# Lab: Spring Data Advanced Querying

This document defines the lab assignments for the ["Spring Data" course @ Software University](https://softuni.bg/courses/spring-data).

You are **given** a simpler implementation of the **Shampoo Company**. Now it's time to start writing some query methods to retrieve data.   
**Before you start, insert the data from the "shampoo-company-insert.sql" file!**

## Select Shampoos by Size

Create a method that selects all shampoos with a **given size**, **ordered by shampoo id.**

### Example:

|  |  |
| --- | --- |
| **Input** | **Output** |
| MEDIUM | Nature Moments Mediterranean Olive Oil & Aloe Vera MEDIUM 6.50lv.  Volume & Fullness Lavender MEDIUM 5.50lv.  Rose Shine & Hydration MEDIUM 6.50lv.  Color Protection & Radiance MEDIUM 6.75lv.  Heavenly Long Long-Hair MEDIUM 7.50lv.  Sea Buckthorn Vital MEDIUM 6.50lv.  Fresh it Up! MEDIUM 7.65lv.  Nectar Nutrition MEDIUM 6.85lv. |

## Select Shampoos by Size or Label

Create a method that selects all shampoos with a **given size or label id**. Sort the result **ascending by price**.

### Example:

|  |  |
| --- | --- |
| **Input** | **Output** |
| MEDIUM 10 | Volume & Fullness Lavender MEDIUM 5.50lv.  Intense-Charm Brunette SMALL 5.50lv.  Nature Moments Mediterranean Olive Oil & Aloe Vera MEDIUM 6.50lv.  Rose Shine & Hydration MEDIUM 6.50lv.  Sea Buckthorn Vital MEDIUM 6.50lv.  Color Protection & Radiance MEDIUM 6.75lv.  Nectar Nutrition MEDIUM 6.85lv.  Heavenly Long Long-Hair MEDIUM 7.50lv.  Fresh it Up! MEDIUM 7.65lv.  Active-Caffeine SMALL 7.80lv. |

## Select Shampoos by Price

Create a method that selects all shampoos, which price is **higher than a given price**. Sort the result **descending** **by price**.

### Example:

|  |  |
| --- | --- |
| **Input** | **Output** |
| 5 | Superfruit Nutrition LARGE 13.80lv.  Cotton Fresh LARGE 13.60lv.  Color Protection & Radiance LARGE 11.50lv.  Rose Shine & Hydration LARGE 10.70lv.  Nectar Nutrition LARGE 10.50lv.  Keratin Strong SMALL 8.80lv.  Superfruit Nutrition SMALL 8.80lv.  Cotton Fresh SMALL 8.80lv.  Keratin Strong LARGE 8.80lv.  Volume & Fullness Lavender LARGE 8.50lv.  … |

## Select Ingredients by Name

Create a method that selects all **ingredients**, which **name starts with given letters**.

### Example:

|  |  |
| --- | --- |
| **Input** | **Output** |
| M | Macadamia Oil  Mineral-Collagen  Micro Crystals |

## Select Ingredients by Names

Create a method that selects all **ingredients**, which are **contained in a given list**. Sort the result **ascending by price**.

### Example:

|  |  |
| --- | --- |
| **Input** | **Output** |
| Lavender  Herbs  Apple | Apple  Lavender  Herbs |

## Count Shampoos by Price

Create a method that **counts all shampoos** with **price lower than a given price**.

### Example:

|  |  |
| --- | --- |
| **Input** | **Output** |
| 8.50 | 15 |

# JPQL Querying

## Select Shampoos by Ingredients

Create a method that selects all **shampoos** **with ingredients** includedin a **given list**.

### Example:

|  |  |
| --- | --- |
| **Input** | **Output** |
| Berry  Mineral-Collagen | Color Protection & Radiance  Fresh it Up!  Nectar Nutrition  Superfruit Nutrition  Color Protection & Radiance  Nectar Nutrition  Superfruit Nutrition  . . . |

## Select Shampoos by Ingredients Count

Create a method that selects all **shampoos** **with ingredients less than a given number**.

### Example:

|  |  |
| --- | --- |
| **Input** | **Output** |
| 2 | Moroccan Argan Oil & Macadamia  Volume & Fullness Lavender  Sea Buckthorn Vital  Active-Caffeine |

1. **Delete Ingredients by Name**

Create a method that **deletes ingredients by a given name**. Use named query.

1. **Update Ingredients by Price**

Create a method that **increases the price of all ingredients by 10%**. Use named query.

## Update Ingredients by Names

Create a method that **updates the price** of all ingredients, which names are in a given list.