

The background of the slide features a topographic map with white contour lines on a light green background. The map is more prominent in the top right corner and fades into the background towards the left.

CSC 508/9

Software Engineering (Design & Deployment)

Lecture 01. **Course Presentation**

Dr. Javier **Gonzalez-Sanchez**

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office: 14 -227



Introductions

Contact Information

Dr.

Javier

First name

Gonzalez-Sanchez

Last name



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Where Am I from?



Teaching



www.javiergs.info/teaching/

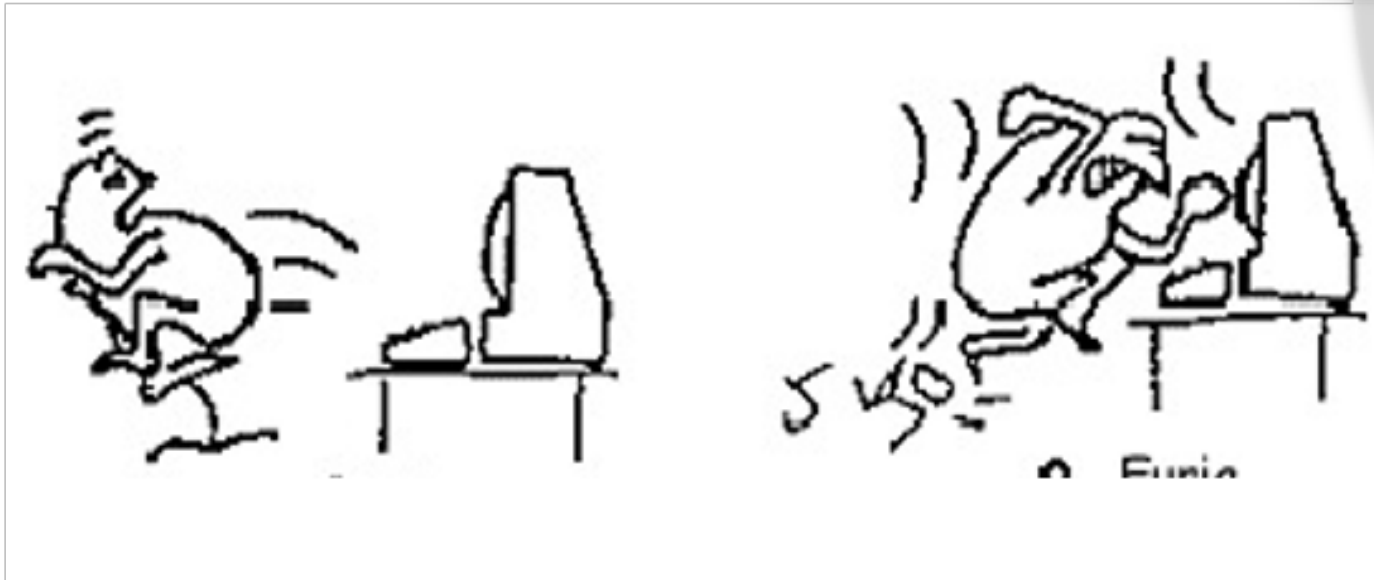
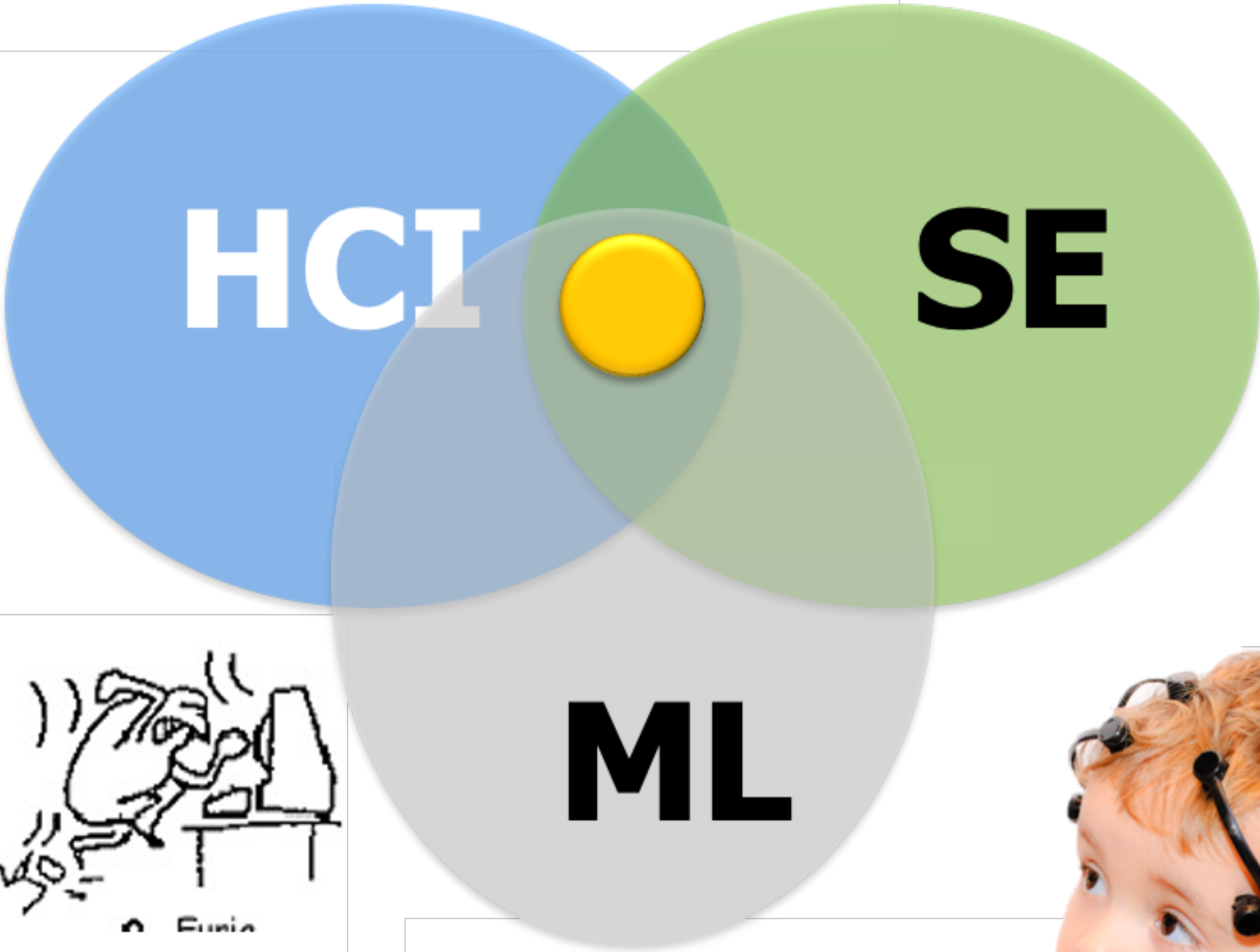
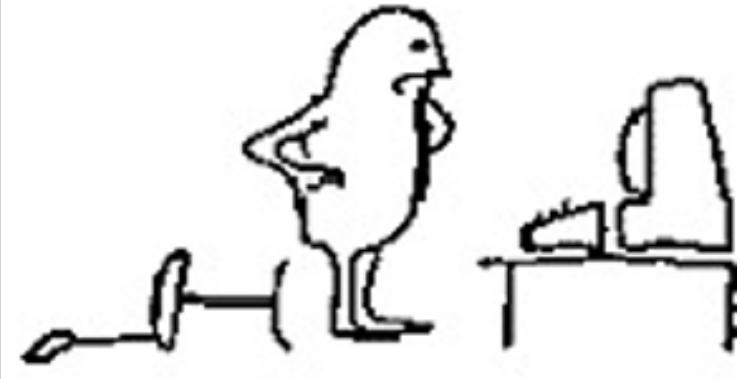


At CSU:

Software Engineering (CSC 307, 308, 309, 508, 509)

Human-Computer Interaction Topics (CSC 570)

Research

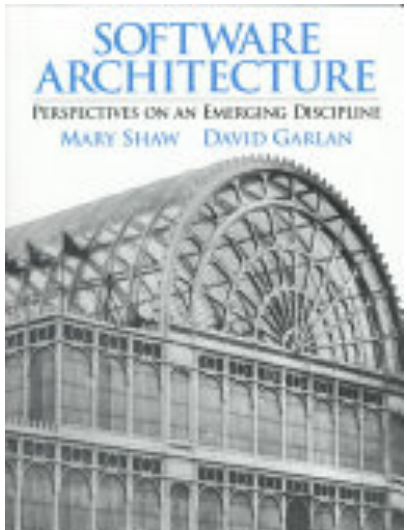


Context

Rosalind Picard
MIT MediaLab



1997



Winslow Burleson
University of Arizona
PhD Advisor



David Garlan
Carnegie Mellon
PhD Committee Member



HCI
Affective
Computing

SW
Engineering

**Self-
Adaptive
Systems**



Your Turn

- What is your **name** (or how you go by it)?
- Are you **proficient** in **Software Engineering**?
- What is Your experience **developing software** (internships, personal projects, hackathons, others)?

Course Content

Software Engineering

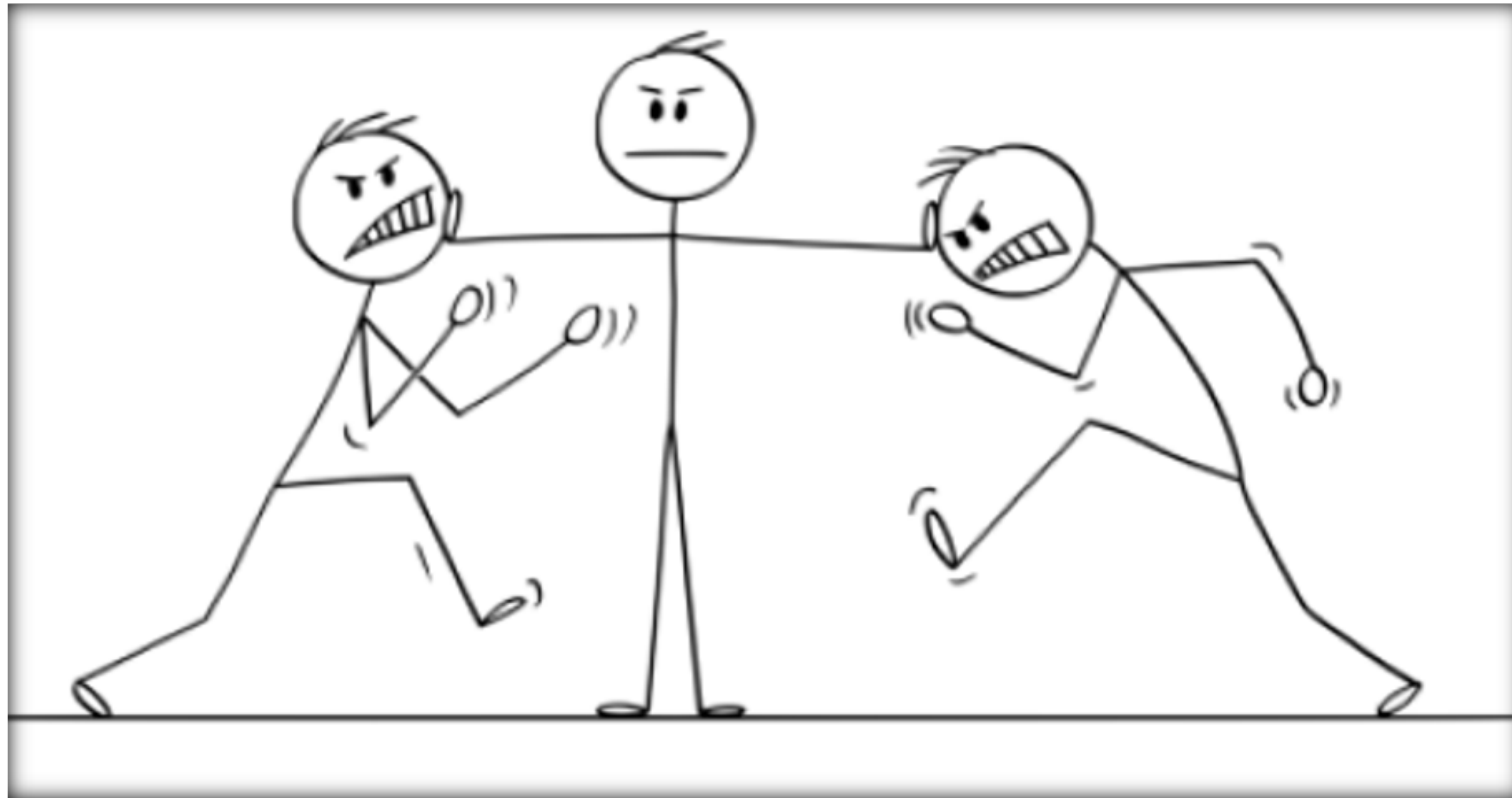
Undergraduate Course on Software Engineering (307 or 308 + 309)

- **Foundational concepts**, tools, and techniques.
- Preparing students for **entry-level positions** in the industry
- **Follow** established processes
- Developing **well-defined** software applications
- Emphasis is on **teamwork**

Graduate Course on Software Engineering (508 + 509)

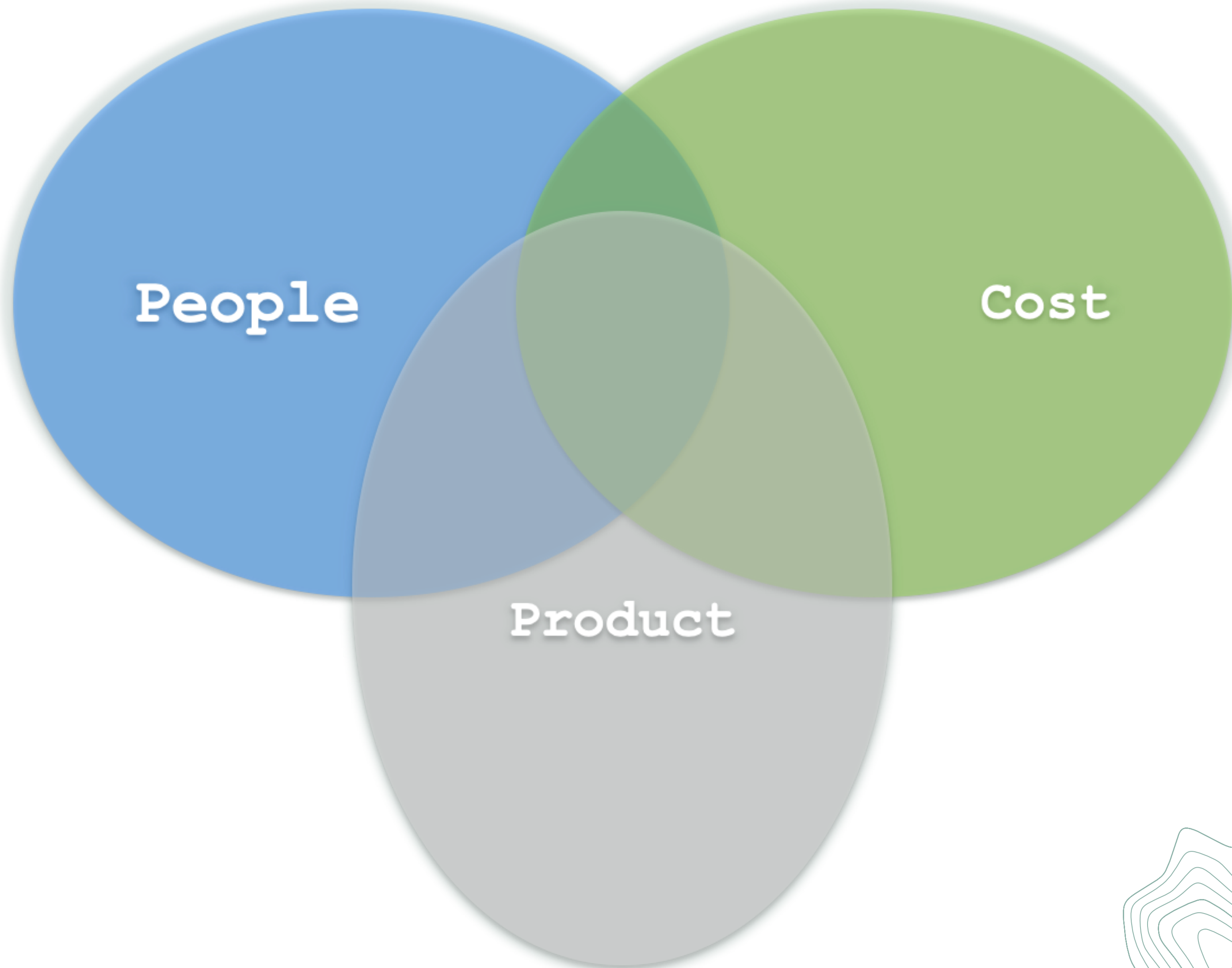
- **Specialized topics** “*advanced*” software architecture, distributed systems, model-driven engineering, cutting-edge research and emerging technologies.
- A hint of **leadership** roles
- Theory, research, and innovation –students are expected to **explore** “*complex*” problems.
- Self-learning, **critical thinking**, and the ability to synthesize information from multiple sources
- Projects are **open-ended**

Together but not Scrambled

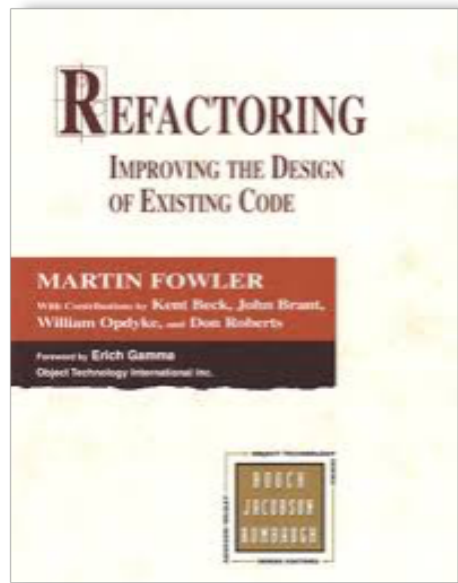


Zdenek Sasek / Alamy Stock Vector

This is About Engineering



Code is meant for human consumption



- *"Any fool can write code that a computer can understand. **Good programmers write code that humans can understand**".*
-Martin Fowler

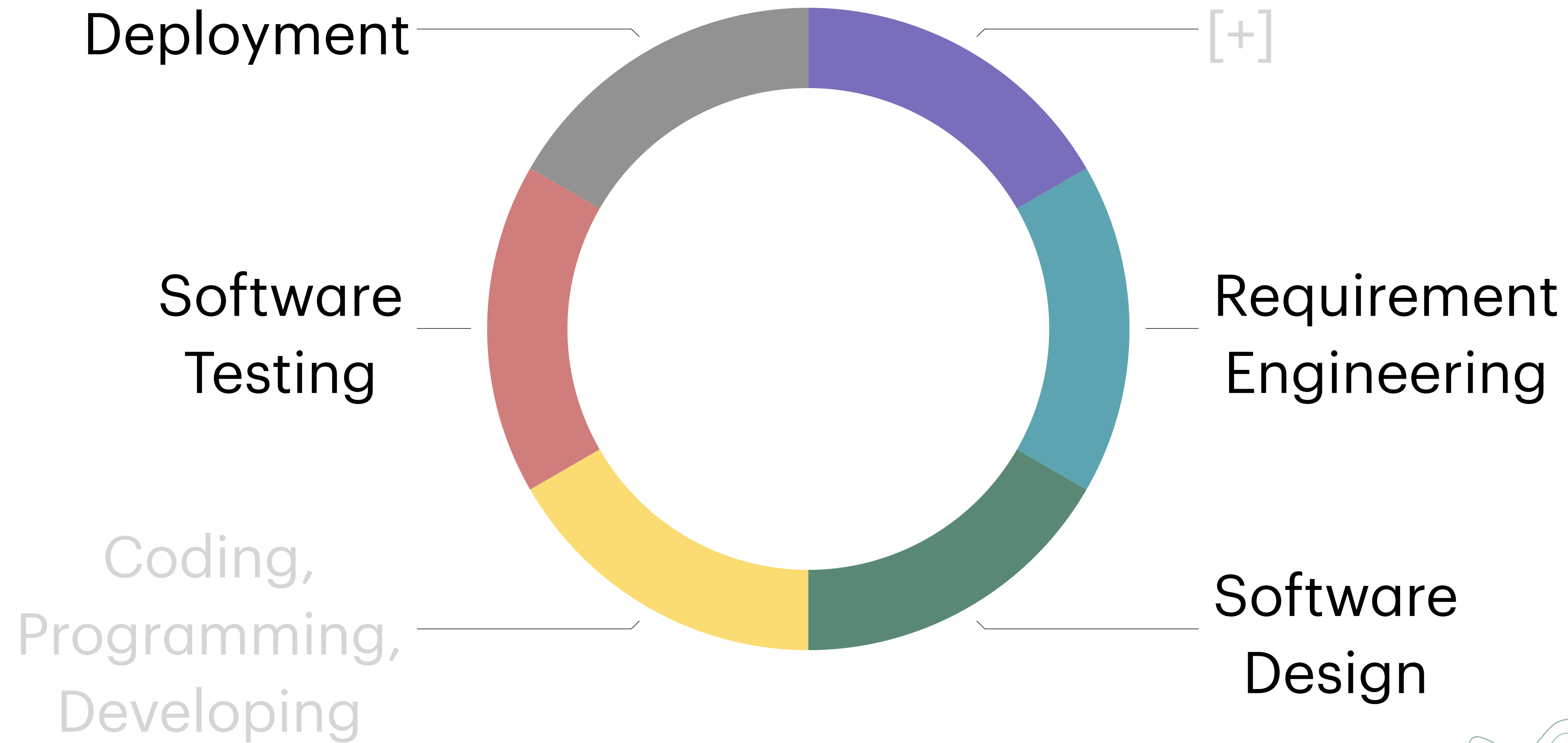


- *"Even bad code can function".*
-Robert C. Martin

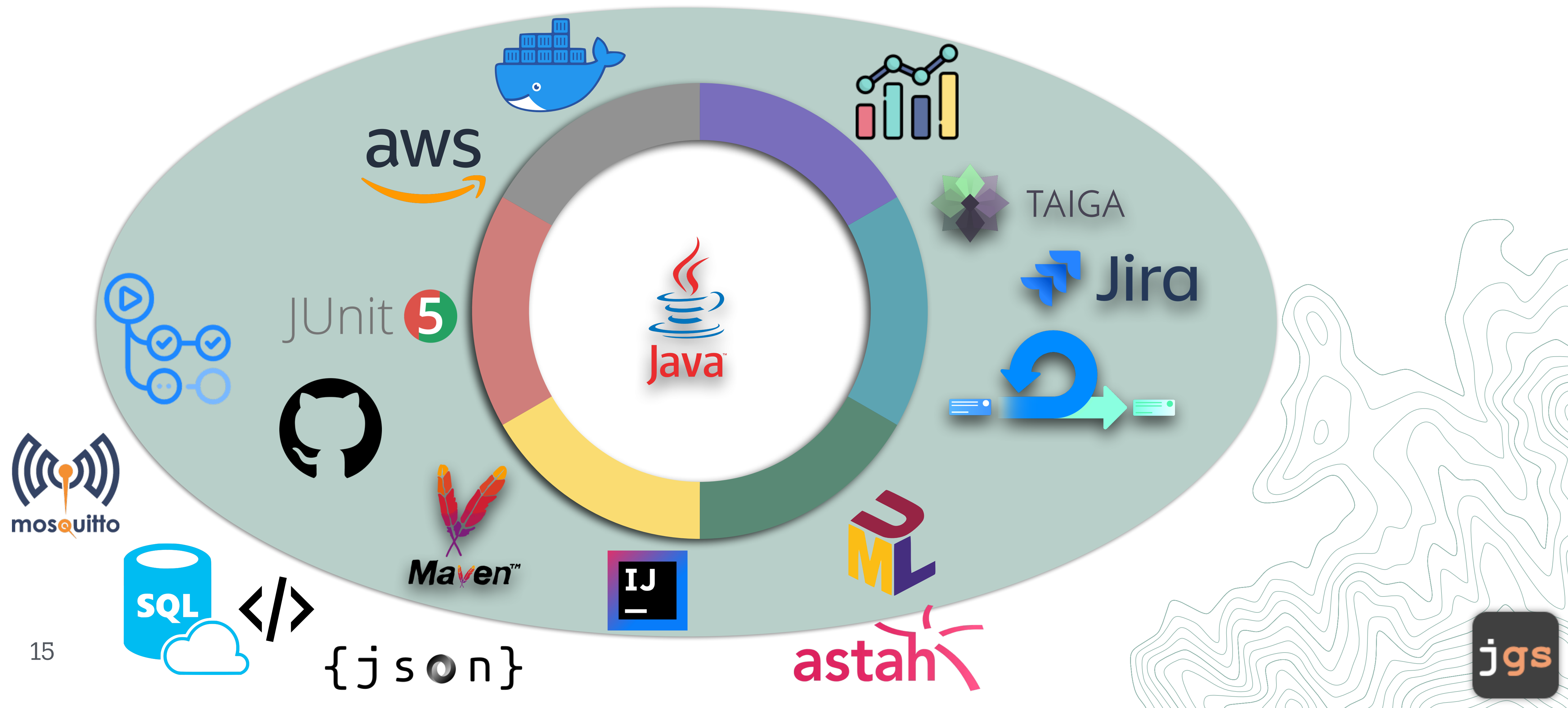


- *"The ratio of time spent **reading vs writing** is well over **10:1**".* -
Robert C. Martin

Topics



Tools



This Course

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This is About Engineering



"Most **software** today is very much like an **Egyptian pyramid** with **millions of bricks** piled on top of each other, with **no structural integrity**, but just done by **brute force** and thousands of **slaves**".

– Alan Kay.

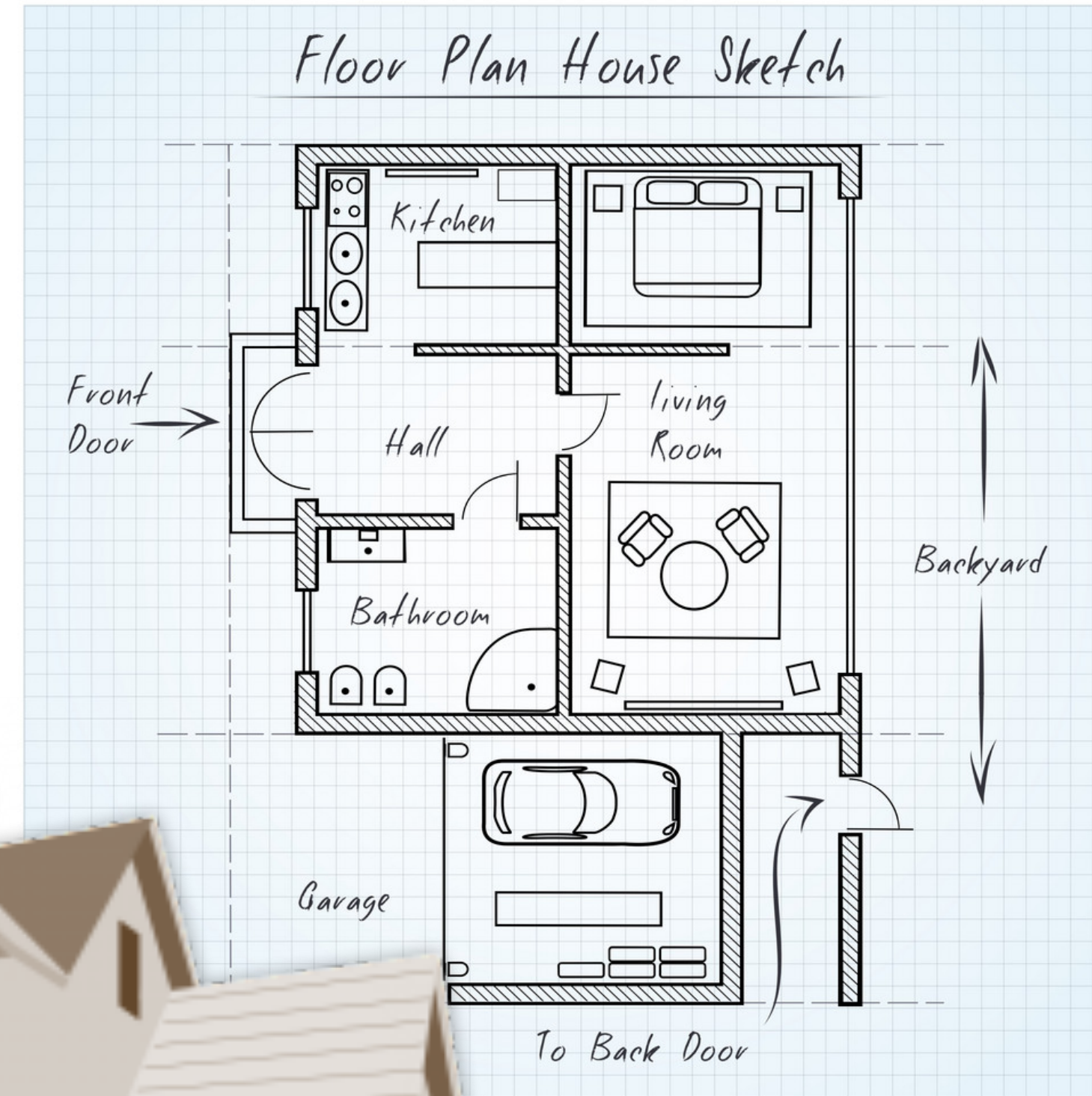
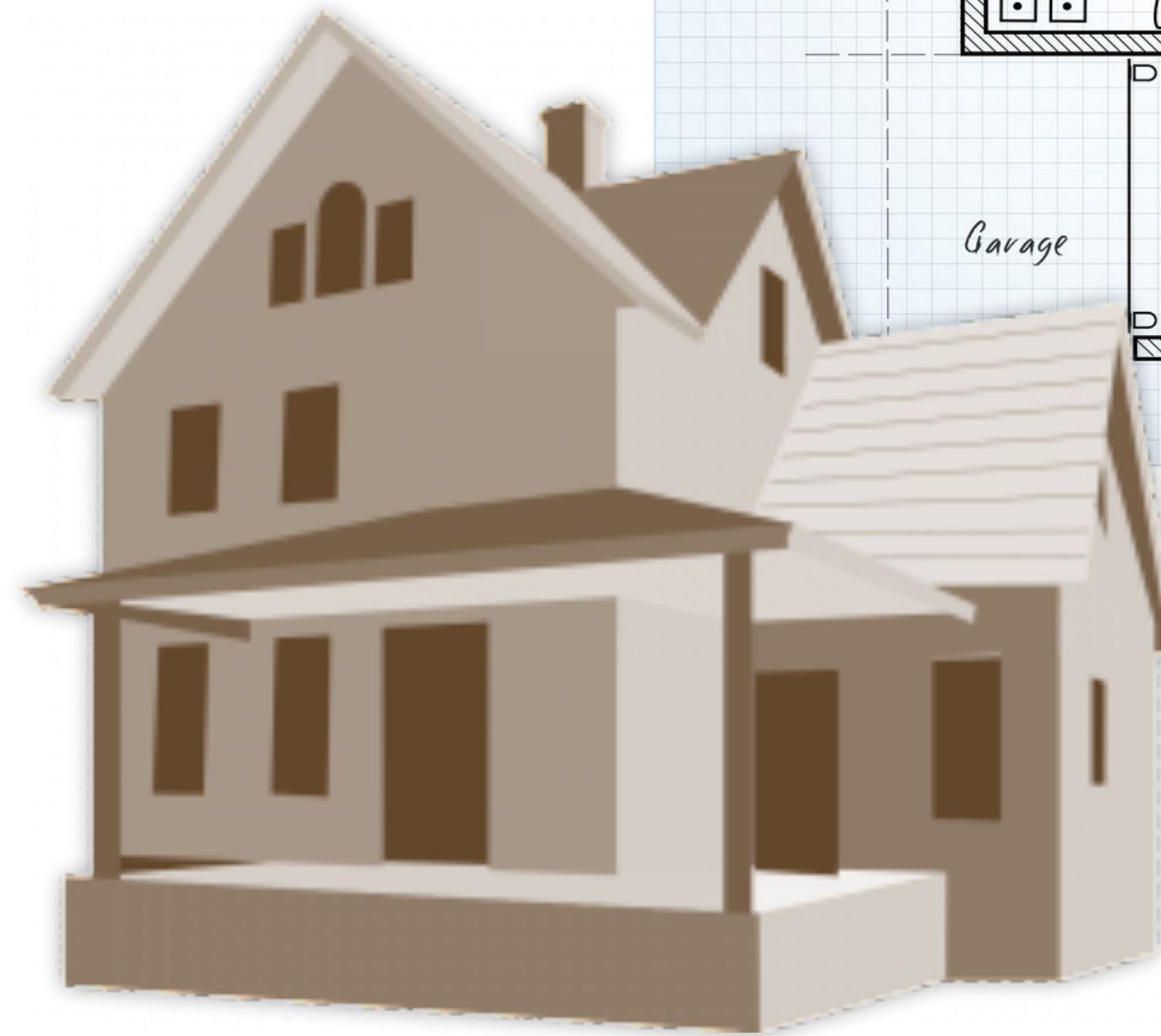
Pioneering work on object-oriented programming
ACM Queue. Vol. 2, No. 9 – Dec/Jan 2004–2005



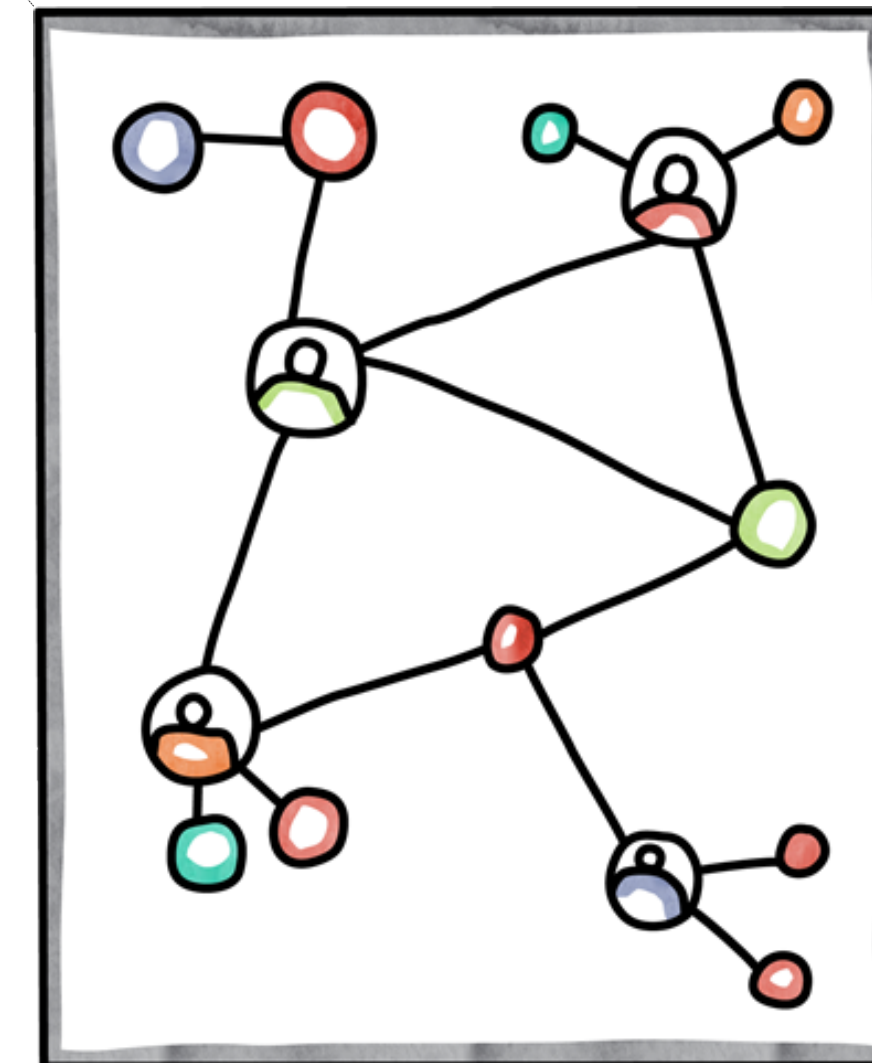
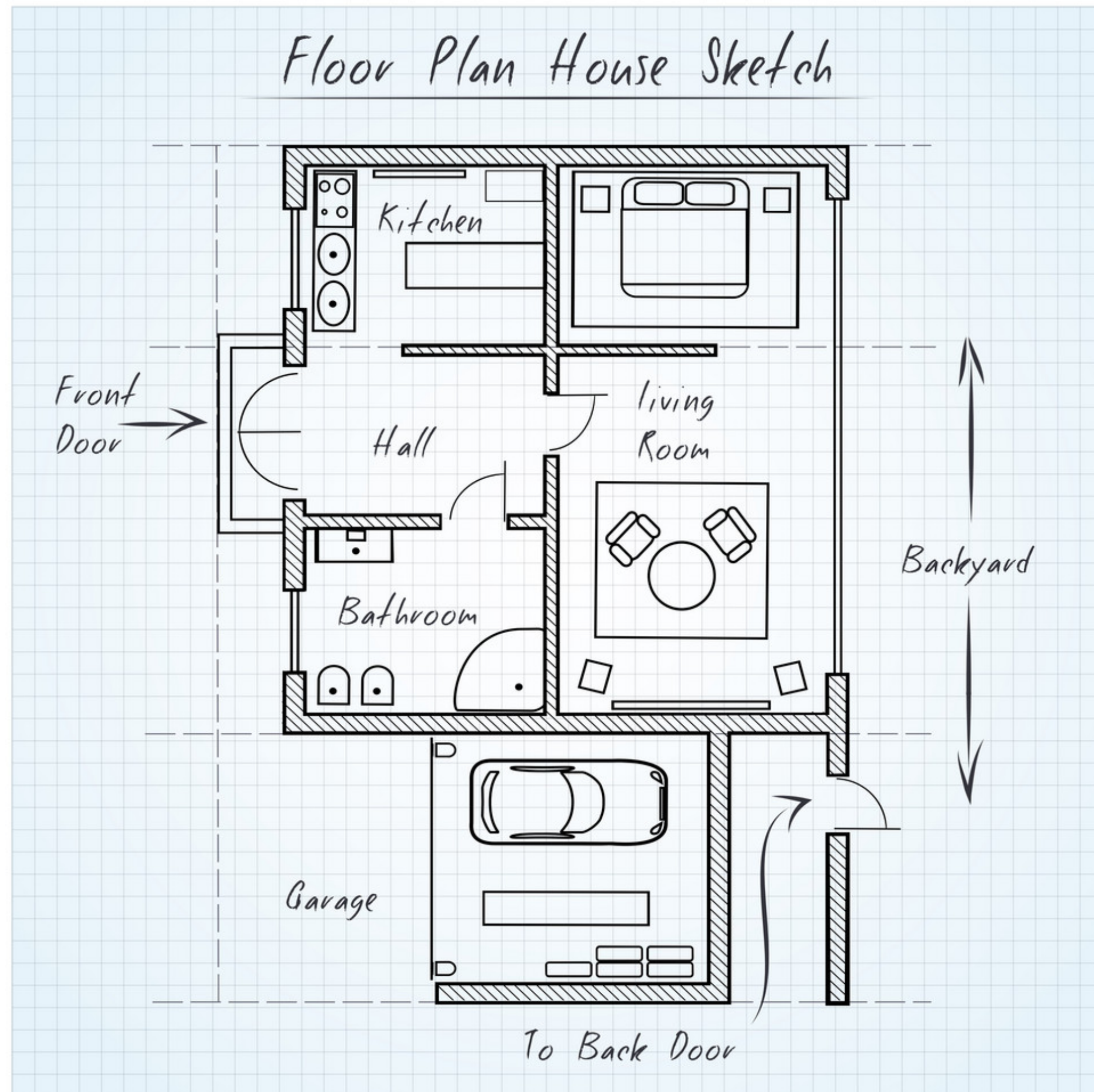
Design



VS



Blueprint



Blueprint

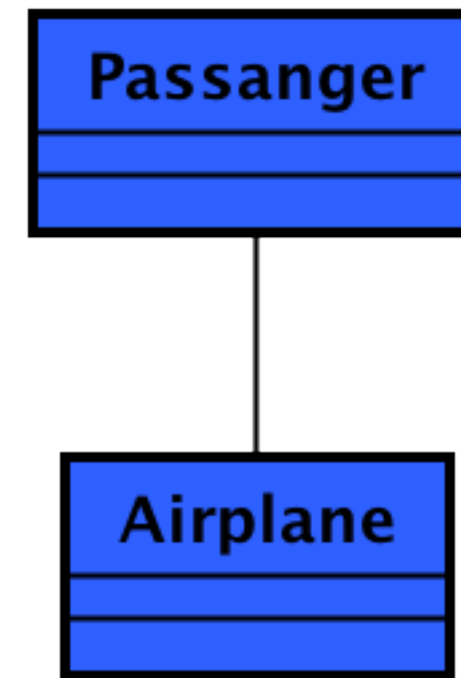
Parts → Classes and Interfaces

+

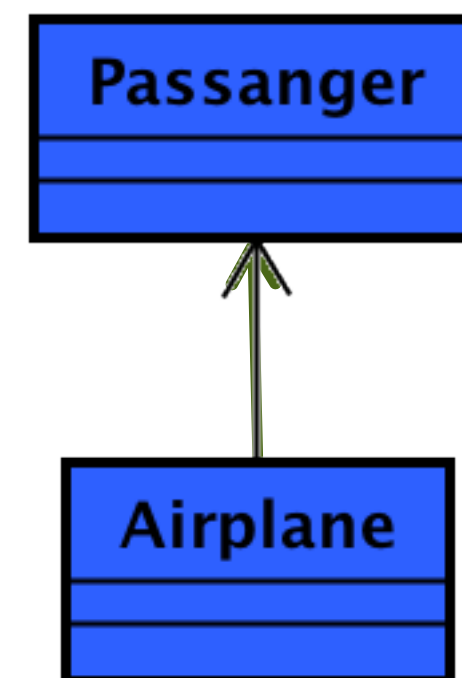
Relationships → Connections



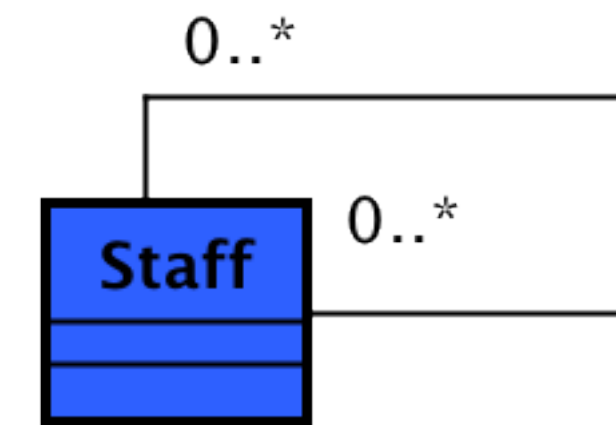
Relationships



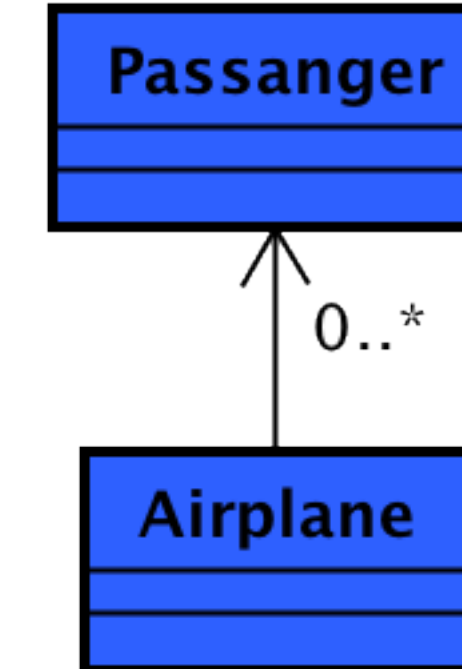
Association



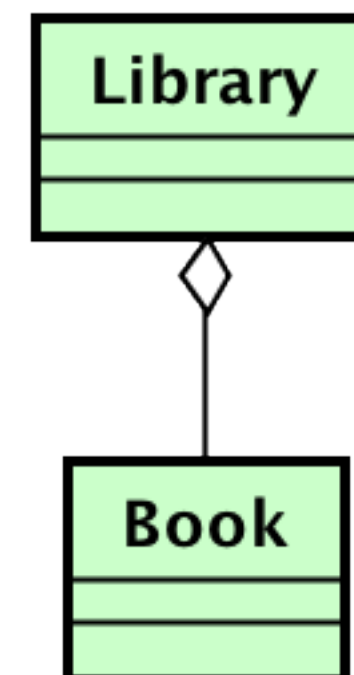
Directed Association



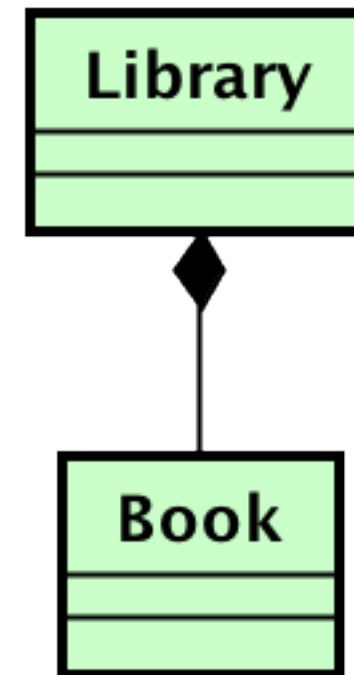
Reflexive Association



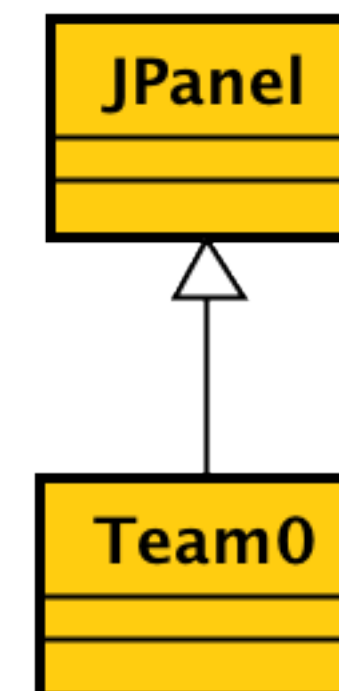
Multiplicity



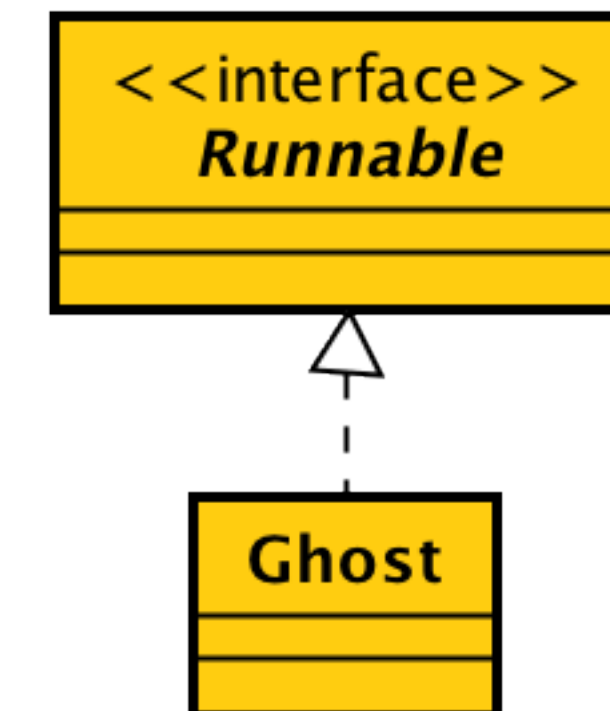
Aggregation



Composition

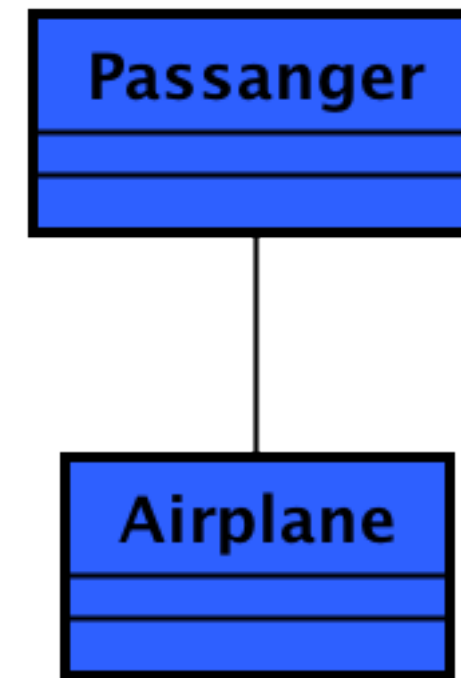


Generalization

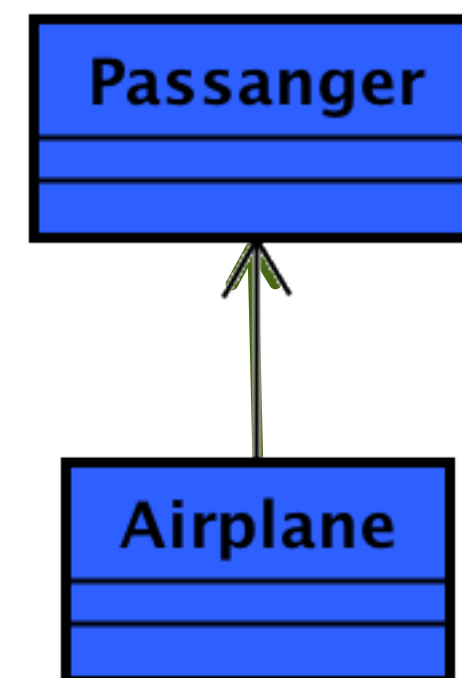


Realization

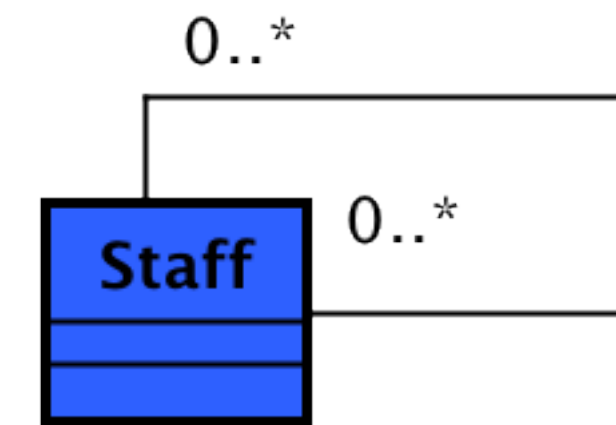
Relationships



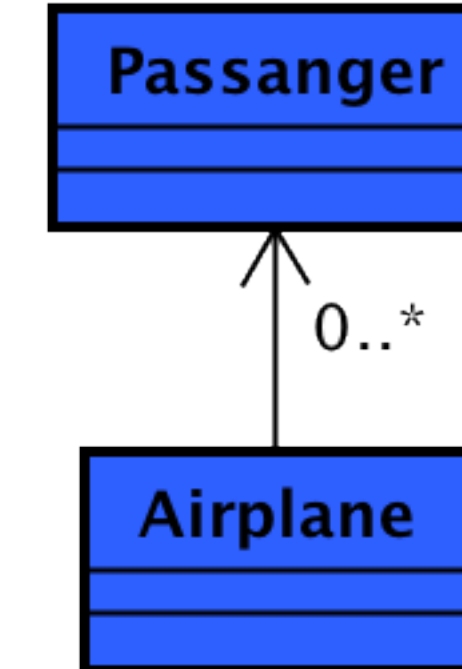
Association



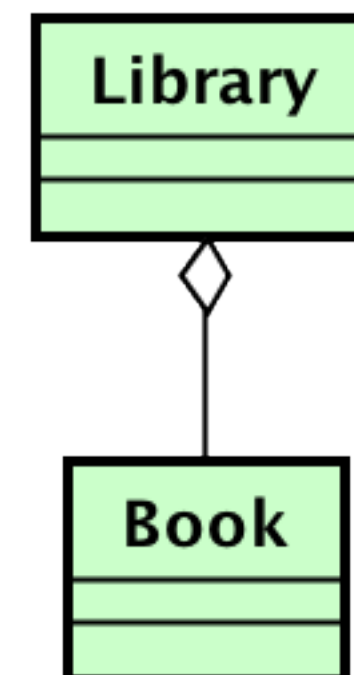
Directed Association



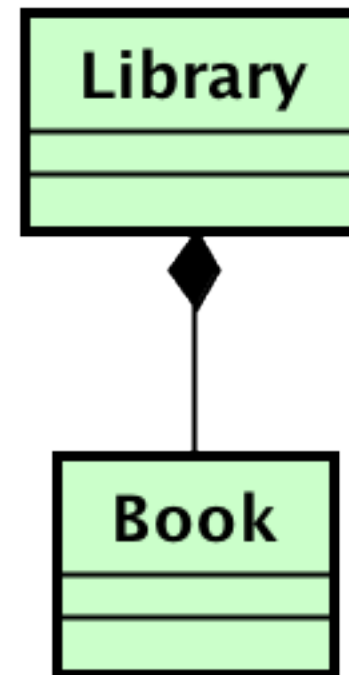
Reflexive Association



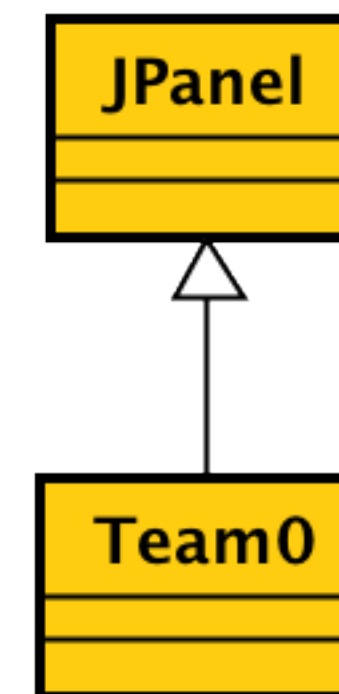
Multiplicity



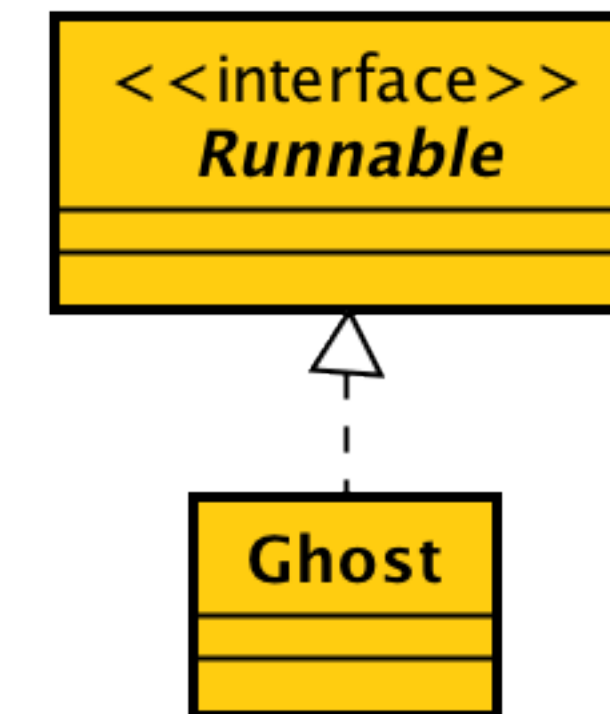
Aggregation



Composition



Generalization



Realization

To be Continued

Syllabus

Guidelines

**Attendance (participation) is
Expected**



Guidelines

Time per Week



Guidelines

Late Assignments



Guidelines

Regularly visit our course page on Canvas.

The syllabus, assignments, quizzes, and other resources are there.



Agenda (in no particular order)

	Main Topics
1	Fundamentals and Research Background
2	Information Hiding
3	Interconnection and Decoupling
4	Software Architecture
5	Patterns
6	User Interfaces (Views)
7	Frameworks, Platforms, and APIs
8	Model-Driven Development

Grading

Team Project	30%	
Assignments	20%	
Labs + Quizzes	20%	
Final Exam	20%	
Attendance & Participation	5%	
Self / Peer Evaluation	5%	100%

Grading

100%

≥ 96.5

A

≥ 93.0

A-

≥ 89.5

B+

≥ 86.0

B

≥ 82.5

B-

≥ 79

C+

≥ 75.5

C

≥ 72.0

C-

≥ 68.5

D+

≥ 65.0

D

≥ 61.5

D-

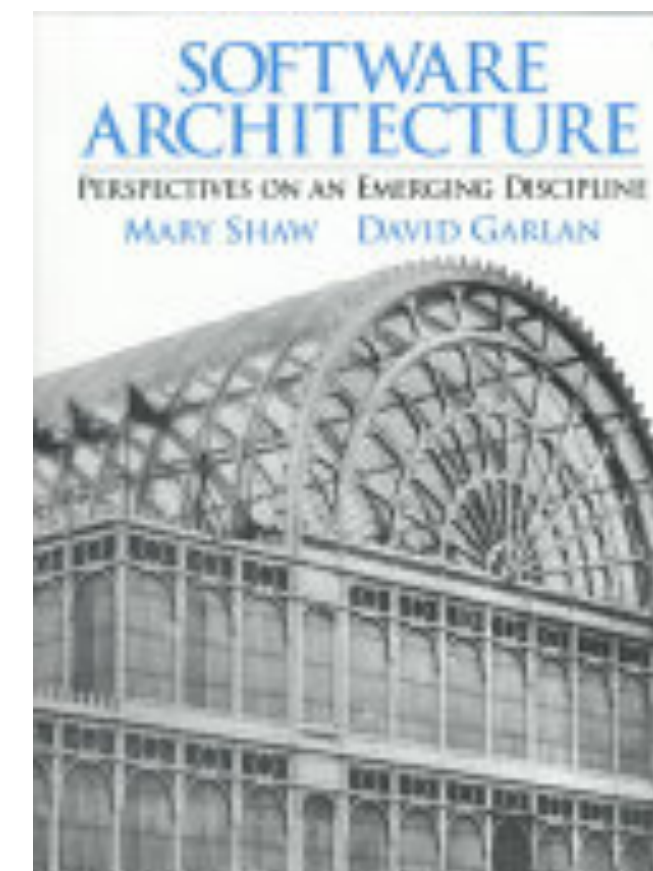
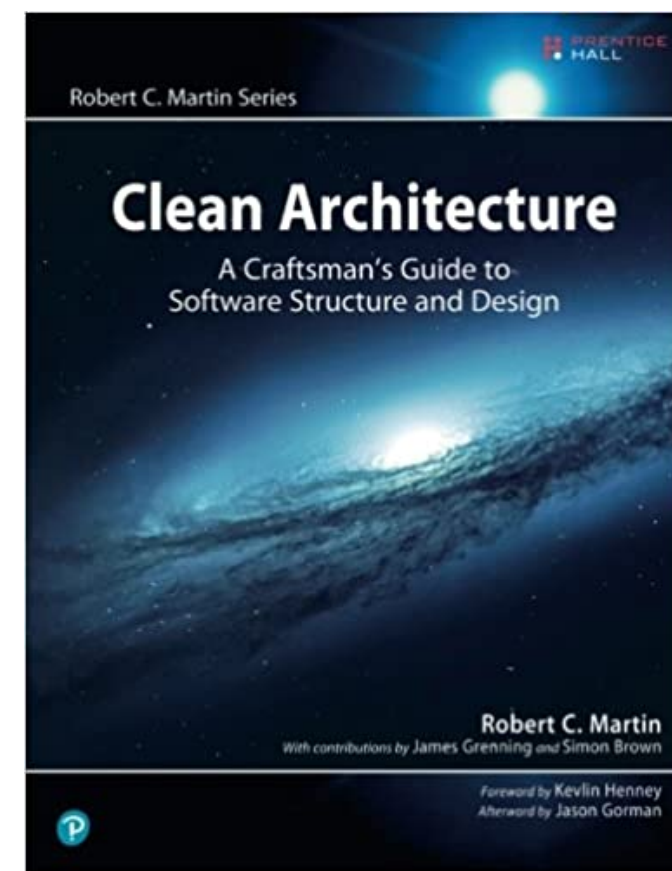
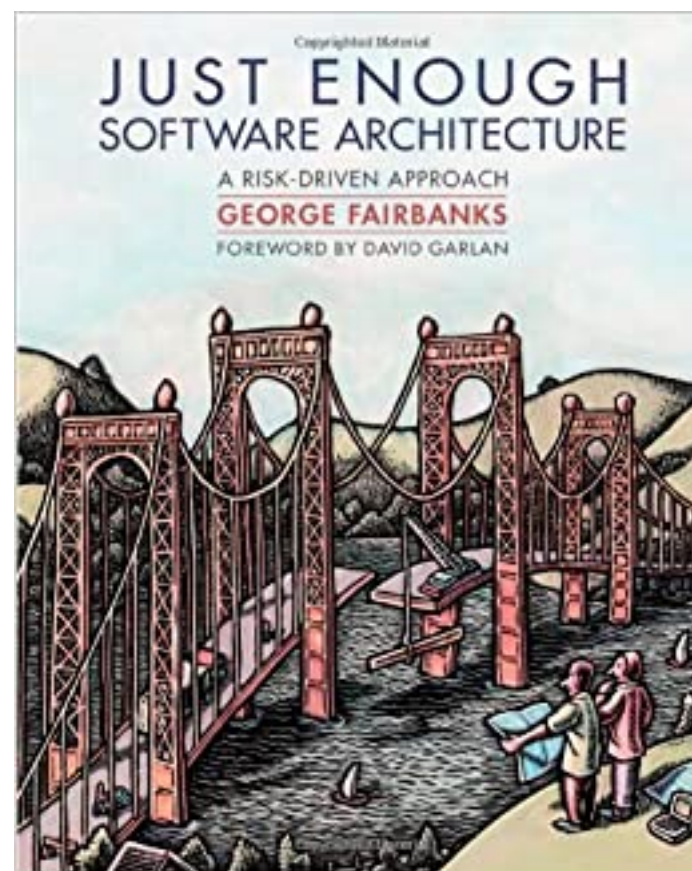
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References

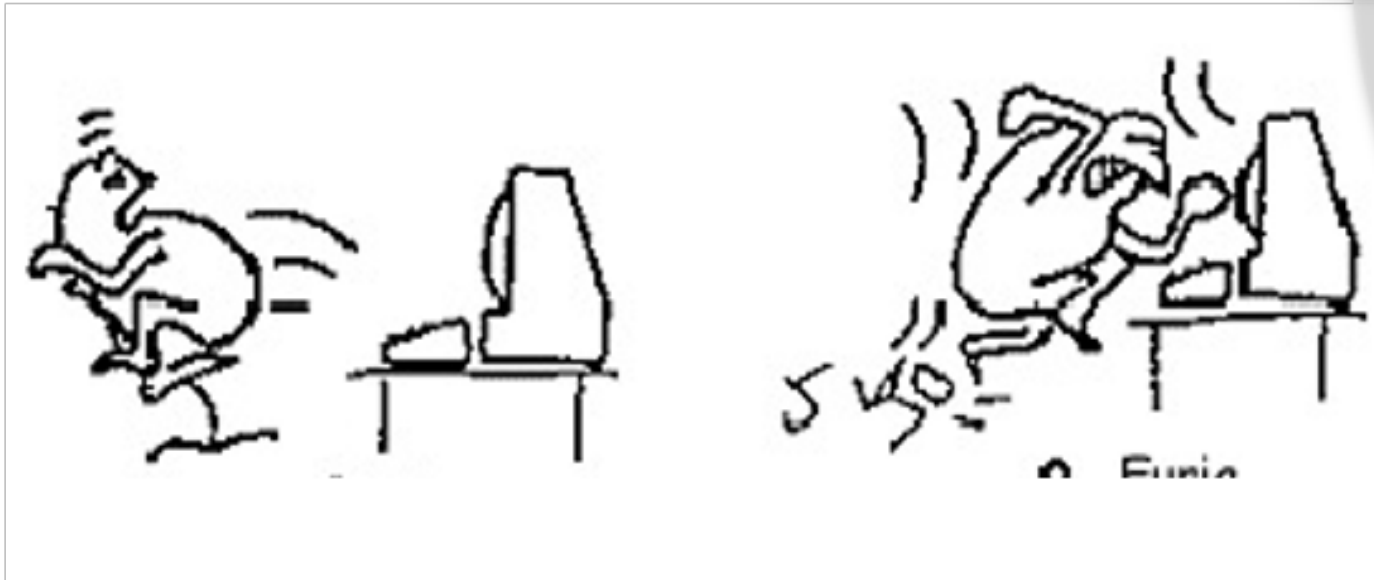
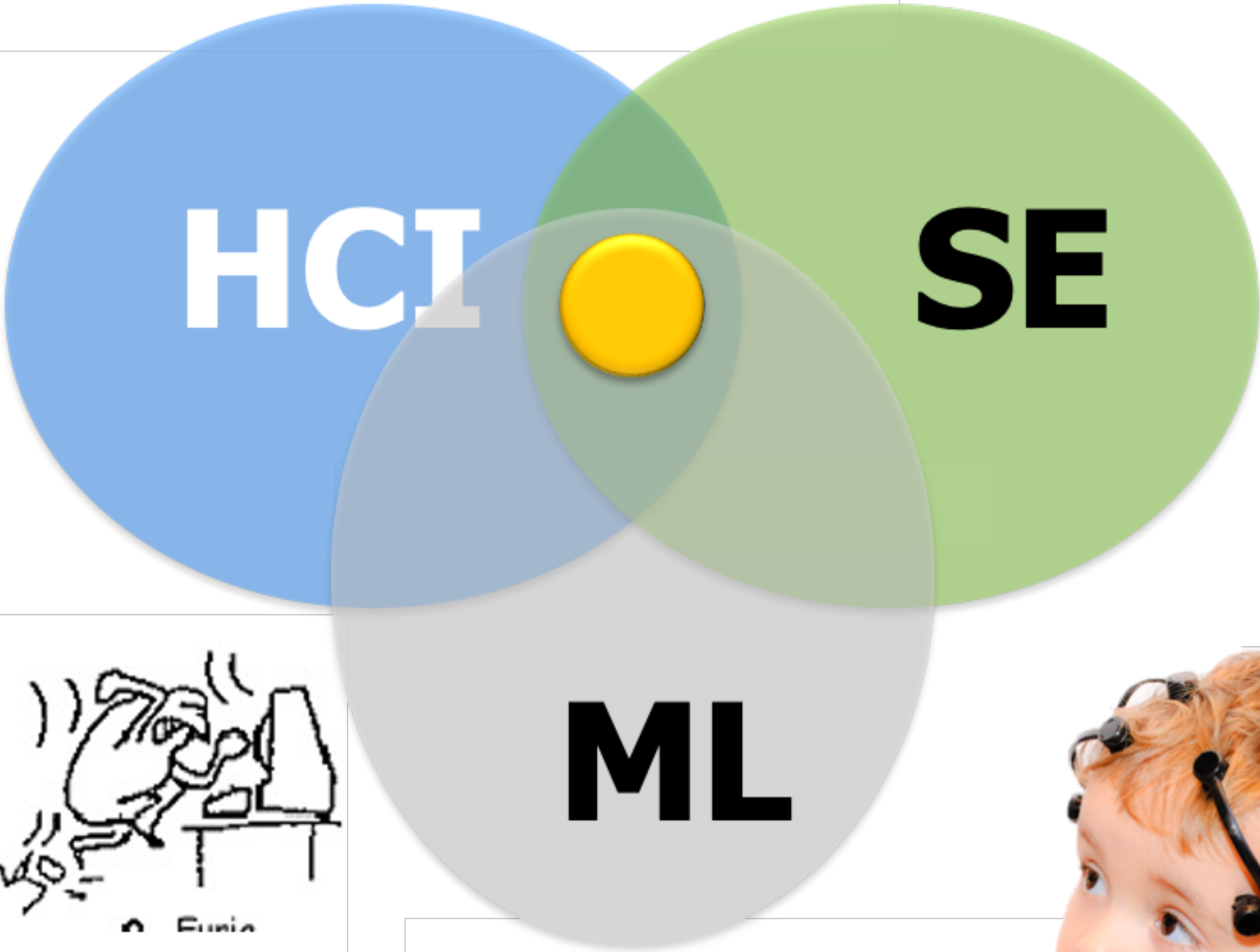
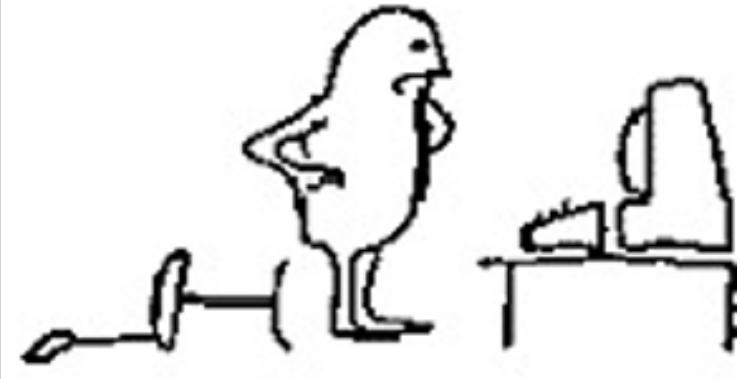
- **Research Papers posted on Canvas**

- Recommended Books:

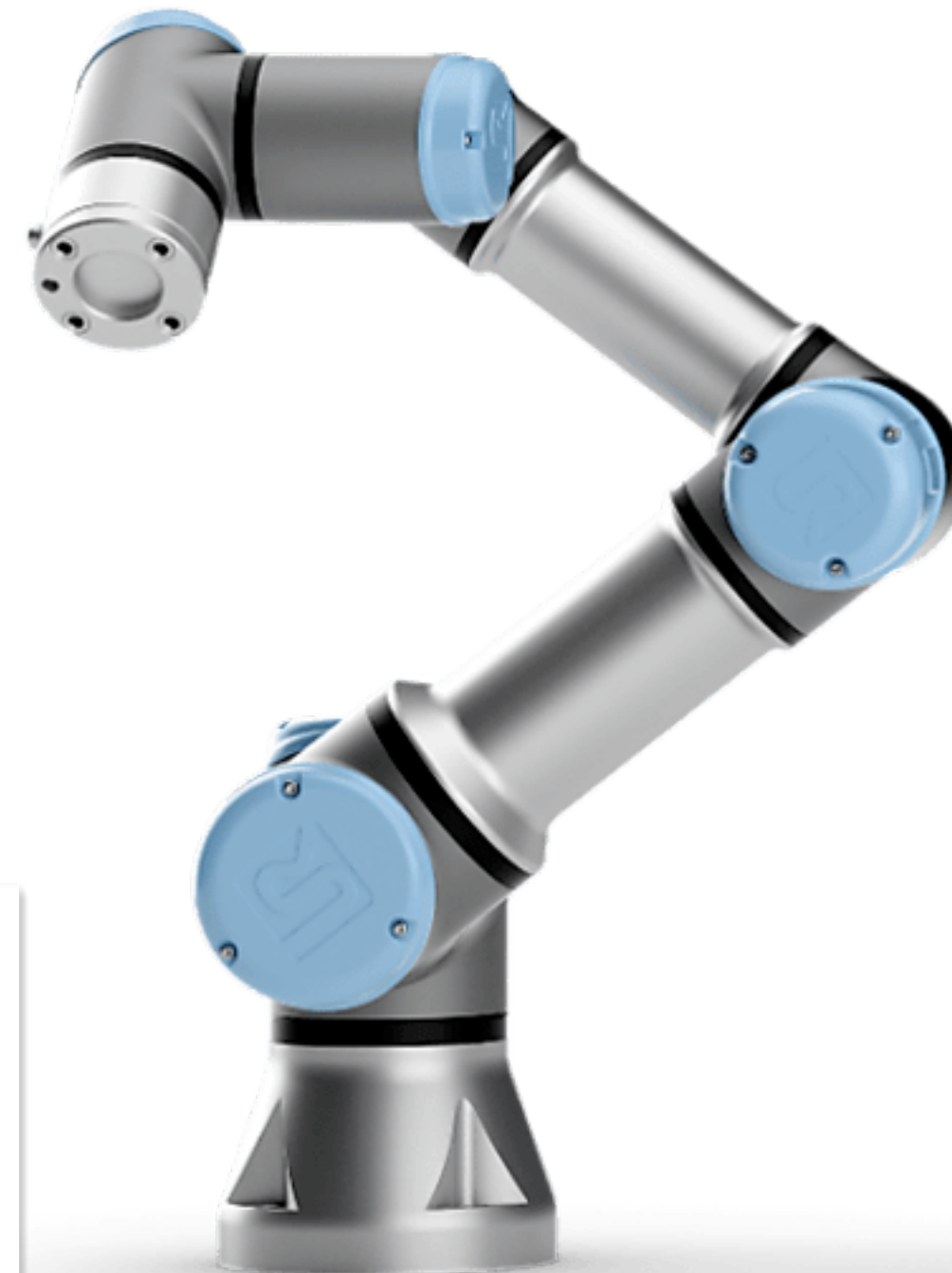


Projects

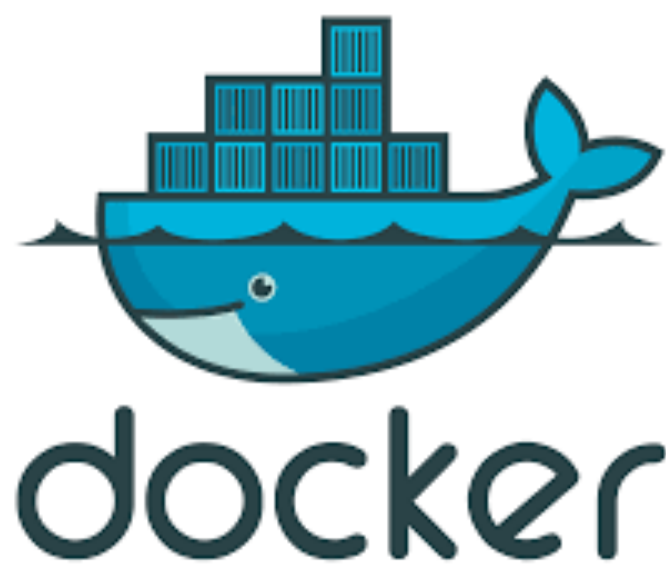
Research



Environment



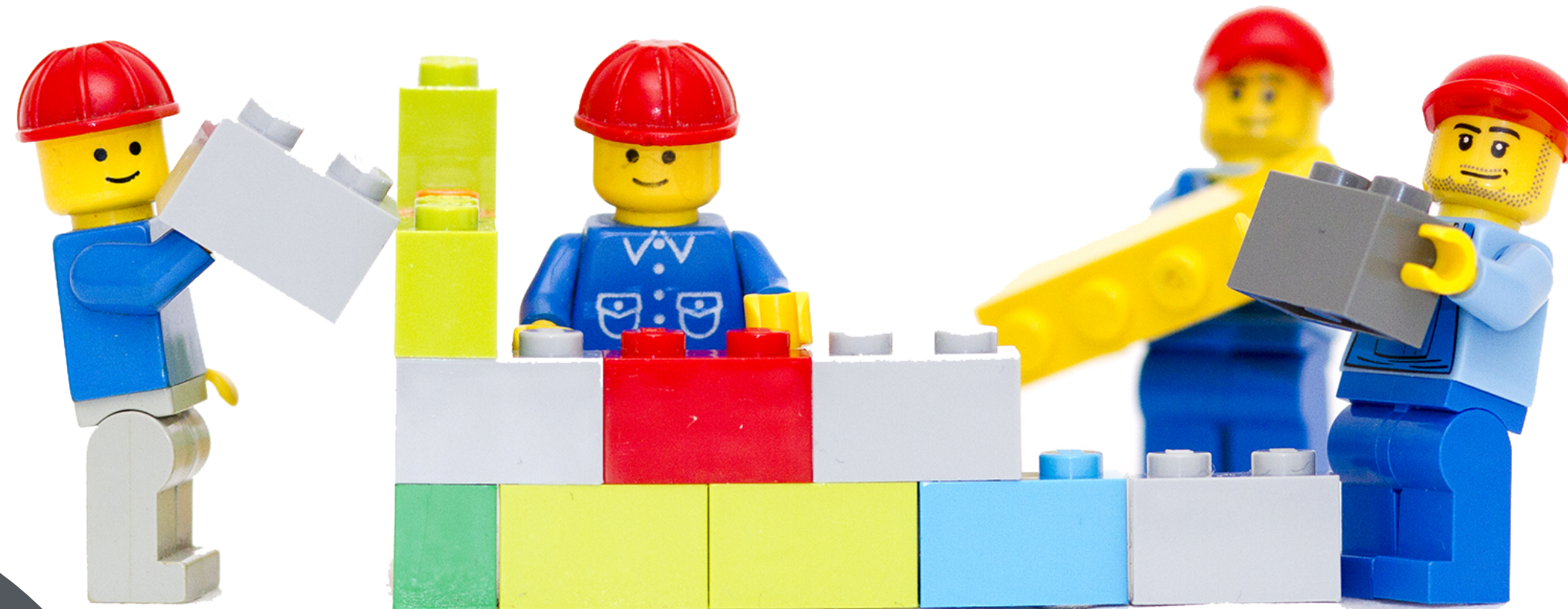
Environment



Calling for Software Engineers

SDK

General
Solutions



Frameworks

Quality

Homework

- Create a Team (3 or 4 members)
- Think about a project





CSC 509 Software Engineering
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Fall 2024

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