CHAPTER 2: RETRIEVING DATA

2023

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SELECT

```
SELECT column1,  column2  …
FROM table_name;
```

```
SELECT * FROM table_name;
```

```
SELECT first_name, last_name FROM Employees;
```

Practice SELECT

1. Select all data from the *listings* table
2. Only select the *name* and the *room_type* column
3. Display the names of the B&Bs their hosts and the last date when a review was made.
4. Display the review p/month along with the type of room and the minimum number of nights clients are allowed to stay.

WHERE

```
SELECT column1   column2  …
FROM table_name
WHERE condition;
```

```
SELECT * FROM Employees
WHERE first_name= ‘John’ ;
```

```
SELECT * FROM Employees
WHERE salary=24000;
```

Where Name = ‘Mitzie’ or

Amount > 50 or

Date >= ‘2021-01-01’ or

Country <> ‘South Africa’ or

PhoneNum IS NULL or

Amount between 10 and 50

BETWEEN

```
 SELECT column_name(s)
FROM table_name
WHERE column_name BETWEEN value1 AND value2;
```

```
 SELECT * FROM Employees
WHERE salary BETWEEN 10000 AND 20000;
```

```
 SELECT * FROM Orders
WHERE OrderDate BETWEEN ’1996-07-01’ AND ’1996-07-31’;
```

OPERATORS

Operator	**Description**
=	Equal to
>	Greater than
<	Less than
>=	Greater than or equal to
<=	Less than or equal to
<>	Not equal to

Practice WHERE

1. Show the name and the room_type from the *listings* table of only the Private rooms
2. Show all data from the *listings* table where you can book if you only need to stay for 1 night
3. Show all the detail from the listings that has been reviewed in 2021
4. Show the name and the availability_365 of all the listings who has availability throughout the whole year
5. Display the room type, cost and reviews /month that are less than 0.05

AND

```
SELECT column1  column2  ...
FROM table_name
WHERE condition1 AND condition2 AND condition3 ...;
```

```
SELECT * FROM Customers
WHERE Country= ‘Germany ‘ AND City= ‘Berlin’ ;
```

```
SELECT *

FROM suppliers

WHERE state = 'California' AND supplier_id <> 900
```

```
 SELECT * FROM Products
WHERE Price BETWEEN 10 AND 20
AND CategoryID =1
```

OR

```
SELECT column1   column2  …
FROM table_name
WHERE condition1 OR condition2 OR condition3 …;
```

```
SELECT * FROM Customers
WHERE City= ‘Berlin’  OR City= ‘München’ ;
```

```
SELECT * FROM Customers

WHERE Name=‘John' OR Surname=‘Williams’;
```

```
SELECT * FROM Customers

WHERE Age>=18 OR Location=‘USA';
```

Practice AND / OR

1. Show the name and the room_type from the *listings* table of the Private rooms or hotel rooms
2. Show all data from the *listings* table where you can book if you only need to stay for 1 night or 7 nights
3. Show all the detail from the listings that has either been reviewed in 2021 or that is less than R1000 per night
4. Only all the listings names and neighbourhood in Ward 107or Ward 77
5. Show all data for the room type Private rooms and price is less than R500
6. Show all data for where ward is 107 or ward 77 and the rooms are home/apt.

IN

```
SELECT column_name(s)
FROM table_name
WHERE column_name IN (value1 , value2  …);
```

```
SELECT column_name(s)
FROM table_name
WHERE column_name IN (SELECT STATEMENT);
```

```
SELECT * FROM Customers
WHERE Country IN ( ‘Germany’ ,   ‘France’ ,   ‘UK’ );
```

```
SELECT * FROM Customers
WHERE Country IN (SELECT Country FROM Suppliers);
```

Practice IN

1. Show the names and their neighbourhoods of those who are situated in 1 of the following wards: 107, 115, 54, 77, 61 and 59
2. Show all the names of the buildings that don't have one of the following room types: home/apartment or shared room. Using IN clause.
3. Show the host_name and the listing name for either 'Chris', 'Erika & Chris', 'Chris & David' or 'Chris+Alison'

NOT

```
SELECT column1   column2  ...
FROM table_name
WHERE NOT condition;
```

```
SELECT * FROM Customers
WHERE NOT Country= ‘Germany’ ;
```

Practice NOT

1. Only all the listings names and neighbourhoods except for those in Ward 107 neighbourhood
2. Only all the listings names and neighbourhoods except for those in Ward 107 108 or 109
3. Display all the names of apartments and their hosts that did receive the reviews in 2020 July
4. Display all the apartments that are not in this geographic coordinate system   -33.0000 -33.9999and 18.0000 18.5000 latitudes and longitude respectfully

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COMBINING AND OR AND NOT

```
SELECT * FROM Customers
WHERE Country= Germany  AND (City= ‘Berlin’  OR City= ‘München’ );
```

```
SELECT * FROM Customers
WHERE NOT Country= ‘Germany’  AND NOT Country= ‘USA’ ;
```

Practice AND OR NOT

1. Show all the columns of private rooms or shared rooms less than R500 per night. Use the listings table
2. Show all Entire home/apt listings that are not in Ward 107 108 or 109

SQL LOGICAL OPERATORS

Operator	Description	Example
AND	TRUE if all the conditions separated by AND is TRUE	
BETWEEN	TRUE if the operand is within the range of comparisons	
IN	TRUE if the operand is equal to one of a list of expressions	
LIKE	TRUE if the operand matches a pattern	
NOT	Displays a record if the condition(s) is NOT TRUE	
OR	TRUE if any of the conditions separated by OR is TRUE	
SOME	TRUE if any of the *subquery* values meet the condition	
ALL	TRUE if all of the *subquery* values meet the condition	
EXISTS	TRUE if the *subquery* returns one or more records	
ANY	TRUE if any of the *subquery* values meet the condition	

ORDER BY

```
SELECT column1,  column2  ...
FROM table_name
ORDER BY column1,  column2  ... ASC|DESC;
```

```
SELECT * FROM Customers
ORDER BY Country,  CustomerName;
```

```
SELECT * FROM Customers
ORDER BY Country ASC , CustomerName DESC;
```

```
SELECT * FROM Customers
ORDER BY 1 ASC , 2 DESC;
```

Practice ORDER BY

1. Show all the columns of private rooms or shared rooms where either of those are less than R500 per night. Sort from cheapest to most expensive
2. Show all the info of the Entire home/apt listings that are not in Ward 107, 108 or 109. Show those most recently reviewed, first
3. Display the rooms hosted by **Abe (S.A.)** and sort them by price from the cheapest one.
4. List the names of homes/apartments in alphabetical order, the room_type field, their prices and the number of reviews that have less than 20 reviews and costs more than 1000.
5. List all details of private rooms that have reviews that are greater than 100 and prices less than 500. Order them by Neighbourhood, A-Z, then from the most expensive to the cheapest

NULL VALUES

```
SELECT column_names
FROM table_name
WHERE column_name IS NULL;
```

```
SELECT column_names
FROM table_name
WHERE column_name IS NOT NULL;
```

```
SELECT CustomerName,  ContactName,  Address
FROM Customers
WHERE Address IS NOT NULL;
```

Practice NULL VALUES

1. Select all data from the listing table where the room type is not specified/null
2. Select all data where the neighborhood group is null
3. Select all data where the hostname is blank.
4. Select the name of home/apartments where the host ID has been filled in, but the host name is blank

LIMIT / TOP

If want to *limit* the number of results that are returned you can simply use the LIMIT command in MySQL or the TOP command in SQL server

MYSQL – LIMIT

When you use the LIMIT clause, it is important to use an ORDER BY clause to ensure the order of rows in the result set.

```
SELECT column_name(s)
FROM table_name
WHERE condition
LIMIT number;

SELECT * FROM TestTable
WHERE id=12
LIMIT 10

Select * from emp
order by sal desc
limit 5
```

MSSQL – SELECT TOP

```
SELECT top 10 * FROM TestTable
WHERE id=12
```

OFFSET (WITH LIMIT)

You can also specify an OFFSET from where to start returning data.

```
SELECT * FROM artists LIMIT 5 OFFSET [Number of rows to skip];
```

Say you want to get 5 artists, but not the first five. You want to get rows 3 through 8. You'll want to add an OFFSET of 2 to skip the first two rows:

```
SELECT * FROM artists

LIMIT 5 OFFSET 2;
```

Practice LIMIT

1. Which 5 listings have the highest number of reviews? Show name and nr of reviews only
2. Show the name, host_name, number_of_reviews and price of the 10 most expensive Entire homes/apartments
3. ~~Write a query to return the second highest 2nd expensive apartment.~~
4. Return the 15 lowest apartment prices

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