

# Exercises: Built-in Functions

This document defines the **exercise assignments** for the ["Databases Basics - MySQL" course @ Software University](#).

## Part I – Queries for SoftUni Database

### Problem 1. Find Names of All Employees by First Name

Write a SQL query to find **first** and **last names** of all employees whose **first name starts with "SA"**. Submit your query statements as Prepare DB & run queries.

#### Example

first_name	last_name
Sariya	Harnpadoungsataya
Sandra	Reategui Alayo
...	...

### Problem 2. Find Names of All employees by Last Name

Write a SQL query to find **first** and **last names** of all employees whose **last name contains "ei"**. Submit your query statements as Prepare DB & run queries.

#### Example

first_name	last_name
Kendall	Keil
Christian	Kleinerman
...	...

### Problem 3. Find First Names of All Employees

Write a SQL query to find the **first names** of all employees in the **departments** with **ID 3 or 10** and whose **hire year** is **between 1995 and 2005 inclusive**. Submit your query statements as Prepare DB & run queries.

#### Example

first_name
Stephen
Brian
Michael
...

### Problem 4. Find All Employees Except Engineers

Write a SQL query to find the **first** and **last names** of all employees whose **job titles does not contain "engineer"**. Submit your query statements as Prepare DB & run queries.

#### Example

first_name	last_name
Guy	Gilbert
Kevin	Brown
Rob	Walters

...	...
-----	-----

## Problem 5. Find Towns with Name Length

Write a SQL query to find town names that are **5 or 6 symbols long** and **order** them **alphabetically by town name**. Submit your query statements as Prepare DB & run queries.

### Example

name
Berlin
Duluth
Duvall
...

## Problem 6. Find Towns Starting With

Write a SQL query to find all towns that **start with** letters **M, K, B or E**. Order them **alphabetically** by town name. Submit your query statements as Prepare DB & run queries.

### Example

town_id	name
5	Bellevue
31	Berlin
30	Bordeaux
...	...

## Problem 7. Find Towns Not Starting With

Write a SQL query to find all towns that **does not start with** letters **R, B or D**. Order them **alphabetically** by name. Submit your query statements as Prepare DB & run queries.

### Example

town_id	name
2	Calgary
23	Cambridge
15	Carnation
...	...

## Problem 8. Create View Employees Hired After 2000 Year

Write a SQL query to create view **v\_employees\_hired\_after\_2000** with **first and last name** to all employees **hired after 2000 year**. Submit your query statements as Run skeleton, run queries & check DB.

### Example

first_name	last_name
Steven	Selikoff
Peter	Krebs
Stuart	Munson
...	...

## Problem 9. Length of Last Name

Write a SQL query to find the names of all employees whose last name is **exactly 5 characters long**.

## Example

first_name	last_name
Kevin	Brown
Terri	Duffy
Jo	Brown
Diane	Glimp
...	...

## Part II – Queries for Geography Database

### Problem 10. Countries Holding 'A' 3 or More Times

Find all countries that holds the **letter 'A'** in their name **at least 3 times** (case insensitively), **sorted by ISO code**. **Display** the **country name** and **ISO code**. Submit your query statements as Prepare DB & run queries.

## Example

country_name	iso_code
Afghanistan	AFG
Albania	ALB
...	...

### Problem 11. Mix of Peak and River Names

**Combine all peak names with all river names**, so that the last letter of each peak name is the same like the first letter of its corresponding river name. **Display** the **peak names**, **river names**, and the **obtained mix**. **Sort the results by the obtained mix**. Submit your query statements as Prepare DB & run queries.

## Example

peak_name	river_name	mix
Aconcagua	Amazon	aconcaguamazon
Aconcagua	Amur	aconcaguamur
Banski Suhodol	Lena	banski suhodolena
...	...	...

## Part III – Queries for Diablo Database

### Problem 12. Games from 2011 and 2012 year

Find the **top 50 games ordered by start date**, then **by name** of the game. Display only **games from 2011 and 2012** year. Display start date in the format **"YYYY-MM-DD"**. Submit your query statements as Prepare DB & run queries.

## Example

game	start
Rose Royalty	2011-01-05
London	2011-01-13
Broadway	2011-01-16
...	...

## Problem 13. User Email Providers

Find all users along with information about their email providers. Display the username and email provider. Sort the results by email provider alphabetically, then by username. Submit your query statements as Prepare DB & run queries.

### Example

Username	Email Provider
Pesho	abv.bg
monoxidecos	astonrasuna.com
bashsassafras	balibless
...	...

## Problem 14. Get Users with IPAdress Like Pattern

Find all users along with their IP addresses sorted by username alphabetically. Display only rows that IP address matches the pattern: `“***.1^.*”`. Submit your query statements as Prepare DB & run queries.

Legend: \* - one symbol, ^ - one or more symbols

### Example

Username	IP Address
bindbawdy	192.157.20.222
evolvingimportant	223.175.227.173
inguinalself	255.111.250.207
...	...

## Problem 15. Show All Games with Duration and Part of the Day

Find all games with part of the day and duration sorted by game name alphabetically then by duration and part of the day. **Parts of the day** should be **Morning** (time is  $\geq 0$  and  $< 12$ ), **Afternoon** (time is  $\geq 12$  and  $< 18$ ), **Evening** (time is  $\geq 18$  and  $< 24$ ). **Duration** should be **Extra Short** (smaller or equal to 3), **Short** (between 4 and 6 including), **Long** (greater than 6) and **Extra Long** (without duration). Submit your query statements as Prepare DB & run queries.

### Example

Game	Part of the Day	Duration
Ablajack	Morning	Long
Ablajack	Afternoon	Short
Abregado Rae	Afternoon	Long
Abrion	Morning	Extra Short
Acaeria	Evening	Long
...	...	...

## Part IV – Date Functions Queries

### Problem 16. Orders Table

You are given a table **Orders**(**Id**, **ProductName**, **OrderDate**) filled with data. Consider that the **payment** for that order must be accomplished **within 3 days after the order date**. Also the **delivery date is up to 1 month**. Write a

query to show each product's **name, order date, pay and deliver due dates**. Submit your query statements as Prepare DB & run queries.

## Original Table

id	product_name	order_date
1	Butter	2016-09-19 00:00:00
2	Milk	2016-09-30 00:00:00
3	Cheese	2016-09-04 00:00:00
4	Bread	2015-12-20 00:00:00
5	Tomatoes	2015-12-30 00:00:00
...	...	...

## Output

product_name	order_date	pay_due	deliver_due
Butter	2016-09-19 00:00:00	2016-09-22 00:00:00	2016-10-19 00:00:00
Milk	2016-09-30 00:00:00	2016-10-03 00:00:00	2016-10-30 00:00:00
Cheese	2016-09-04 00:00:00	2016-09-07 00:00:00	2016-10-04 00:00:00
Bread	2015-12-20 00:00:00	2015-12-23 00:00:00	2016-01-20 00:00:00
Tomatoes	2015-12-30 00:00:00	2016-01-02 00:00:00	2016-01-30 00:00:00
...	...	...	...

## Problem 17. People Table

You are given a table **People(Id, Name, Birthdate)**. Write a query to **find age in years, months, days and minutes** for each person for the current time of executing the query.

## Original Table

id	name	birthdate
1	Victor	2000-12-07 00:00:00
2	Steven	1992-09-10 00:00:00
3	Stephen	1910-09-19 00:00:00
4	John	2010-01-06 00:00:00
...	...	...

## Example Output

name	age_in_years	age_in_months	age_in_days	age_in_minutes
Victor	16	189	5754	8286787
Steven	24	288	8764	12621187
Stephen	106	1272	38706	55737667
John	6	80	2437	3510307
...	...	...	...	...