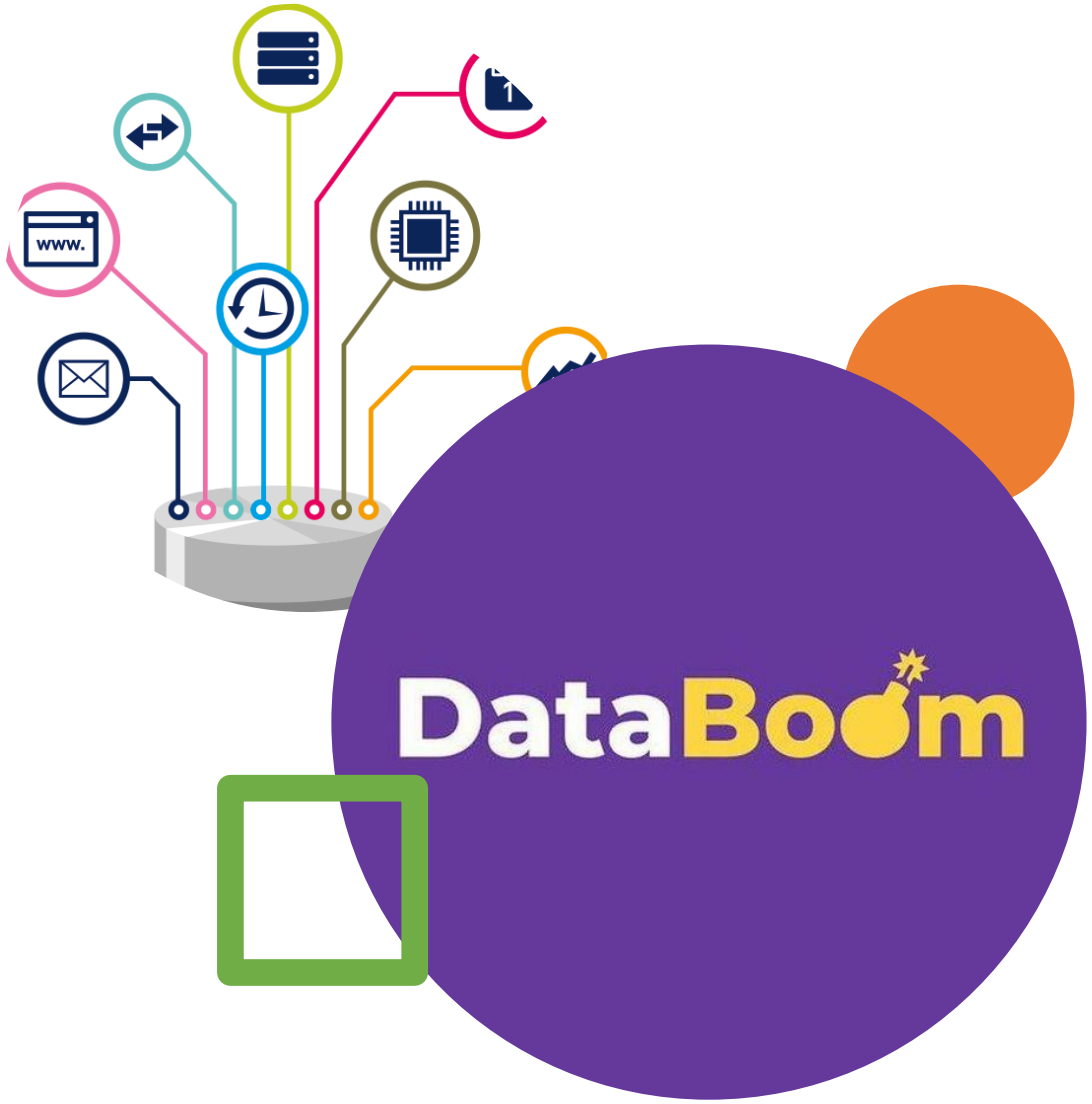


Курс 2 в 1: SQL

+ подготовка к собеседованиям

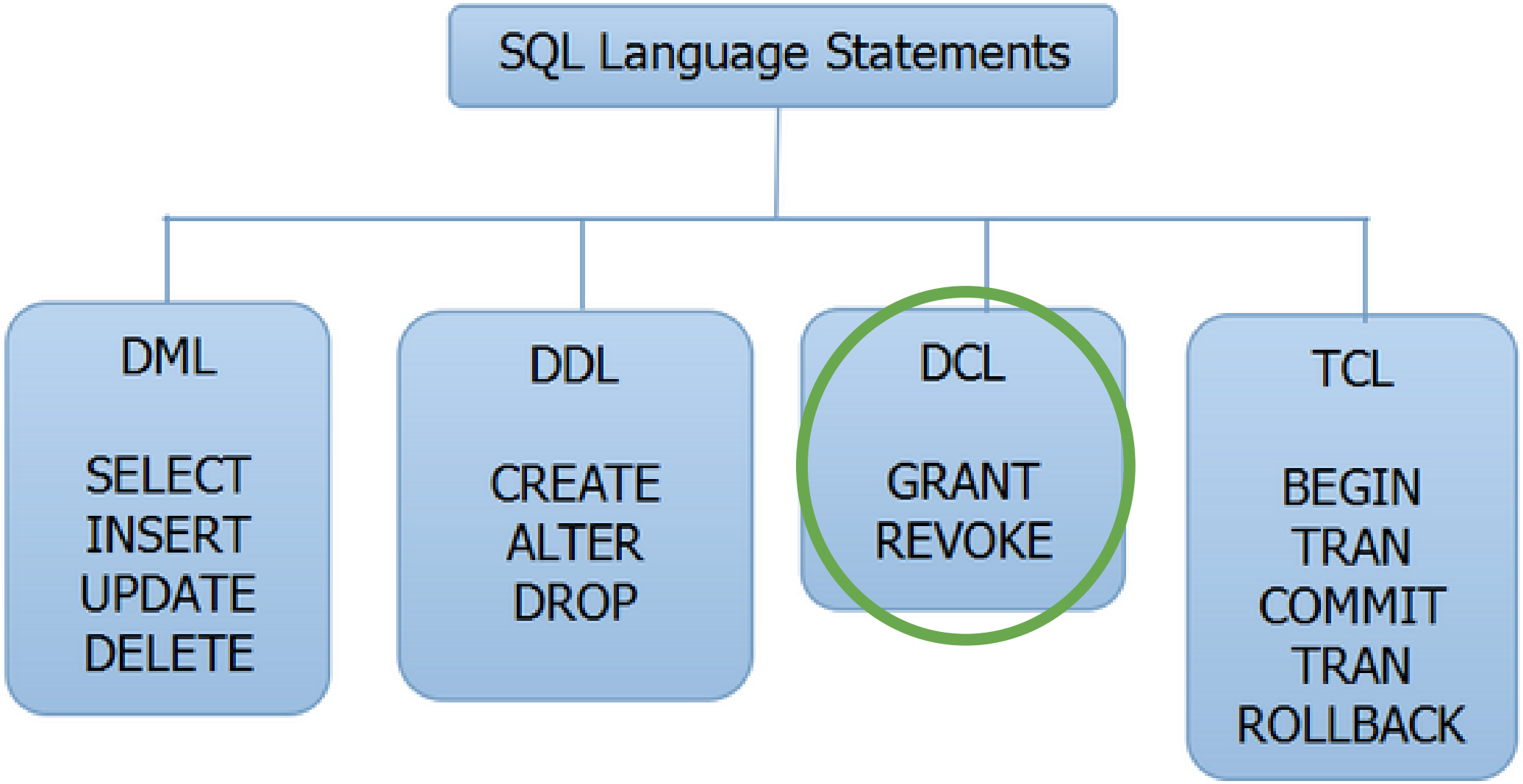
Неделя 4

Екатерина Рехерт

Спасибо за обратную связь!

План:

- DCL & Security
- продолжаем работу с 2 таблицами: advanced JOINS, CROSS JOIN, SELF JOIN, UNION
- Subqueries
- вопросы с реальных собеседований


SQL Language Statements
DML
SELECT
INSERT
UPDATE
DELETE
DDL
CREATE
ALTER
DROP
DCL
GRANT
REVOKE
TCL
BEGIN
TRAN
COMMIT
TRAN
ROLLBACK

SQL Server Security

DataBoom

1. Server Level Security

DataBoom

- Logins grant access to SQL Server
- Two types of logins: Windows & SQL Server
- Logins can be a member of server roles

1. Server Level Security

DataBoom

Windows VS SQL Authentication

- Windows Authentication via Active Directory
- Windows can either be a user or a group
- SQL Authentication via SQL Server
- SQL Authentication must be enabled

2. Database Level Security

DataBoom

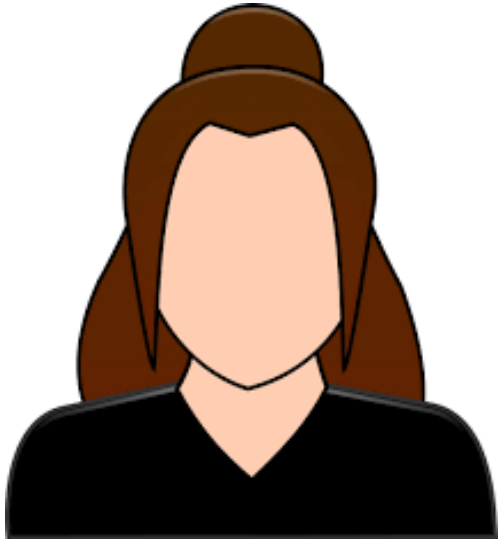
- Logins are mapped to database users
- Users are assigned permissions within the database
- Users can be a member of a database role

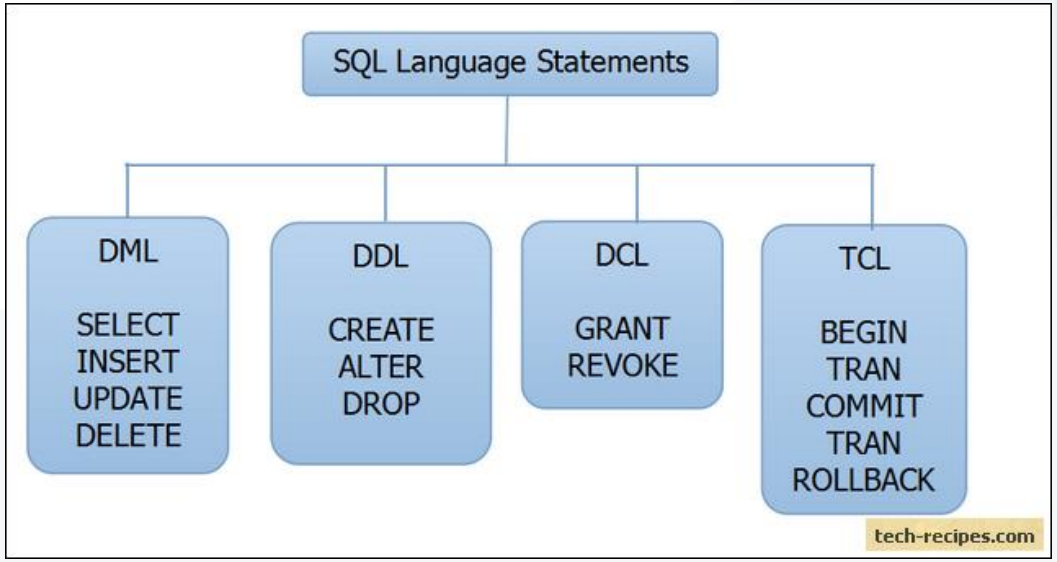
3. Object Level Security

DataBoom

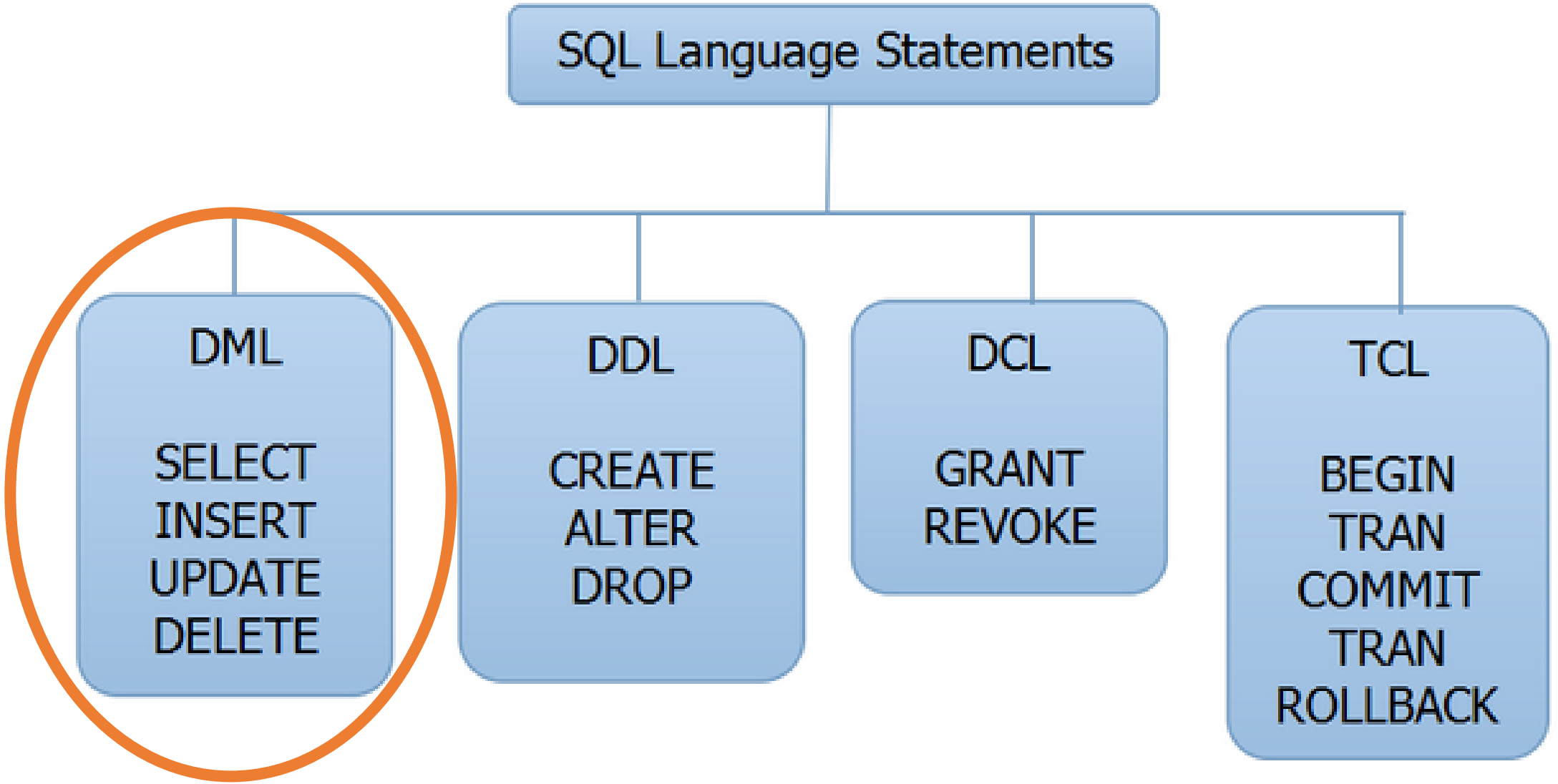
- Objects are known as securables
- Server & Database level securables
- Principals are assigned permissions to securables

Principals - Permissions - Securables



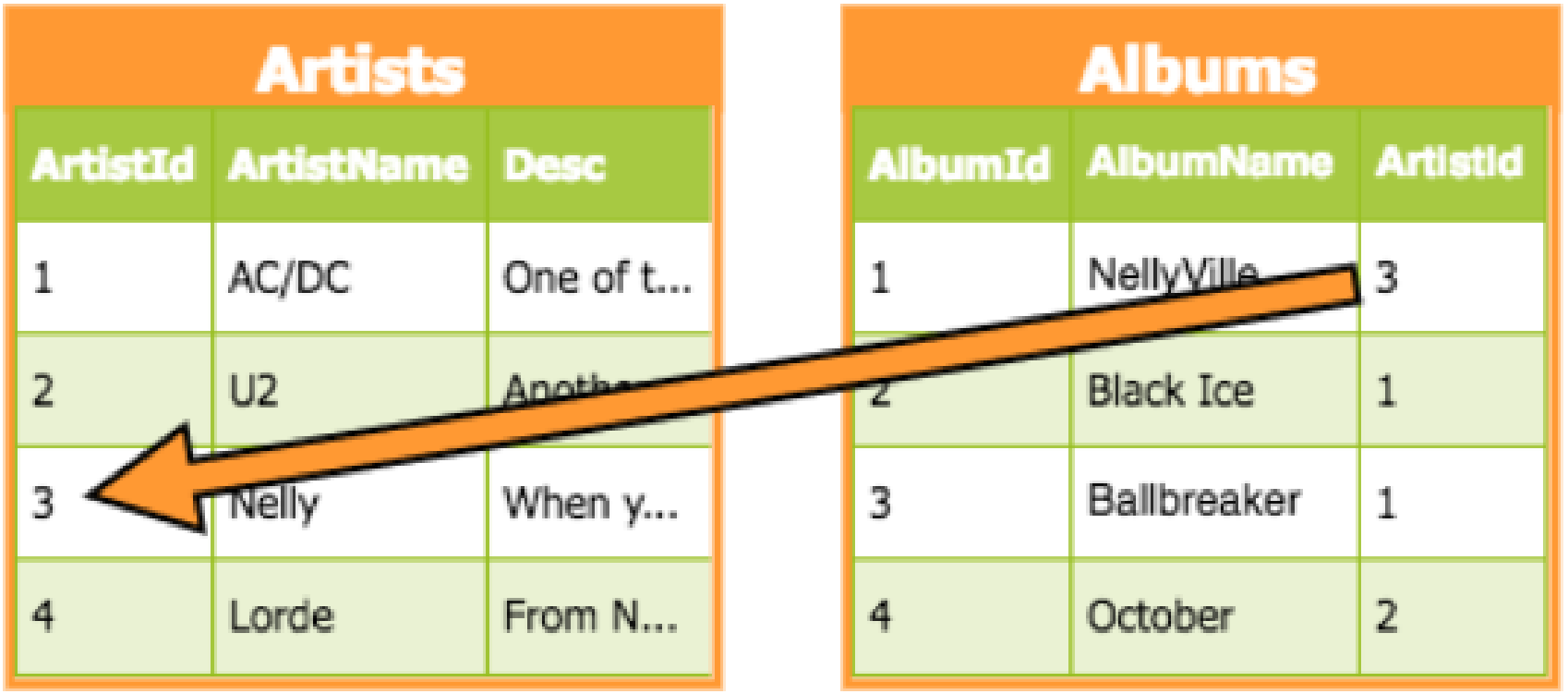


Практика
Цель: 4.8


SQL Language Statements
DML
SELECT
INSERT
UPDATE
DELETE
DDL
CREATE
ALTER
DROP
DCL
GRANT
REVOKE
TCL
BEGIN
TRAN
COMMIT
TRAN
ROLLBACK


JOINS

Primary Key and Foreign Key – нужны в таблицах для создания связей (relations)



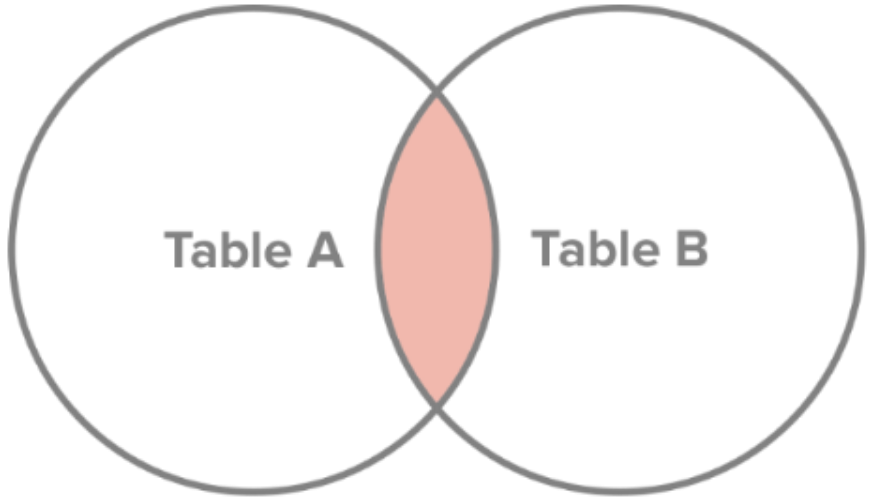
Artists

ArtistId	ArtistName	Desc
1	AC/DC	One of t...
2	U2	Anoth...
3	Nelly	When y...
4	Lorde	From N...

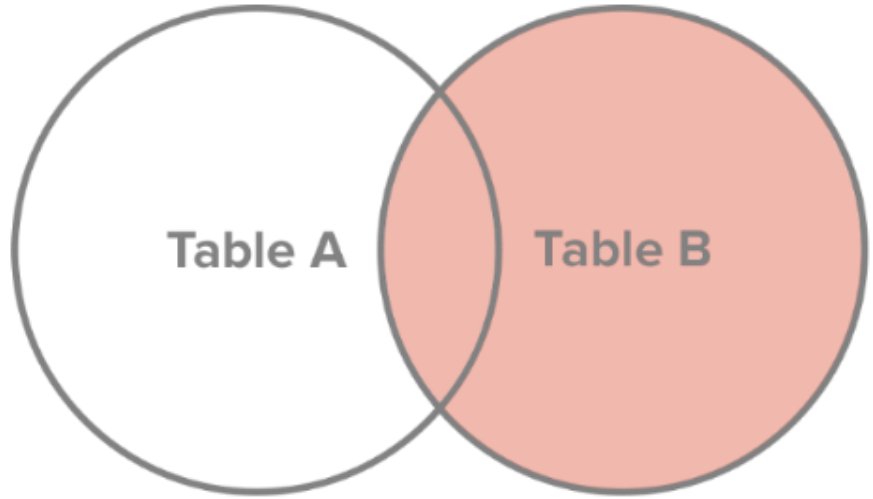
Albums

AlbumId	AlbumName	ArtistId
1	NellyVille	3
2	Black Ice	1
3	Ballbreaker	1
4	October	2

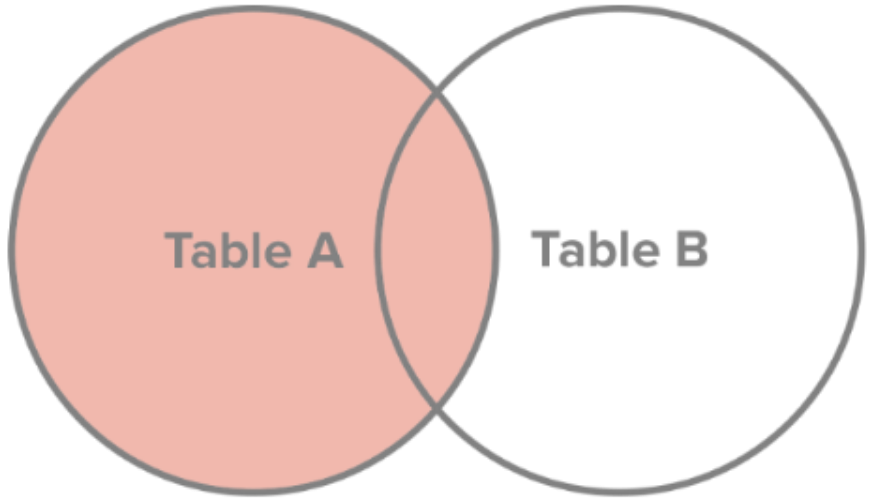
Inner Join



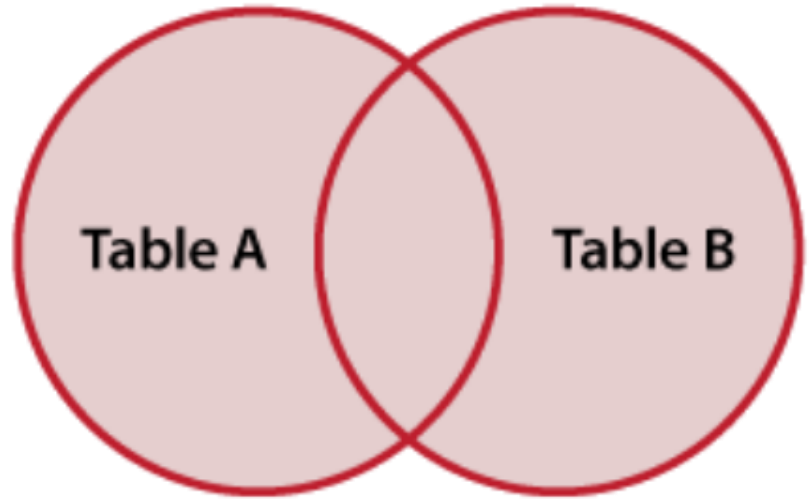
Right Join



Left Join



FULL OUTER JOIN

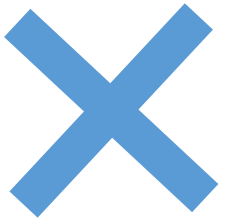


JOIN TYPES

INNER

OUTER

LEFT
RIGHT
FULL

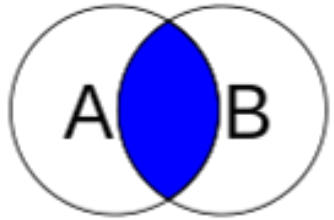


CROSS

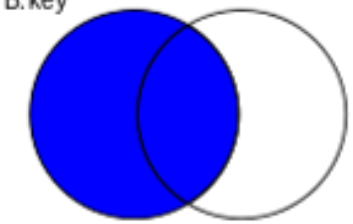
Advanced JOINS

SQL JOINS

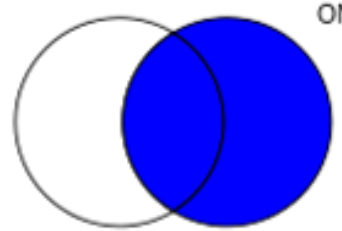
SELECT <fields>
FROM TableA A
INNER JOIN TableB B
ON A.key = B.key



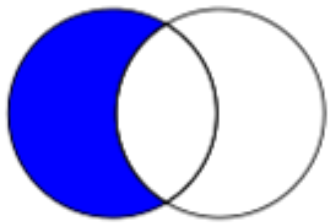
SELECT <fields>
FROM TableA A
LEFT JOIN TableB B
ON A.key = B.key



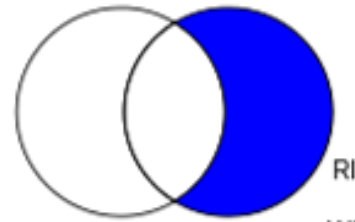
SELECT <fields>
FROM TableA A
RIGHT JOIN TableB B
ON A.key = B.key



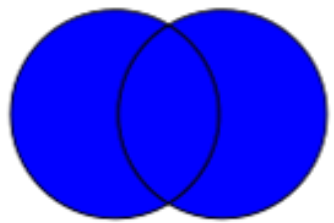
SELECT <fields>
FROM TableA A
LEFT JOIN TableB B
ON A.key = B.key
WHERE B.key IS NULL



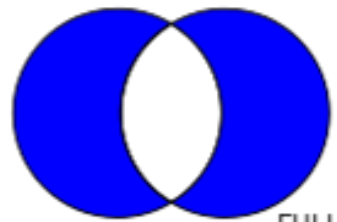
SELECT <fields>
FROM TableA A
RIGHT JOIN TableB B
ON A.key = B.key
WHERE A.key IS NULL



SELECT <fields>
FROM TableA A
FULL OUTER JOIN TableB B
ON A.key = B.key



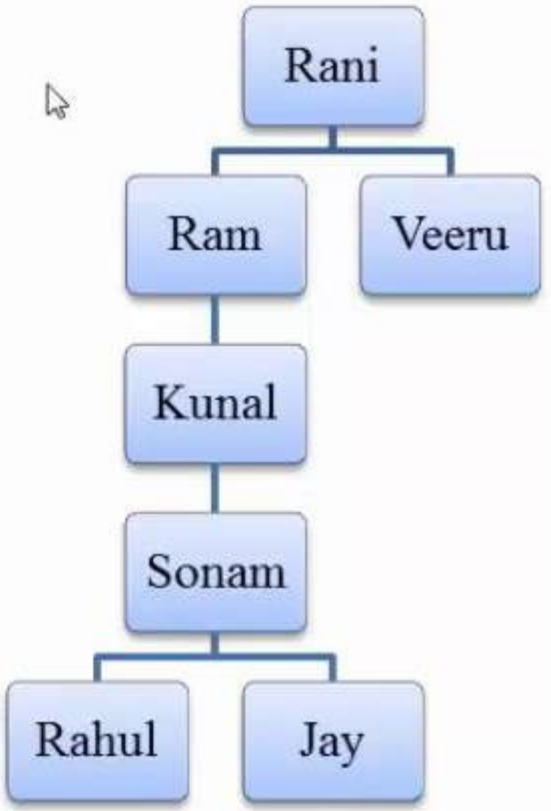
SELECT <fields>
FROM TableA A
FULL OUTER JOIN TableB B
ON A.key = B.key
WHERE A.key IS NULL
OR B.key IS NULL



SELF JOIN – это НЕ отдельный вид JOIN

Self join is a table joined to itself.

Empid	Name	ManagerID
1	Rahul	3
2	Jay	3
3	Sonam	4
4	Kunal	5
5	Ram	6
6	Rani	NULL
7	Veeru	6

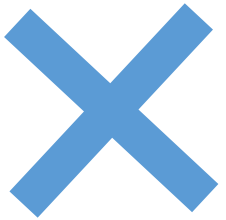


JOIN TYPES

INNER

OUTER

LEFT
RIGHT
FULL



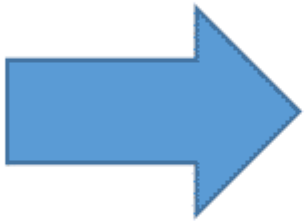
CROSS

CROSS JOIN - прямое, или декартово произведение двух множеств (CARTESIAN PRODUCT)

Tables

Color
Red
Blue

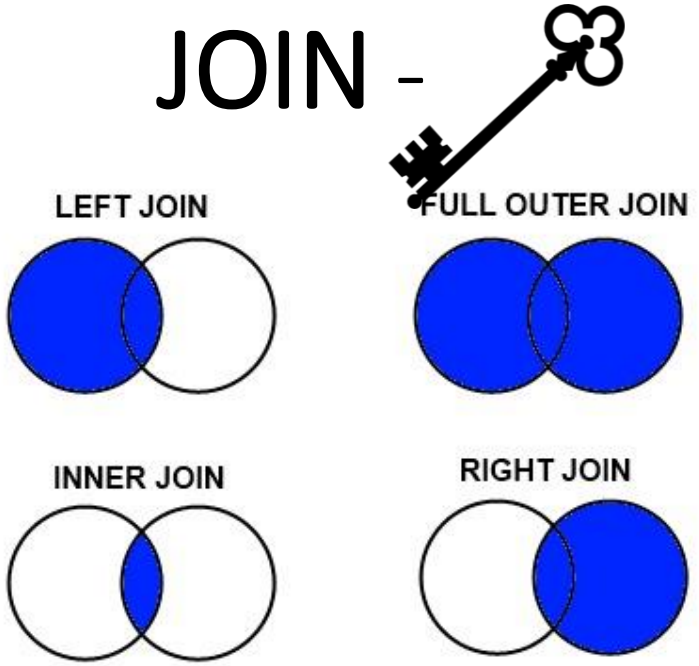
Size
Small
Medium
Large
Extra Large



Query Result

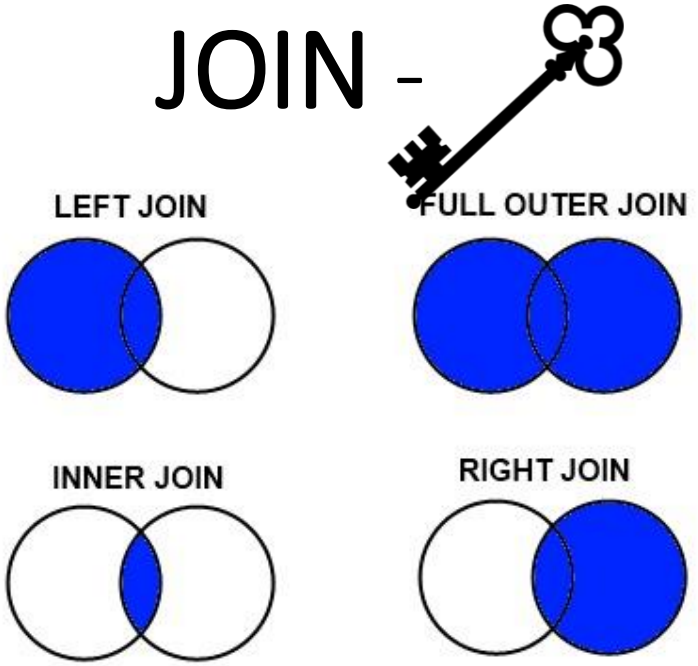
Color	Size
Red	Small
Blue	Small
Red	Medium
Blue	Medium
Red	Large
Blue	Large
Red	Extra Large
Blue	Extra Large

JOIN – «горизонтальное склеивание таблиц»



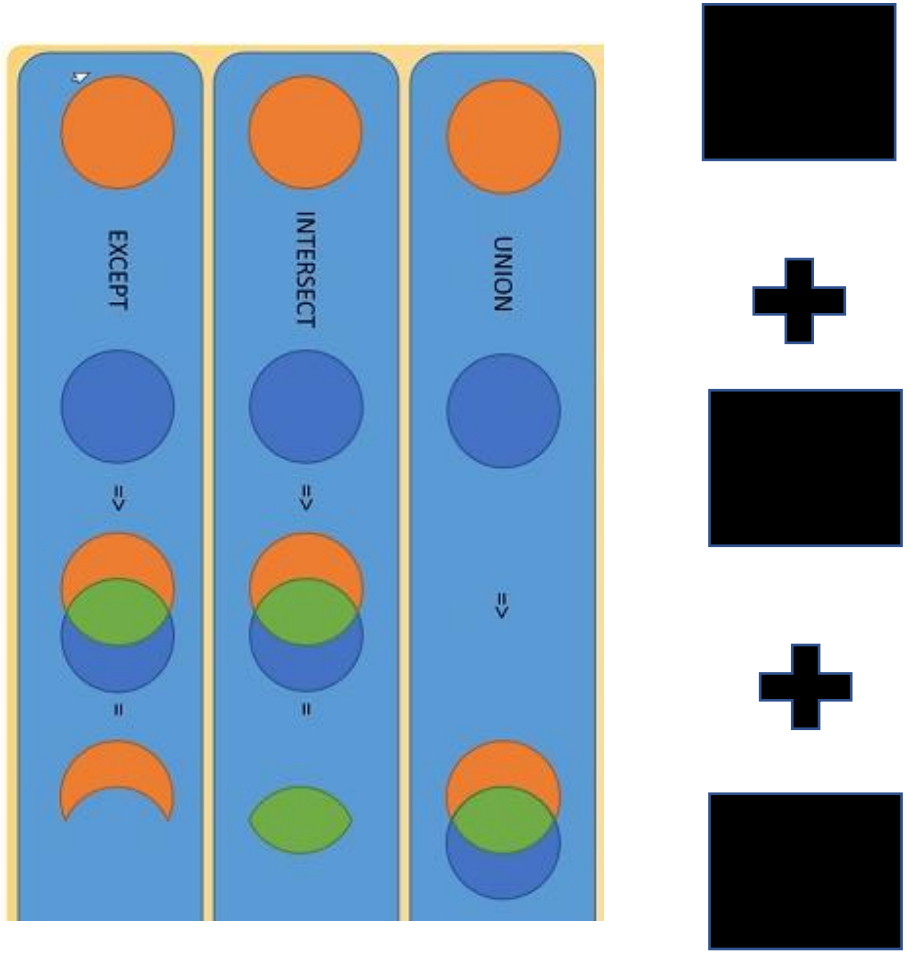
Результат: больше столбцов

JOIN – «горизонтальное склеивание таблиц»



Результат: больше столбцов

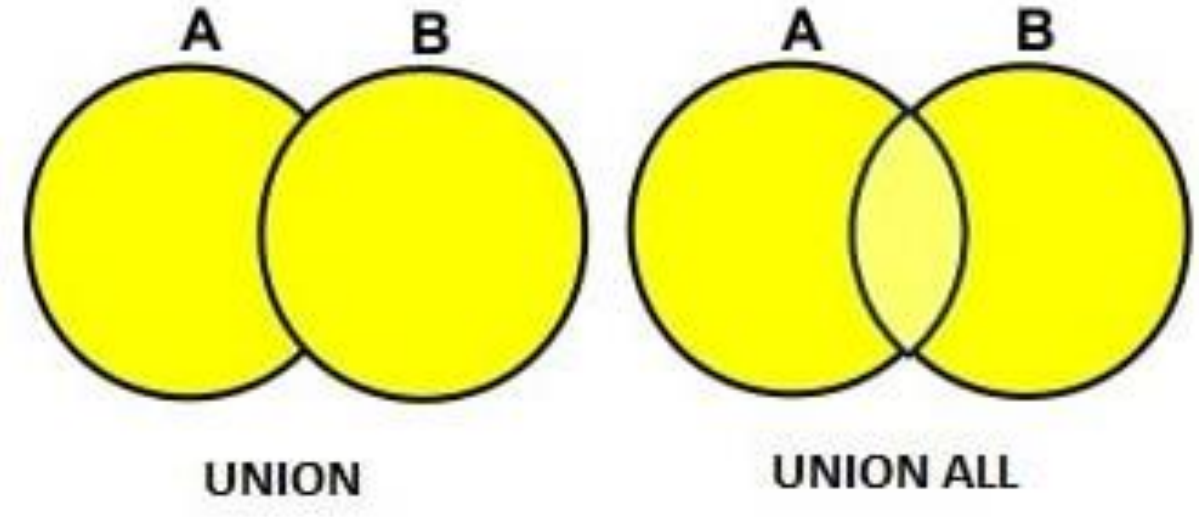
UNION – «вертикальное склеивание таблиц»



Результат: больше строк

UNION ALL vs. UNION

UNION ALL – склеивает 2 таблицы вертикально
UNION – склеивает 2 вертикально, удаляя дубликаты и сортируя результат (поэтому медленнее)



UNION будет работать только при условиях:

- Одинаковое кол-во столбцов
- Одинаковые типы данных
- Одинаковый порядок столбцов
- *Одинаковые названия столбцов*

SUBQUERIES (подзапросы)

– запрос внутри запроса

Inner

```
SELECT ProductID,
       Name,
       ListPrice
FROM   production.Product
WHERE  ListPrice > (SELECT AVG(ListPrice)
                    FROM   Production.Product)
```

subquery

Outer