# SQL JOINs

*How to crud related tables*
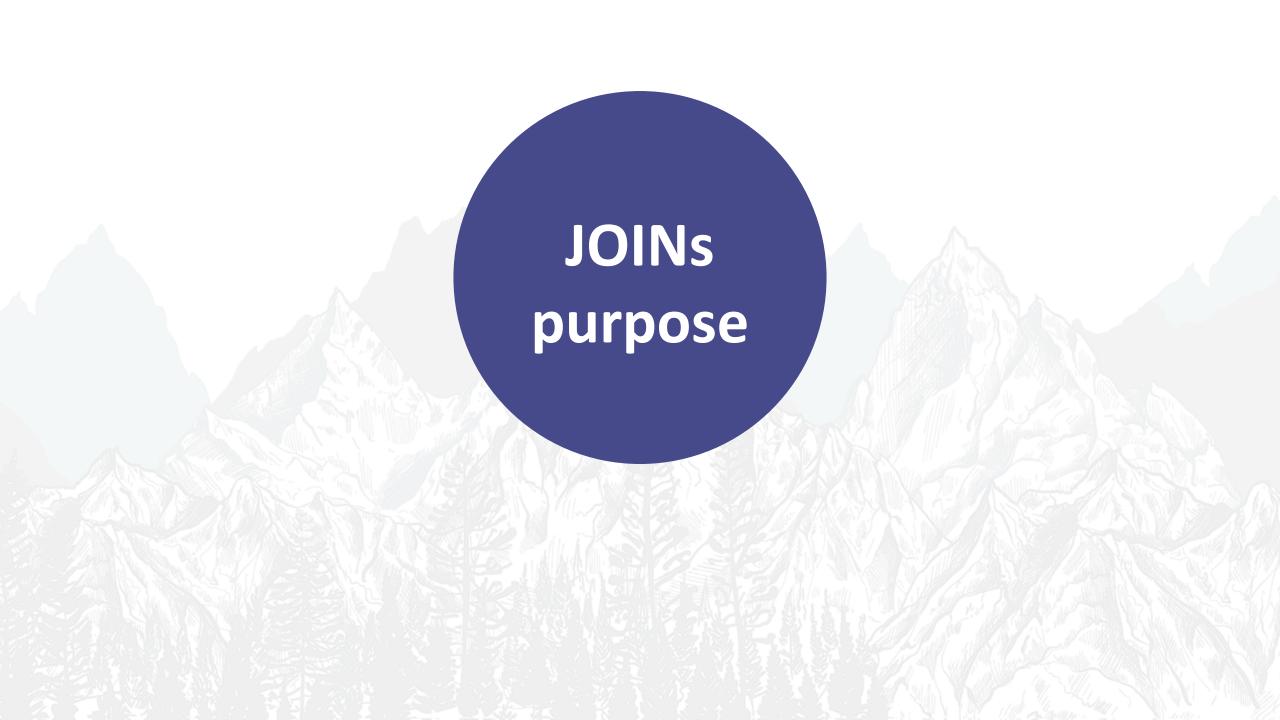
**PHP web development 2020/2021**

Milena Tomova

Vratsa Software

https://vratsasoftware.com/

# Table of Contents

1. JOINs - purpose

2. JOINs - types

3. How to CRUD related tables

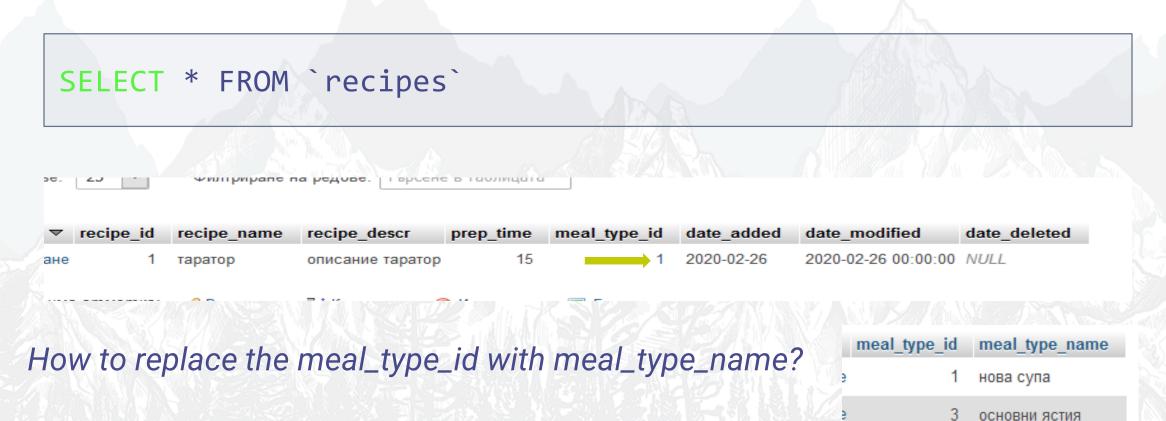# JOINs purpose

# JOINs - purpose

purpose

1. Свързваме таблици в БД чрез FK и PK /Internal relation

1. Достъпваме информация от няколко /свързани/ таблици и можем да изпълним CRUD към нея.
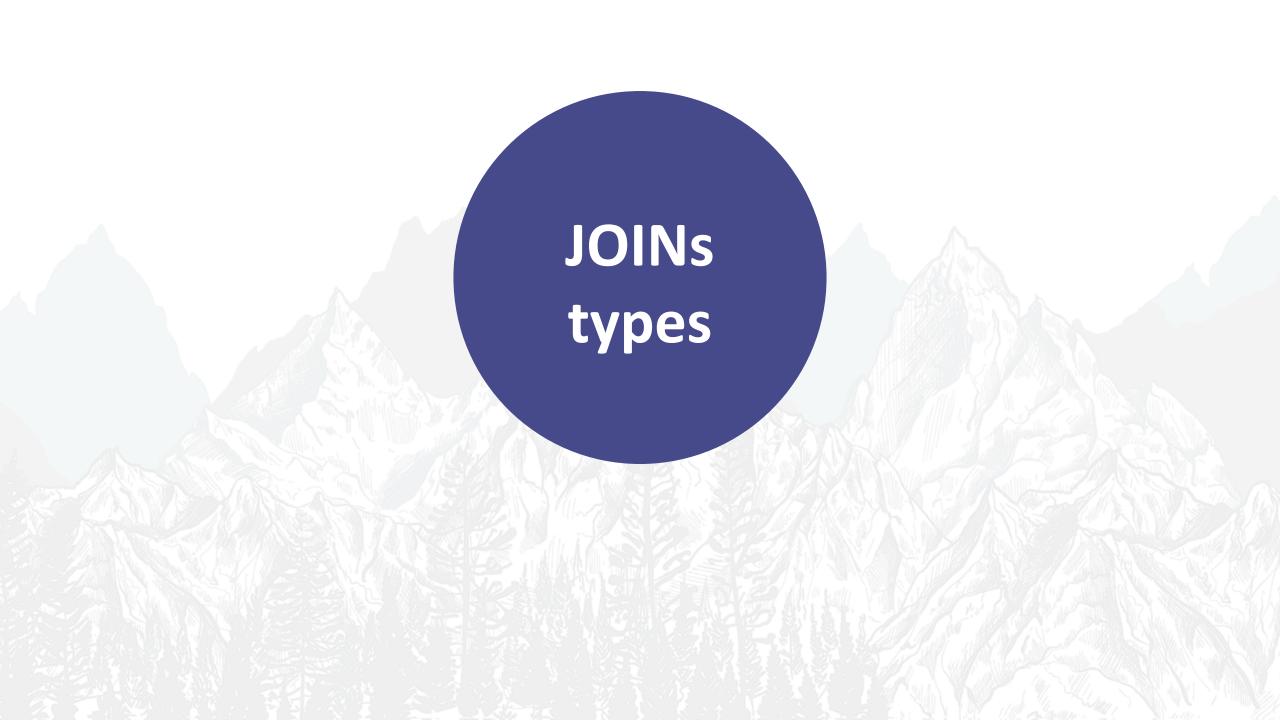
# JOINs - example

- ## Recipes have meal_type
  - meal_type_id is FK in recipes table - points to meal_types table

```
SELECT * FROM `recipes`
```

| recipe_id | recipe_name | recipe_descr | prep_time | meal_type_id | date_added | date_modified | date_deleted |
|---|---|---|---|---|---|---|---|
| 1 | тарател | описание тарател | 15 | → 1 | 2020-02-26 | 2020-02-26 00:00:00 | *NULL* |

*How to replace the meal_type_id with meal_type_name?*

| meal_type_id | meal_type_name |
|---|---|
| 1 | нова супа |
| 3 | основни ястия |
| 4 | предястия |

JOINs types

# JOINs - types

types

**INNER JOIN or**

**JOIN**: Returns all rows when there is at least one match in BOTH tables

**LEFT JOIN**: Return all rows from the left table, and the matched rows from the right table

**RIGHT JOIN**: Return all rows from the right table, and the matched rows from the left table

**FULL JOIN**: Return all rows when there is a match in ONE of the tables

JOIN /
INNER JOIN

# JOIN/INNER JOIN

- the sql query

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

**or**

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

# JOIN/INNER JOIN - result

result

Като резултат виждаме само записите,

за които има

PK - FK

съответствие.

# JOIN/INNER JOIN - example

- recipes table

| | recipe_id | recipe_name | recipe_descr | prep_time | meal_type_id | date_added | date_modified | date_deleted |
|---|---|---|---|---|---|---|---|---|
| че | 1 | таратор | описание таратор | 15 | → 1 | 2020-02-26 | 2020-02-26 00:00:00 | *NULL* |
| че | 3 | палачинки | Как се приготвят палачинки | 120 | → *NULL* | 2020-03-11 | 2020-03-11 00:00:00 | *NULL* |

ма отметка:   🖉 Редакция    📋 Копиране    ⊖ Изтриване    📊 Експорт

***set meal_type_id default value to NULL*

# JOIN/INNER JOIN

- ## the sql query

```
SELECT *
FROM `recipes`
JOIN meal_types on recipes.meal_type_id = meal_types.meal_type_id
```

## the result

+ Настройки

| recipe_id | recipe_name | recipe_descr | prep_time | meal_type_id | date_added | date_modified | date_deleted | meal_type_id | meal_type_name |
|---|---|---|---|---|---|---|---|---|---|
| 1 | таратор | описание таратор | 15 | 1 | 2020-02-26 | 2020-02-26 00:00:00 | *NULL* | 1 | нова супа |

# JOIN/INNER JOIN - tasks

tasks

1. Направете JOIN заявка към таблиците recipes & meal_types в phpMyAdmin
2. Селектирайте всички данни
3. Селектирайте само
   a. името на рецептата и тип ястие
   b. името на рецептата, тип ястие, време за приготвяне
   c. име на рецептата, тип ястие, описание на рецептата
4. *Приложете в sql заявката си, съкратен запис на името на таблиците.

# LEFT JOIN

- the sql query

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

**or**

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

- the sql query - join recipes to meal-types

```
SELECT * FROM `recipes`

LEFT JOIN meal_types ON recipes.meal_type_id = meal_types.meal_type_id
```

the result

| | Показване на всички | Брой редове: | 25 | | Филтриране на редове: | Търсене в таблицата | | Сортиране по ключ: | Няма |

настройки

| ipe_id | recipe_name | recipe_descr | prep_time | meal_type_id | date_added | date_modified | date_deleted | m |
|---|---|---|---|---|---|---|---|---|
| 1 | таратор | описание таратор | 15 | 1 | 2020-02-26 | 2020-02-26 00:00:00 | NULL | |
| 3 | палачинки | Как се приготвят палачинки | 120 | NULL | 2020-03-11 | 2020-03-11 00:00:00 | NULL | |

- the sql query - join meal-types to recipes

SELECT * FROM `meal_types`

**LEFT JOIN** recipes ON meal_types.meal_type_id = recipes.meal_type_id

the result

| type_id | meal_type_name | recipe_id | recipe_name | recipe_descr | prep_time | meal_type_id | date_added | date_modified | date_deleted |
|---|---|---|---|---|---|---|---|---|---|
| 1 | нова супа | 1 | таратор | описание таратор | 15 | 1 | 2020-02-26 | 2020-02-26 00:00:00 | NULL |
| 3 | основни ястия | NULL | NULL | NULL | NULL | NULL | NULL | NULL | NULL |
| 4 | предястия | NULL | NULL | NULL | NULL | NULL | NULL | NULL | NULL |

Показване на всички | Брой редове: 25 ⌄  Филтриране на редове: Търсене в таблицата  Сортиране по ключ: Няма ⌄

# JOIN/INNER JOIN

- Explain the difference between the two queries and their results!

RIGHT JOIN

# RIGHT JOIN

- the sql query

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

# RIGHT JOIN

- the sql query - join recipes to meal-types

SELECT * FROM `recipes`

**RIGHT JOIN** meal_types ON recipes.meal_type_id = meal_types.meal_type_id

the result

+ Настройки

| recipe_id | recipe_name | recipe_descr | prep_time | meal_type_id | date_added | date_modified | date_deleted | meal_type_id | meal_type_name |
|---|---|---|---|---|---|---|---|---|---|
| 1 | таратор | описание таратор | 15 | 1 | 2020-02-26 | 2020-02-26 00:00:00 | NULL | 1 | нова супа |
| NULL | NULL | NULL | NULL | NULL | NULL | NULL | NULL | 3 | основни ястия |
| NULL | NULL | NULL | NULL | NULL | NULL | NULL | NULL | 4 | предястия |

# RIGHT JOIN

- Explain the results of the query - joining meal_types to recipes using
    - LEFT JOIN
    - RIGHT JOIN

# RIGHT JOIN

- the sql query - join meal-types to recipes

SELECT * FROM `meal_types`

**RIGHT JOIN** recipes ON meal_types.meal_type_id = recipes.meal_type_id

the result

☐ Показване на всички  |  Брой редове:  25 ▾  Филтриране на редове: [Търсене в таблицата]  Сортиране по ключ:  Няма ▾

+ Настройки

| meal_type_id | meal_type_name | recipe_id | recipe_name | recipe_descr | prep_time | meal_type_id | date_added | date_modified | date_deleted |
|---|---|---|---|---|---|---|---|---|---|
| 1 | нова супа | 1 | таратор | описание таратор | 15 | 1 | 2020-02-26 | 2020-02-26 00:00:00 | *NULL* |
| *NULL* | *NULL* | 3 | палачинки | Как се приготвят палачинки | 120 | *NULL* | 2020-03-11 | 2020-03-11 00:00:00 | *NULL* |

# RIGHT JOIN

- Explain the results of the query - joining recipes to meal_types using
    - LEFT JOIN
    - RIGHT JOIN

# TIPS & TRICKS

# TIPS AND TRICKS

tasks

1. Add date_added, date_modified, date_deleted columns to meal_types table.
2. Select all recipes joining meal_types. What happens to the same column data?
3. Select recipes where meal_types column date_deleted is not NULL.

# REMEMBER

1. First is the result you have the get, then you select the join to use!

   *true for every query you set*

1. You can join as many tables as you need if you are able to manage to get the desired and trustworthy result!

2. When you join tables with same column names, you have to give a unique name for each of them in the SQL query!

# Questions?



Враца Софтуер Общество

Гнездото
Coworking

Цялостен курс по програмиране

Дизайн курс

Курс по дигит. маркетинг

MindHub

CodeWeek Враца

HACK VRATSA #кодаправиш

# Partners

# Trainings @ Vratsa Software

- Vratsa Software – High-Quality Education, Profession and Jobs

    - www.vratsasoftware.com

- The Nest Coworking

    - www.nest.bg

- Vratsa Software @ Facebook

    - www.fb.com/VratsaSoftware

- Slack Channel

    - www.vso.slack.com