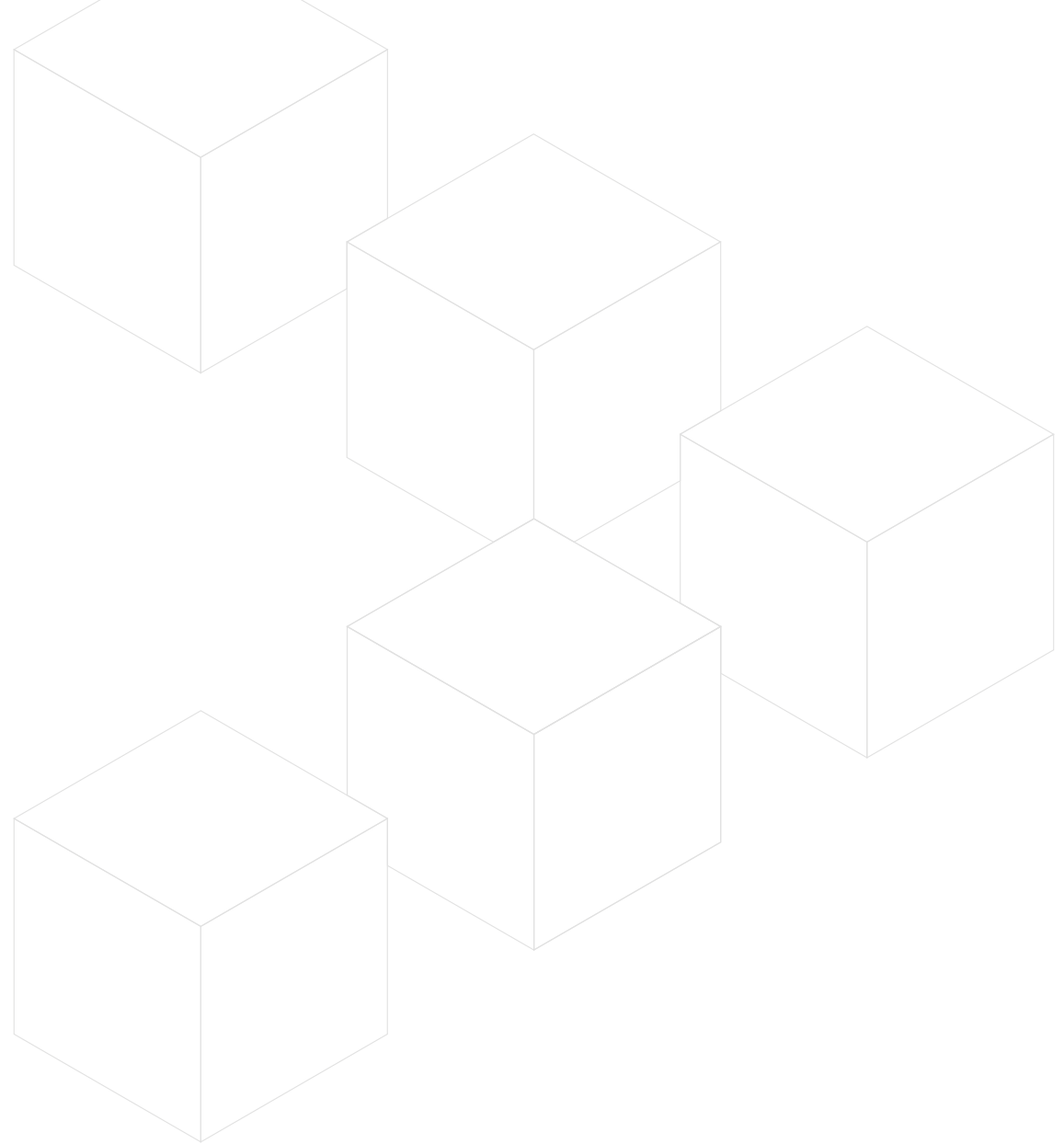


Webengineering

2017-05-22

Dr. Michael Lesniak

mlesniak@micromata.de



Roadmap 2017-08-22

- Organizational issues
- What is Maven?
- Solution to exercises
- Wrap-Up: backend
- What we have not implemented
- Outlook
 - Next week
 - The following four? weeks
 - Rest of the lecture
- No exercise this week (see above)

Organizational issues

- Audio
 - problems in the last lectures
 - lessons learned
 - ...although I hope this does not happen again
- No wishes for project yet – there is still time ;-)




What is Maven?

- Libraries are one of the success factors of Java
- Remember this?

```
javac -d classes *.java  
java -cp lib/*.jar:classes/ MyApp
```

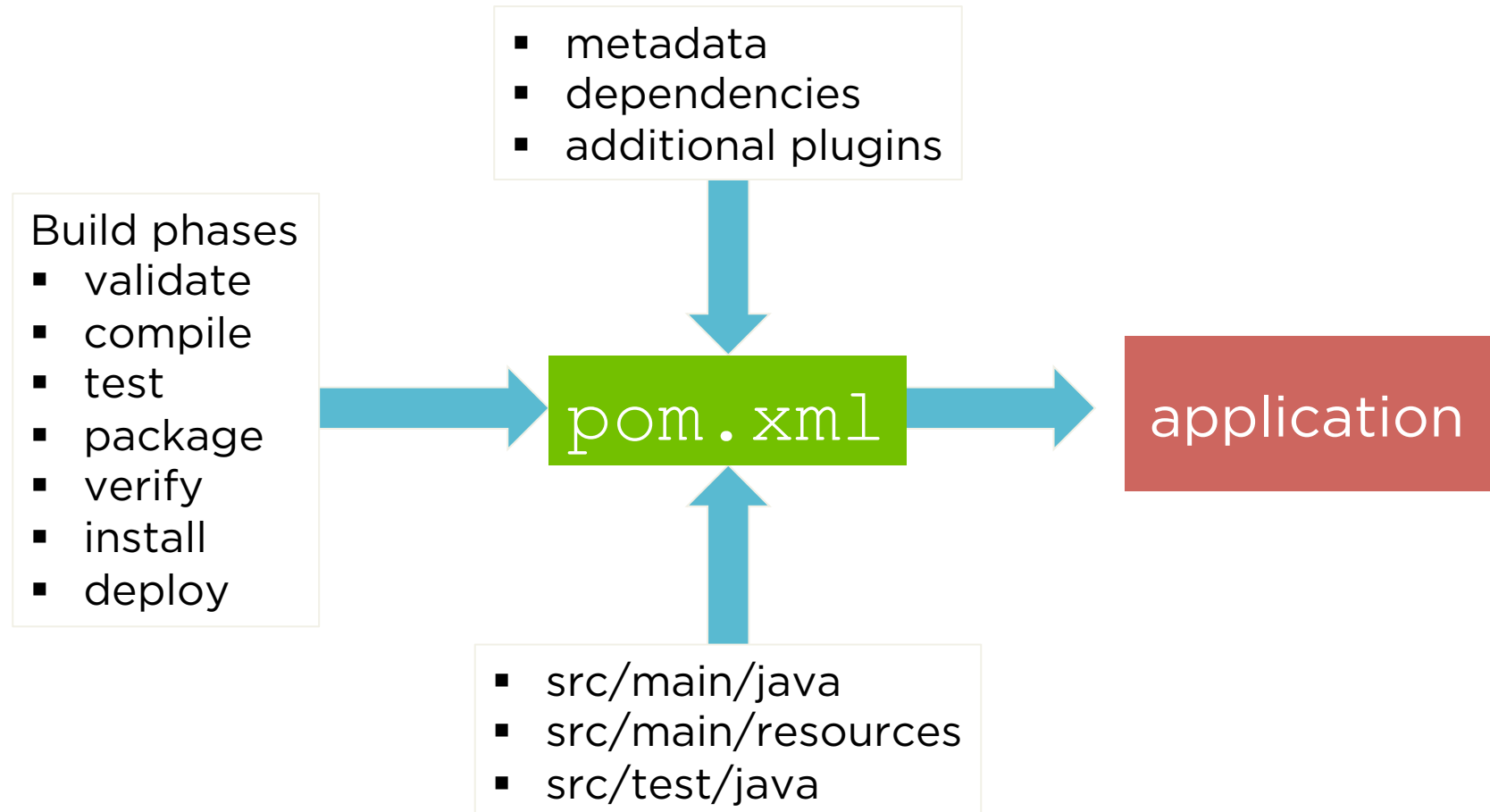
- Today, building software becomes much more complicated

- library packaging
- dependency management
- static source code validation
- starting unit- and integration tests
- executing frontend build tools
- generating container images
- ...



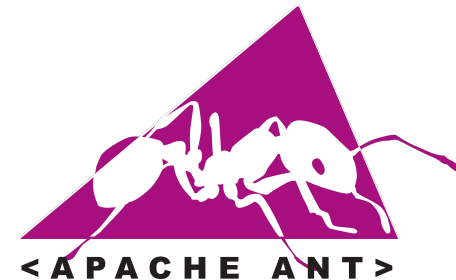
Maven allows to
do all of this

Maven structure



Maven vs ...

- There are multiple other build tools in the Java world
 - maven
 - ant
 - gradle
 - sbt
-
- each have their own strengths and weaknesses
 - try to use each one in a toy project



Solution to exercises

Answer the following questions...

- Difficulty & Speed – ok?
- Style of lecture?
- Ratio of theory vs Reality?



Use postgres on your Heroku instance

- Configure your instance to use Postgres
- Add application profile
- Deploy it
- Test it (hint: restart heroku instance)



How to handle POST-Create URL host handling?

- Create a post on your heroku instance
- What is the returned URL?
- Optional: Try to find out / think about why
- Think about different approaches to fix this
 - Advantages?
 - Disadvantages?

Password-Hashing

- SALT-ing of passwords
 - What is it?
 - Why should you use it?
- Add a simple salting mechanism to password checking



Add CREATED_AT in data-h2.sql

- Add `createdAt`-information in `data-h2.sql`
- Hints
 - Look at schema in h2 table
 - H2 has conversion functions



Secret in AuthService

- The secret in AuthService is fixed
- What can you do to change it?
- Hint: @Value annotation



Add Logging

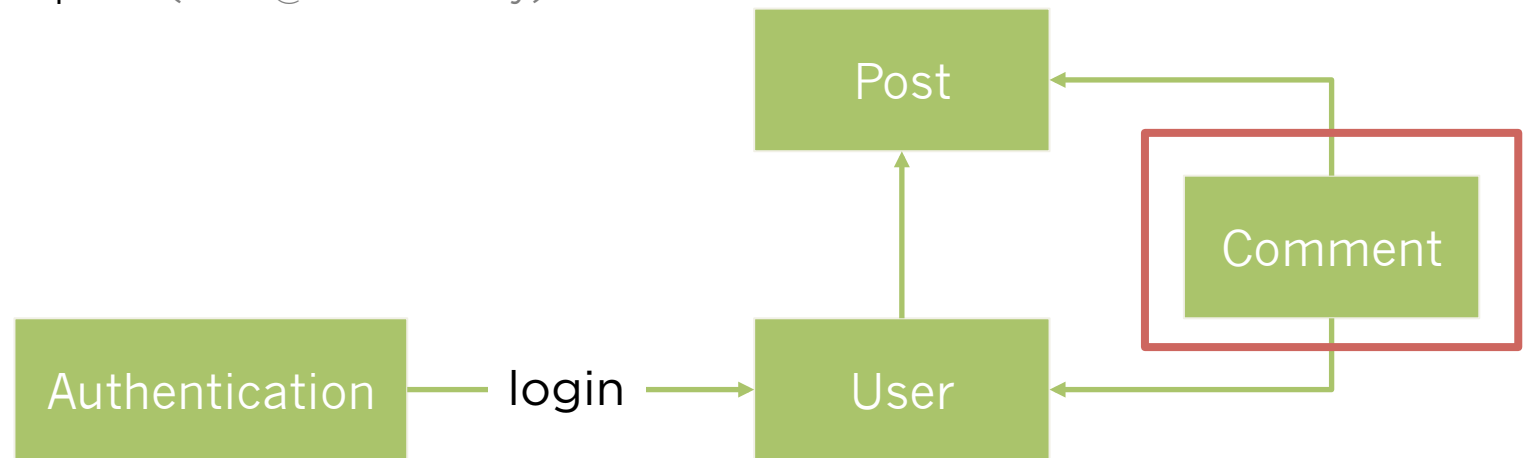
- Look at my examples in Code
- Why is logging relevant?
- Distribute functional logging in services



;-)

Add Comments to post

- Add all necessary functionality to add comments to an existing (or new) post
 - Controller
 - Service
 - Repository
 - Add comments to posts (Hint @OneToMany)

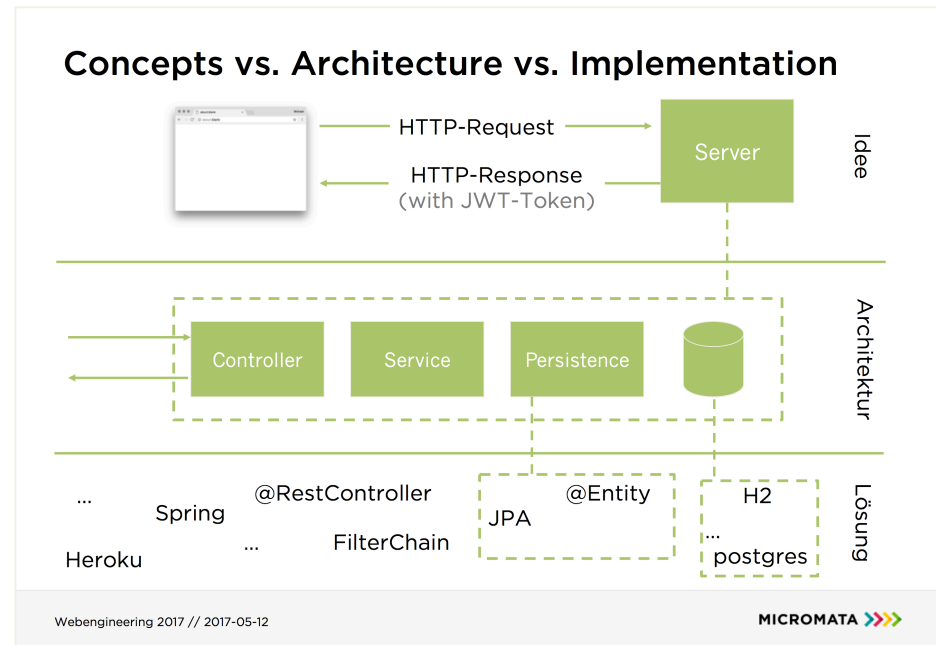


Note that this is a lot of work, but 90% has already been shown in the lecture

Wrap-up Part I

Wrap-up Backend

- concept vs. implementation
- consistency & pragmatism
- walkthrough with debugger
- decisions involve trade-offs
 - package structure
 - location of validation
 - amount of tests (follows)
 - ...
- Remember to think about alternatives and your motivation for a particular solution
- (this is project relevant)



What we have not implemented

Current backend implementation is a compromise between

- understandability
- real-world application
- functionality



What we have not implemented

There are a LOT of things which we did not consider in full detail...

...but are relevant in a real-world application

- Error handling
 - Exception strategy
 - Corner cases
 - Input validation
- Operational issues
 - Updates w/o downtime
 - Deployment strategies (in particular migration, e.g. of database schemas)
 - Logging strategies
- Testing
 - Functional
 - Performance
 - Integration
- Security
 - role management
 - OWASP Top ten

Outlook

Next week

- No lecture on 2017-06-05
- But I want to introduce frontend technologies without a didactic gap
- Solution: next week technical lecture
- Wishes accepted until

2017-05-24 18:00

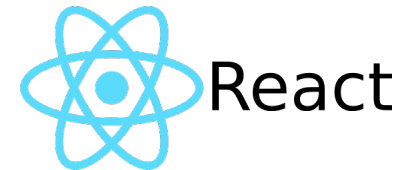


The following four weeks

- Focus on implementing the frontend
- Then connecting to the backend

- Technologies

- React
- Redux
- HTML(5)
- CSS
- NPM, WebPack, ...



The future...

- Combination of
 - short lectures
 - support in your project
in addition to exercises
- Still open for topics

