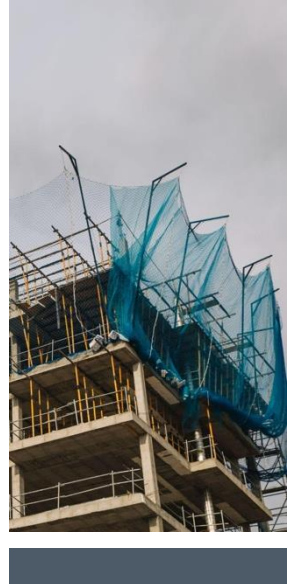
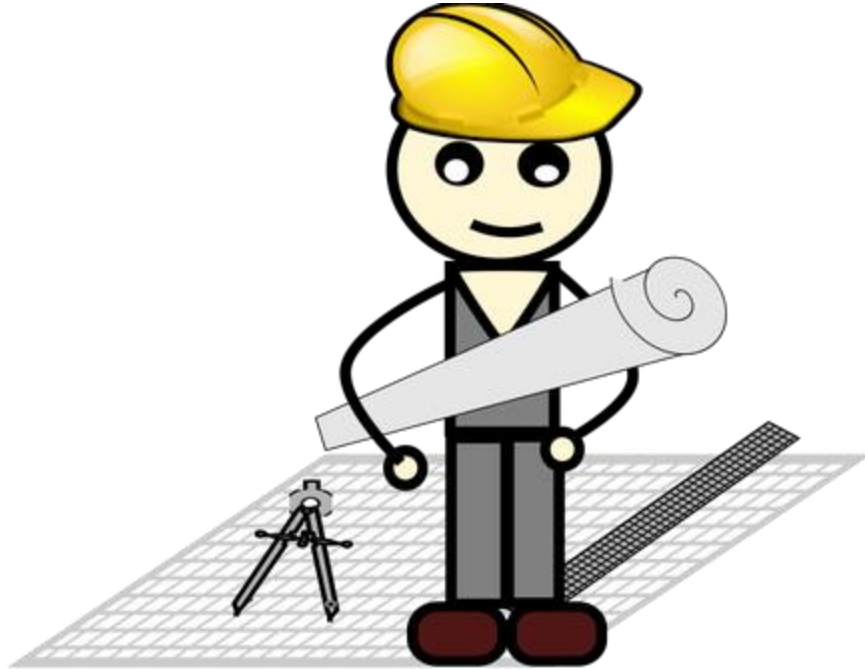


# Software Architecture

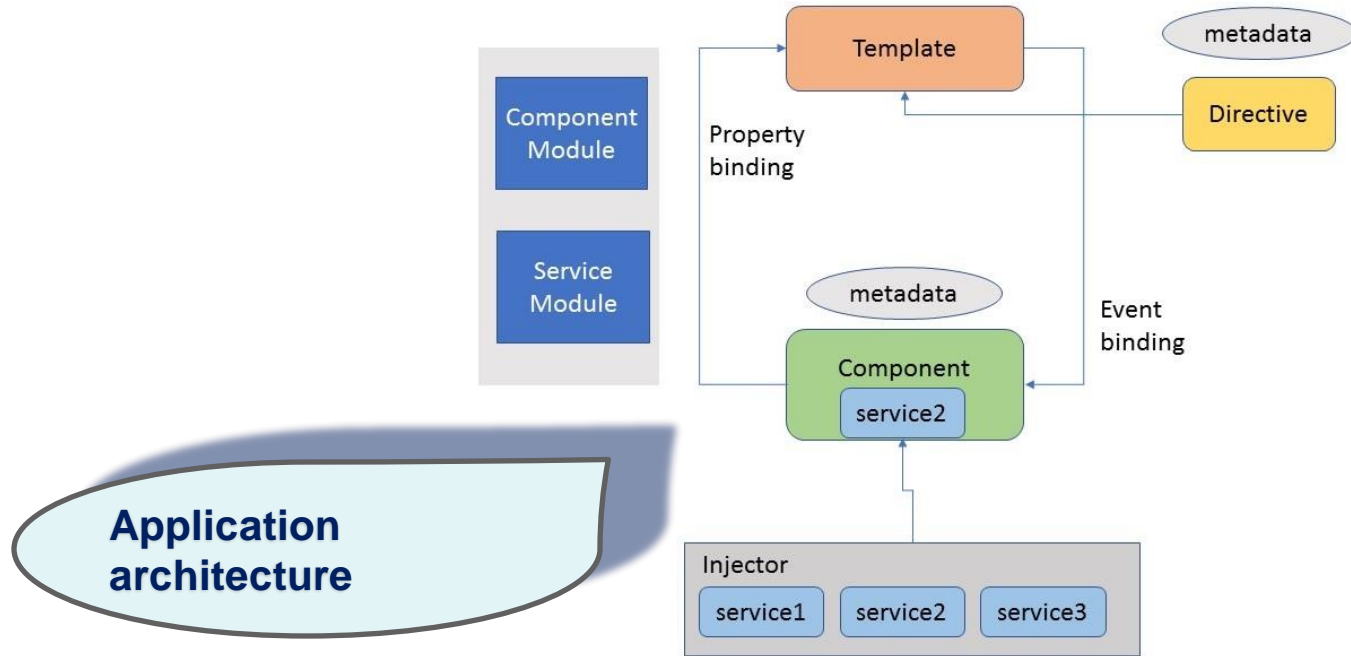
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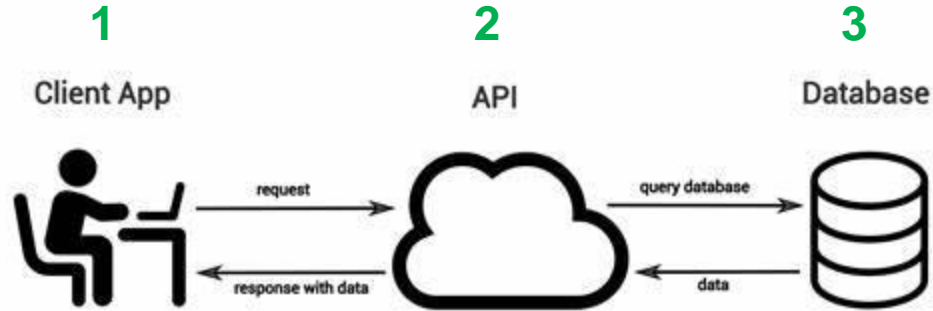
# What does software architecture mean?



# Communication between multiple components!

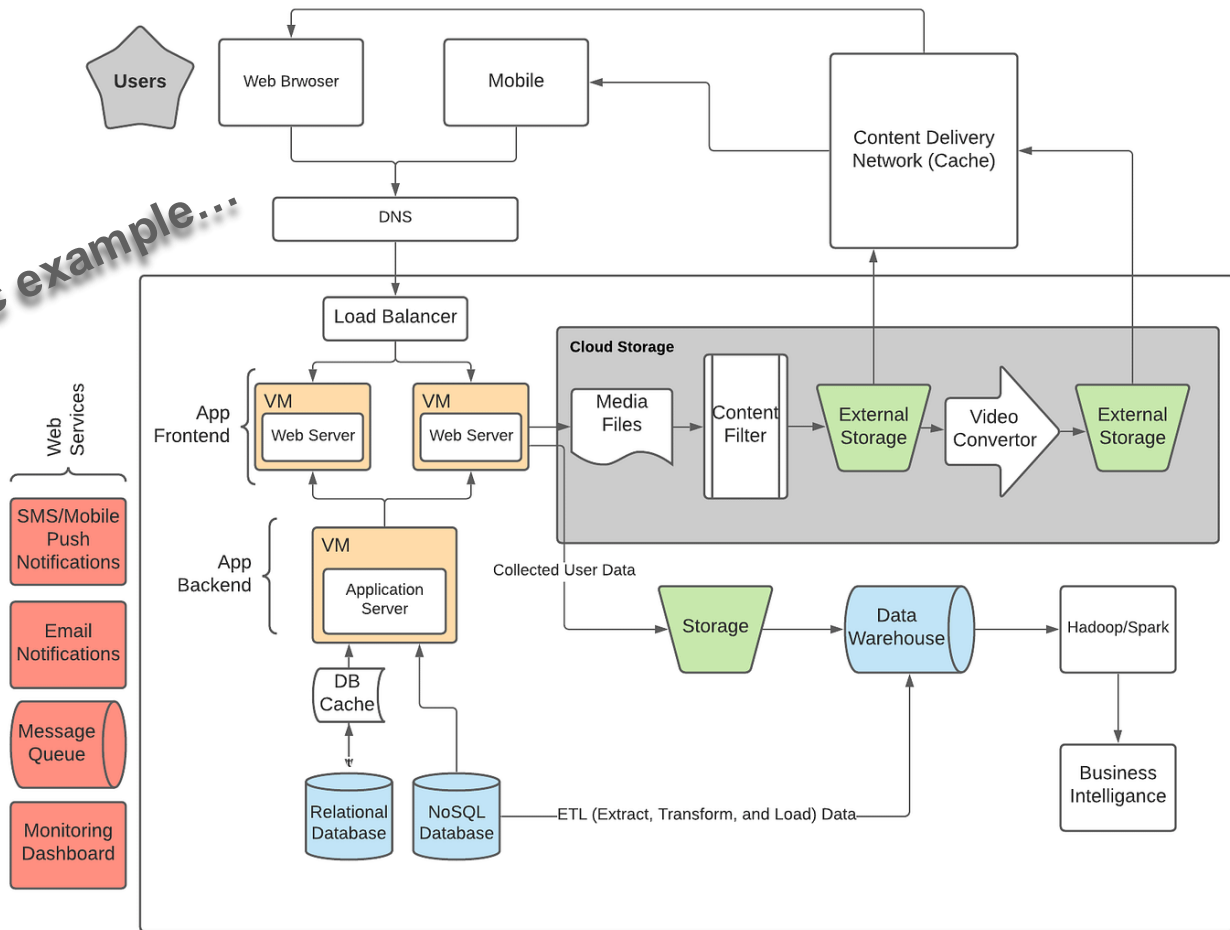


# Communication between multiple components!



**System  
architecture**

More realistic example...



# System architecture

**“everything related to the design of a software system”**

(Brown 2022, p. 11)

**“the fundamental organization of a software system embodied in its components, their relationships to each other and to the environment, and the principles guiding its design and evolution”** (Sommerville 2020, p. 93)

Code is not the only relevant element when talking about a software product!

# Non-functional system quality attributes

**Table 4.2** Non-functional system quality attributes

Attribute	Key issue
Responsiveness	Does the system return results to users in a reasonable time?
Reliability	Do the system features behave as expected by both developers and users?
Availability	Can the system deliver its services when requested by users?
Security	Does the system protect itself and users' data from unauthorized attacks and intrusions?
Usability	Can system users access the features that they need and use them quickly and without errors?
Maintainability	Can the system be readily updated and new features added without undue costs?
Resilience	Can the system continue to deliver user services in the event of partial failure or external attack?

**Let's think about this...**



**An airline wants to promote its fidelity programme by working together with a bank to provide branded credit cards with various benefits.**

**The bank will build a special internet banking app for these clients. What architectural challenges can you see for this app?**



# Case studies

- ❑ [Netflix Architecture | Medium](#)
- ❑ [Uber Architecture | Medium](#)
- ❑ [TicketMaster Architecture | Medium](#)

# Choosing the architecture

**1. Define functional and non-functional system requirements**

**2. Analyze architecture domains and viewpoints**

**3. Compare architectural styles**

**4. Chose an architecture and justify your choice**

**Kahoot!**

# Next time on ...

Course 5

Please read Chapter 3 from Brown – The C4 model for visualizing software architecture

And / or

Watch [Visualising software architecture with the C4 model - Simon Brown, Agile on the Beach 2019](#)