

**This exercise sheet will be discussed in tutorials
from June 20 to June 24, 2022.**

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AI: Internet Computing Summer 2022

Exercise Sheet 3

Exercise 1: Middleware in Practice | Booking a flight ticket

Use case: A customer books a flight ticket on the airline's website and pays by credit card. Afterwards, an Email is sent which includes the boarding.

Assuming that this process is handled primarily by existing legacy systems and middleware is used. What could the architecture look like? Sketch your thoughts and describe in bullet points how the process of this presumably simple transaction might be handled from a system perspective.

What would change if the customer used another way to book the flight tickets (e.g., by phone or using a website for price comparison)?

Exercise 2: Analyzing http/https requests

1. Watch the video from Google Chrome Developers to get familiar with the Chrome Developer Tools: <https://www.youtube.com/watch?v=e1gAyQuIFQo>
 - a. Try to perform some of the steps (till 2:33) explained in the video using the website: <https://cii.aifb.kit.edu/>
 - b. What other information about <https://cii.aifb.kit.edu/> could you find and analyze by using Chrome Developer Tools?

Exercise 3: Middleware RPC | Spotify API

Spotify leads the market in the field of music streaming and provides a broad API support for developers. These allow individually allowed applications to connect to Spotify in order to use the services provided via RPC. To activate the access to the API, one has to register at Spotify to create an account and, thereafter, activate the developer options at <https://developer.spotify.com/>

- a. On which principles does Spotify build on for RPC?
- b. In which format does Spotify provide the response?
- c. How can this answer be parsed to further use the information provided?

Exercise 4: XML and DOM

The following exercise (part a) was part of the Winter 2020/2021 exam [translated version]:

- a. The 2018 film Red Sparrow belongs to the thriller category. The very successful film entertains the audience (minimum age 16) for two hours and 21 minutes. The film Passengers, also starring actress Jennifer Lawrence, lasts for one hour and 56 minutes. The 2016 science fiction film was directed by Morten Tyldum.

Summarize the relevant movie data from the text above into an XML document with a meaningful schema.

```
<?xml version="1.0" encoding="UTF-8"?>
```

- b. What would the corresponding Document Object Model (DOM) look like?