SQL queries – joins

- Inner joins
- Outer joins

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SQL query – join

- If you want to show fileds/columns from several tables, you can use a *join*

- In most cases you only want to see records with a match between certain fields in different tables

- Example: *Find no, type and price for the room and name of hotel, for each hotel in Roskilde*

SQL query – join

SELECT Room_No, types, name, price

FROM room r, hotel h

WHERE h.hotel_no = r.hotel_no

AND address LIKE '%Roskilde%';

Different SQL JOINs

- **INNER JOIN**:
  - Returns all rows with a match in BOTH tables
- **LEFT JOIN**:
  - Returns all rows from the left table and the matching rows from the right table
- **RIGHT JOIN:**
  - Returns all rows from the right table and the matching rows from the left table
- **FULL JOIN**:
  - Returns all rows, when there is a match in ONE of the tables
- LEFT, RIGHT & FULL are together called *OUTER JOIN*

Inner Join

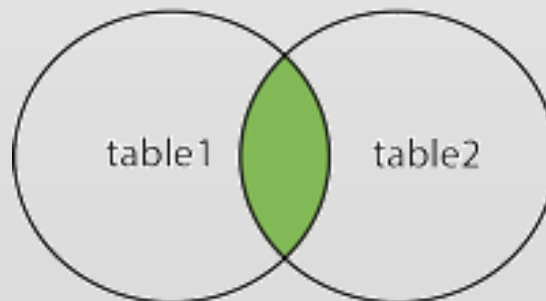- Chooses all rows from both tables, if there is a match between the fields in both tables.

- Syntax:

SELECT *column_name(s)*
FROM *table1*
INNER JOIN *table2*
ON *table1.column_name=table2.column_name*;

Inner Join

SELECT Room_No, types, name, price

FROM room

INNER JOIN hotel

ON room.hotel_no =hotel.hotel_no

Returns all rows, when there is a matching Hotel_No in BOTH tables.

The above syntax is the "modern" version of the syntax in slide 3.

LEFT JOIN

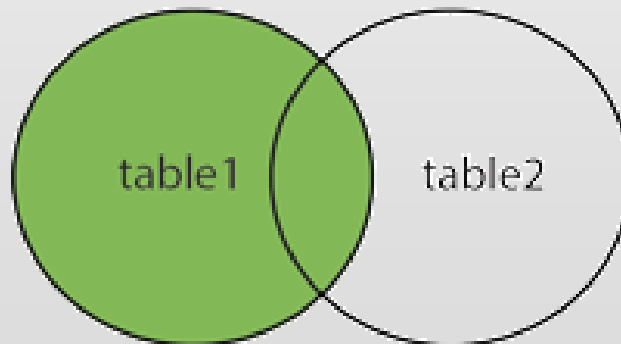- Returns all rows from the left table, and the matching rows from the right table

- Syntax:

SELECT *column_name(s)*
FROM *table1*
LEFT JOIN *table2*
ON *table1.column_name=table2.column_name*;

LEFT JOIN

- List all guests and their bookings, if they have any:

SELECT Guest.Guest_No, Guest.Name, Booking.Date_From, Booking.Date_To

FROM Guest

LEFT JOIN Booking

ON Guest.Guest_No = Booking.Guest_No

ORDER BY Guest.Guest_No;

RIGHT JOIN

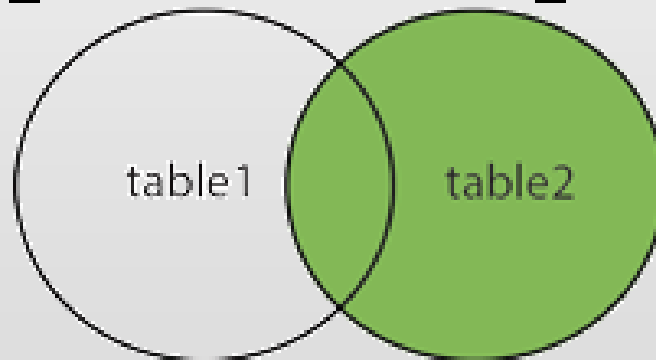- Returns all rows from the right table and the matching rows in the left table

- Syntax:

  SELECT *column_name(s)*
  FROM *table1*
  RIGHT JOIN *table2*
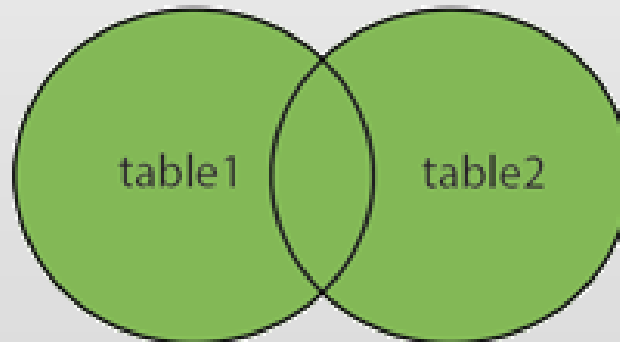 ON *table1.column_name=table2.column_name*e (table1).

RIGHT JOIN

- List all hotels and the rooms in the hotels

SELECT Room.Room_No, Hotel.Hotel_No, Hotel.Name

FROM Room

RIGHT JOIN Hotel

ON Room.Hotel_No=Hotel.Hotel_No

ORDER BY Hotel.Hotel_No;

FULL OUTER JOIN

- Returns all rows from the left table and from the right table

- FULL OUTER JOIN combines the resultat of both LEFT & RIGHT joins.

table1   table2

FULL OUTER JOIN

- Syntax:

  SELECT *column_name(s)*
  FROM *table1*
  FULL OUTER JOIN *table2*
  ON *table1.column_name=table2.column_name*;

FULL OUTER JOIN

SELECT Guest.Guest_No, Guest.Name, Booking.Date_From, Booking.Date_To

FROM Guest

FULL OUTER JOIN Booking

ON Guest.Guest_No = Booking.Guest_No

ORDER BY Guest.Guest_No;

Join of more than two tables

- If you need to join more than two tables, it can be done simply by repeating:
  - JOIN …
  - ON …

- See an example at e.g. http://javarevisited.blogspot.dk/2012/11/how-to-join-three-tables-in-sql-query-mysql-sqlserver.html

Exercise – SQL joins

- With the data in place for the ***HotelDB database*** then run the below queries:

  - List Room no & Type for all rooms including Hotel no & name of hotel. Order the list by hotel no.

  - List the details of all rooms at 'Prindsen', including the name of the guest staying in the room, if the room is occupied.