

Exercise for Java Developer Candidates

1. Background

This is a small exercise which is asked to be performed by each Java developer candidate. The purpose of the exercise is to allow candidates to show their skills and capabilities in designing and developing enterprise applications. The focus is on the Java programming language and the use of appropriate software.

2. Summary

The result of this exercise should be a small web application which:

- Asks input from the user
- Validates the user input
- Stores the input in a database

3. Application Description and Requirements

3.1. Frameworks and Technologies

The implementation must be based on Java Enterprise Edition technologies. Please feel free to use the following and other frameworks and technologies as you see fit:

- Java Persistence API and Hibernate
- Spring Framework
- Spring Boot

Use other frameworks and technologies as you see fit.

For the development, you can use any tools, but the project must be built using Apache Maven (<http://maven.apache.org>).

The application should be deployable on Apache Tomcat (<http://tomcat.apache.org>) or a standalone Java program. The application must be able to use PostgreSQL database server (<http://www.postgresql.org>).

3.2. Application Workflow

The application workflow should be implemented as follows:

- i. User enters the web application form
- ii. User provides input and submits the form
- iii. The input is validated
 - a. If the input is valid, proceed to the next step
 - b. If the input is invalid, return to the previous step and show fields containing errors.
- iv. The valid input is stored in the database and shown to the user as a confirmation of successful processing.

3.3. Input Data and Validation

The form should contain the following fields:

Field name	Type	Validation
First name	Text	Empty value not accepted. Maximum length is 50 characters.
Last name	Text	Empty value not accepted. Maximum length is 50 characters.
Date of birth	Date	Empty value not accepted. Age must be between 15 and 100 years old.
Gender	Choice of Male or Female	Either of the options must be selected.
Why are you applying to this job?	Multiline text	Empty value not accepted. Maximum length is 1000 characters.

4. Expected Deliverables

Please deliver the following artifacts to your contact person:

- Maven project directory (zipped)
 - pom.xml
 - Source code
 - Unit tests
- Deployment guide
 - How to install the web application on Tomcat or how to run the standalone program
 - SQL DDL scripts for preparing the database
- Technical documentation
 - Justify your design decisions, eg. why did you choose a particular technology