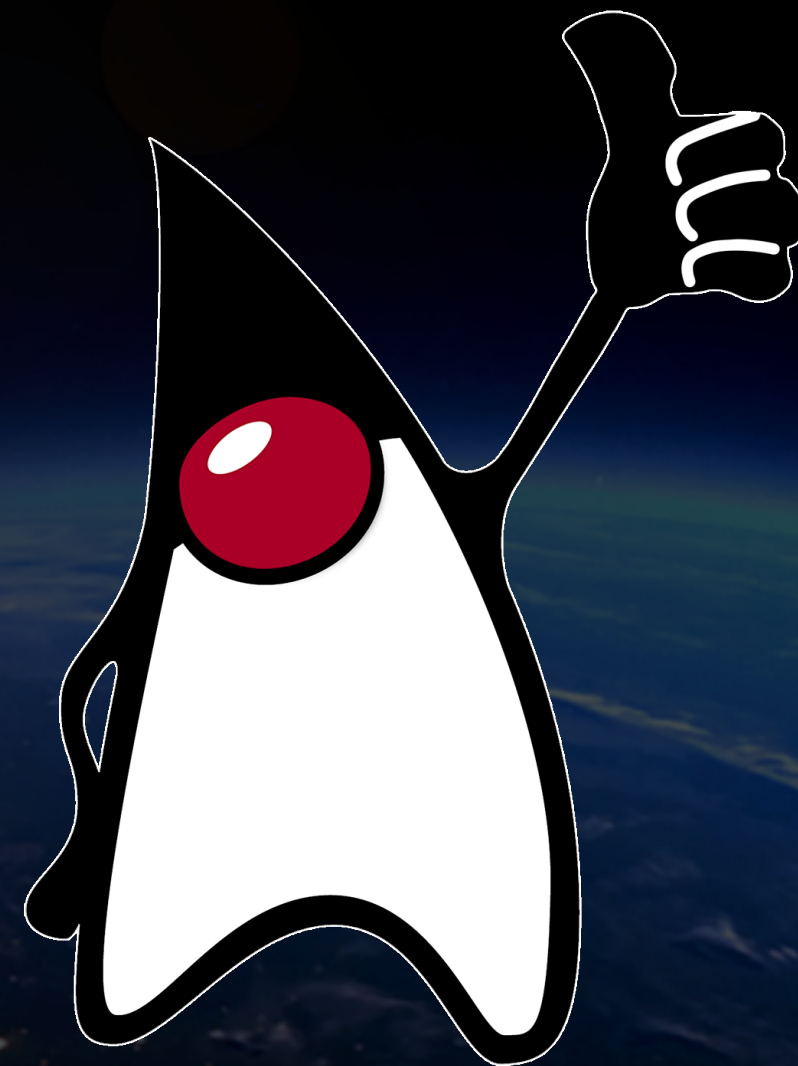


# The MicroServices Smackdown: Data



# Andres Almiray

Seasoned Sourceror  
@ Oracle

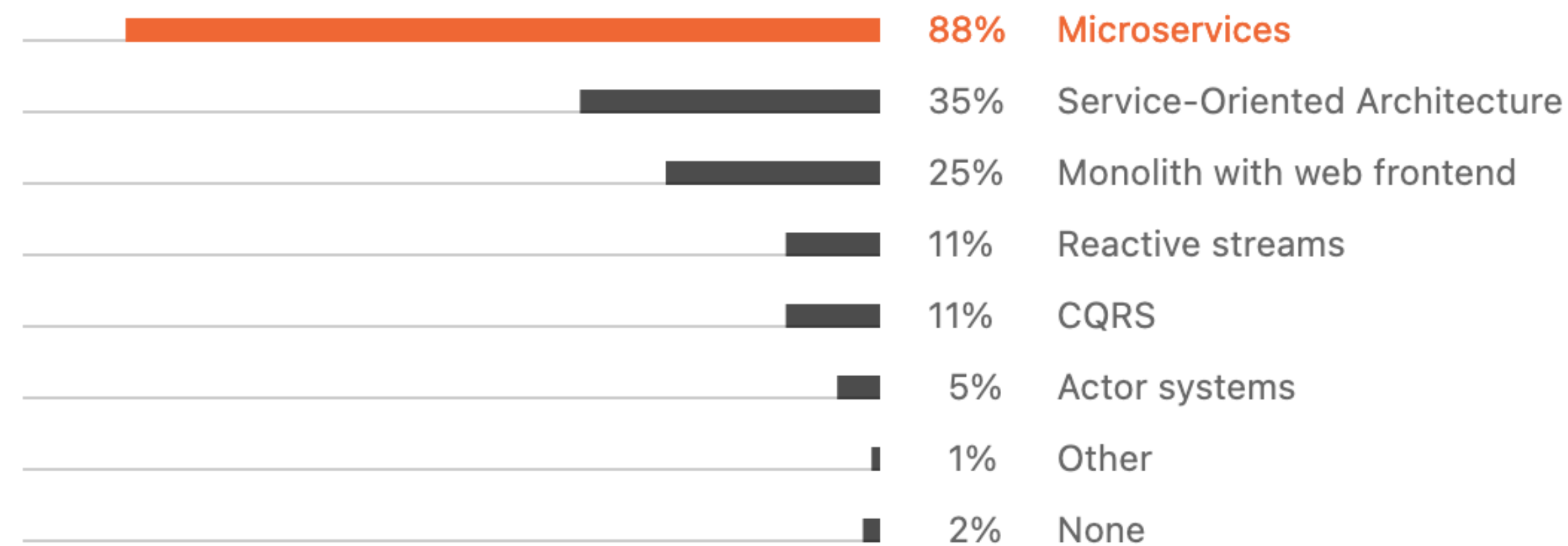
Apache Groovy PMC  
Java Champion  
Hackergarten  
[github.com/aalmiray](https://github.com/aalmiray)



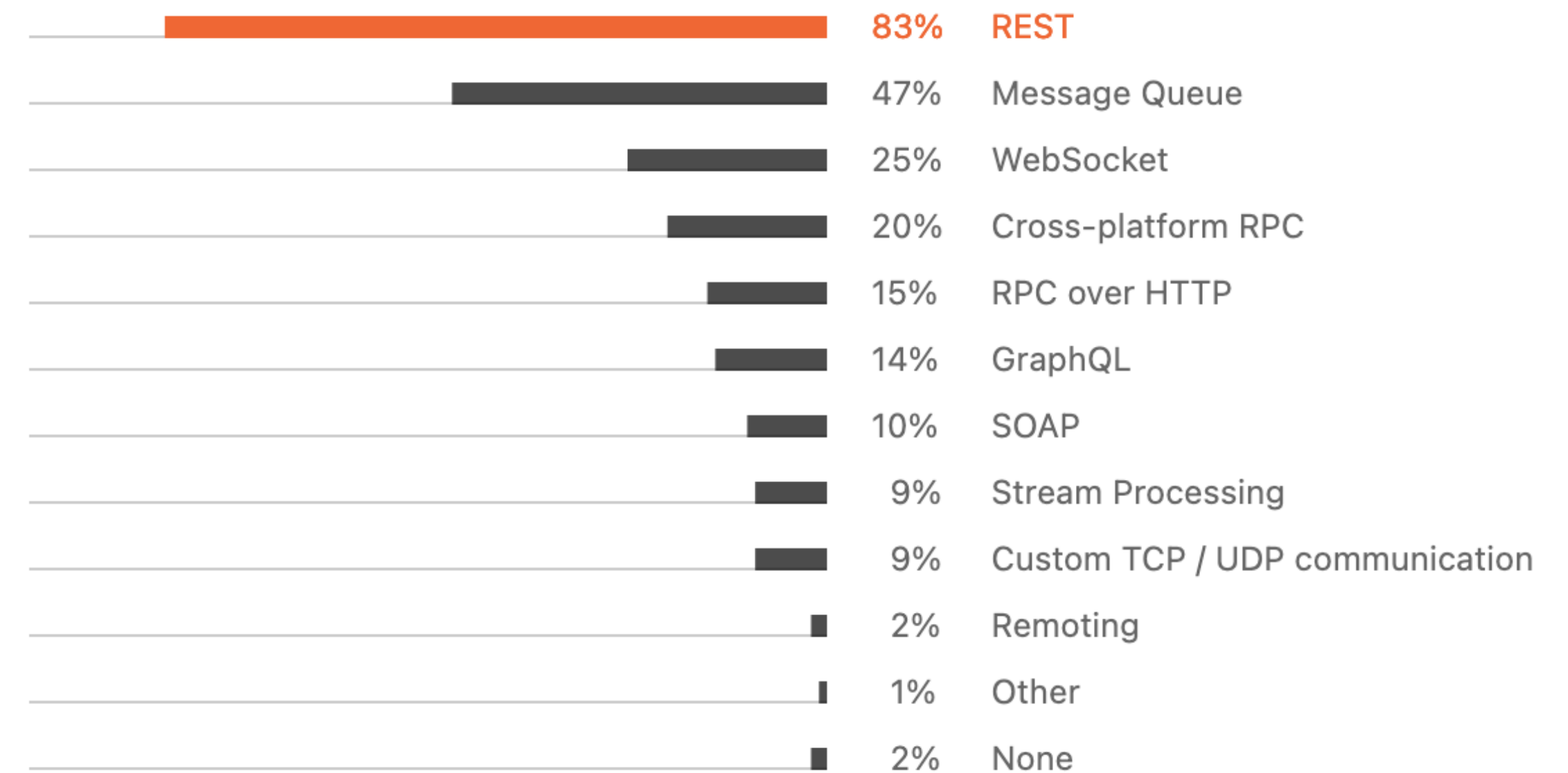
Where are we?

# <https://www.jetbrains.com/lp/devecosystem-2021>

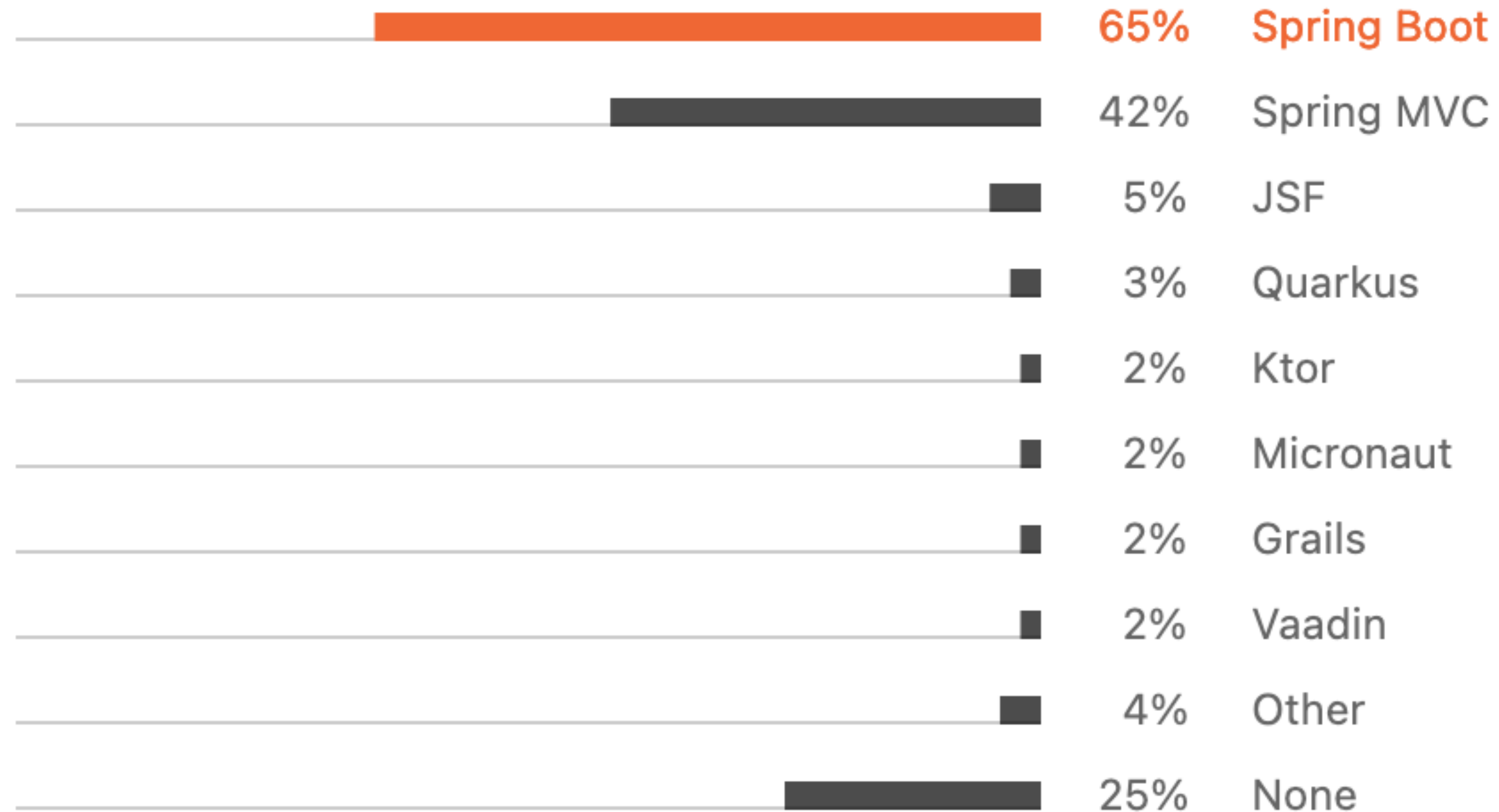
## What approaches do you use in your system design?



## How do the distributed parts of your application communicate?

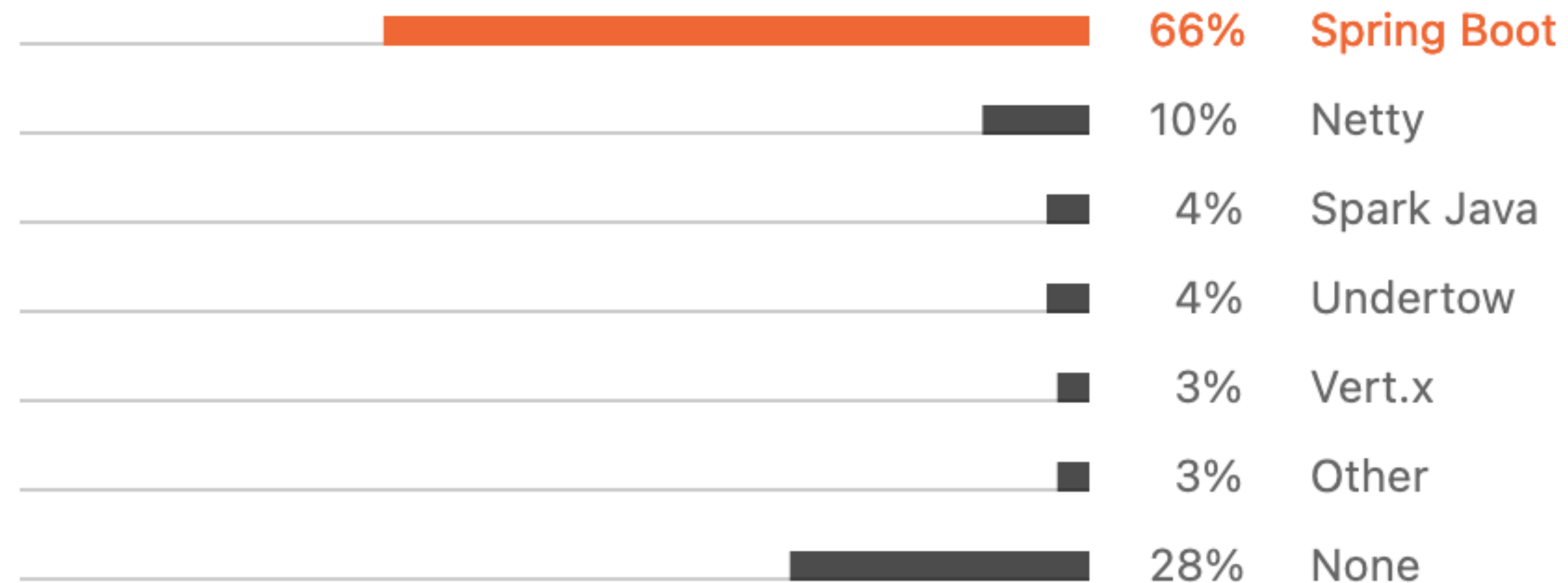


## What web frameworks do you use, if any?



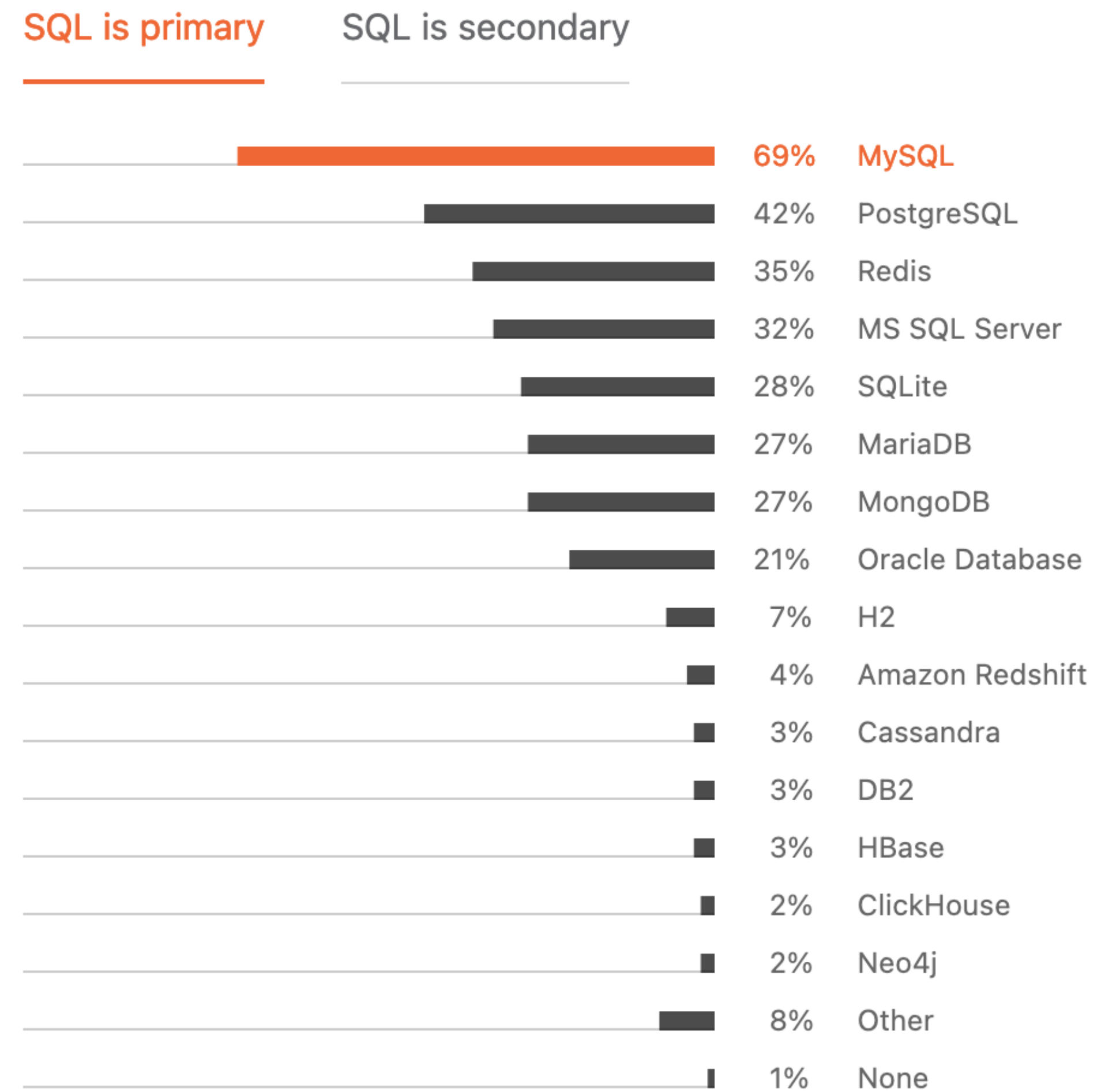
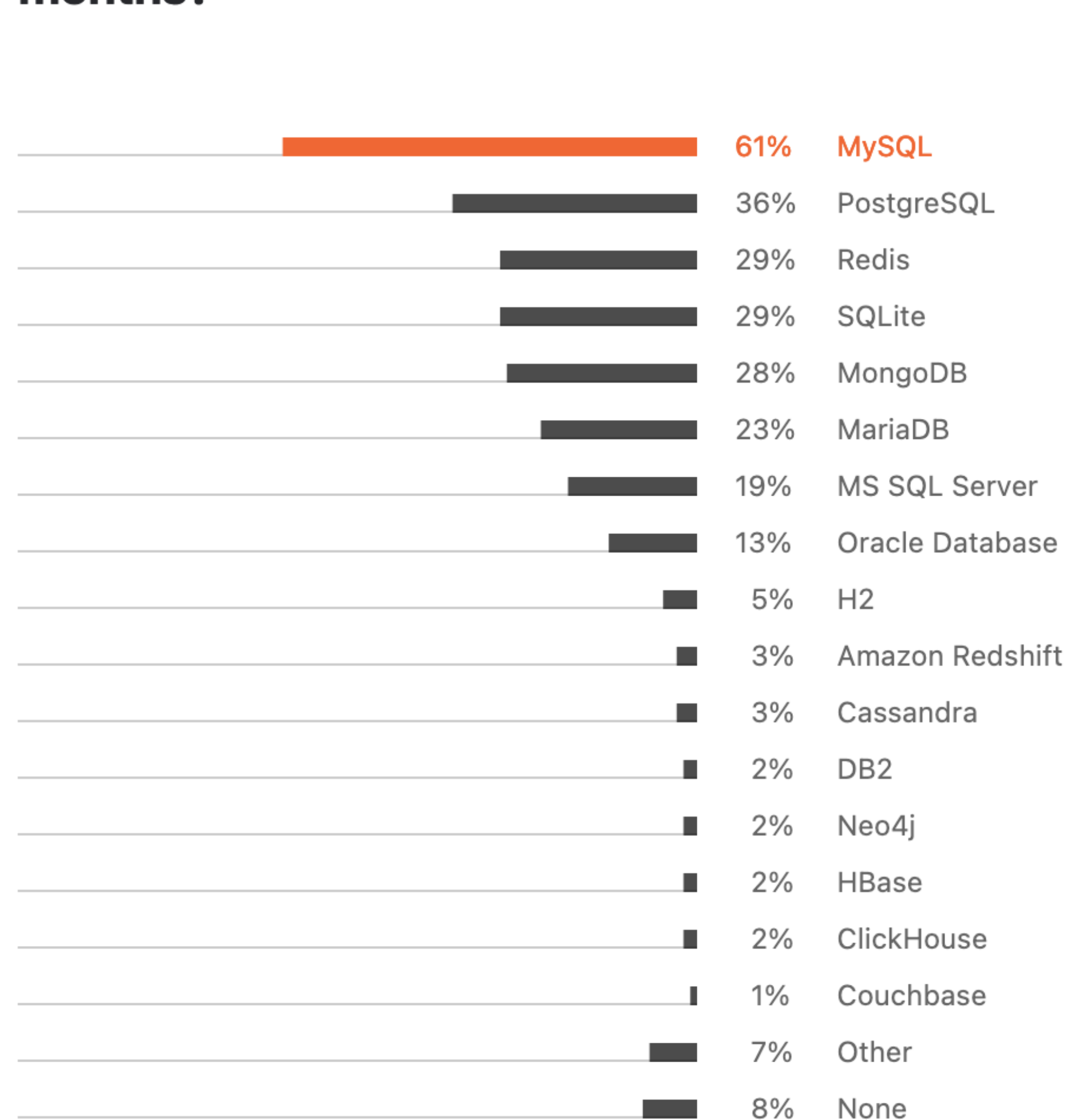
<https://www.jetbrains.com/lp/devecosystem-2021>

## Which frameworks do you use as an alternative to an application server, if any?



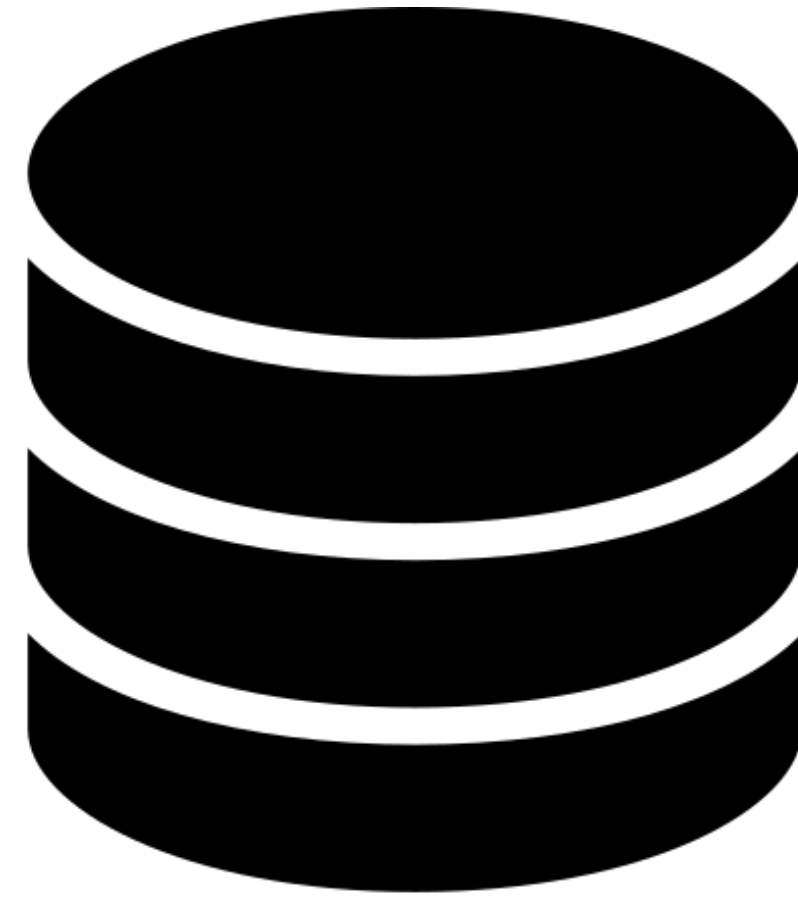
# <https://www.jetbrains.com/lp/devecosystem-2021>

## Which databases have you used in the last 12 months?









# **SQL vs. NoSQL**

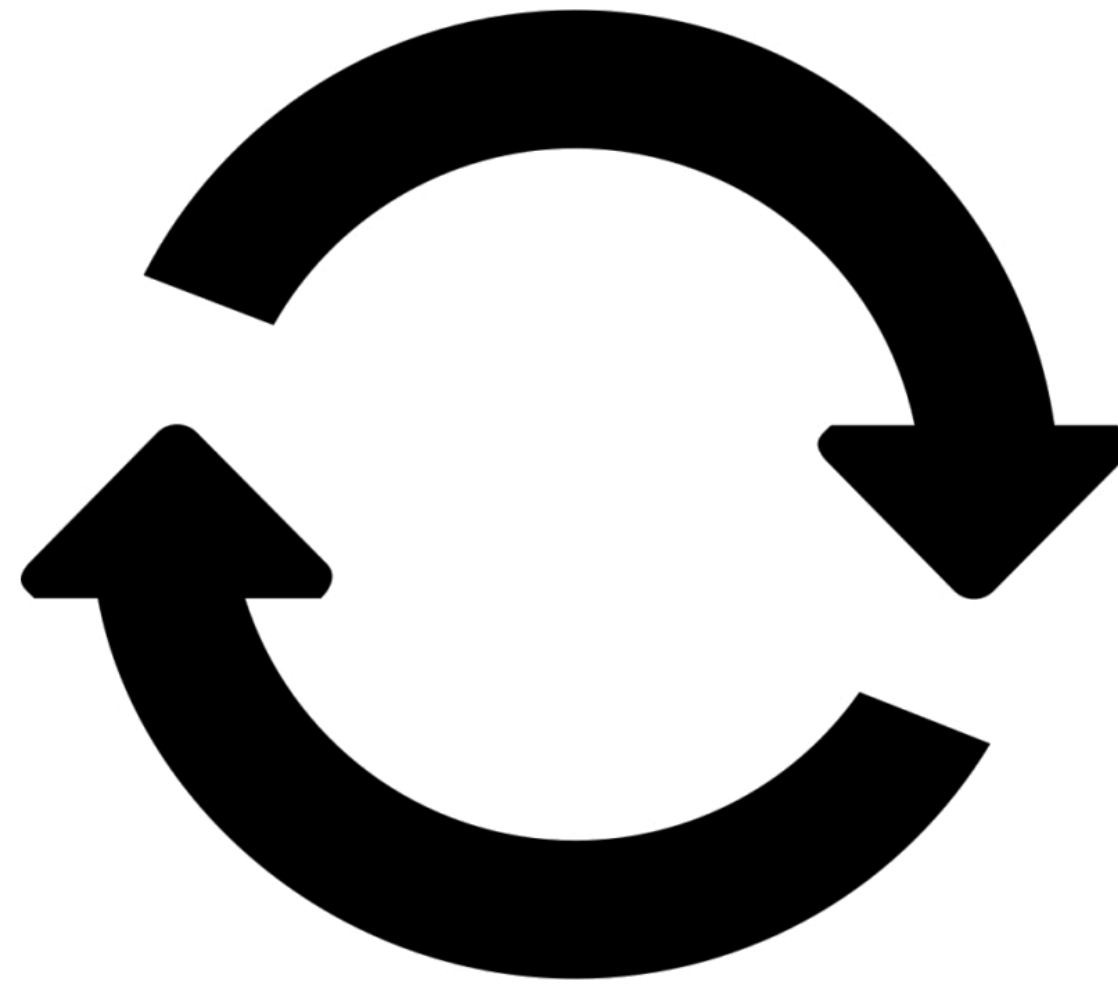


Single-purpose  
Databases

VS



Converged Database



**Sync vs. Async**



**JPA**

**ER2DBC**

# R2DBC

<https://r2dbc.io>

```
ConnectionFactory connectionFactory = ConnectionFactories
    .get("r2dbc:h2:mem:///testdb");

Mono.from(connectionFactory.create())
    .flatMapMany(connection -> connection
        .createStatement("SELECT firstname FROM PERSON WHERE age > $1")
        .bind("$1", 42)
        .execute())
    .flatMap(result -> result
        .map((row, rowMetadata) -> row.get("firstname", String.class)))
    .doOnNext(System.out::println)
    .subscribe();
```



<https://r2dbc.io>

GCP Spanner

H2

MariaDB

MySQL

PostgreSQL

SQL Server

Oracle



<https://vertx.io>

DB2

MySQL

PostgreSQL

SQL Server

MongoDB

Redis

Cassandra

Oracle\*

# Spring Boot

- Choices everywhere:
  - JdbcTemplate
  - Hibernate
  - JPA
  - MyBatis
  - Spring-Data
  - R2DBC
  - ...



**DEMO**



# Resources

- <https://github.com/gvenzl/oci-oracle-xe>
- <https://github.com/oracle/oracle-r2dbc>
- <https://r2dbc.io/drivers/>
- <https://vertx.io/docs/#databases>
- <https://spring.io/projects/spring-data>
- <https://micronaut-projects.github.io/micronaut-data/latest/guide>
- <https://quarkus.io/guides/hibernate-orm-panache>
- <https://quarkus.io/guides/getting-started-reactive>



KEEP  
CALM  
AND  
OPEN  
SOURCE

*Thank*

**YOU**



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