Introduction to **Software Architecture**

Philippe Collet
(95%. Of slides from Sébastien Mosser)

Lecture #1.1, 07.02.2020

Architecture?

“ The **art** or **science** of building; esp. the art or practice of **designing** and **building** edifices for **human use**, taking both **aesthetic** and **practical factors** into account.

[Oxford English Dictionary, 2002]

Architect?

“ **Beautiful**

architectures

do **more** with **less**.

[Stephen J. Mellor]

Organization

ISA & DevOps as a Single Module

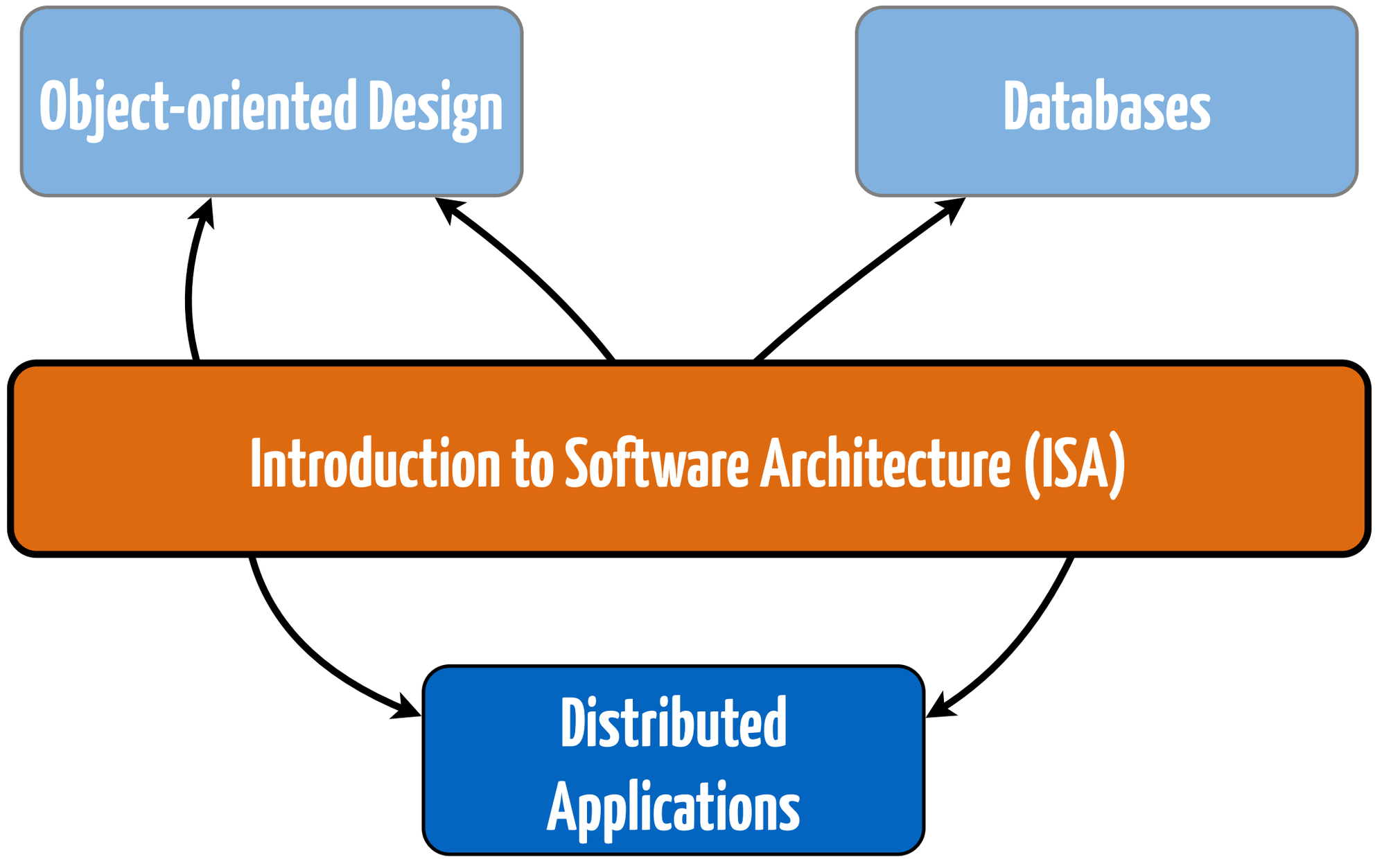
Week	Friday Morning				Friday Afternoon			
	08:00 - 09:00	09:00 - 10:00	10:15 - 11:15	11:15 - 12:15	13:30 - 14:30	14:30 - 15:30	15:45 - 16:45	16:45 - 17:45
6	ISA Overview		Project kick-off		DevOps overview	TD DevOps on TCF		
7	EJB, ORM	TD ISA on TCF			Test	TD Test	Project work	
8	View point	Project work			Artifactory	Distributed CI		
9	Winter Break							
10	Interoperability & WS	Project work			Multi-plan CI	Docker TD		
11	Arch Dojo	Project work			Whiteboard session	Multi-plan CI		
12	Technical interview (Minimal & Viable Product)				Technical interview (Minimal & Viable Product)			
13	Persistence	Project work			Docker	Project work		
14	Stateful Services	Project work			Compose	Project work		
15	Interceptors	Project work			Kubernetes	Project work		
16	Easter Break							
17		Architecture Exam (3 hours)				DevOps Exam (3 hours)		
18	Bank Holiday, no TD, but project work during the other days of the week							
19	Bank Holiday, no TD, but project work during the other days of the week							
20	Technical interview (Minimal & Viable Product)							

Shared Case study & Technological Stack

Contract

- Students:
  - **No computer** during lectures
  - **Be on time** (lectures, labs)
  - Project **involvement**
  - **Prepare** when asked for
- Staff:
  - One-week latency feedback
  - Availability (slack, meeting)

Intro. to Soft. Arch.: Dependencies



The team

ISA

Anne-Marie Déry
Polytech

Laureen Ginier
IBM

DEVOPS

Philippe Collet
Polytech

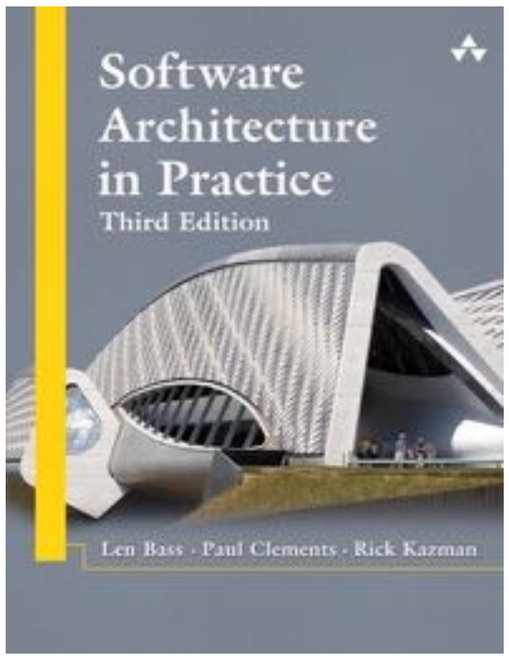
Guilhem Molines
IBM

Salah Dahmoul
Orange

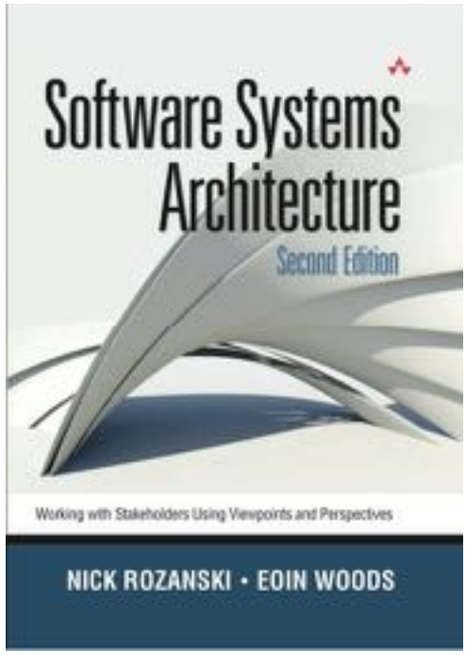
https://github.com/collet/isa-devops

slack **#si4-isa-devops**

Bibliography (technologically independent)

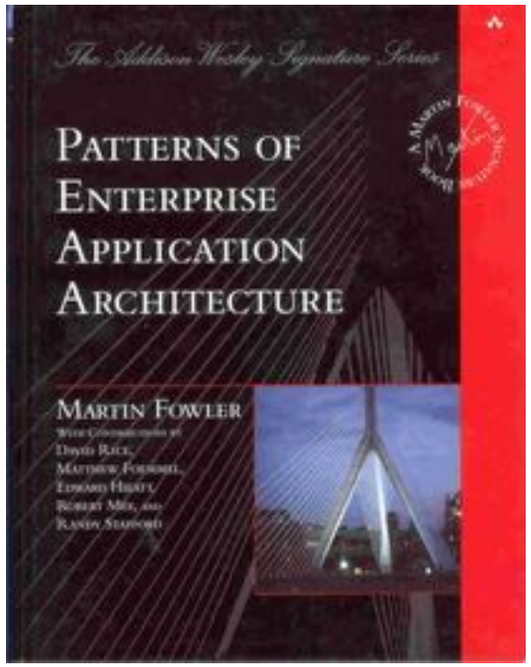


[SAiP, 2012]

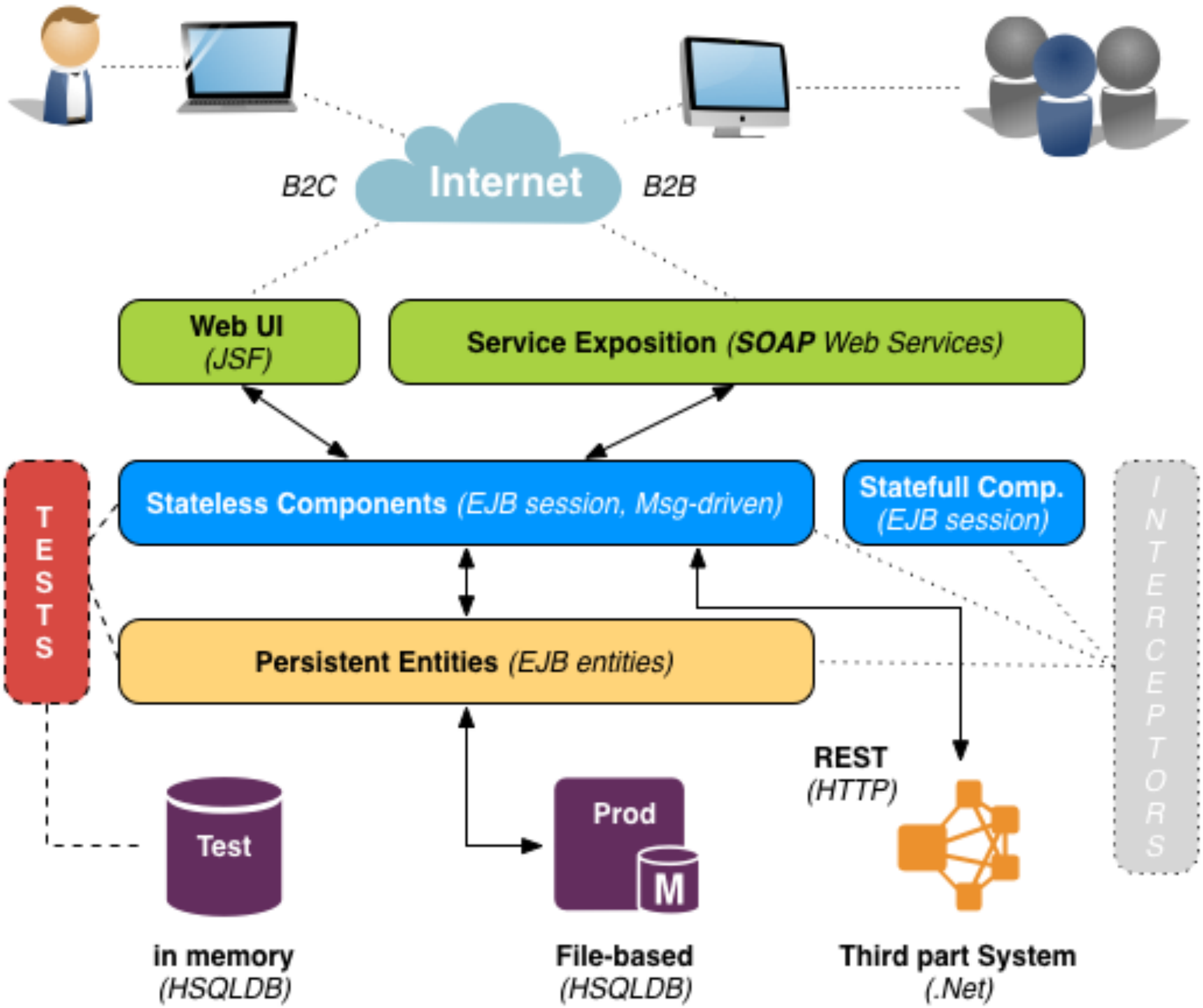


[SSA, 2011]

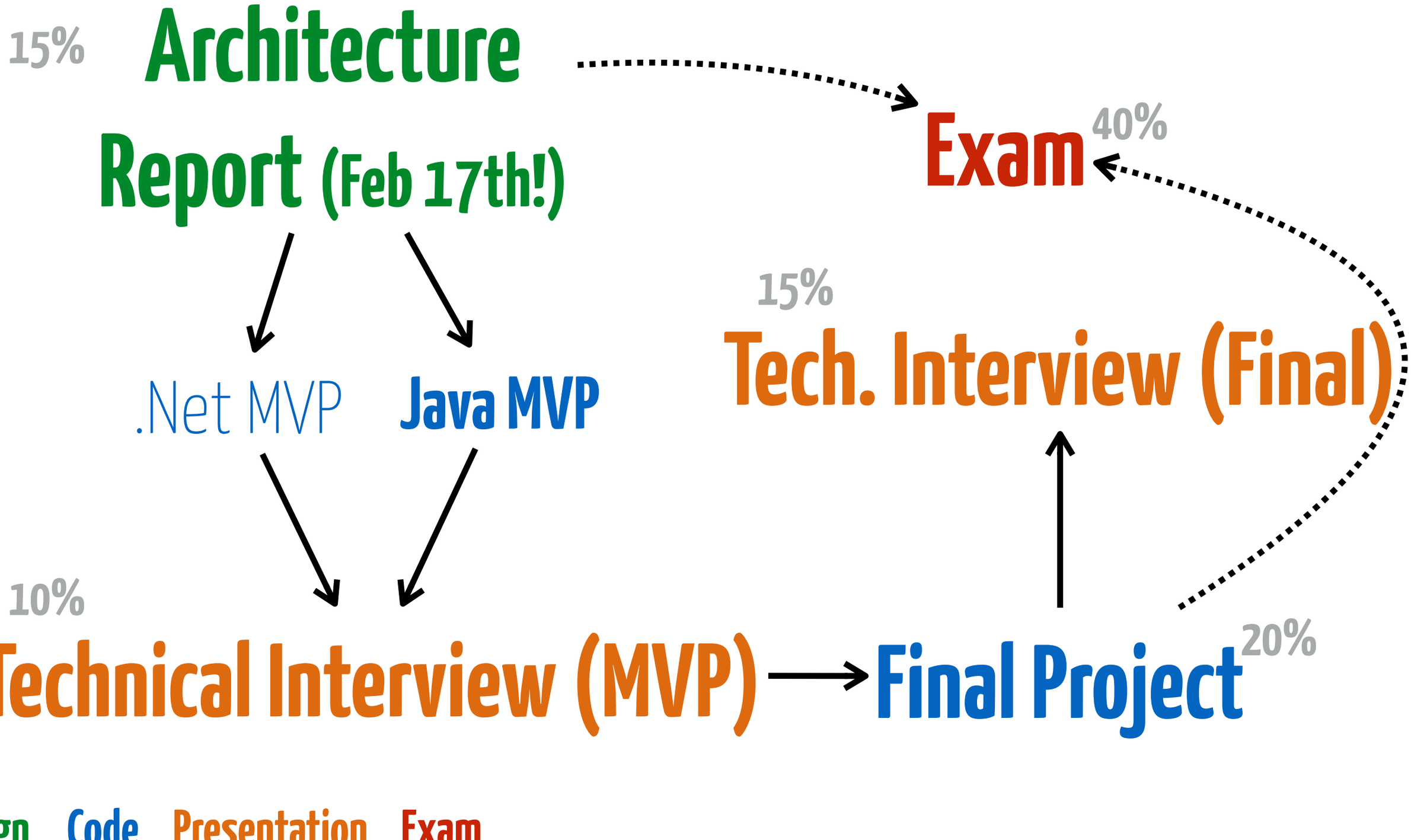
[BA, 2009]



[PoEAA, 2002]


B2C
Internet
B2B
Web UI
(JSF)
Service Exposition (SOAP Web Services)
TESTS
Stateless Components (EJB session, Msg-driven)
Statefull Comp.
(EJB session)
INTERCEPTORS
Persistent Entities (EJB entities)
REST
(HTTP)
Test
Prod
M
in memory
(HSQLDB)
File-based
(HSQLDB)
Third part System
(.Net)

Evaluation (dependency graph)



Design Code Presentation Exam

Homework

Today

Building teams of 5

Setup : GitHub classroom / team / Repo / kanban

Compiling & Understanding TCF (The Cookie Factory)

Delivery

Monday 17th, February, 8:00pm

Architecture document on the git (~10 pages long)

- Use cases diagrams;
- Business objects definition as class diagram;
- Interfaces pseudo-code definition (e.g., Java like);
- Components described by a component diagram;

Each artefact must be justified with respect to its relevance in your architecture.