Lab 2. SQL exercise using DreamHome database

This lab uses *DreamHome* database created in Lab 1.

It is recommended that you use command line application (i.e. MySQL Command Line Client) for formulating SQL statements.

1. Start MySQL 8.0 Command Line Client when MySQL server is running (you can start the MySQL server in MySQL WorkBench: click the "Local Instance MySQL80", then click "Server" from menu, then click "Startup/Shutdown").
2. When prompted, enter password in Command Line Client– this is the password you set when you install MySQL on your own laptop.
3. Now you can select which database to connect to and formulate SQL statements! (See also "Useful commands in MySQL command Line Client.pdf")

Task 1

Once the MySQL 8.0 Command Line Client is running and you have connected to the MySQL server, type "`use dreamhome;`" and "enter" key to enter DreamHome database.

You need to populate your tables in DreamHome database with sample data in "Instance of the DreamHome rental database.pdf" in week 1, using INSERT statement in SQL. For example:

```
INSERT INTO BRANCH
VALUES ('B005', '22 Deer Rd', 'London', 'SW1 4EH');
```

When inserting data, you need to pay attention to the sequence of table for which you insert data into, as foreign key constraints apply.

If you come across errors while inserting data, you need to read the error message carefully, and check the data you are trying to insert matches the attributes sequence in your table, or attributes domain, or foreign key constraints. (You may need to set a foreign key attribute to allow NULL value.)

For other useful commands that you can use, please see "Useful commands in MySQL command Line Client.pdf".

Task 2

Use SQL statements to find out the results for the following queries:

1. List all staff details.
2. List staff whose salary is between 8,000 and 20,000. Show staff name, position and salary.
3. List details of staff in branch B003 and B007.
4. Display all the **distinct** different types of positions of staff.
5. List all branch offices in London, give branch number and address.
6. List the employees whose first names have 'an' in them.
7. List the client numbers and names, order by last name.
8. Find the property number and address of all properties for rent which has not been assigned to a staff.
9. How many properties for rent are managed in each branch?
10. List all properties for rent in descending order of their rent.

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11. Calculate the annual rent for all properties for rent (the rent in DreamHome Database is monthly rent), renaming the column to “AnnualRent” in the result.
12. Find all the staff who is not a manager and with a salary greater than or equal to 12,000.
13. Find out how many managers there are without listing them.
14. Calculate average salary for all staff.
15. Calculate average salary for staff at each Branch.
16. For each branch with more than 1 member of staff, find number of staff in each branch and their average salaries.
17. Find the highest salary and lowest salary of staff and the difference between them.
18. Count the number of properties for rent with 3 rooms.
19. Find the average salary for assistants and managers.
20. Calculate the weekly rent for all properties for rent, and round the results to the nearest penny. Assuming there are 4 weeks in a month. (Use ROUND(X,D) function, this rounds the argument X to D decimal places.)
21. List the properties for rent which have not been viewed at all. (Hint: use subquery)