



BACHELOR, MASTER

Practicum: Development and Testing of Microservice Systems

Preliminary Meeting, 01.07.2024

Who are we?

Informatics i4 – Chair of
Software and Systems
Engineering

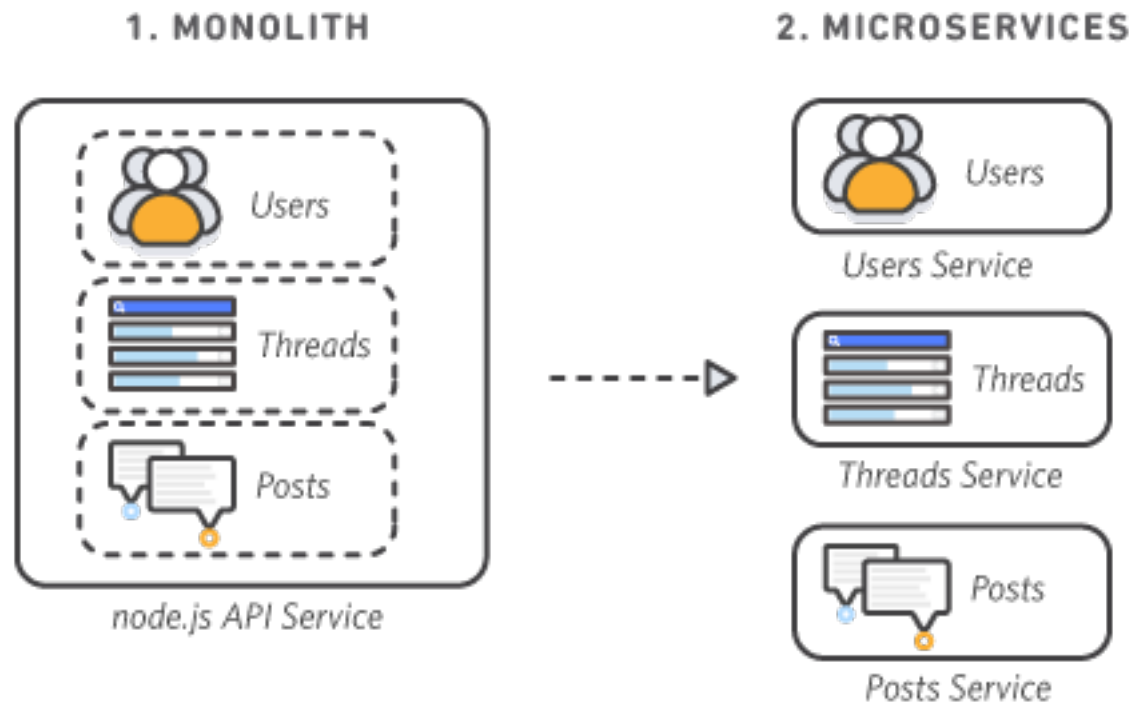
Lena Gregor



Quirin Sailer



What are Microservice Systems?

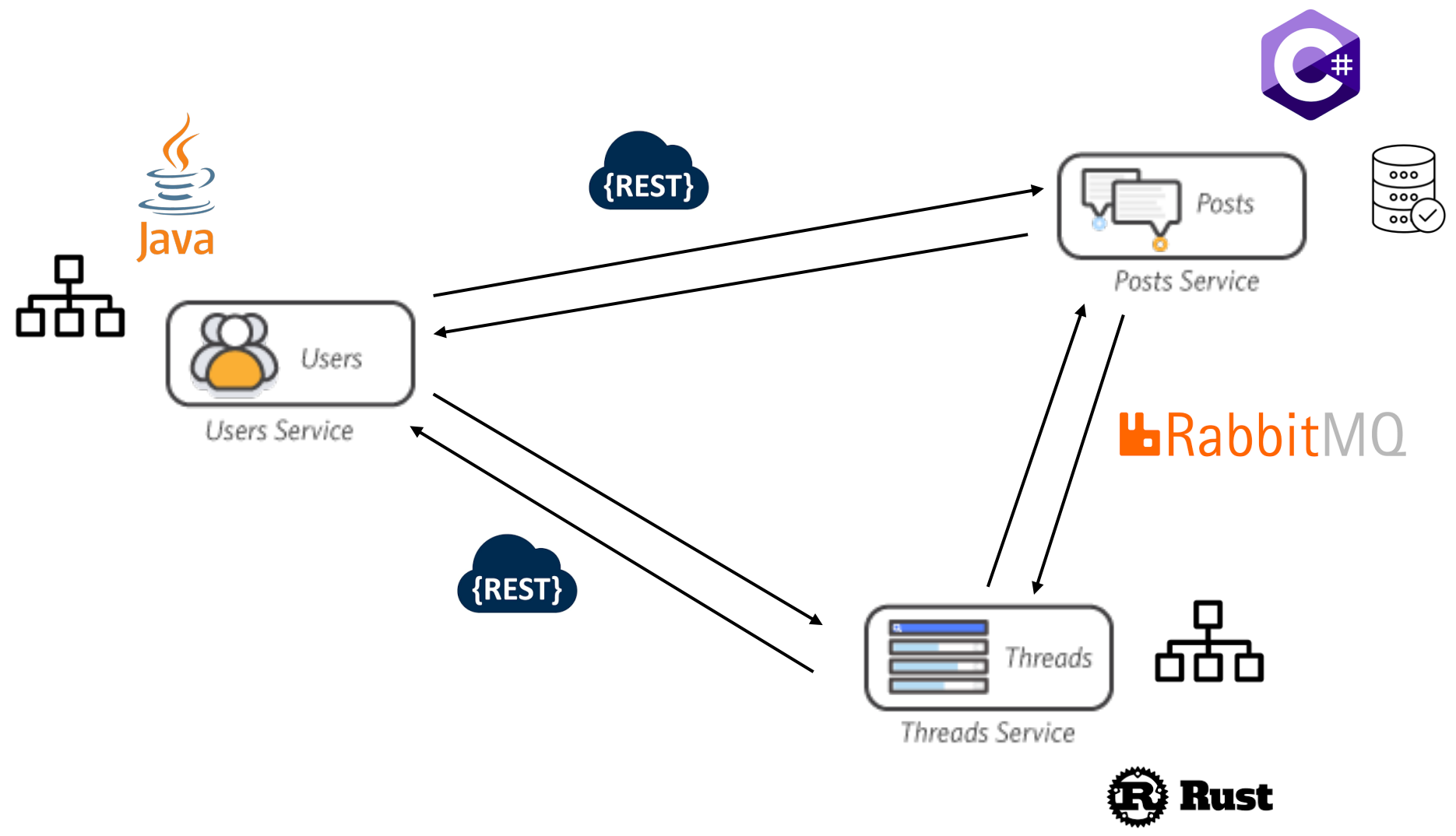


NETFLIX

amazon

Uber

What are Microservice Systems?



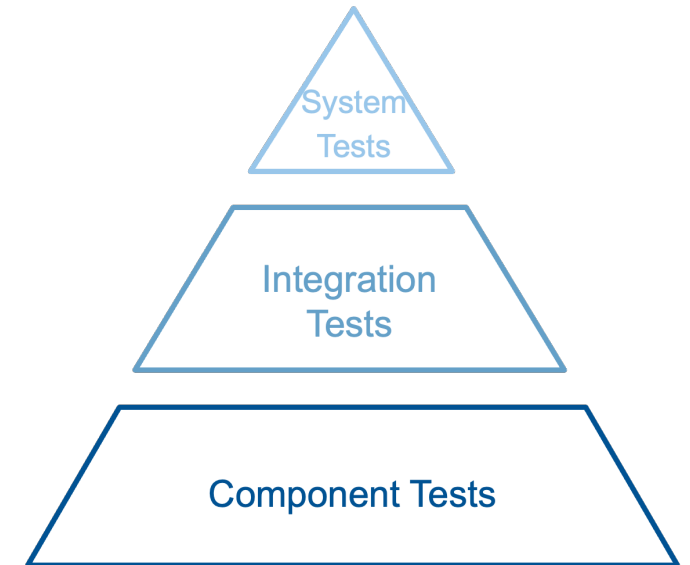
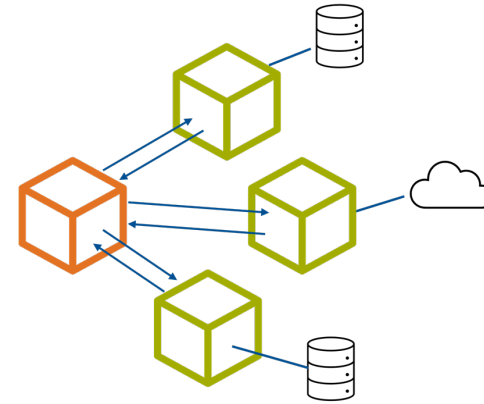
What to expect from this course

Learn how to implement microservices.

Learn how to convert an existing, real world system into a microservice system.

Implement, **test**, and deploy microservices with a focus on high-quality code and structured development processes.

What you will learn



Current System

MyCleanHotel – A hotel task management system

- Features:
 - User management
 - Lost & Found
 - General Task management
 - Room Cleaning Task management
 - Defects management
 - Time Tracking
 - Analytics
 - 4-eye task control
 - Duty roster
 - and many more

TEST2 - Reinigung

Alle zu erledigen

Rüstaufgabe			
Ende 3			
	Zimmer .002 Bleibe	Rezeption: asdasdasd	4 2 1
	Zimmer .003 Abreise		3 3
	Zimmer .004 Anreise	Rezeption: asd	1 1
	Zimmer .103 Ab/Anreise		2 2
	Zimmer .105 Sauber		1 1
	Zimmer .106 Sauber		1 1
	Zimmer .110 Sauber		1 1
	Zimmer .210 Sauber		1 1
	Zimmer 123 Sauber		1 1

TEST2 - Kontrolle

Alle zu erledigen

	Sauber Zimmer .001 -	Rezeption: asd asd asd dsa dsa ed as	4 4
	Bleibe Zimmer .002 - TEST2	Rezeption: asdasdasd	4 2 1
	Abreise Zimmer .003 - TEST2		3 3
	Anreise Zimmer .004 - TEST2	Rezeption: asd	1 1
	Ab/Anreise Zimmer .103 - TEST2		2 2
	Sauber Zimmer .104 -		2 2
	Sauber Zimmer .105 - TEST2		1 1
			1 1
			1 1
			1 1

Admin

- Einstellungen
- Aufgaben
- Dienstplan
- Zimmerstatus
- Aufgabenverteilung
- Reinigungstatus
- Mängelstatus

Zimmerstatus

Gestern Heute **Alle EZ**

S	B	AB	AN	AA	Gestern		Heute		Bemerkung
.001					4BZ	EZ	DZ	4BZ	Very important
.002					4BZ+2B	EZ	DZ	DZ+2B	Even more important
.003					3BZ	EZ	DZ	3BZ	
.004					EZ	EZ	DZ	EZ	Guest is really chill
.103					DZ	EZ	DZ	DZ	
.104					DZ	EZ	DZ	DZ	
.105					EZ	EZ	DZ	EZ	
.106					EZ	EZ	DZ	EZ	
.107					EZ	EZ	DZ	EZ	
.108					EZ	EZ	DZ	EZ	
.109					EZ	EZ	DZ	EZ	
.110					EZ	EZ	DZ	EZ	
.111					EZ	EZ	DZ	EZ	
.112					EZ	EZ	DZ	EZ	

Logout

Speichern

Current System

Why do we need a new system?

- It's a monolith
- Data schema is horrible
- Not translated
- Poorly developed (by myself, 8 years ago)
- It's closed source

Admin Logout

⚙️ Einstellungen
📁 Aufgaben

- Dienstplan
- Zimmerstatus
- Aufgabenverteilung
- Reinigungsstatus
- Mängelstatus

Zimmerstatus	Gestern					Heute		Bemerkung
	S	B	AB	AN	AA	Alles	EZ	
.001	⊕	○	○	○	○	4BZ	↓ EZ DZ	
.002	○	⊕	○	○	○	4BZ-ZB	↓ EZ DZ	Very important
.003	○	○	⊕	○	○	3BZ	↓ EZ DZ	Even more important
.004	○	○	○	⊕	○	EZ	↓ EZ DZ	Guest is really chill
.103	○	○	○	○	⊕	DZ	↓ EZ DZ	
.104	⊕	○	○	○	○	DZ	↓ EZ DZ	
.105	⊕	○	○	○	○	EZ	↓ EZ DZ	
.106	⊕	○	○	○	○	EZ	↓ EZ DZ	
.107	⊕	○	○	○	○	EZ	↓ EZ DZ	
.108	⊕	○	○	○	○	EZ	↓ EZ DZ	
.109	⊕	○	○	○	○	EZ	↓ EZ DZ	
.110	⊕	○	○	○	○	EZ	↓ EZ DZ	
.111	⊕	○	○	○	○	EZ	↓ EZ DZ	
.112	⊕	○	○	○	○	EZ	↓ EZ DZ	

Speichern

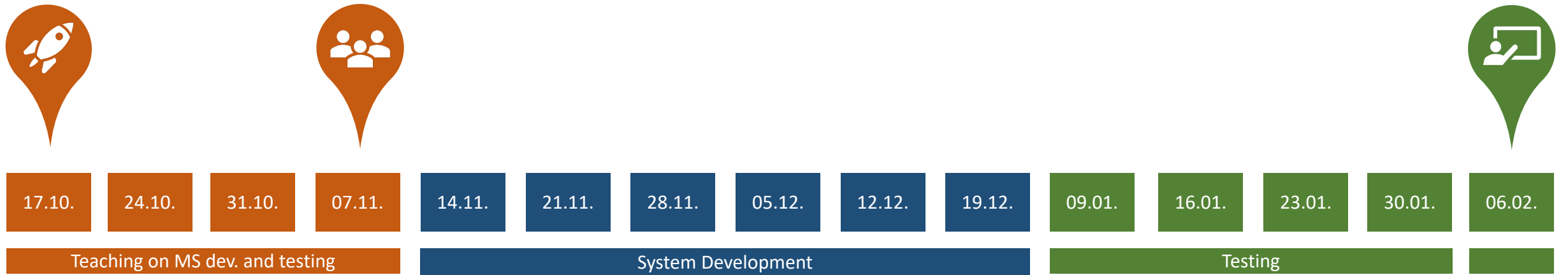
TEST2 - Reinigung Alle zu erledigen

Rüstaufgabe	Rezeption	Personen
Zimmer .002 Bleibe	Rezeption: asdasdasd	4/2 +1
Zimmer .003 Abreise		3/3
Zimmer .004 Anreise	Rezeption: asd	1/1
Zimmer .103 Ab/Anreise		2/2
Zimmer .105 Sauber		1/1
Zimmer .106 Sauber		1/1
Zimmer .110 Sauber		1/1
Zimmer .210 Sauber		1/1
Zimmer 123 Sauber		1/1

TEST2 - Kontrolle Alle zu erledigen

Status	Zimmer	Rezeption	Personen
✓ Sauber	Zimmer .001 -	Rezeption: asd asd asd dsa ed as	4/4
○ Bleibe	Zimmer .002 - TEST2	Rezeption: asdasdasd	4/2 +1
○ Abreise	Zimmer .003 - TEST2		3/3
○ Anreise	Zimmer .004 - TEST2	Rezeption: asd	1/1
○ Ab/Anreise	Zimmer .103 - TEST2		2/2
✓ Sauber	Zimmer .104 -		2/2
✓ Sauber	Zimmer .105 - TEST2		1/1
✓ Sauber	Zimmer .106 - TEST2		1/1
✓ Sauber	Zimmer .107 -		1/1
✓ Sauber	Zimmer .108 -		1/1

Organization (preliminary)



Organization

Max. Participants:

16 Students

Working in Teams:

4 Students / Team

Weekly Meetings (**Mandatory**):

Thursdays, 14:00-16:00, in-person (in Garching)

Prerequisites

You have

Experience with **version control (Git)**

Good programming skills in **Java, C# or Typescript**

Some experience in **testing** applications (recommended)

Some experience with **Docker and containerization** (recommended)

Motivation to delve into cutting edge tools and frameworks

Application: until 17th of July to be prioritized
With **CV, grade report** and short **motivational statement**
Through the form on our website (link see below)

Don't forget the **registration** via <https://matching.in.tum.de/>

For everything else refer to the practicum homepage:
<https://go.tum.de/431242>



Motivational Statement

Please address

Why are you interested in this course?

What kind of skills do you have that will be beneficial in this course (technical knowledge, soft skills, experience, etc.)?

Which skills are you most excited about to acquire in this course?