# Exercises: Spring Data Advanced Quering

This document defines the exercise assignments for the [“Databases Frameworks” course @ SoftUni](https://softuni.bg/courses/databases-advanced-hibernate).

For the following tasks use the **bookshop\_system** database from the previous exercise. Make sure it has proper connections between the tables and it is populated with any sample data.

## Books Titles by Age Restriction

Write a program that prints **the titles of all books**, for which the **age restriction** matches the given input (minor, teen or adult). **Ignore casing** of the input.

### Example

|  |  |
| --- | --- |
| **Input** | **Output** |
| miNor | A che punto Ã¨ la note  After Many a Summer Dies the Swan  Ah  … |
| teEN | All Passion Spent  Wide Sea  Antic Hay  … |

## Golden Books

Write a program that prints **the** **titles of the golden edition books**, which have **less than 5000 copies**.

### Example

|  |
| --- |
| **Output** |
| Behold the Man  Bury My Heart at Wounded Knee  The Cricket on the Hearth  … |

## Books by Price

Write a program that prints **the titles and prices** **of books** with **price lower than 5** and **higher than 40**.

### Example

|  |
| --- |
| **Output** |
| A che punto Ã¨ la note - $45.78  All the King's Men - $45.60  An Evil Cradling - $3.30  Beyond the Mexique Bay - $45.45  … |

## Not Released Books

Write a program that prints **the titles** of all books that are **NOT released** in a given year.

### Example

|  |  |
| --- | --- |
| **Input** | **Output** |
| 2000 | Absalom  A che punto Ã¨ la note  After Many a Summer Dies the Swan  … |
| 1998 | A che punto Ã¨ la note  Ah  Wilderness!  … |

## Books Released Before Date

Write a program that prints **the title, the edition type and the price** of books, which are **released before a given date**. The date will be in the **format dd-MM-yyyy**.

### Example

|  |  |
| --- | --- |
| **Input** | **Output** |
| 12-04-1992 | All Passion Spent  Bury My Heart at Wounded Knee  A Catskill Eagle  … |
| 30-12-1989 | Bury My Heart at Wounded Knee  Consider the Lilies  The Curious Incident of the Dog in the Night-Time  … |

## Authors Search

Write a program that prints **the names** of those authors, whose **first name ends with a given string**.

### Example

|  |  |
| --- | --- |
| **Input** | **Output** |
| e | George Powell  Jane Ortiz  Julie Washington  … |
| dy | Randy Morales  Randy Graham |

## Books Search

Write a program that prints **the** **titles of books**, which **contain a given string** (regardless of the casing).

### Example

|  |  |
| --- | --- |
| **Input** | **Output** |
| sK | A Catskill Eagle  The Daffodil Sky  The Skull Beneath the Skin |
| WOR | Great Work of Time  Terrible Swift Sword |

## Book Titles Search

Write a program that prints **the titles of books**, which are **written by authors**,whose **last name starts with a given string**.

### Example

|  |  |
| --- | --- |
| **Input** | **Output** |
| R | A Time of Gifts (Amanda Rice)  To Sail Beyond the Sunset (Amanda Rice)  To Say Nothing of the Dog (Amanda Rice) |
| gr | What's Become of Waring (Randy Graham)  Vanity Fair (Randy Graham)  Dominations (Chris Graham)  Eyeless in Gaza (Brenda Griffin) |

## Count Books

Write a program that prints **the** **number of books**, whose **title is longer than a given number**.

### Example

|  |  |  |
| --- | --- | --- |
| **Input** | **Output** | **Comments** |
| 12 | 178 | There are 178 books with longer title than 12 symbols |
| 40 | 2 | There are 2 books with longer title than 40 symbols |

## Total Book Copies

Write a program that prints **the** **total number of book copies** **by author**. Order the results **descending by total book copies**.

### Example

|  |
| --- |
| **Output** |
| Amanda Rice – 87819  Amy Porter – 29366  Christina Jordan – 18708  Earl Bennett – 12978  … |

## Reduced Book

Write a program that prints **information** (**title**, **edition type**, **age** **restriction** and **price**) for a book **by given title**. When retrieving the book information **select only those fields** and **do NOT include any other information** in the returned result.

### Example

|  |  |
| --- | --- |
| **Input** | **Output** |
| Тhrones | Thrones PROMO MINOR 21.41 |
| Things Fall Apart | Things Fall Apart GOLD ADULT 40.02 |

### Hints

You must **create a projection** of the book class omitting the not required fields.

1. Create an **interface ReducedBook** with properties for **title**, **edition type**, **age restriction** and **price**.
2. In the books repository create **query method** that would return **ReducedBook** by given title.
3. Use that method in the **BookService class.**
4. Use the **BookService** to retrieve instance of that object and print its information.

## \* Increase Book Copies

Write a program that **increases the copies of all books** **released after a given date** **with a given number**. Print the total amount of book copies that were added.

### Input

* On the **first line** – date in the format **dd-MMM-yyyy.** If a book is released after that date (exclusively), increase its book copies with the provided number from the second line of the input.
* On the **second line** – number of **book copies** each book should be increased with.

### Output

* **Total number of books** that was added to the database.

### Example

|  |  |  |
| --- | --- | --- |
| **Input** | **Output** | **Comments** |
| 12 Oct 2005  100 | 6100 | 61 books are released after 12 Oct 2005, so total of 6100 book copies were added |
| 06 Jun 2013  44 | 572 | 13 books are released after 6 Jun 2013, so total of 572 book copies were added |

## \* Remove Books

Write a program that **removes from the database** those **books**, which **copies are lower than a given number**. Print the **number of books that were deleted** from the database.

### Example

|  |  |
| --- | --- |
| **Input** | **Output** |
| 300 | 4 books were deleted |
| 4200 | 34 books were deleted |

## \* Stored Procedure

Using HeidiSQL (or other similar tool) **create a stored procedure**, which receives an **author’s first and last name** and returns the **total amount of books the author has written**. Then write a **program** that **receives an author’s name** and prints the **total number of books** the author has written by **using the stored procedure** you’ve just created.

### Example

|  |  |
| --- | --- |
| **Input** | **Output** |
| Amanda Rice | Amanda Rice has written 4 books |
| Christina Jordan | Christina Jordan has written 1 book |
| Wanda Morales | Wanda Morales has not written any books yet |