



## S4DX CODING CHALLENGE - BACKEND DEVELOPER

Thanks for your application for the position as S4DX Backend developer. We have prepared this exercise to discuss during the in-depth technical interview. We do not expect the perfect and complete solution, but we would like to see how you would approach such a task.

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### 1.1 Context

The purpose of this test is to give us a small sample of your code and to see how you approach and solve a simple problem. Ideally, you should not spend more than an hour or two on this. This is a simple class to extract matching strings from an array regardless of the character order.

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### 1.2 Task

You will write a Java class that accepts an array of strings in the constructor. The class will expose a `find` function that accepts a string. The function will return all strings from the array that contains the exact same characters as the string passed into it. The order of the characters in the strings is not relevant.

For example, the constructor should take an array as follows:

```
String[] thisIsAStringArray = new String[5];
thisIsAStringArray[0] = "asd";
thisIsAStringArray[1] = "asdd";
thisIsAStringArray[2] = "fre";
thisIsAStringArray[3] = "glk";
thisIsAStringArray[4] = "lkm";
Finder finder = new Finder(thisIsAStringArray);
```

Calling `finder.find('sad')` should return an array containing the string `asd`.

In the case where more than one member of the initialization array matches the key, the return array will have more than one member.

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### 1.3 Requirements

- State your assumptions. Anywhere you feel that the requirements are unclear please assume and document that assumption
- Please comment on your code where needed. Find the right balance between comments and self-documenting code. Code quality is of high importance.
- You are not allowed to use any external libraries aside from junit/TestNg. Gradle or maven are permitted for integrating the latter.
- The performance of your code matters, so please try to keep your code as optimized as possible.
- Write tests to showcase the quality of your solution, its performance (e.g. 50k+ runs, large initialization arrays etc.) and its edge cases.
- Java 11+



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## 1.4 Deliverables

Please send us archive or link to GitHub project which contains:

- Java source-code and tests
- Instructions on how to compile your project or a script/build step that does it automatically
- Any other material that you feel is relevant for your solution

We look forward to your solution!