eSAAM 2023

on Cloud to Edge Continuum

Modular Monoliths the way to Standardization

Presenter: Michail Tsechelidis
tsechelidis.michail@gmail.com

HELLENIC REPUBLIC
UNIVERSITY OF MACEDONIA

Co-authors: Nikolaos Nikolaidis, Theodore Maikantis, Apostolos Ampatzoglou
Ludwigsburg, Germany

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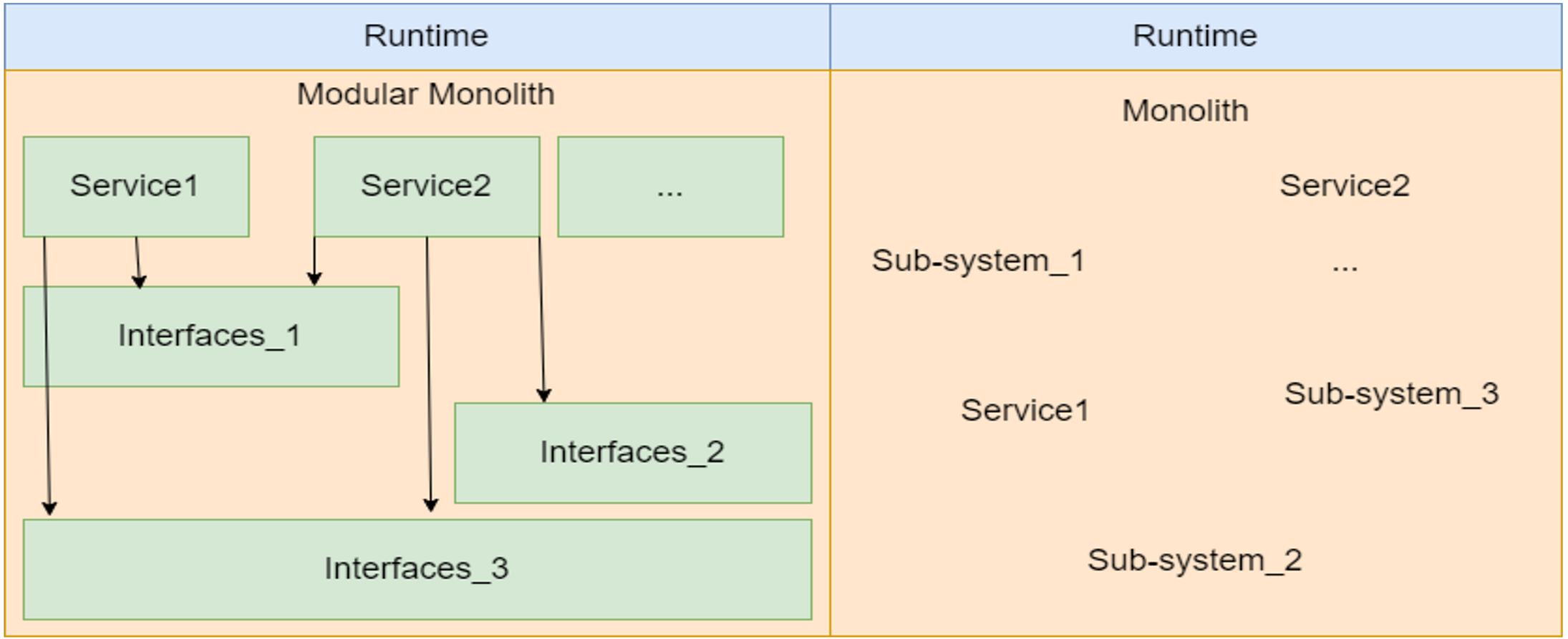
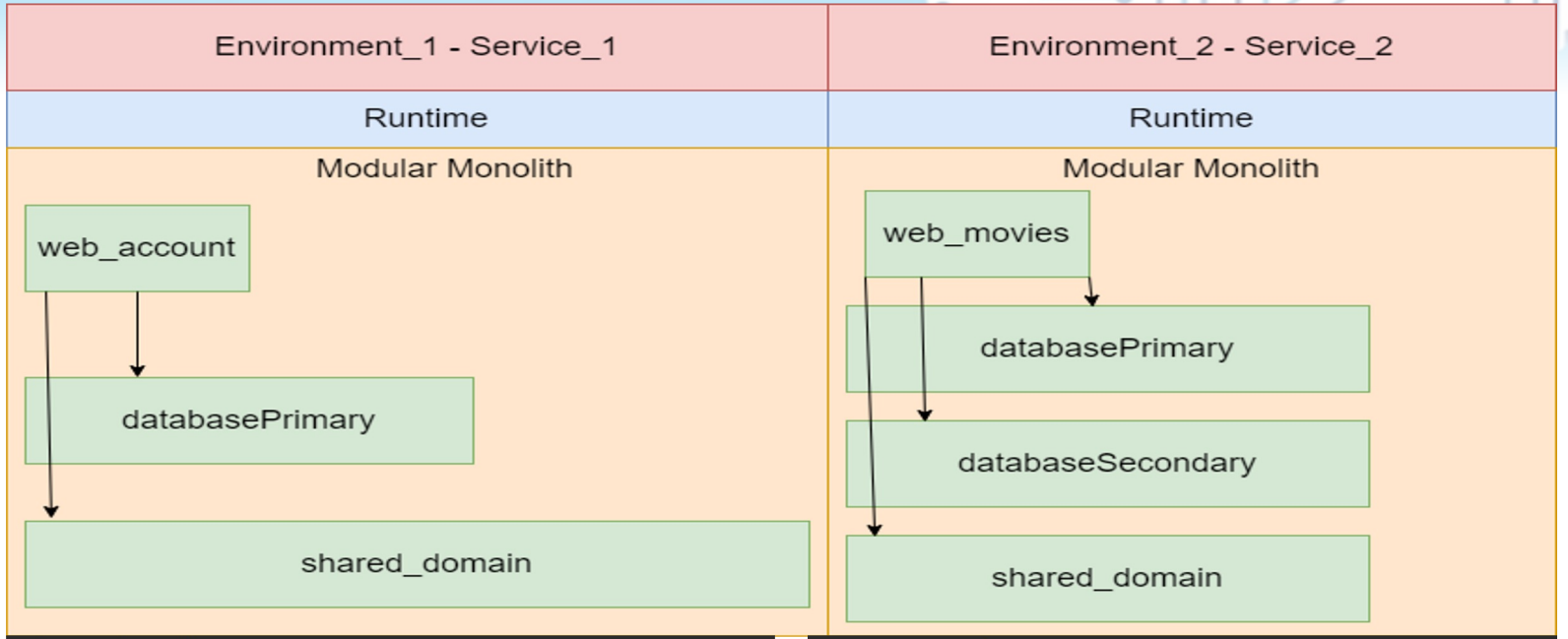
Why?

- Resolve Development Requirements
- Control Granularity with ease
- Aim for Simpler Infrastructures (ex. people, networks, pipelines, ….)

Modular Monolith?



Controlling Granularity




```xml
<dependencies>

    <dependency>
        <groupId>tsechelidisMichail</groupId>
        <artifactId>web_account</artifactId>
        <version>${version}</version>
        <scope>runtime</scope>
    </dependency>

</dependencies>
```

```xml
<dependencies>

    <dependency>
        <groupId>tsechelidisMichail</groupId>
        <artifactId>web_movie</artifactId>
        <version>${version}</version>
        <scope>runtime</scope>
    </dependency>

</dependencies>
```

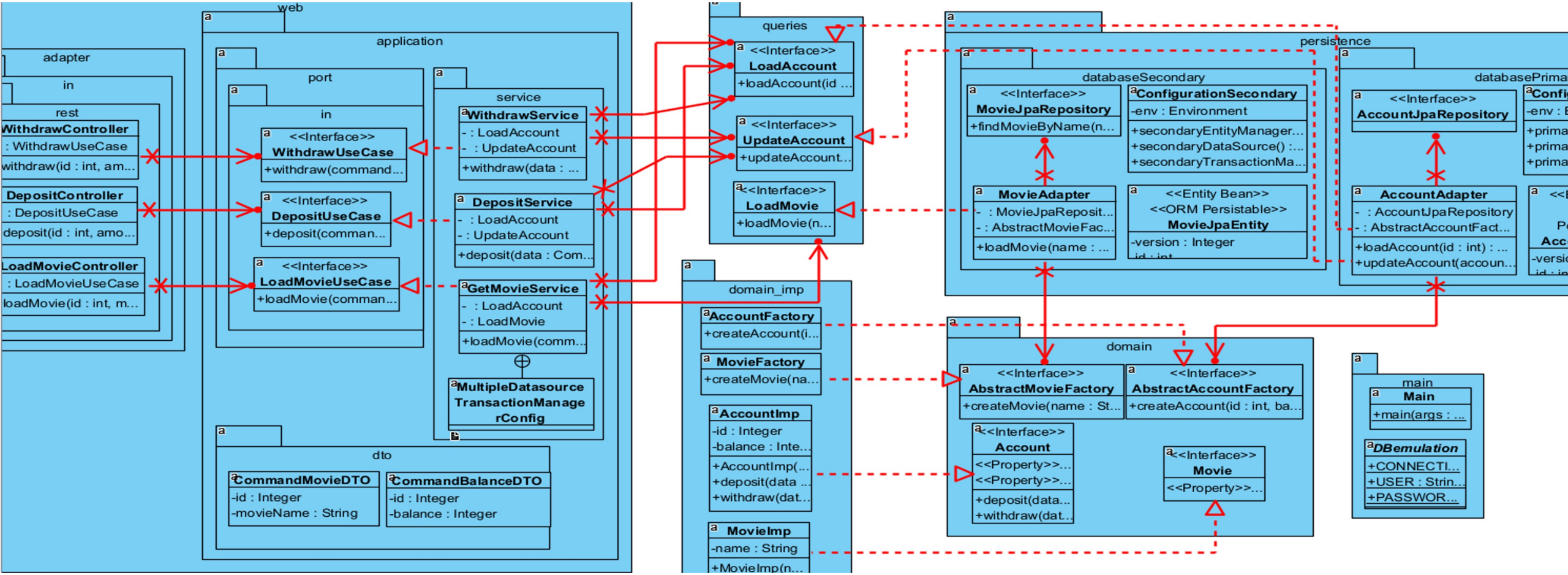
Hexagonal Architecture

- Simple starting point
- Easy identification & extraction of internal functionalities (ex. port.out package structure)

Patterns

- Dependency Injection
- Separated Interfaces
- Layer Supertype
- Abstract Factory

The Monolith Modularized



Modular Compiles

Initial state

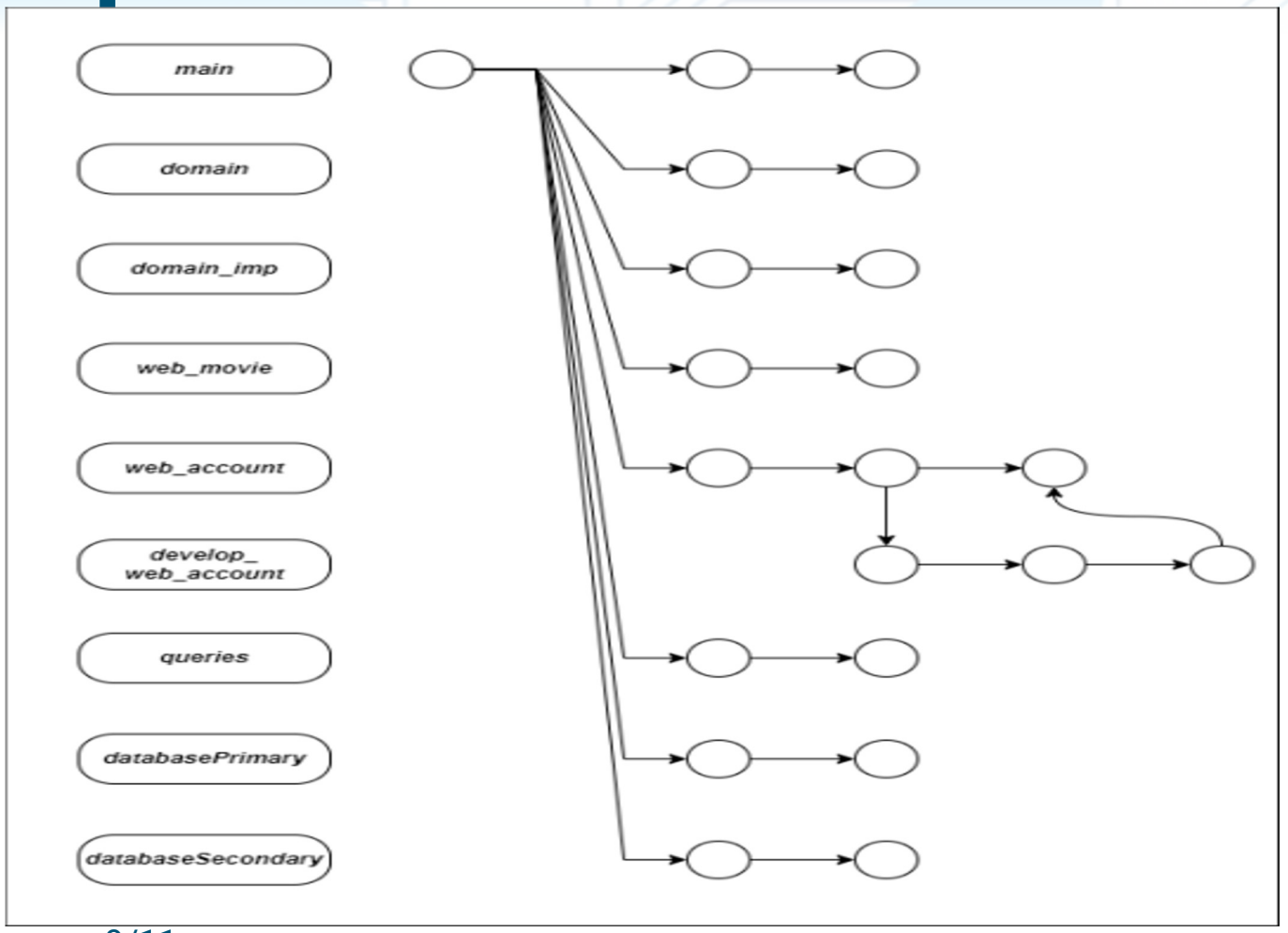
```
[INFO] domain ..... SUCCESS [  1.186 s]
[INFO] queries ..... SUCCESS [  0.079 s]
[INFO] domain_imp ..... SUCCESS [  0.084 s]
[INFO] databasePrimary ..... SUCCESS [  0.106 s]
[INFO] web_account ..... SUCCESS [  0.115 s]
[INFO] databaseSecondary ..... SUCCESS [  0.100 s]
[INFO] web_movie ..... SUCCESS [  0.054 s]
[INFO] main ..... SUCCESS [  0.057 s]
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  2.283 s
```

After change

```
[INFO] domain ..... SUCCESS [  0.792 s]
[INFO] queries ..... SUCCESS [  0.114 s]
[INFO] domain_imp ..... SUCCESS [  0.069 s]
[INFO] databasePrimary ..... SUCCESS [  0.118 s]
[INFO] web_account ..... SUCCESS [  0.073 s]
[INFO] databaseSecondary ..... SUCCESS [  0.058 s]
[INFO] web_movie ..... SUCCESS [  1.931 s]
[INFO] main ..... SUCCESS [  0.108 s]
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  3.716 s
```

Larger systems have more Development Requirements

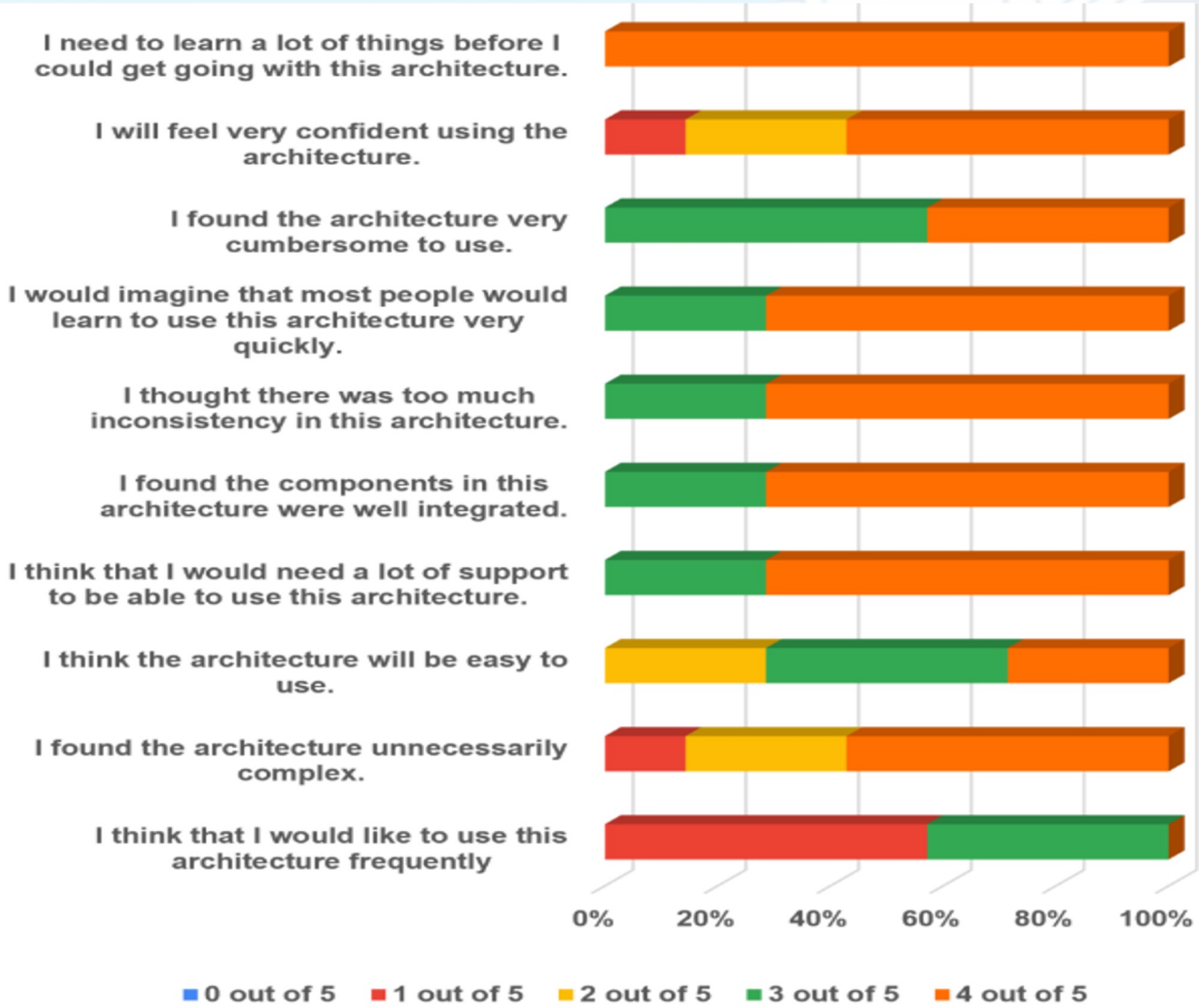
- Git Branches
- Pipelines (ex. Github Actions)
- Artifact Repository (ex. Github Packages)



Validation

0/5 Strongly Agree

1/5 Agree



4/5 Strongly Disagree

3/5 Disagree

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Thank you!

Questions?

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