.
$$x = 5$$
 $x > 4$ and $x < 6$, where x is an integer

D. none of the above



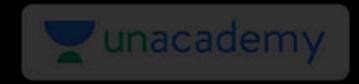
Consider a relation geq which represents "greater than or equal to", that is, $(x,y) \in \text{geq only if } y \geq x$.

```
create table geq
(
   ib integer not null,
   ub integer not null,
   primary key ib,
   foreign key (ub) references geq on delete cascade
);
```

Which of the following is possible if tuple (x,y) is deleted?

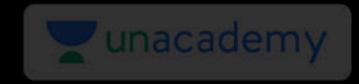
- A. A tuple (z,w) with z > y is deleted
- C. A tuple (z, w) with w < x is deleted

- B. A tuple (z, w) with z > x is deleted
- D. The deletion of (x,y) is prohibited



Consider a relation examinee (regno, name, score), where regno is the primary key to score is a real number.

Write an SQL query to list the regno of examinees who have a score greater than the average score.



Consider a relation examinee (regno, name, score), where regno is the primary key to score is a real number.

Suppose the relation appears (regno, centr_code) specifies the center where an examinee appears. Write an SQL query to list the centr_code having an examinee of score greater than 80.



Consider the set of relations shown below and the SQL query that follows.

Students: (Roll_number, Name, Date_of_birth)

Courses: (Course_number, Course_name, Instructor)

Grades: (Roll_number, Course_number, Grade)

```
Select distinct Name
from Students, Courses, Grades
where Students.Roll_number=Grades.Roll_number
and Courses.Instructor = 'Korth'
and Courses.Course_number = Grades.Course_number
and Grades.Grade = 'A'
```

Which of the following sets is computed by the above query?

- A. Names of students who have got an A grade in all courses taught by Korth
- B. Names of students who have got an A grade in all courses
- C. Names of students who have got an A grade in at least one of the courses taught by Korth
- D. None of the above



The employee information in a company is stored in the relation

Employee (name, sex, salary, deptName)

Consider the following SQL query

```
Select deptName
From Employee
Where sex = 'M'
Group by deptName
Having avg(salary) >
(select avg (salary) from Employee)
```

It returns the names of the department in which

- A. the average salary is more than the average salary in the company
- B. the average salary of male employees is more than the average salary of all male employees in the company
- C. the average salary of male employees is more than the average salary of employees in same the department
- D. the average salary of male employees is more than the average salary in the company



A relational database contains two tables student and department in which student table has columns roll_no, name and dept_id and department table has columns dept_id and dept_name. The following insert statements were executed successfully to populate the empty tables:

```
Insert into department values (1, 'Mathematics')
Insert into department values (2, 'Physics')
Insert into student values (1, 'Navin', 1)
Insert into student values (2, 'Mukesh', 2)
Insert into student values (3, 'Gita', 1)
```

How many rows and columns will be retrieved by the following SQL statement?

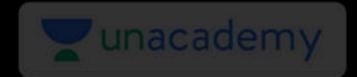
Select * from student, department

A. 0 row and 4 columns

B. 3 rows and 4 columns

C. 3 rows and 5 columns

D. 6 rows and 5 columns



A table T1 in a relational database has the following rows and columns:

Roll no.	Marks
1	10
2	20
3	30
4	NULL

The following sequence of SQL statements was successfully executed on table T1.

```
Update T1 set marks = marks + 5
Select avg(marks) from T1
```

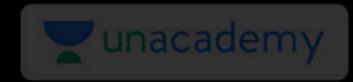
What is the output of the select statement?

A. 18.75

B. 20

C. 25

D. Null



Consider two tables in a relational database with columns and rows as follows:

Table: Student

Roll_no	Name	Dept_id
1	ABC	1
2	DEF	1
3	GHI	2
4	JKL	3

Table: Department

Dept_id	Dept_name
1	A
2	В
3	C

Roll_no is the primary key of the Student table, Dept_id is the primary key of the Department table and Student.Dept_id is a foreign key from Department.Dept_id

What will happen if we try to execute the following two SQL statements?

- i. update Student set Dept_id = Null where Roll_on = 1
- ii. update Department set Dept_id = Null where Dept_id = 1
- A. Both i and ii will fail
- C. i will succeed but ii will fail

- B. i will fail but ii will succeed
- D. Both i and ii will succeed