

Coding Test (Developer)

Registration with Exclusion Services

Build a web application that offers a remote service interface (endpoint) to register a user. A user can only register if not part of an exclusion list. The goal is to demonstrate that the web application runs, the tests are passing, and real HTTP requests can be made. In summary:

1. Set up a way to run a web application server
2. Implement a REST endpoint for the register operation based on the given interface specifications
3. Implement a *simple* way for the web application to remember already registered users (no real persistence needed, in-memory is sufficient)
4. Implement a way to use the given 'ExclusionService' interface to simulate the business logic of validating the user against an exclusion list.

It is not expected that anything more is done than to implement the **minimal requirements in a clean and reasonable** way. Any detail that is missing in the requirements can be implemented at discretion. If the candidate feels the wish to use more technology than needed, they are happily invited to do so as long as they can successfully run the system on MacOS.

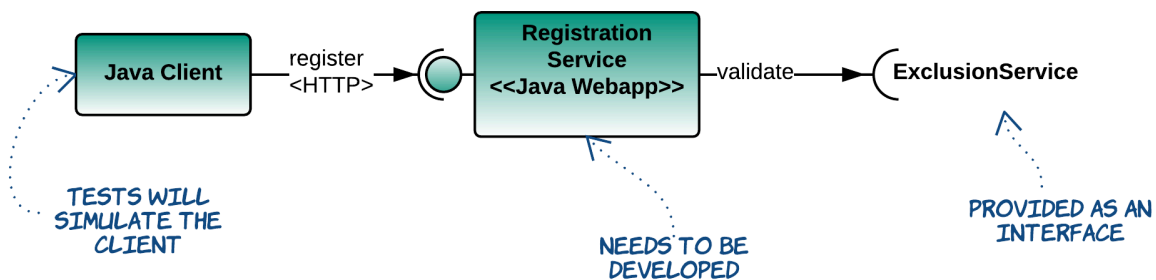
The project will have to be demonstrated in the interview and will be open for discussion. This will also be a good chance to talk about anything that was unclear, couldn't be implemented or leaves room for improvement.

Technology

The choice of technologies and frameworks is up to the candidate as long as they are Java-based and freely available:

- **Programming Language**
Java (version 8 and above)
- **Webserver**
Any e.g.: Spring Boot, Jetty plugin in Maven, Dropwizard, Tomcat..
- **Remote Service Protocol**
REST
- **Testing/ Stubbing**
Any (e.g. Junit, Mockito, self-made stubs, rest-assured)
- **Build**
Maven, Gradle..

Architecture



Registration Service (Web Application)

This will be the web application the candidate needs to set up and implement. It offers a REST endpoint to register a user. The definition of the endpoint is:

- parameters:
 - “username” (alphanumeric, no spaces)
 - “password” (at least four characters, at least one lower case character, at least one upper case character, at least one number)
 - “dateOfBirth” (ISO 8601)
 - “ssn” (Social Security Number - does *not* have to be validated, for better understanding see: http://en.wikipedia.org/wiki/Social_Security_number)
- checks:
 - parameters are valid according to specification
 - user hasn't been already registered
 - user is not in the exclusion list
- returns an appropriate response that makes clear if a member could be registered or any error occurred

Exclusion Service

The exclusion service is given as an interface and needs to be implemented in order to exclude the following users:

username	password	dateOfBirth	ssn
adaLovelace	Analytical3ngineRulz	10 th December 1815	85385075
alanTuring	eniGmA123	23 rd of June 1912	123456789
konradZuse	zeD1	22 nd of June 1910	987654321

```
/**
 * Service to offer validation of a user against an exclusion list.
 * @author gamesys
 */
public interface ExclusionService {
    /**
     * Validates a user against an exclusion list using their date of
     * birth and social security number as identifier.
     *
     * @param dateOfBirth the user's date of birth in ISO 8601 format
     * @param ssn the user's social security number (United States)
     * @return true if the user is not excluded
     */
    boolean validate(String dateOfBirth, String ssn);
}
```