

Software engineering

Famous disasters



#109055521

Adobe



Looking forward

What is the deal?

- I will try to condense my 10 years of experience in the industry
- I will minimize the purely academic parts
- By getting good at this material, you should:
 - Get a job more easily
 - Fall in the team lead's: "This junior knows what they are doing" category
- It's my first course, so parts are going to be bad/experimental
- I expect you to show up, take notes, get your assignment done on time

What to expect

- Journey through ever increasing complexity, guided by you
- Learn C# + .NET framework
- Find out what to expect in the industry in the next 5-10 years
- Learn how NOT to make your working life a living hell
- Learn how to talk about architectures
- Work together in teams
- Mandatory Microsoft Team code: l92ucv2

Grades and attendance

- No attendance
- 50% of your grade is from written exam at the 14th course
- 50% of your grade is from lab activity
 - Both need to be at least 6.0
- You need to come with your own subgroup
- If the lab grade, for everybody who did not abandon the faculty, is above 8.0, you can choose a problem from the written exam, and everybody gets maximum grades for it.
- Students who are taking this course as an optional course or are retaking this material, can come to any lab/seminar, for group work purposes you will be grouped together, in several groups, I suggest you join these as a group



Requirements gathering



C# .NET



Hi, I'm
Milo !

Age: 4

Sex: male

Breed: Labrador Retriever

Size: 70 lbs

About Me

Milo is a very friendly labrador retriever who I adopted as a puppy. We've lived together in an apartment for the last 4 years and he is house-broken, quiet, and well-behaved. He's also received professional training and gets along very well with other animals, children, and adults.

Health

Neutered

Up to date on all vaccinations including

flea, tick, and worm prevention.

Obedience & Skills

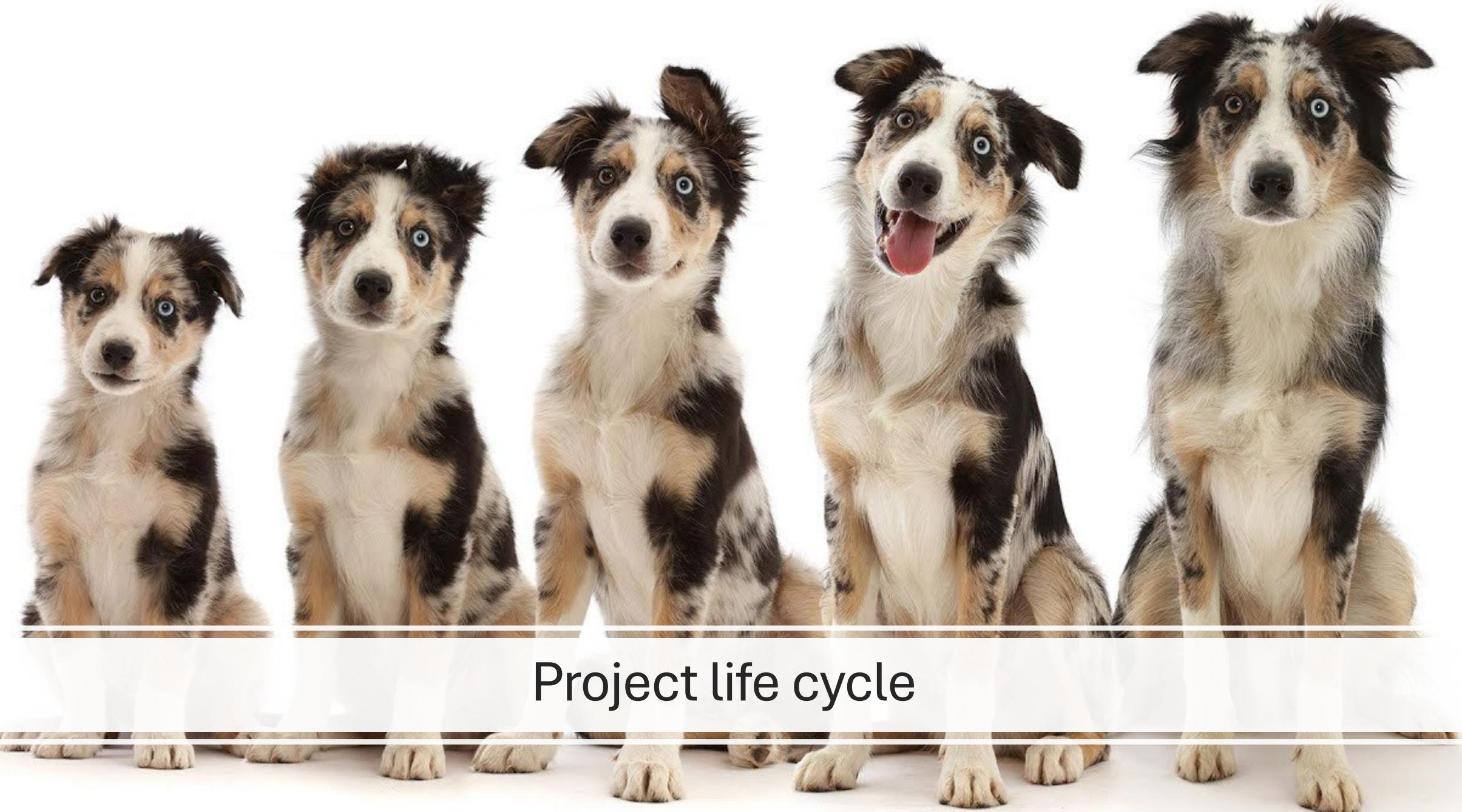
Received a certificate of completion from
obedience school. Gets along well with
other animals and is kid-friendly.

CV

References

Joe Sanders | Previous landlord | 619.123.4567
Jones | Veterinarian | 619.321.0987





Project life cycle



Use case diagram

Class diagram





GUI Design

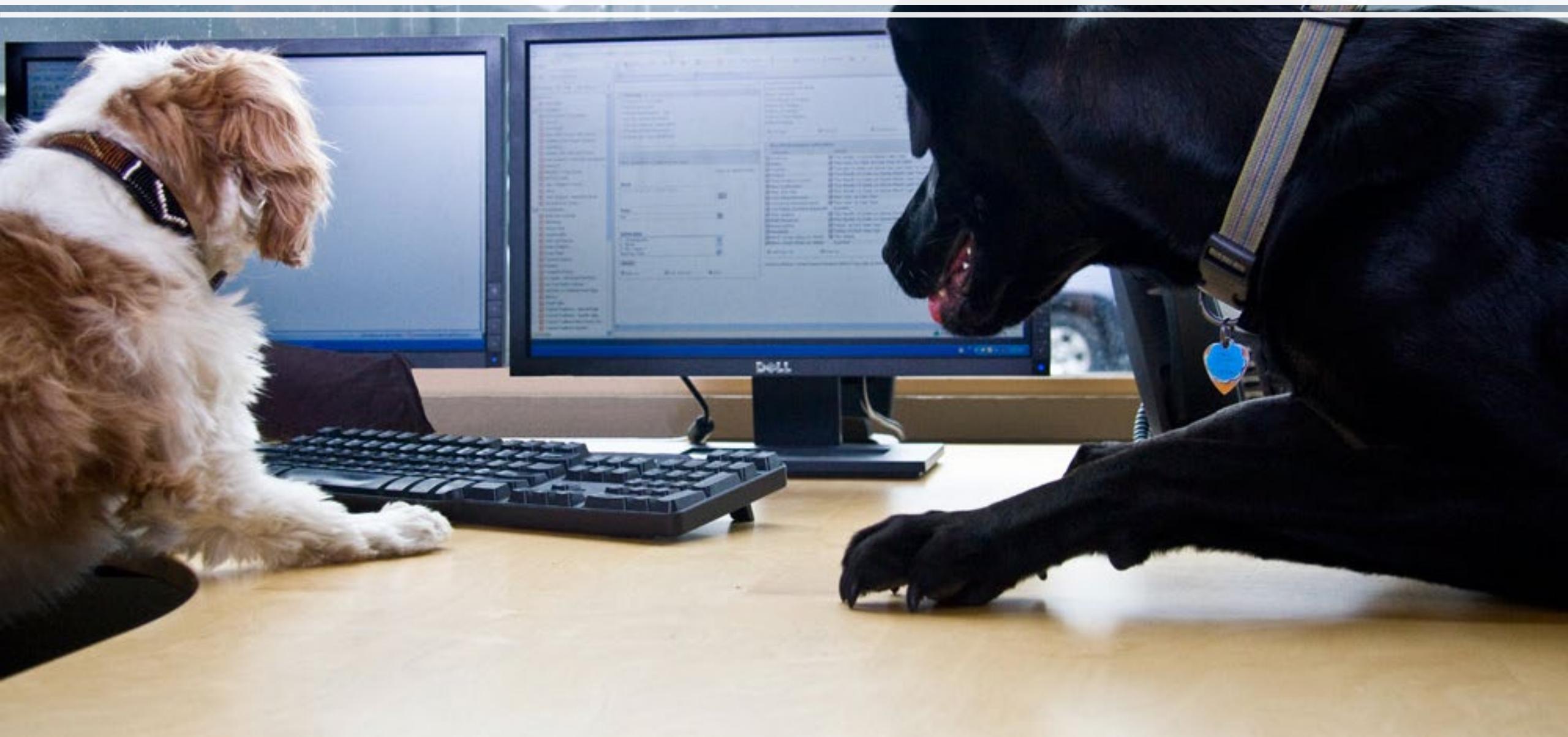


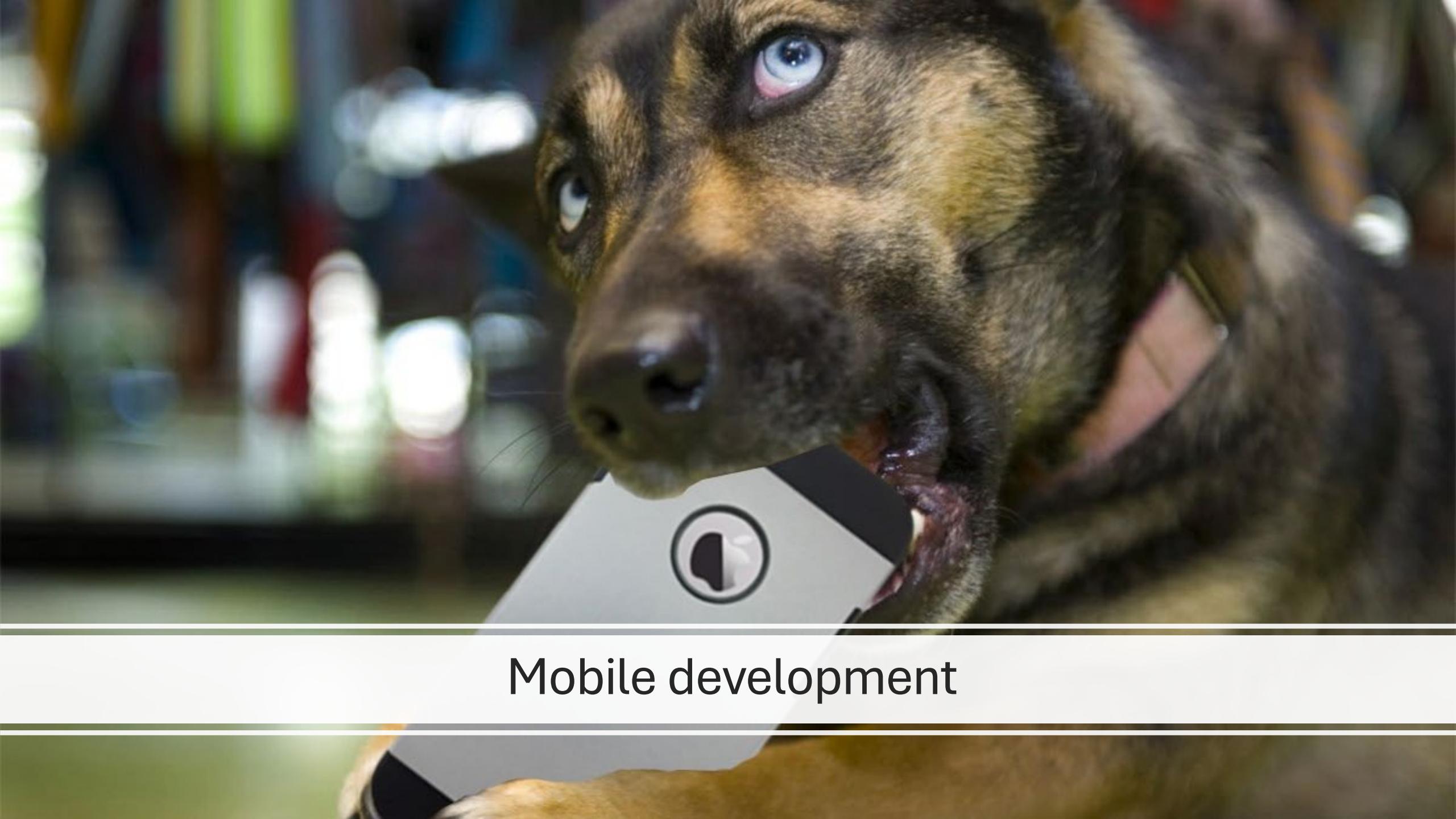
Scrum + Kanban



Git + branching

Desktop development





Mobile development

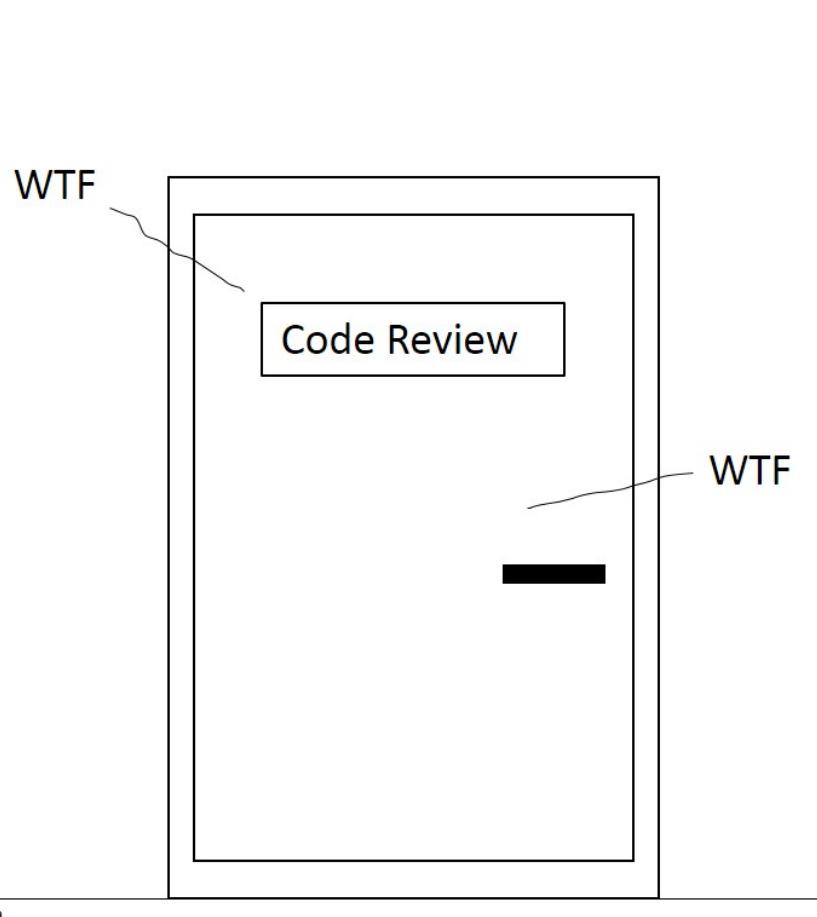


Clean code

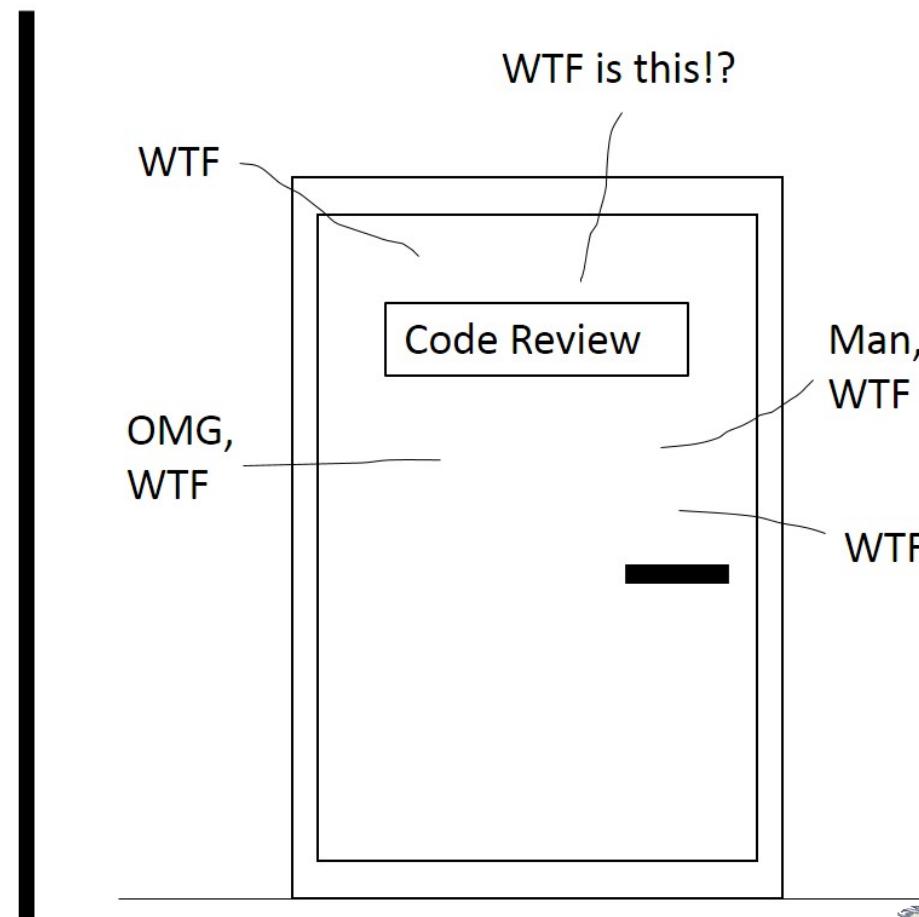


Design patterns: Singleton, Template, and Strategy

The only valid measurement of code quality: WTFs/minute

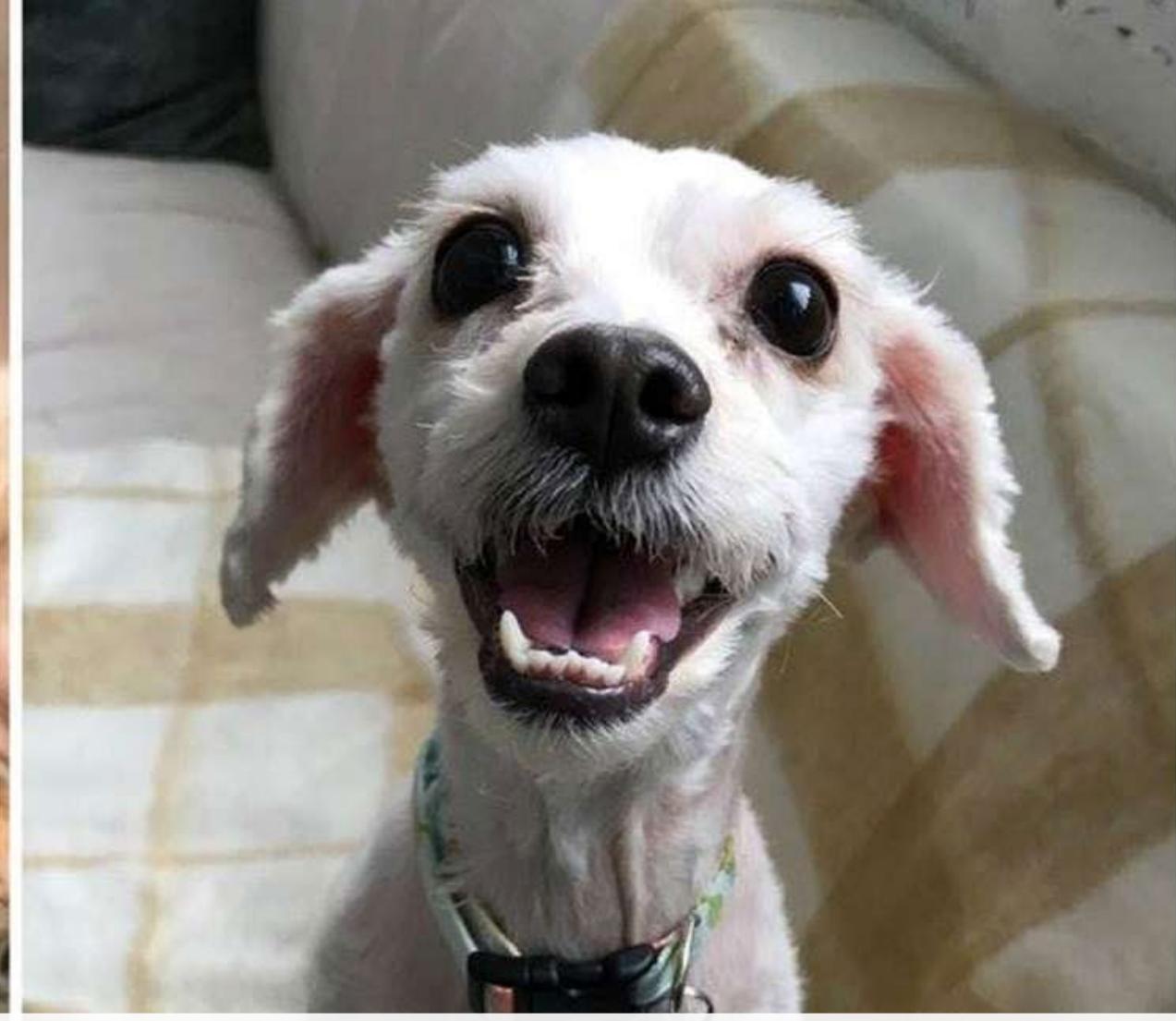


Good code



Bad code





Refactoring

Code smells



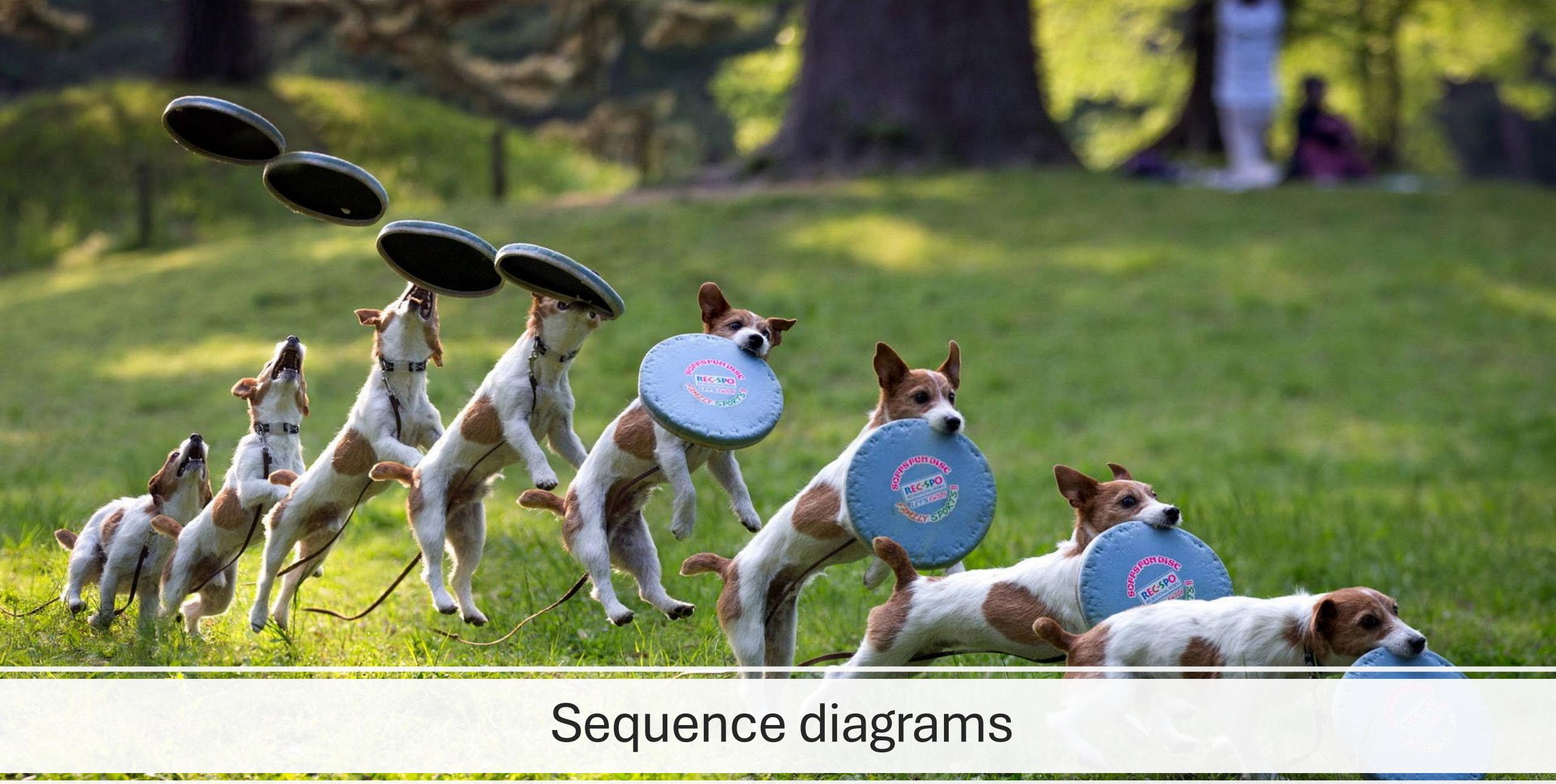


The art of unit testing



Dependency injection

Façade + Adapter



Sequence diagrams



Activity
diagram

Data storage with entity framework (ORM)



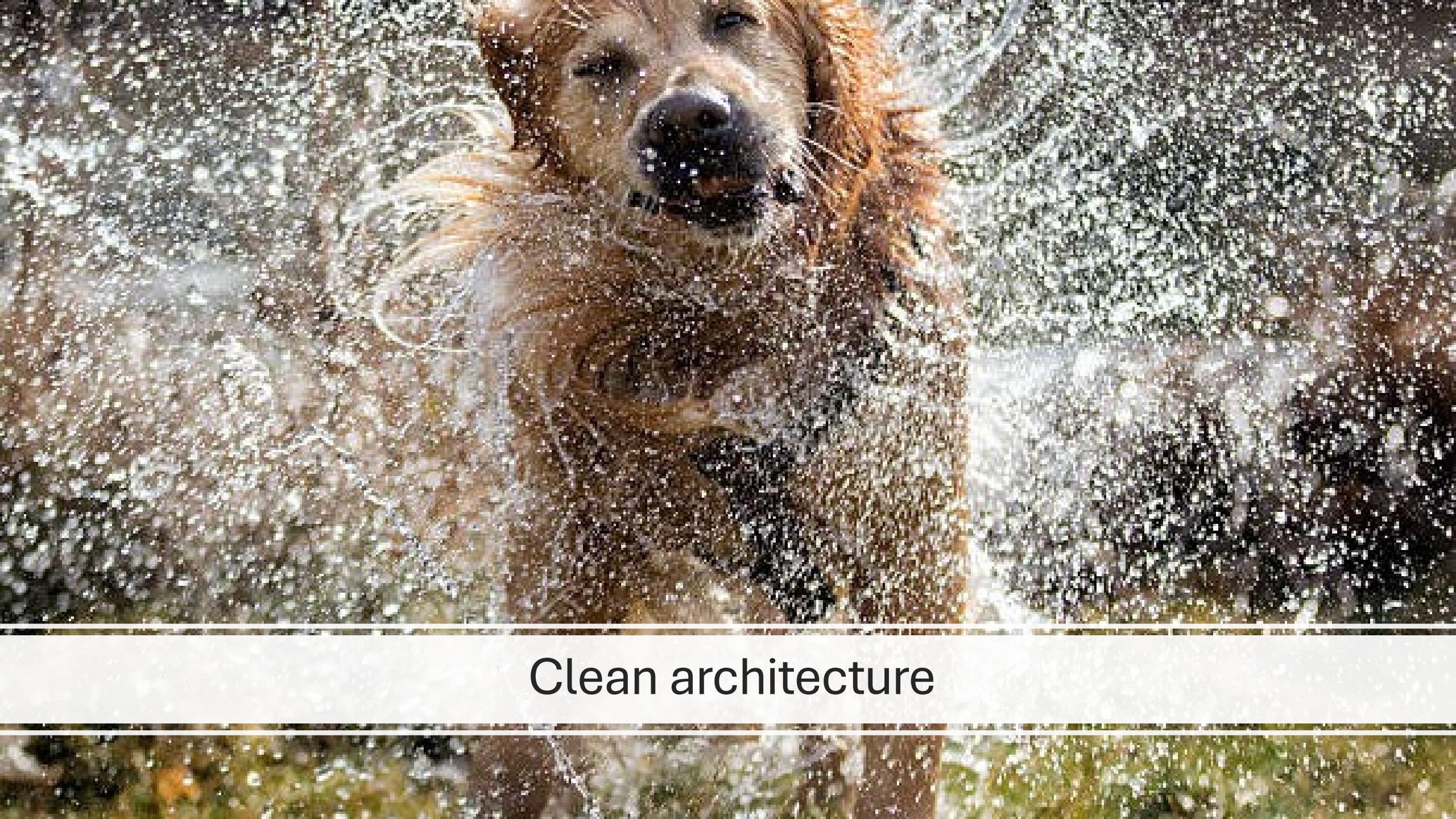


Deploy to server

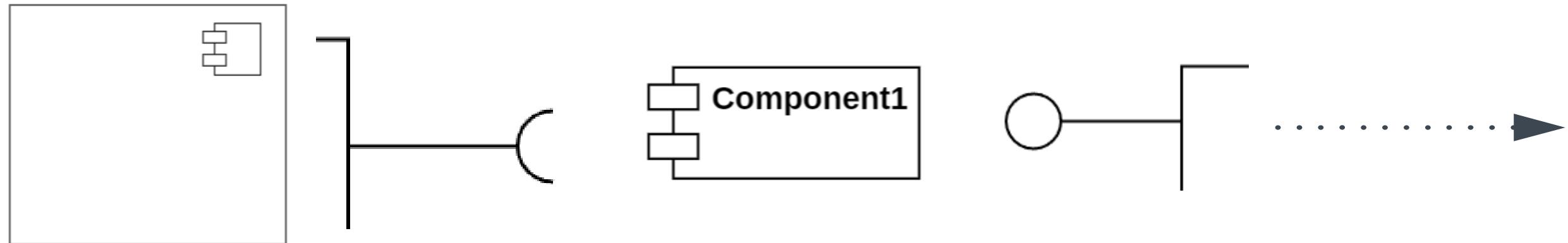
Abstract factory,
Factory method,
Proxy,
Message bus patterns



Web development



Clean architecture

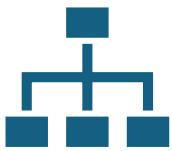


Component diagram



S.O.L.I.D.

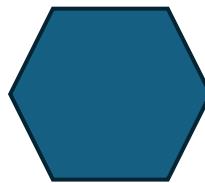
Architectures



Package by
layer (3 tier)



Package by
feature



Hexagonal
architecture



Package by
component