

Java Web Development Basics

Regular Exam

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. 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.

2. Page Requirements

Index Page (logged-out user)

EXODIA

Home Login Register

Welcome to EXODIA Xerox Information.

[Login](#) if you have an account.
[Register](#) if you don't.

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Login Page (logged-out user)

EXODIA

Home Login Register

Login

Username

Username...

Password

Password...

Login

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Register Page (logged-out user)

EXODIA

Home Login Register

Register

Username

Username...

Password

Password...

Confirm Password

Confirm Password...

Email

Email...

Register

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Home Page (logged-in user)

EXODIA

Home Schedule Logout

An essay for...

Print Details

Job Offering...

Print Details

Tasks Report...

Print Details

Tech Support...

Print Details

Execution fa...

Print Details

Logs 27/05/2...

Print Details

Interview of...

Print Details

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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)

EXODIA

Home Schedule Logout

Schedule

Title

Title...

Content

Content...

Schedule

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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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EXODIA

Home Schedule Logout

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

Title

An essay for Global Pollution.

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.

Print

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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.

3. 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.

4. 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.

5. Code Quality

Make sure you provide the best architecture possible. Structure your code into different modules, divide and conquer, follow the principles of high-quality code. You will be scored for the **Code Quality** and **Architecture** of your project.

6. Bonus

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 **** element.
- 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**.

7. Scoring

Database – 10 points.

Pages – 15 points.

Functionality – 30 points.

Security – 15 points.

Code Quality – 30 points.

Bonus – 10 points.