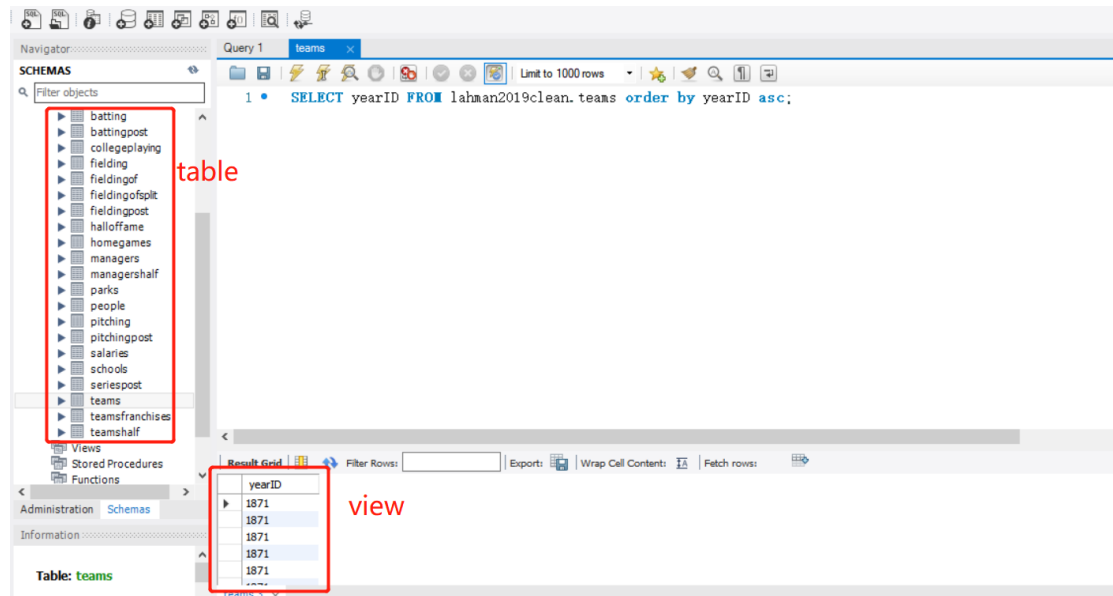


1. What is the difference between a view and a table in SQL?

Table is preliminary storage for storing data and information. A table is a collection of related data entries and it consists of columns and rows.

A view is a virtual table whose contents are defined by a query. Unless indexed, a view does not exist as a stored set of data values in a database.



2. How does a GROUP BY statement in SQL work?

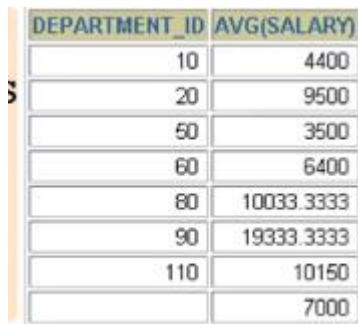
If we have a table named Employees as flowing picture and it has some contributes named Department_ID and Salary

DEPARTMENT_ID	SALARY
10	4400
20	13000
20	6000
50	5800
50	3500
50	3100
50	2500
50	2600
60	9000
60	6000
60	4200
80	10500
80	8600
80	11000
90	24000
90	17000

I want to know the average salary of every department. I can use a syntax:

```
SELECT
    AVG(Salary), Department_id
FROM
    Employees
GROUP BY
    Department_id
```

I can get this:

A screenshot of a database query result. It shows a table with two columns: 'DEPARTMENT_ID' and 'AVG(SALARY)'. The table contains 9 rows of data. The first row has values 10 and 4400. The second row has values 20 and 9500. The third row has values 50 and 3500. The fourth row has values 60 and 6400. The fifth row has values 80 and 10033.3333. The sixth row has values 90 and 19333.3333. The seventh row has values 110 and 10150. The eighth row has values 7000 and an empty cell for the average salary.

DEPARTMENT_ID	AVG(SALARY)
10	4400
20	9500
50	3500
60	6400
80	10033.3333
90	19333.3333
110	10150
7000	

Therefore, The GROUP BY statement groups rows that have the same values into summary rows, like "find the average salary in each apartment". The GROUP BY statement is often used with aggregate functions (COUNT, MAX, MIN, SUM, AVG) to group the result-set by one or more columns.

3. What is HTTP and how do HTTP requests work?

HTTP is the protocol that web browsers and web servers use to communicate with each other over the Internet. It is an application-level protocol because it sits on top of the TCP layer in the protocol stack and is used by specific applications to talk to one another. In this case, the applications are web browsers and web servers.

4. What are the characteristics of a RESTful API?

It is a very simplified and lightweight web service compared to SOAP. Performance, scalability, simplicity, portability, and modifiability are the main principles behind the REST design. The REST API allows different systems to communicate and send/receive data in a very simple way.

Main characteristics:

- **Client-server based architecture:** Client/server architecture is a computing model in which the server hosts, delivers and manages most of the resources and services to be consumed by the client. This type of architecture has one or more client computers connected to a central server over a network or internet connection. This system shares computing resources.
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5. Given the two tables 'Birth Info' and 'Astrological Info', what is the result of the following queries in table form.

- a. `SELECT name, birth_month, astrological_sign FROM birth_info LEFT JOIN astrological_info ON birth_info.birth_month = astrological_info.month`

	name	birth_month	astrological_sign
►	Don	September	Virgo
	Ara	September	Virgo
	Meghna	June	Gemini
	Aly	January	NULL
	Krit	May	NULL

- b. `SELECT name, birth_month, astrological_sign FROM birth_info OUTER JOIN astrological_info ON birth_info.birth_month = astrological_info.month`

name	Birth_month	astrological_sign
Don	September	Virgo
Meghna	June	Gemini
Aly	January	Aquarius
Ara	September	Virgo
Kirit	May	NULL

- c. `SELECT name, birth_month, astrological_sign FROM birth_info OUTER JOIN astrological_info ON birth_info.birth_month = astrological_info.month`

name	Birth_month	astrological_sign
Don	September	Virgo
Meghna	June	Gemini
Aly	January	Aquarius
Ara	September	Virgo

- d. `SELECT name, birth_month, astrological_sign FROM birth_info RIGHT JOIN astrological_info ON birth_info.birth_month = astrological_info.month`

name	Birth_month	astrological_sign
Don	September	Virgo

Meghna	June	Gemini
Aly	January	Aquarius
Ara	September	Virgo

6. What does this HTTP response codes mean?

Code	Meaning
200	OK
201	Created
400	Bad Request
401	Unauthorized
300	Multiple Choices
403	Forbidden
404	Not Found
500	Internal Server Error