# **Exercises: Data Aggregation**

This document defines the exercise assignments for the "Databases Basics - MySQL" course @ Software University.

Mr. Bodrog is a greedy small goblin. His most precious possession is a small database of the deposits in the wizard's world. Mr. Bodrog wants you to send him some reports.

Get familiar with the gringotts database. You will use it in the assignments below.

#### 1. Records' Count

Import the database and send the total count of records to Mr. Bodrog. Make sure nothing got lost.

#### **Example:**

count	
162	

#### 2. Longest Magic Wand

Select the size of the longest magic wand. Rename the new column appropriately.

#### **Example:**

longest_magic_wand
31

### 3. Longest Magic Wand per Deposit Groups

For wizards in each deposit group show the longest magic wand. **Sort result by longest magic** wand for each deposit group **in increasing order**, then by **deposit\_group** alphabetically. Rename the new column appropriately.

### **Example:**

deposit_group	longest_magic_wand
Human Pride	30

### 4. Smallest Deposit Group per Magic Wand Size\*

Select the deposit group with the lowest average wand size.

deposit_group
Troll Chest















#### 5. Deposits Sum

Select all deposit groups and its total deposit sum. Sort result by total\_sum in increasing order.

#### **Example:**

deposit_group	total_sum
Blue Phoenix	819598.73

# 6. Deposits Sum for Ollivander family

Select all deposit groups and its total deposit sum but **only for the wizards who has their magic wand crafted by Ollivander family**. Sort result by **deposit\_group alphabetically**.

#### **Example:**

deposit_group	total_sum
Blue Phoenix	52968.96
Human Pride	188366.86

### 7. Deposits Filter

Select all deposit groups and its total deposit sum but **only for the wizards who has their magic wand crafted by Ollivander family**. After this, **filter** total deposit sums **lower than 150000**. Order by total deposit sum in **descending order**.

#### **Example:**

deposit_group	total_sum
Troll Chest	126585.18

### 8. Deposit charge

Create a query that selects:

- Deposit group
- Magic wand creator
- · Minimum deposit charge for each group

Group by deposit\_group and magic\_wand\_creator.

Select the data in ascending order by magic\_wand\_creator and deposit\_group.















#### **Example:**

deposit_group magic_wand_creator		min_deposit_charge	
Blue Phoenix	Antioch Peverell	30.00	

### 9. Age Groups

Write down a query that creates 7 different groups based on their age.

Age groups should be as follows:

- [0-10]
- [11-20]
- [21-30]
- [31-40]
- [41-50]
- [51-60]
- [61+]

The query should return:

- Age groups
- · Count of wizards in it

Sort result by **increasing size** of age groups.

### **Example:**

age_group	wizard_count
[11-20]	21
	•••

# 10. First Letter

Write a query that returns all unique wizard first letters of their first names only if they have deposit of type Troll Chest. Order them alphabetically. Use GROUP BY for uniqueness.

first_letter
А

















#### 11. Average Interest

Mr. Bodrog is highly interested in profitability. He wants to know the average interest of all deposits groups split by whether the deposit has expired or not. But that's not all. He wants you to select deposits with start date after 01/01/1985. Order the data descending by Deposit Group and ascending by Expiration Flag.

#### **Example:**

deposit_group	is_deposit_expired	average_interest
Venomous Tongue	0	16.698947

# 12. Rich Wizard, Poor Wizard\*

Give Mr. Bodrog some data to play his favorite game Rich Wizard, Poor Wizard. The rules are simple: You compare the deposits of every wizard with the wizard after him. If a wizard is the last one in the database, simply ignore it. At the end you have to sum the difference between the deposits.

host_wizard	host_wizard_deposit	guest_wizard	guest_wizard_deposit	difference
Harry	10 000	Tom	12 000	-2000
Tom	12 000			

At the end your query should return a single value: the **SUM** of all differences.

#### **Example:**

sum_difference	
44393.97	

### 13. Employees Minimum Salaries

That's it! You no longer work for Mr. Bodrog. You have decided to find a proper job as an analyst in SoftUni.

It's not a surprise that you will use the **soft\_uni** database.

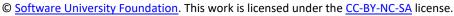
Select the minimum salary from the employees for departments with **ID** (2,5,7) but only for those who are **hired** after 01/01/2000. Sort result by **department\_id** in ascending order.

Your query should return:

• department\_id

department_id	minimum_salary
2	25000.00

















#### 14. Employees Average Salaries

Select all high paid employees who earn **more than 30000** into a new table. Then **delete** all high paid employees who have **manager\_id = 42** from the new table; Then **increase** the salaries of all high paid employees with **department\_id =1 with 5000** in the new table. Finally, select the **average** salaries in each department from the new table. Sort result by **department\_id** in **increasing** order.

#### **Example:**

department_id	avg_salary
1	45166.6666

### 15. Employees Maximum Salaries

Find the max salary for each department. Filter those which have max salaries not in the range 30000 and 70000. Sort result by department id in increasing order.

#### **Example:**

department_id	max_salary
2	29800.00

#### 16. Employees Count Salaries

Count the salaries of all employees who don't have a manager.

### 17. 3rd Highest Salary\*

Find the **third highest salary** in each department if there is such. Sort result by **department\_id** in **increasing** order.

### **Example:**

department_id	third_highest_salary
1	36100.00
2	25000.00

### 18. Salary Challenge\*\*

Write a query that returns:

- first\_name
- last name
- department\_id

for all employees who have salary **higher than the average salary** of their respective departments. Select only the **first 10 rows**. Order by **department\_id**.

















#### **Example:**

first_name	last_name	department_id
Roberto	Tamburello	1
Terri	Duffy	1
Rob	Walters	2

# 19. Departments Total Salaries

Create a query which shows the **total sum of salaries** for each department. Order by **department\_id**.

Your query should return:

• department\_id

department_id	total_salary
1	241000.00















