

Empirical Study - A1D

These are the tasks for this week's lab session. Please fill out all sections one after another within the next 90 minutes. You can leave after you're done.

Most of the other students in the room have different tasks and can use different materials than you. Next week, you'll do similar tasks again with the materials the others are using now.

Important:

1. the work is **strictly individual**. If you help each other or copy the results, we cannot use them. If you can't find a result, just select the corresponding answer or write "I don't know".
2. this first point holds true until the end of the next lab session. So, **do not talk to your peers about the tasks until January 19th**.

 [Konto wechseln](#)



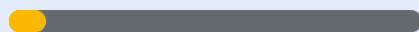
 Nicht freigegeben

* **Gibt eine erforderliche Frage an**

Please enter your name (so we can match this form against your informed consent) *

Meine Antwort

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Scenario

You work as a software security expert and you're tasked by your company to assess an open-source application found on GitHub. The developers that want to use this application need your expertise to answer some general questions about the system structure and a few details about its security mechanisms. Please answer the following questions they sent you. Also, if possible, provide the place in the code that made you give the answer you did, so that the engineers can understand your decision process.

The resources you can use to work on the tasks this week are (it might be easier for you to download the PNG and PDFs to your computer and examine there instead of on GitHub):

- Source code of application 1 ([link to GitHub](#))
- Documentation of application 1 ([link to GitHub](#))
- Dataflow Diagram of application 1 ([link to GitHub](#))
- Traceability information for the DFD of application 1 ([link to GitHub](#))
- Supplementary material ([link to GitHub](#))

When filling out the fields of where you found the evidence for your answer, you should paste a link to GitHub. When you have the correct file opened, simply copy the current URL from your browser and paste it in the answer field. If you can, further give the line number that is important.

For the questions of which resources you used, you can tick multiple boxes.

If you have any questions or issues, please ask / tell us now.

To start working on the tasks, **please fill in the current time** of your computer (or any other clock. Just use the same at the end of the tasks):

Meine Antwort

Task 1

What's the port number of the microservice *api_gateway*? You can usually find this information in configuration files or build files. *

Meine Antwort

Evidence in the code (link to file on GitHub and line number) *

Meine Antwort

Which resources did you use to answer this question? *

- ☐ Dataflow Diagram
- ☐ Traceability Information
- ☐ Source Code
- ☐ Documentation
- ☐ None or could not answer

Task 2

What library is used to implement the API Gateway (service *api_gateway*)? If you don't recognize the name of the library that is used, you can try to find an import statement of a command that you think is responsible for starting the API Gateway. This is a good answer as well. *

Meine Antwort

Evidence in the code (link to file on GitHub and line number) *

Meine Antwort

Which resources did you use to answer this question? *

- ☐ Dataflow Diagram
- ☐ Traceability Information
- ☐ Source Code
- ☐ Documentation
- ☐ None or could not answer

Task 3

There are 3 outgoing connections from the service *task_webservice*. To which services are they connected? Please put in numbers and refer to them in the next task. *

Meine Antwort

Evidence in the code (link to file on GitHub and line number) *

Meine Antwort

Which resources did you use to answer this question? *

- ☐ Dataflow Diagram
- ☐ Traceability Information
- ☐ Source Code
- ☐ Documentation
- ☐ None or could not answer

Task 4

Are these outgoing connections encrypted, i.e. sent with HTTPS? (use numbers that you gave in previous task) *

	Yes	No	I don't know
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Evidence in the code (link to file on GitHub and line number) *

Meine Antwort

Which resources did you use to answer this question? *

- ☐ Dataflow Diagram
- ☐ Traceability Information
- ☐ Source Code
- ☐ Documentation
- ☐ None or could not answer

Task 5

Do all business logic services check whether incoming requests are authorized / * authenticated?

	Yes	No	I don't know
task_webservice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
user_webservice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
comments_webservice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Evidence in the code (link to file on GitHub and line number) *

Meine Antwort

Which resources did you use to answer this question? *

- ☐ Dataflow Diagram
- ☐ Traceability Information
- ☐ Source Code
- ☐ Documentation
- ☐ None or could not answer

Task 6

Which service handles the authorization? *

Meine Antwort

Evidence in the code (link to file on GitHub and line number) *

Meine Antwort

Which resources did you use to answer this question? *

- ☐ Dataflow Diagram
- ☐ Traceability Information
- ☐ Source Code
- ☐ Documentation
- ☐ None or could not answer

End of the technical tasks

Please fill in the current time (use the same clock as you did in the beginning)

Meine Antwort _____

That's it for the technical tasks.

In the following section, we'll ask a few more questions about your experience.

Questionnaire

After you're done with the tasks, please fill out the following questions to conclude this lab session.

With

the questions, we try to get some insight into your experience as a developer and what you think of the resources you were provided.

Please answer the questions truthfully.

We can not link any answer to you or anyone else after they've been anonymized (which is done by me, [REDACTED], directly after receiving the results).

As final question about the tasks, please tell us anything about whether you found ^{*} the Dataflow Diagrams useful, positive or negative things you experienced while using them, or any other thoughts you might have on this:

Meine Antwort

How would you rate your programming skill level? ^{*}

- ☐ No programming skills
- ☐ Beginner level
- ☐ Intermediate level
- ☐ Advanced level
- ☐ Proficient

How much working experience do you have as a developer approximately? *

Answer in years

- ☐ No working experience as developer
- ☐ 1 year
- ☐ 2 years
- ☐ 3 years
- ☐ 4 or more years

Do you code in your personal time outside the university (e.g., open source projects, GitHub, personal projects...)? *

- ☐ Yes
- ☐ No

How would you rate your experience with reading through Java code to understand the implemented functionality? *

- ☐ I've never done it before
- ☐ I've done it once or twice before
- ☐ I've done it occasionally before
- ☐ I've done it often before
- ☐ I'm very experienced in it

Finished!

That's it for today, thank you for your participation! We'll see each other next week.