# LAB: MySQL and PHP Basics

This document defines the **lab assignments** for the ["PHP WEB @ Software University.](https://softuni.bg/courses/php-basics/)

Download and get familiar with the **restaurant** database. You will use it in the assignments bellow.

You can check your solutions here: <https://judge.softuni.bg/Contests/Practice/Index/1284#0>.

Part 1 – Aggregate Functions

## Problem 1. Departments Info

Write a query to **count** the number of employees **in each department by** id. Order the information by deparment\_id, then by **employees count**. Submit your queries with the **MySQL prepare DB & run queries** strategy.

### Example

|  |  |
| --- | --- |
| **department\_id** | **Number of employees** |
| **1** | **2** |
| **2** | **4** |
| **3** | **3** |
| **…** | **…** |

## Problem 2. Average Salary

Write a query to calculate the **average salary** in each department. Order the information by department\_id. **Round** the salary result to **two digits after the decimal point**. Submit your queries with the **MySQL prepare DB & run queries** strategy.

### Example

|  |  |
| --- | --- |
| **department\_id** | **Average Salary** |
| **1** | **2050** |
| **2** | **1090** |
| **3** | **736.67** |

Part 2 – Subqueries and JOINs

## Problem 3. Addresses with Towns

Write a query that selects:

* first\_name
* last\_name
* town
* address\_text

Sorted by first\_name **in** **ascending order** then by last\_name. Select first 5 employees.

### Example:

|  |  |  |  |
| --- | --- | --- | --- |
| **first\_name** | **last\_name** | **town** | **address\_text** |
| A.Scott | Wright | Newport Hills | 1400 Gate Drive |
| Alan | Brewer | Kenmore | 8192 Seagull Court |
| … | … | … | … |

## Problem 4. Sales Employee

Write a query that selects:

* employee\_id
* first\_name
* last\_name
* department\_name

Sorted by employee\_id **in descending order**. Select only **employees** from “**Sales**” department.

### Example:

|  |  |  |  |
| --- | --- | --- | --- |
| **employee\_id** | **first\_name** | **last\_name** | **department\_name** |
| 290 | Lynn | Tsoflias | Sales |
| 289 | Rachel | Valdez | Sales |
| … | … | … | … |

## Problem 5.Employees Hired After

Write a query that selects:

* first\_name
* last\_name
* hire\_date
* dept\_name

Filter only **employees** with hired after 1/1/1999 and are from either **"Sales" or "Finance"** **departments**. Sorted by hire\_date **(ascending).**

### Example:

|  |  |  |  |
| --- | --- | --- | --- |
| **first\_name** | **last\_name** | **hire\_date** | **dept\_name** |
| Debora | Poe | 2001-01-19 00:00:00 | Finance |
| Wendy | Kahn | 2001-01-26 00:00:00 | Finance |
| … | … | … | … |

## Problem 6.Countries without any Mountains

Find all the count of all **countries** which don’t have a **mountain**.

### Example

|  |
| --- |
| **country\_count** |
| 231 |

## Problem 7.Min Average Salary

Write a query that return the value of the **lowest average** salary of all **departments**.

### Example:

|  |
| --- |
| **min\_average\_salary** |
| 10866.6666 |

**Optional**

Part 3 – SQL Queries

## Problem 8. Prepare Database

* Create new database with name “php-course”
* Create table with name “students”
* Table must contains data for:
  + Student First Name
  + Student Last Name
  + Student number
  + Phone
  + Home address
  + Date of record
  + Date of last data change
  + Is student is active or not
  + Motivation letter
  + Notes

Choose appropriate **names**, **types, sizes** and **mandatory** for each column. Determine which column should be **unique**. Do not forget Primary KEY!

## Problem 9. Add records

* Prepare Insert SQL with data for five students
  + Two students must have all data
  + Others - only mandatory

## Problem 10. Change Records

* Prepare Update SQL for data changing
  + Change phone of student with ID = 2;
  + Set address of students who do not have a number;

## Problem 11. Delete Records

* Prepare Delete SQL
  + Delete data for student with ID = 1;
  + Delete data for students who do not have an address
* Preparate SQL for delete all data in table

# Part 4 - SQL and PHP

## Problem 12. Add records

Create php file that get student data from standard input. First input must be integer which indicates the number of student that must be send. Next N lines wii be in this format

**<First\_name> <Last\_name> <Studen\_number> <Phone>**

None: Phone is not mandatory and can missed

All data must be saved in Database

## Problem 13. Change Records

* Create php file that change student data from standard input.
* Input format must be

<User\_id> <param\_name> <param\_value>

* Param\_name will indicate will indicate which parameter must be change
* Param\_value will indicate will indicate new value of parameter
* New data must be saved in Database

## Problem 14. Delete Records

* Create php file that delete student data from standard input.
* Input format must be

<User\_id>

* Data for studen with ID = N must be deleted from Database