

## **1. Online store database creation**

Think about an online store. What are the basic concepts that can be encountered? Create tables for a few concepts in this area:

- CUSTOMERS
- PRODUCTS
- ORDERS

Consider relations between tables, make use of PRIMARY and FOREIGN keys.

## 2. Hotel booking system

In this exercise we will design a database for a hotel room reservation system.

What should we expose:

- Information about the rooms
- Information about the guests
- Booking details

All of the above information must be stored in tables, make use of primary/foreign keys.

## SQL queries

1. Display from employees table the first name using alias 'First Name' and last name using alias 'Last Name'
2. Select all the employees with first name John
3. Select all the employees with salary greater than 8000.
4. Select all the employees with manager\_id 108
5. Select all the employees with job\_id 19
6. Select hire date, first name and last name in employees table, then order the results by hire date desc and by first name asc.
7. Select the minimum and the maximum salary from employees table.

8. Find all employees who have the letter 'c' in their names.

9. List all the employees who are managers.

10. List all the employees that have sqltutorial.org domain for email addresses.

11. Select the employees with the minimum salary.

12. Select all the employees that don't have any phone number added.

13. Select all the employees that are in department 9 or 10.

8. Find the average salary and the number of employees.

9. Display the name (first name + last name) of the employees, but select only the first 10 records from table.

Hint: make use of CONCAT() function

E.g: concat(column1, " ", column2)

10. Find the monthly salary, rounded by 2 decimal places, of each employee. Assume salary column is the value per year.

Hint: make use of ROUND() function

E.g. round(value, 2) - round value to 2 decimals

11. Display the names (first and last name) then the salary for every employee who has a salary that is less than 10.000 or more than 15.000, and he is part of department 3 or 9.

12. Find the total amount of salaries that is paid to employees.

13. Find out the number of employees that have the same job.

14. Find salary and name of each employee that has a salary which is higher than salary of the employee whose last name is 'Bell'.

15. Find the names of all employees that are part of the IT department.

16. Select all the employees that are working for a department that is located in United States.

17. Find the names, department name and department ID of every employee. **Make use of LEFT/RIGHT/INNER joins.**

18. Select from database the names, department number, job and department name of the employees that are working in London.  
Hint? Use joins :)

19. Select first\_name and last\_name from employee from country Canada and United Kingdom, using only selects, not Joins ordered ascending by Last Name.

21. Display job title and average salary of all employees

22. Look for the hire date and names of employees who got hired later than 'Jones'

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23. Create a new database (using prefix test followed by your name )

24. Create a new table with 4 columns (1 int, 2-3 varchar(20), 4 datetime). Insert 3 rows in your table.

25. Update second row from your table with new values.

26. Add a new Boolean, column to your table, with default value true. Hint use Alter table. Insert 2 more rows in your column.

27. Create a new table with auto\_increment column ID, first\_name, last\_name and timestamp (will put data automatically).



## 9. Database practice:

- Find all employees who have letters 'c' and 'e' in their last name
- List all department names for which there are no employees in the department
- Search for the employees whose salary is greater than the average
- Find all the employees who have the same salary as the minimum salary
- Get the average salary of every department that has more than 10 employees
- Get the department ID and the total salary that is paid for each department
- Look for the hire date and names of employees who got hired later than 'Jones'
- Display job title and average salary of all employees