# **Exercises: Spring Boot Essentials**

Problems for exercises and homework for the <u>"Java Web Development Basics" course</u> <u>@ SoftUni</u>. Submit your solutions on the **course page** of the **current instance**.

## **EXODIA**

**EXODIA** (Enterprise Xerox Open Delivery Information Application) is an application which manages a queue of documents to be printed. Normally this process is managed by the printers (after all it's the 21st century). However, some companies do not think like that and they use printers from BC. One such company is the **ORACLE** corporation (Obscurely Ruthless Amateur Crazy Lunatic Employees), which has hired you to implement the **EXODIA** application platform.

## 1. Technical Info

You are to implement the **EXODIA** application using **Spring MVC**. Use your knowledge of the **Spring framework** up until now and search the internet for something if you do not know it. The **EXODIA** application is completely doable with your knowledge until this point.

# 2. Database Requirements

The **Database** of **EXODIA** needs to support **2 entities**:

#### User

- Has an Id a UUID String
- Has a **Username**
- Has a Password
- Has an Email

#### **Document**

- Has an Id a UUID String
- Has a Title a String
- Has a **Content** a String

Implement the entities with the **correct datatypes** and implement **repositories** for them.

The **Document**'s **Content** should support very long strings.













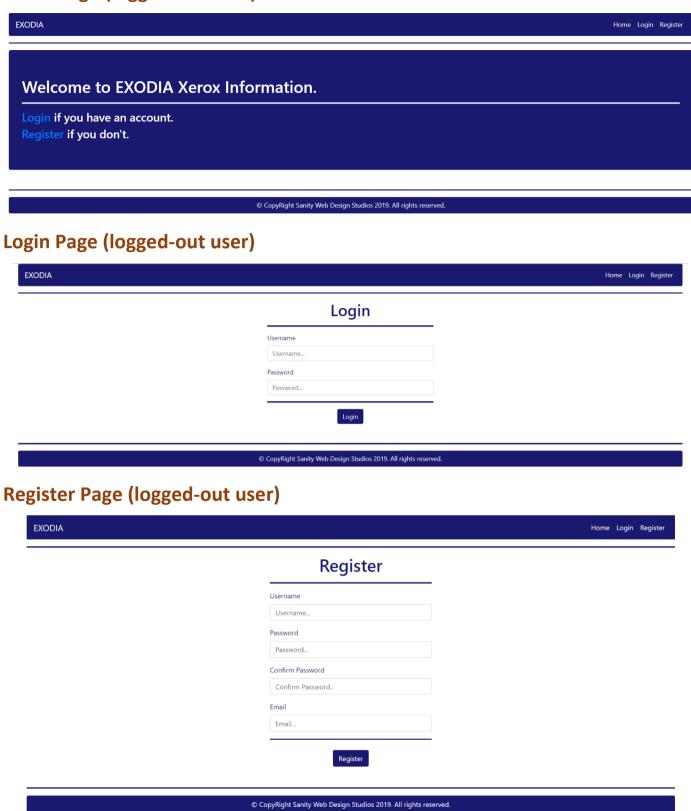






# 3. Page Requirements

# **Index Page (logged-out user)**





















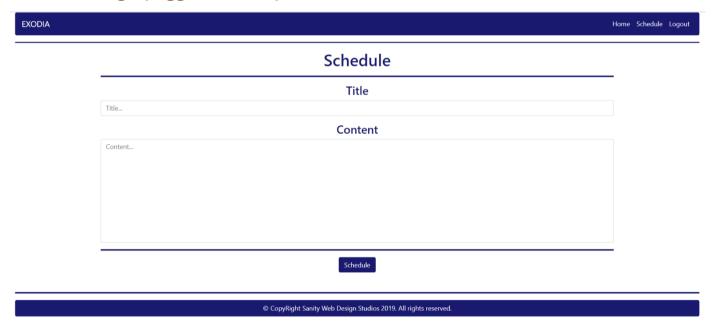
# Home Page (logged-in user)



**NOTE**: As you can see the **elements** are **aligned** to the **left**, **regardless of their count**. The **maximum count** is **5 per row**, however they are **always aligned** to the **left**.

NOTE: The Documents' Titles are visualized and trimmed to the 12-th symbol, then concatenated with a "..." (3 dots).

# Schedule Page (logged-in user)





















## **Details Page (logged-in user)**

EXODIA Home Schedule Logout

Details

Document - 3904c7416-35d2-11e9-b210-d663bd873d93

## An essay for Global Polution.

Air pollution is one of the most dangerous forms of pollution. A biological, chemical, and physical alteration of the air occurs when smoke, dust, and any harmful gases enter into the atmosphere and make it difficult for all living beings to survive as the air becomes contaminated. Burning of fossil fuels, agriculture related activities, mining operations, exhaust from industries and factories, and household cleaning products entail air pollution. People release a huge amount of chemical substances in the air every day. The effects of air pollution are alarming. It causes global warming, acid rains, respiratory and heart problems, and eutrophication. A lot of wildlife species are forced to change their habitat in order to survive. Soil pollution occurs when the presence of pollutants, contaminants, and toxic chemicals in the soil is in high concentration that has negative effect on wildlife, plants, humans, and ground water. Industrial activity, waste disposal, agricultural activities, acid rain, and accidental oil spill are the main causes of soil pollution. This type of contamination influence health of humans, affects the growth of plants, decreases soil fertility, and changes the soil structure. Water pollution is able to lead our world on a path of destruction. Water is one of the greatest natural resources of the whole humanity. Nothing will be able to live without water. However, we do not appreciate this gift of nature and pollute it without thinking. The key causes of the water pollution are: industrial waste, mining activities, sewage and waste water, accidental oil leakage, marine dumping, chemical pesticides and fertilizers, burning of fossil fuels, animal waste, urban development, global warming, radioactive waste, and leakage from sewer lines. There is less water available for drinking, cooking, irrigating crops, and washing.

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## **Print Page (logged-in user)**

EXODIA Home Schedule Logout

#### Document - 904c7416-35d2-11e9-b210-d663bd873d93

# Title An essay for Global Polution. Content Air pollution is one of the most dangerous forms of pollution. A biological, chemical, and physical alteration of the air occurs when smoke, dust, and any harmful gases enter into the atmosphere and make it difficult for all living beings to survive as the air becomes contaminated. Burning of fossil fuels, agriculture related activities, mining operations, exhaust from industries and factories, and household cleaning products entail air pollution. People release a huge amount of chemical substances in the air every day. The effects of air pollution are alarming, It causes global warming, acid rains, respiratory and heart problems, and eutrophication. A lot of wildlife species are forced to change their habitat in order to survive. Soil pollution occurs when the presence of pollutants, contaminants, and toxic chemicals in the soil is in high concentration that has negative effect on wildlife, plants, humans, and ground water. Industrial activity, waste disposal, agricultural activities, acid rain, and accidental oil spill are the main causes of soil pollution. This type of contamination influence health of humans, affects the growth of plants, decreases soil fertility, and changes the soil structure.

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The templates have been given to you in the application skeleton, so make sure you implement the pages correctly.

**NOTE**: The templates should look **EXACTLY** as shown above.

**NOTE**: The templates do **NOT require additional CSS** for you to write. Only **bootstrap** and the **given css** are enough.

# 4. Functionality

The functionality of EXODIA is very simple.

#### **Users**

Guests can Register, Login and view the Index Page.

**Users** can **Schedule Documents** to be printed. **Users** can also see **Scheduled Documents** on the **Home Page**, where they can also **Print** or view **Details** about each one of them.





















#### **Documents**

Documents can be Scheduled for printing by Users. All Scheduled documents are visualized on the Home Page, each one in its own separate rectangular element.

**Documents** may contain large amounts of data so only their **Titles** are visualized on the **Home Page**. Their **Titles** are visualized up to the 12-th symbol, followed by 3 dots ("...").

**Documents** are visualized on the **Home Page** with 2 buttons – [**Print**] and [**Details**].

- The [Print] button leads to the Print Page a simple confirmation-like page.
- The [Details] button leads to the Details Page a simple details visualization page.

**Printing** a **Document** is like **deleting** it – it should be **removed** from the **database** of the **EXODIA** application.

## Redirections

- Upon successful **Registration** of a **User**, you should be redirected to the **Login Page**.
- Upon successful Login of a User, you should be redirected to the Home Page.
- Upon successful Scheduling of a Document, you should be redirected to the Document's Details Page.
- Upon successful **Printing** of a **Document**, you should be redirected to the **Home Page**.
- Upon successful **Logout** of a **User**, you should be redirected to the **Index Page**.

#### General

The application should store its data into a MySQL database, using Hibernate native.

# 5. Security

The **Security** section mainly describes access requirements. Configurations about which users can access specific functionalities and pages.

- **Guest** (not logged in) users can access **Index** page.
- **Guest** (not logged in) users can access **Login** page.
- **Guest** (not logged in) users can access **Register** page.
- Users (logged in) cannot access Guest pages.
- Users (logged in) can access Home page.
- **Users** (logged in) can access **Schedule** page and functionality.
- **Users** (logged in) can access **Print** page and functionality.
- Users (logged in) can access Details page.
- **Users** (logged in) can access **Logout** functionality.

## 6. Bonus

**NOTE**: The **Bonus Task** is no longer optional. Implementing this functionality is **absolutely mandatory** for this exercise and you have to do it.

The ORACLE corporation has given you a bonus task if you think that the whole EXODIA application is easy to implement.

Extend the Printing functionality by sending a formatted PDF of the Document to the User. All other functionality stays the same.

The formatting is simple:



















- If you see a line starting with (from 1 to 6) "#", you should treat that line as a <h1> <h6> element, and it should have a <hr>> (horizontal line after it).
- If you see a line starting with a "\*" (star symbol), you should treat that line as a element inside a
- If you see text wrapped in "\*\*" (double stars) you should make that text **bold**.

The **Title** of the **Document** should be rendered as a centered **<h1>** element with a **<hr>** element below it.

The **Content** of the **Document** should be **formatted** (as specified above) and rendered below the **Title**.















