

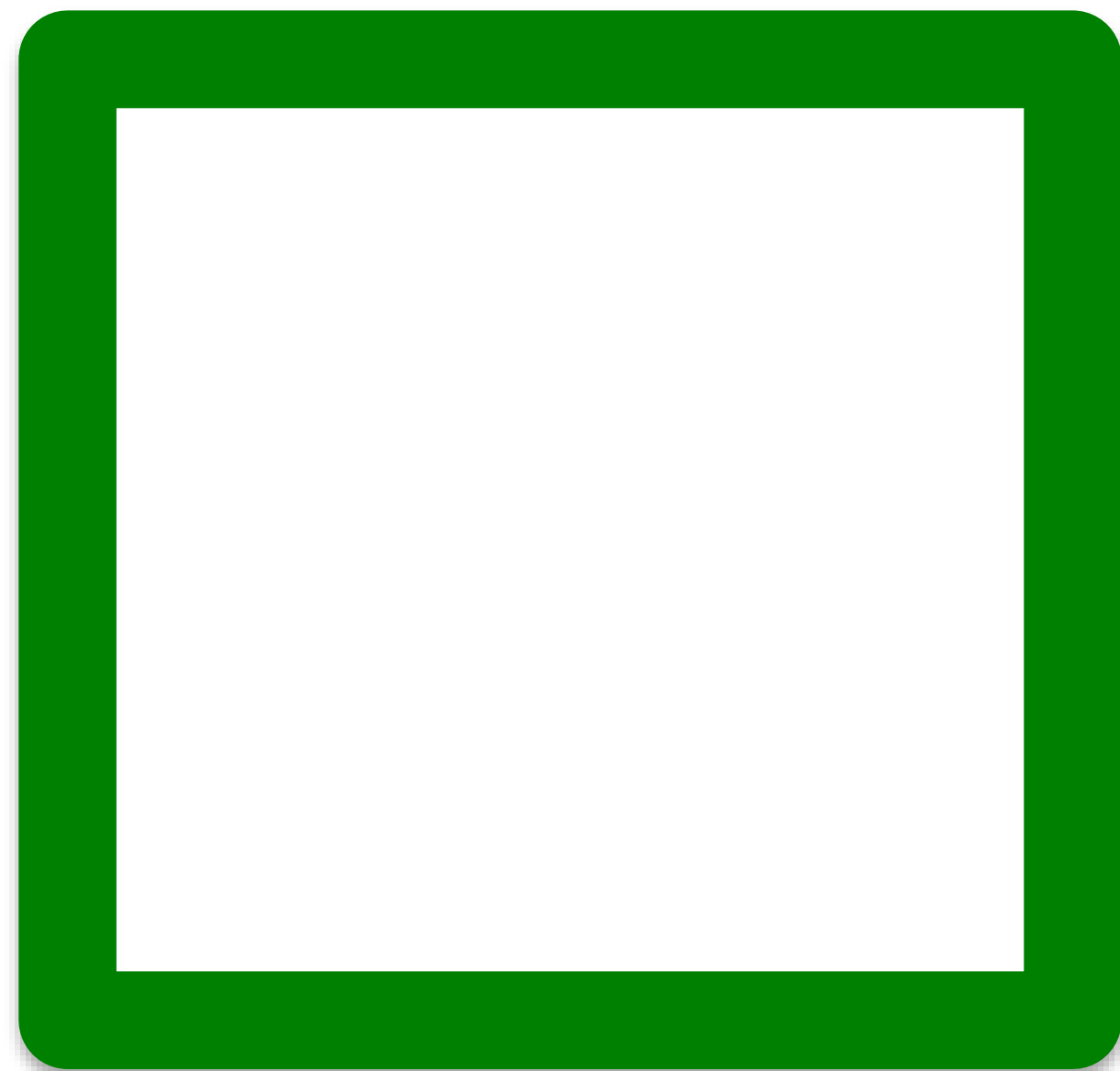
SpringOne Platform by Pivotal®

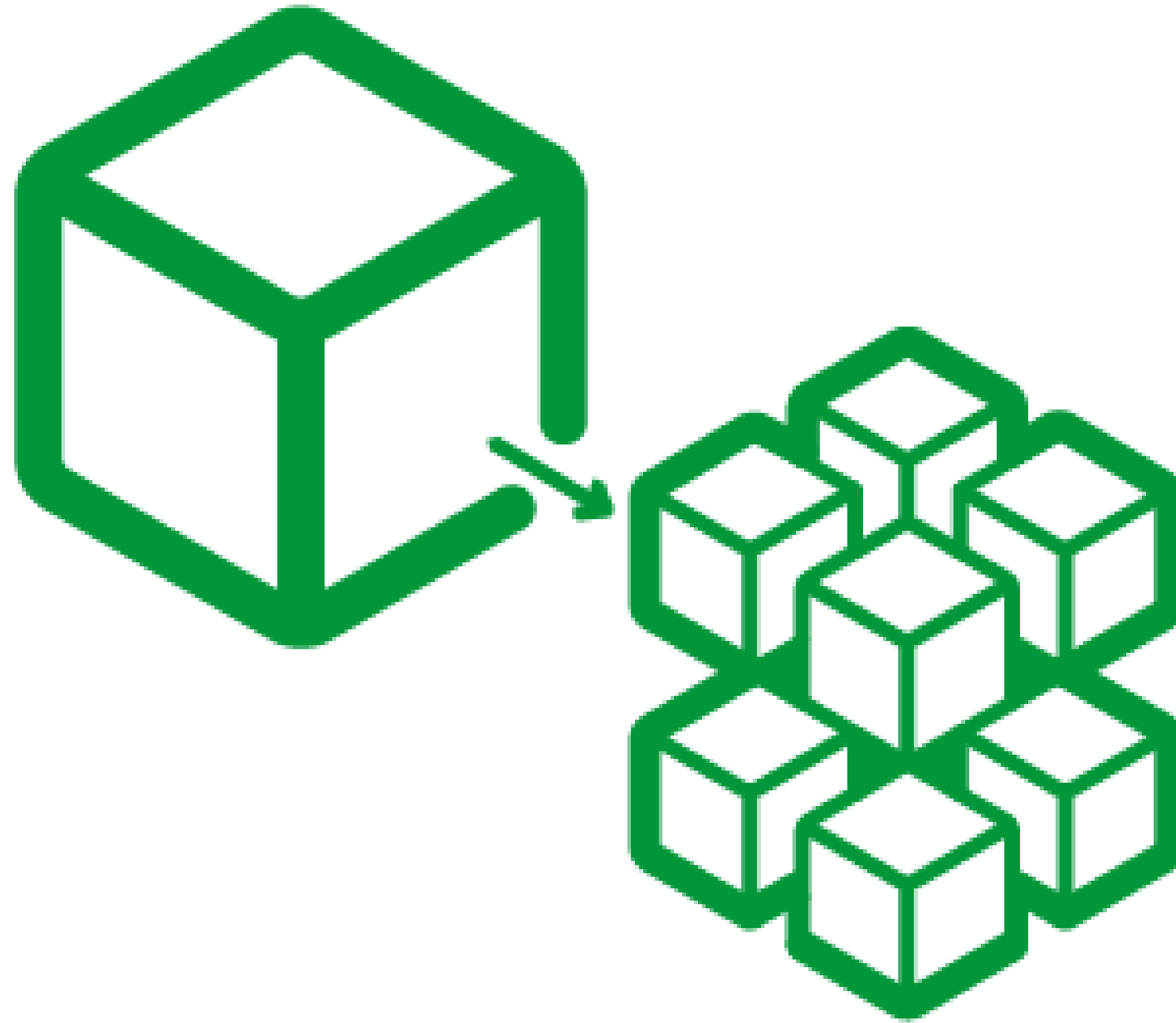
From Zero to Cloud using Spring & Cloud-Native Data Technologies

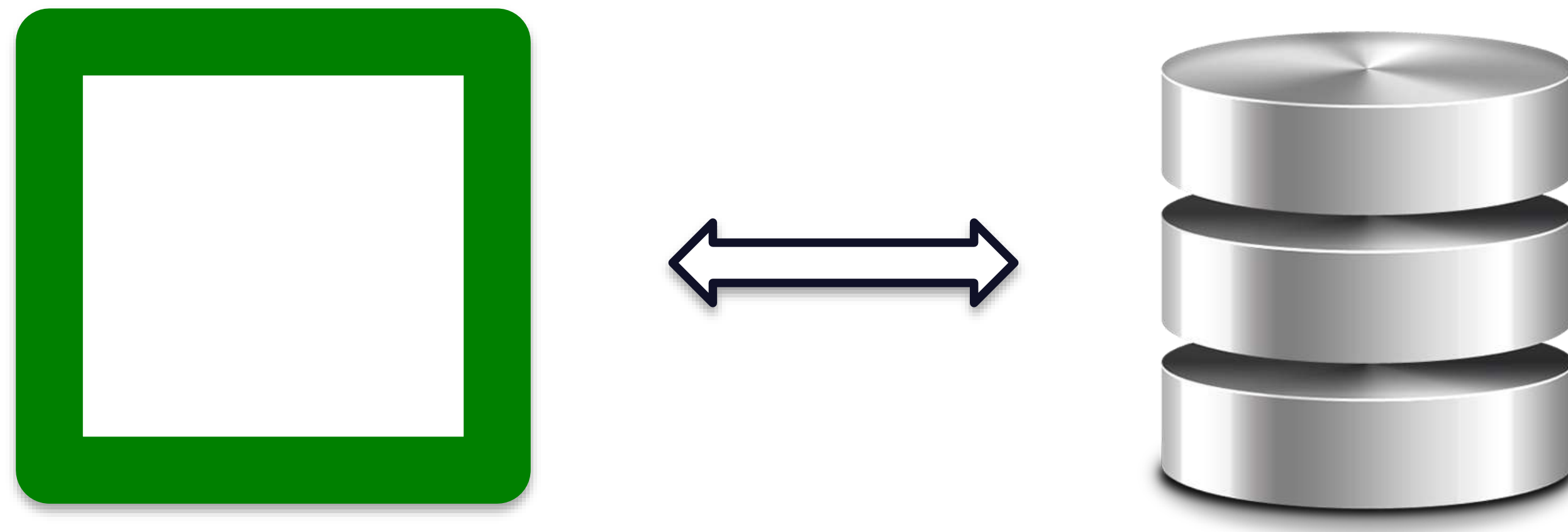
By John Blum
@john_blum

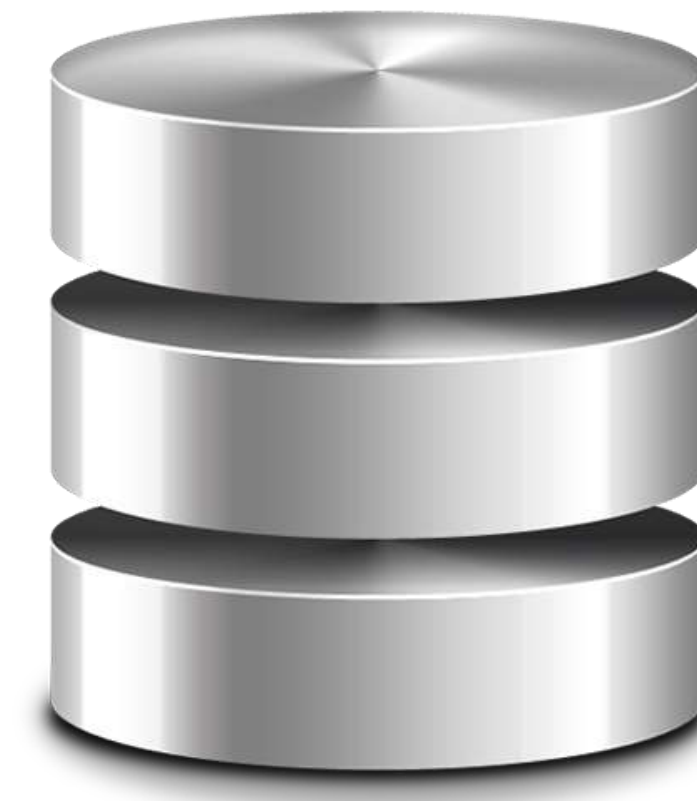
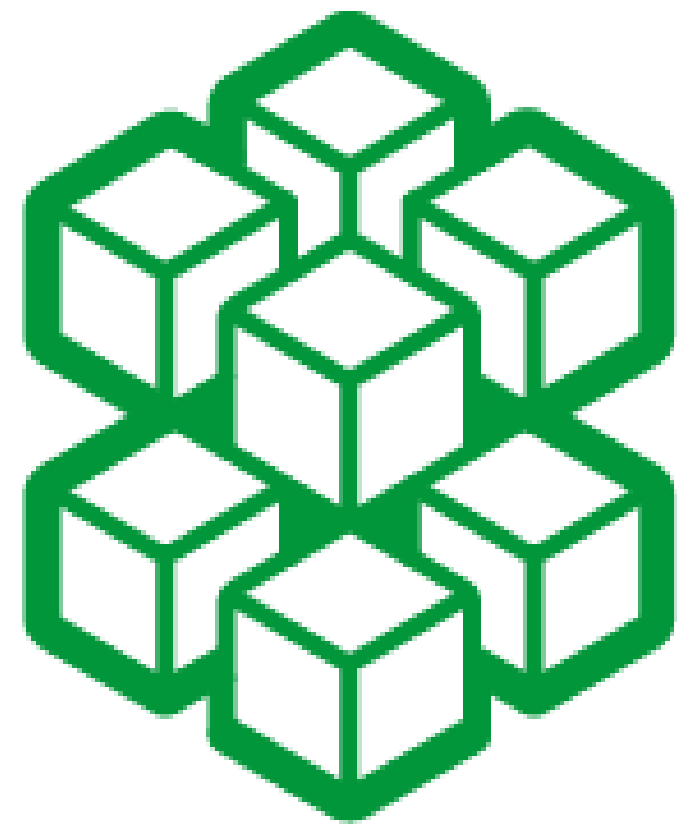


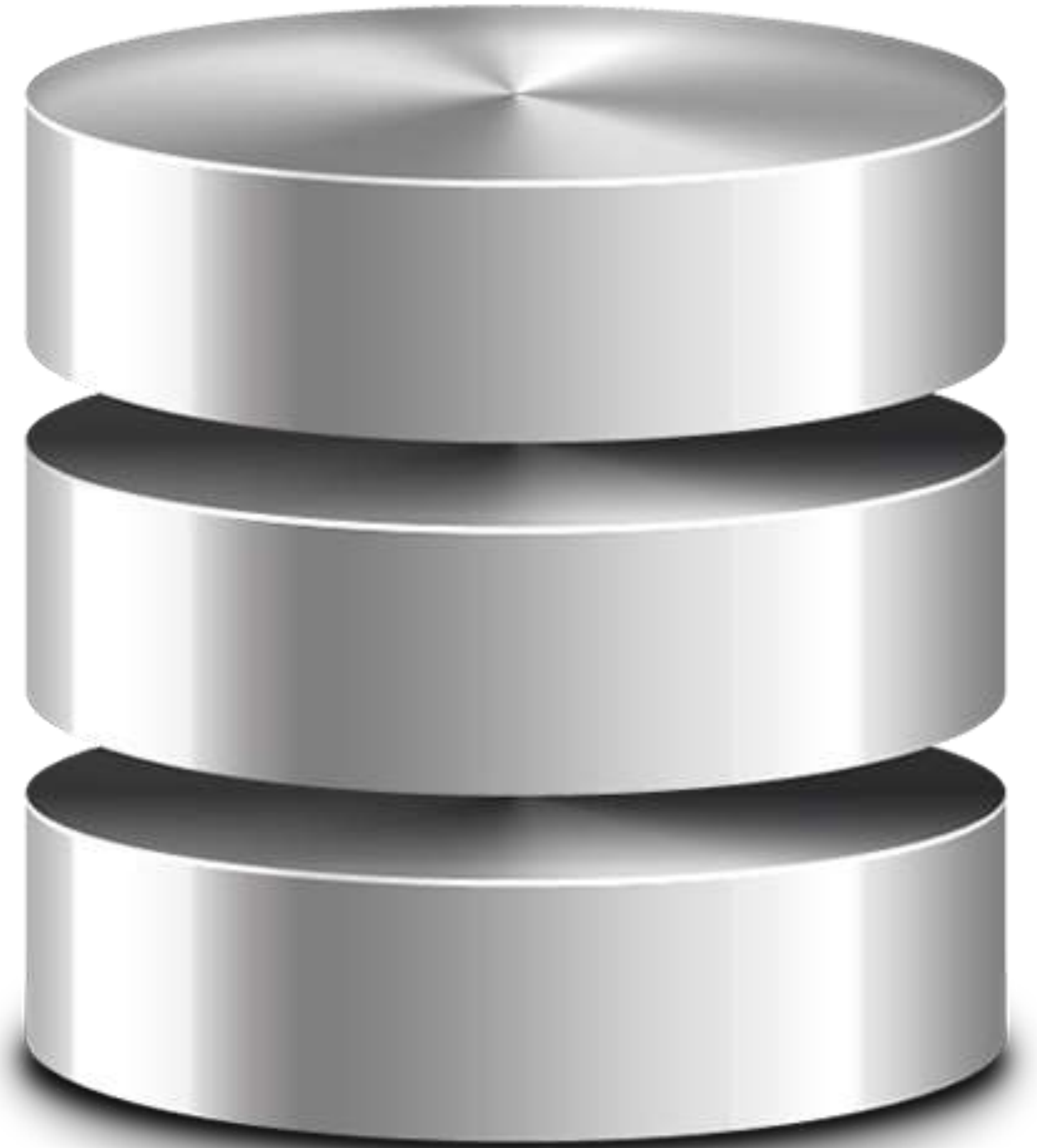
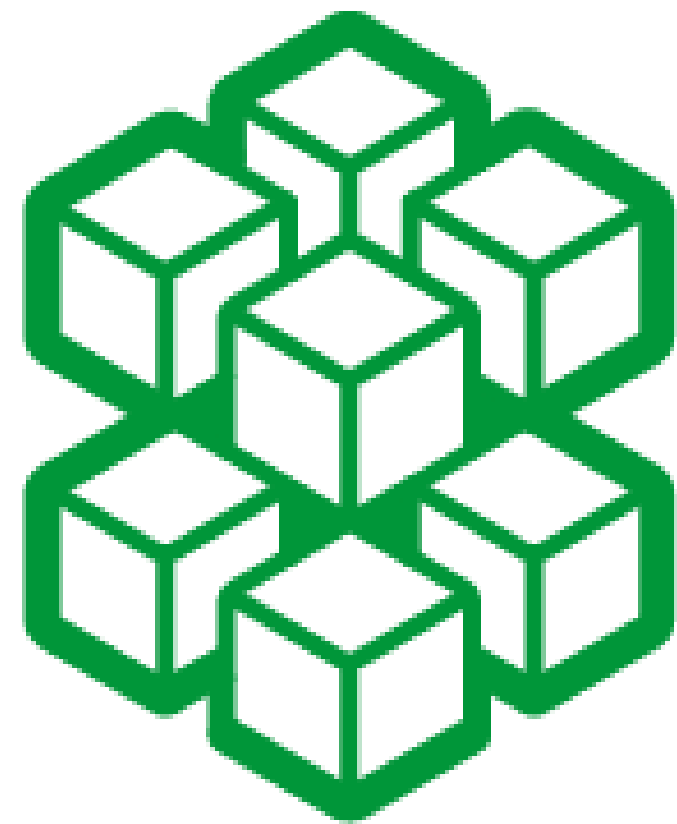




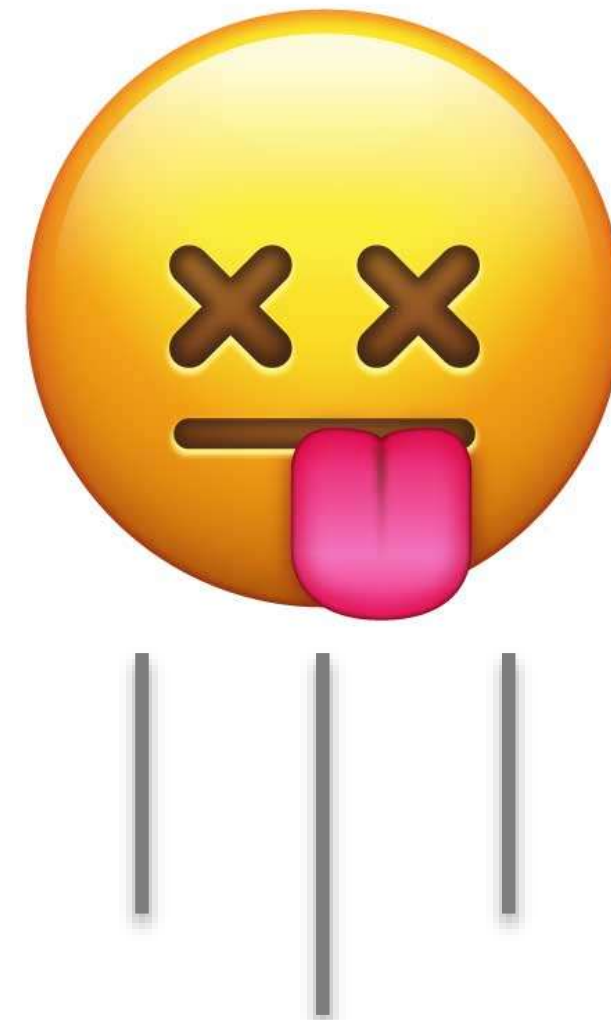






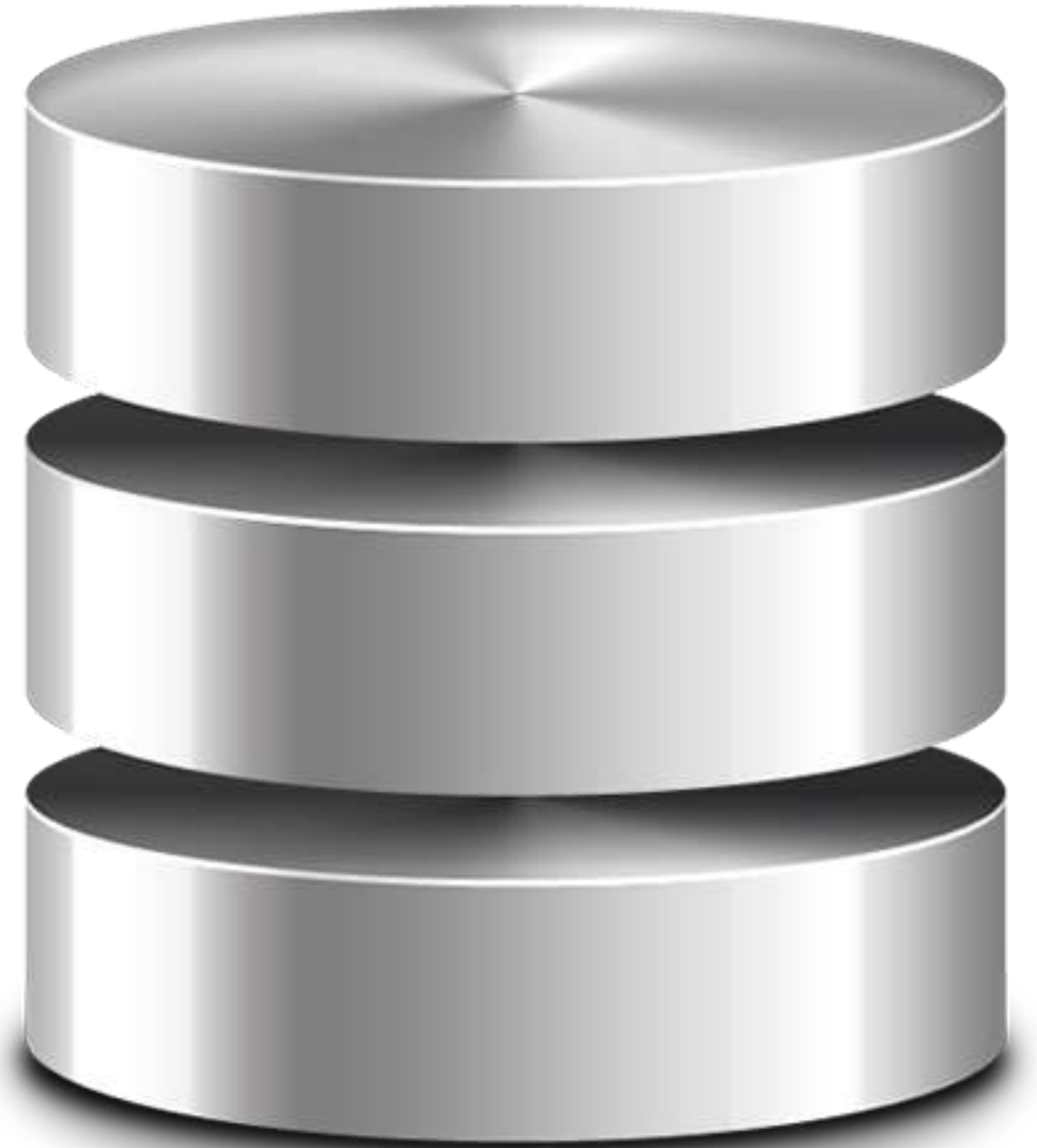






Investment

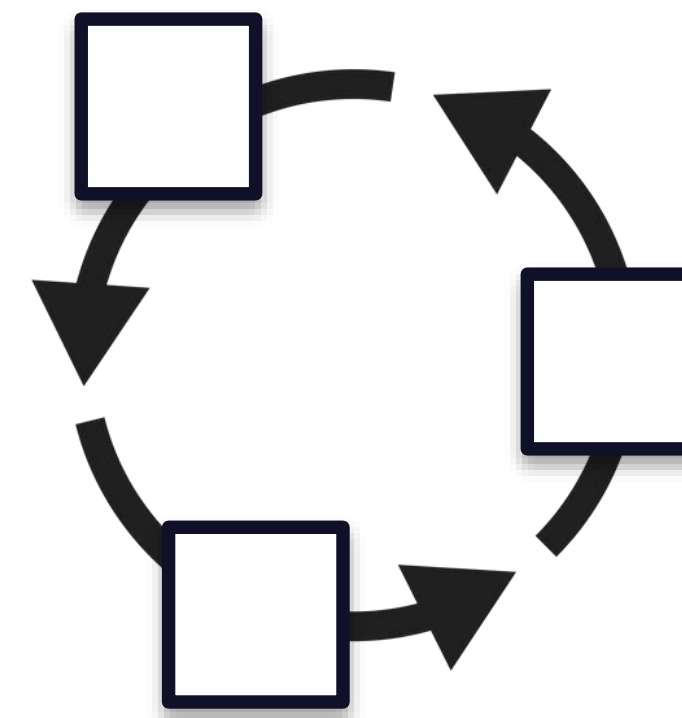
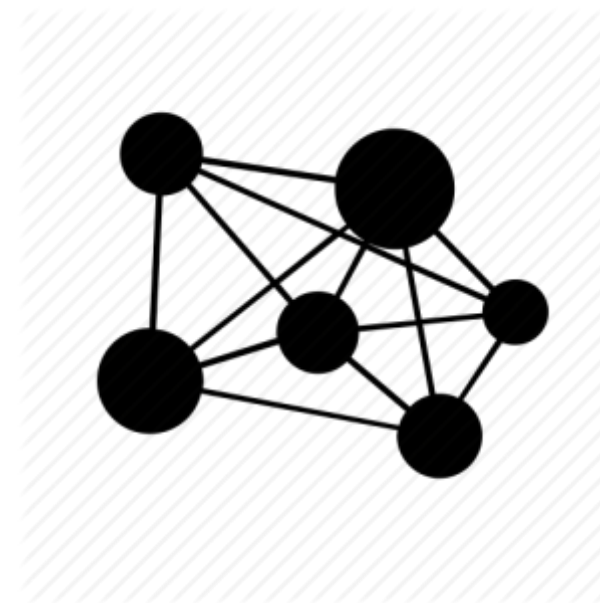
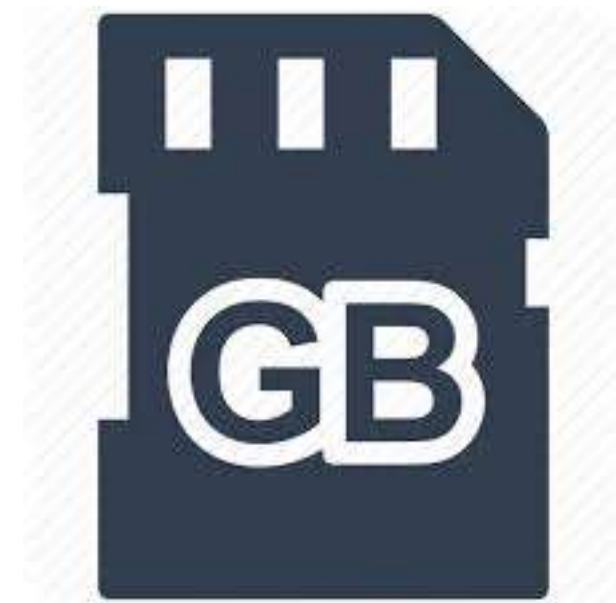
- ✧ Highly structured (*normalized*) **data model**
- ✧ Complex **queries** with finely tuned **indexes**
- ✧ **Functions & Stored Procedures**
- ✧ **Constraints, Triggers & Views**
- ✧ Management, Monitoring, Security
- ✧ ...





Cloud-Native Data

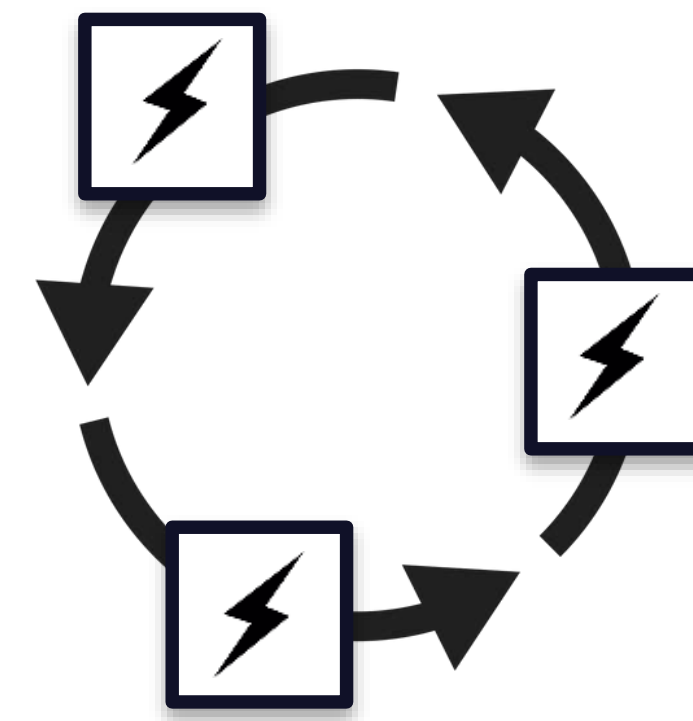
In-Memory, Clustered & Distributed



Cloud-Native Data Patterns

In-Memory, Clustered & Distributed

- ✧ Caching
- ✧ Distributed Compute (Map/Reduce)
- ✧ Streaming
- ✧ ...



Cloud-Native Data Patterns

In-Memory, Clustered & Distributed

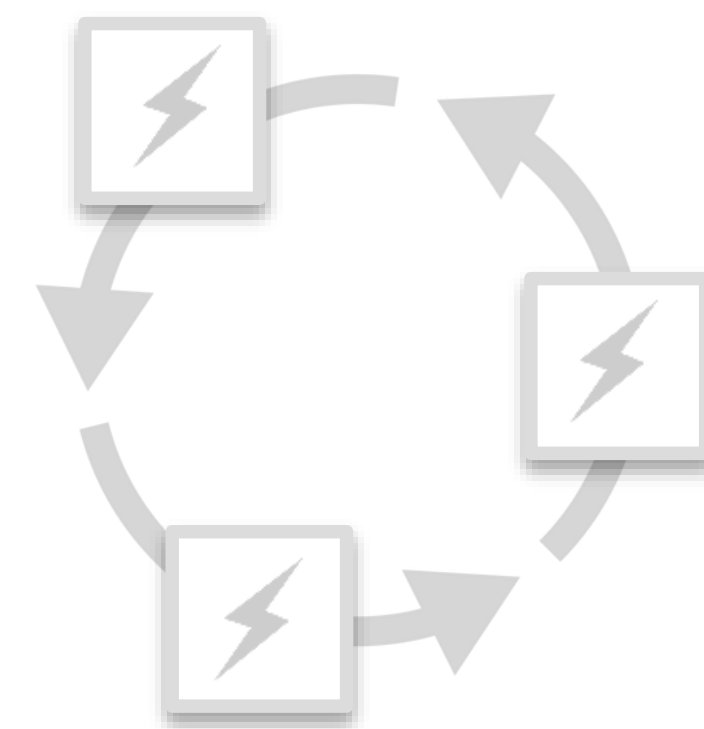
✧ Caching

✧ Distributed Compute (Map/Reduce)

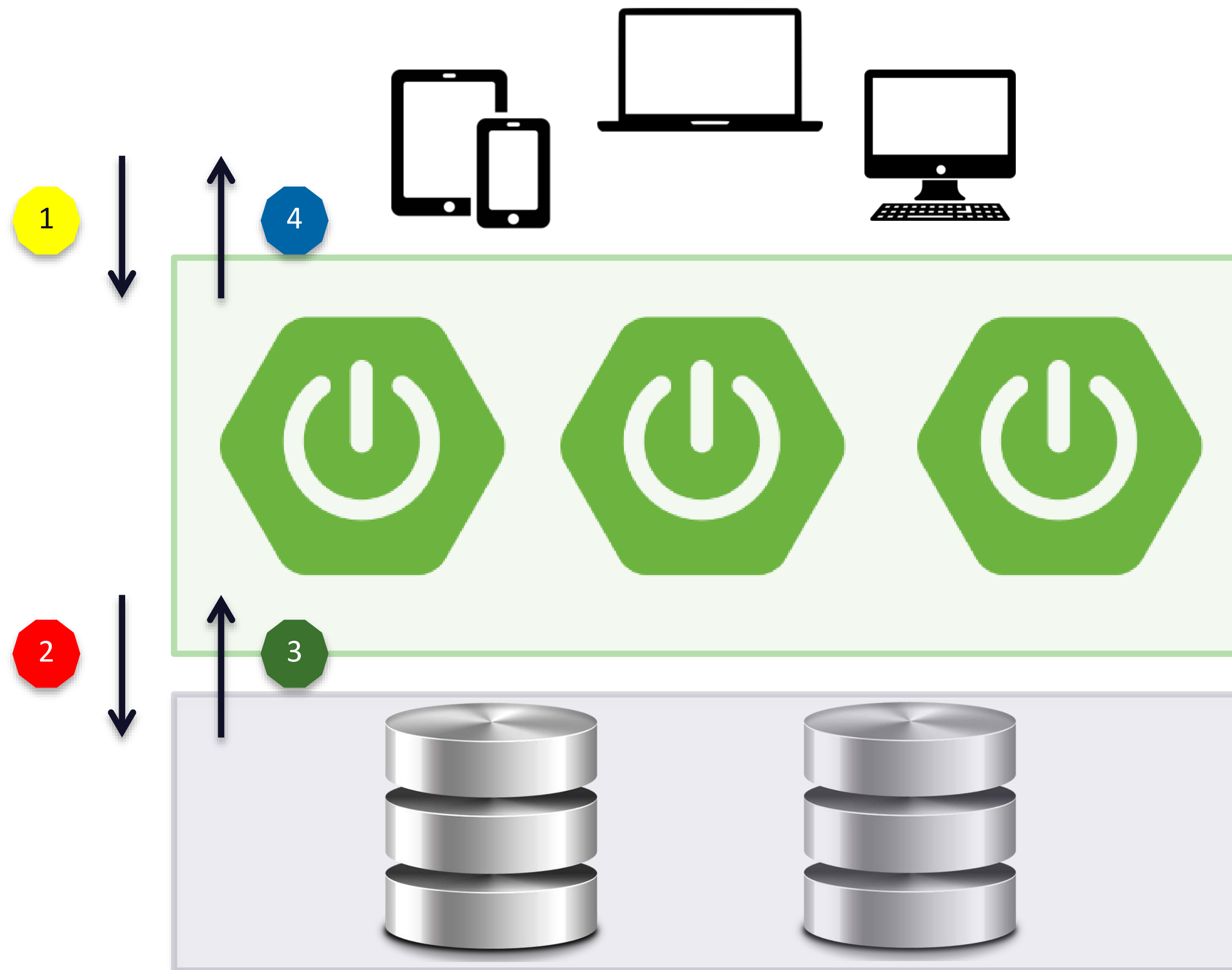
✧ Streaming

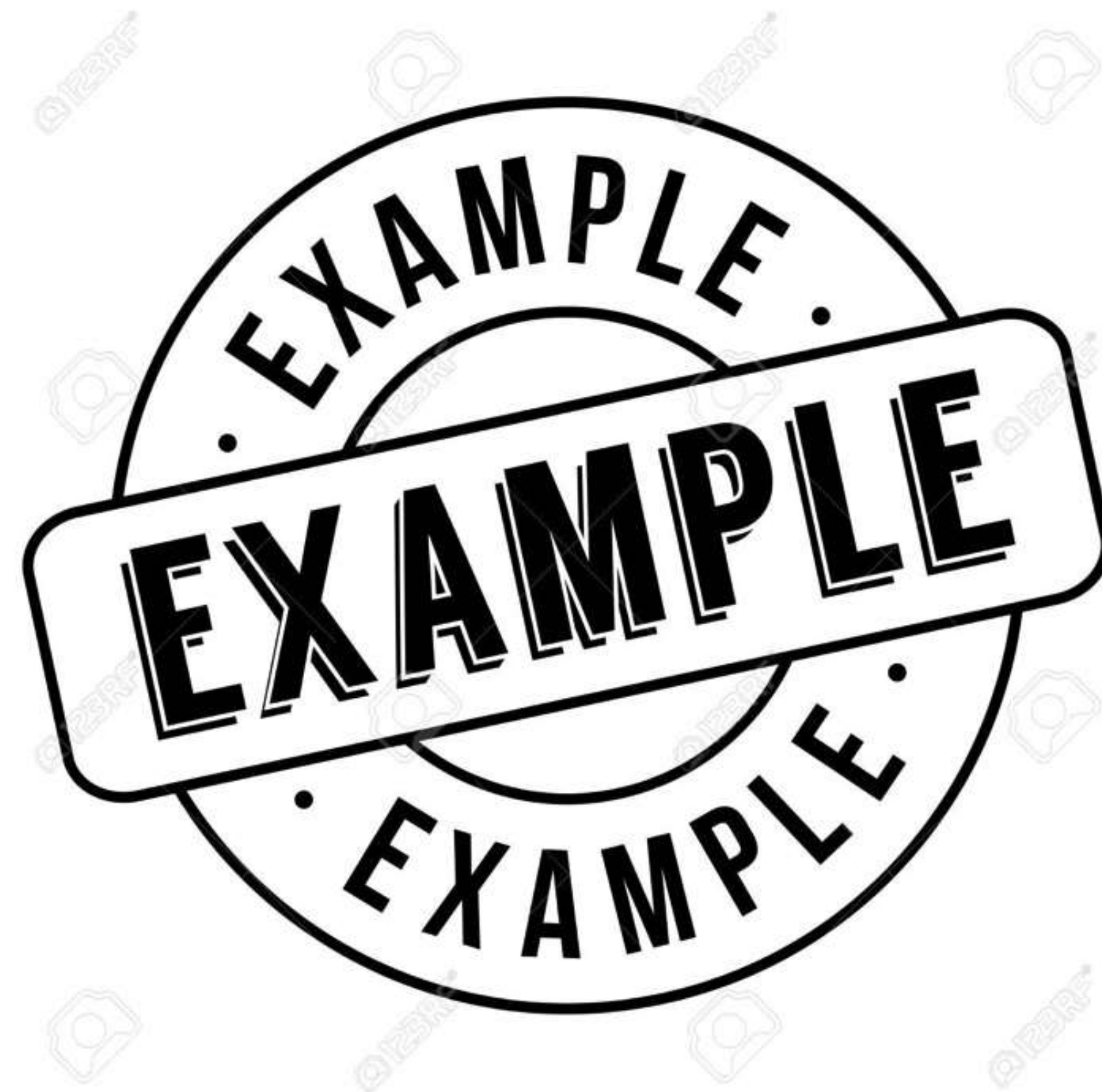
✧ Near Caching

✧ Inline Caching



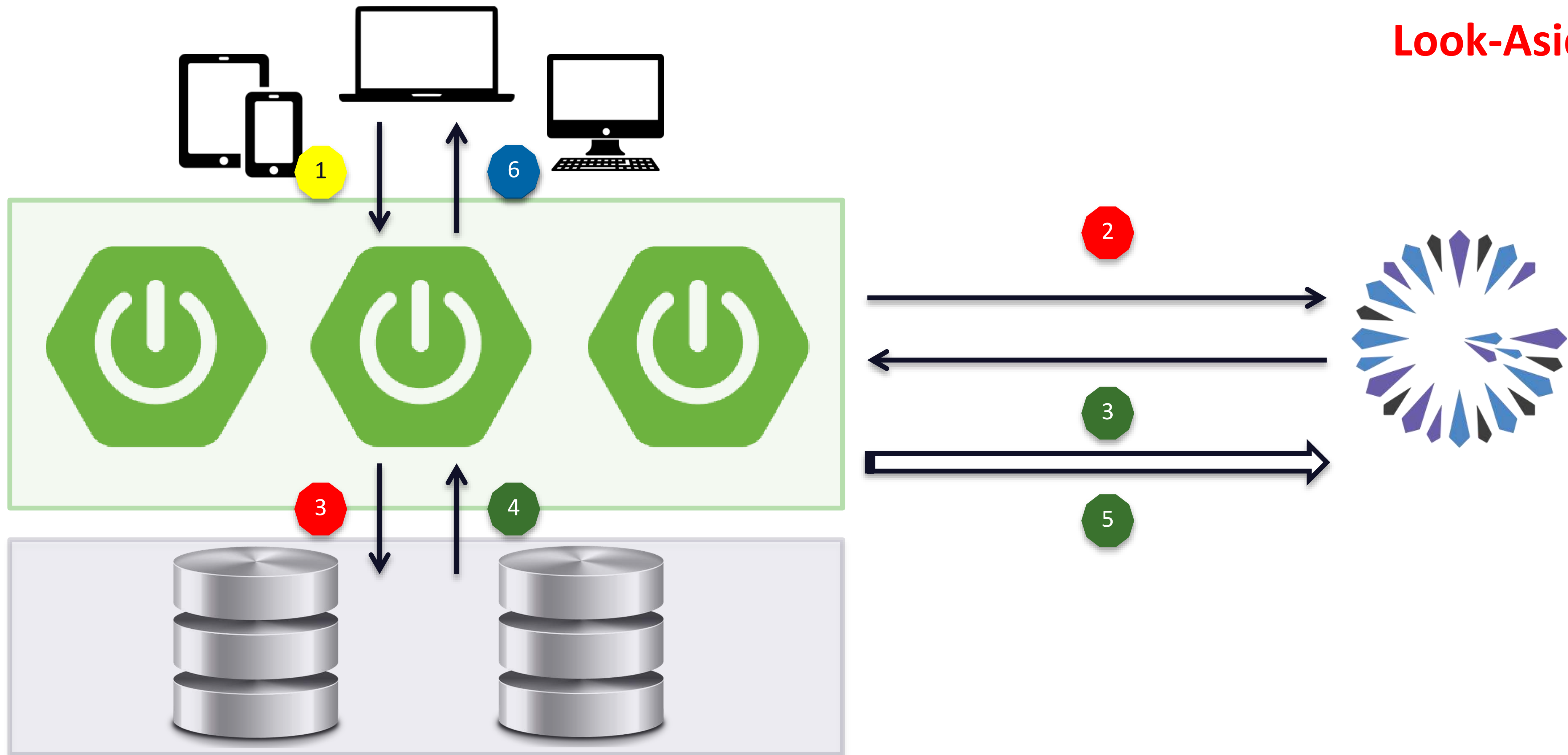
NO CACHING

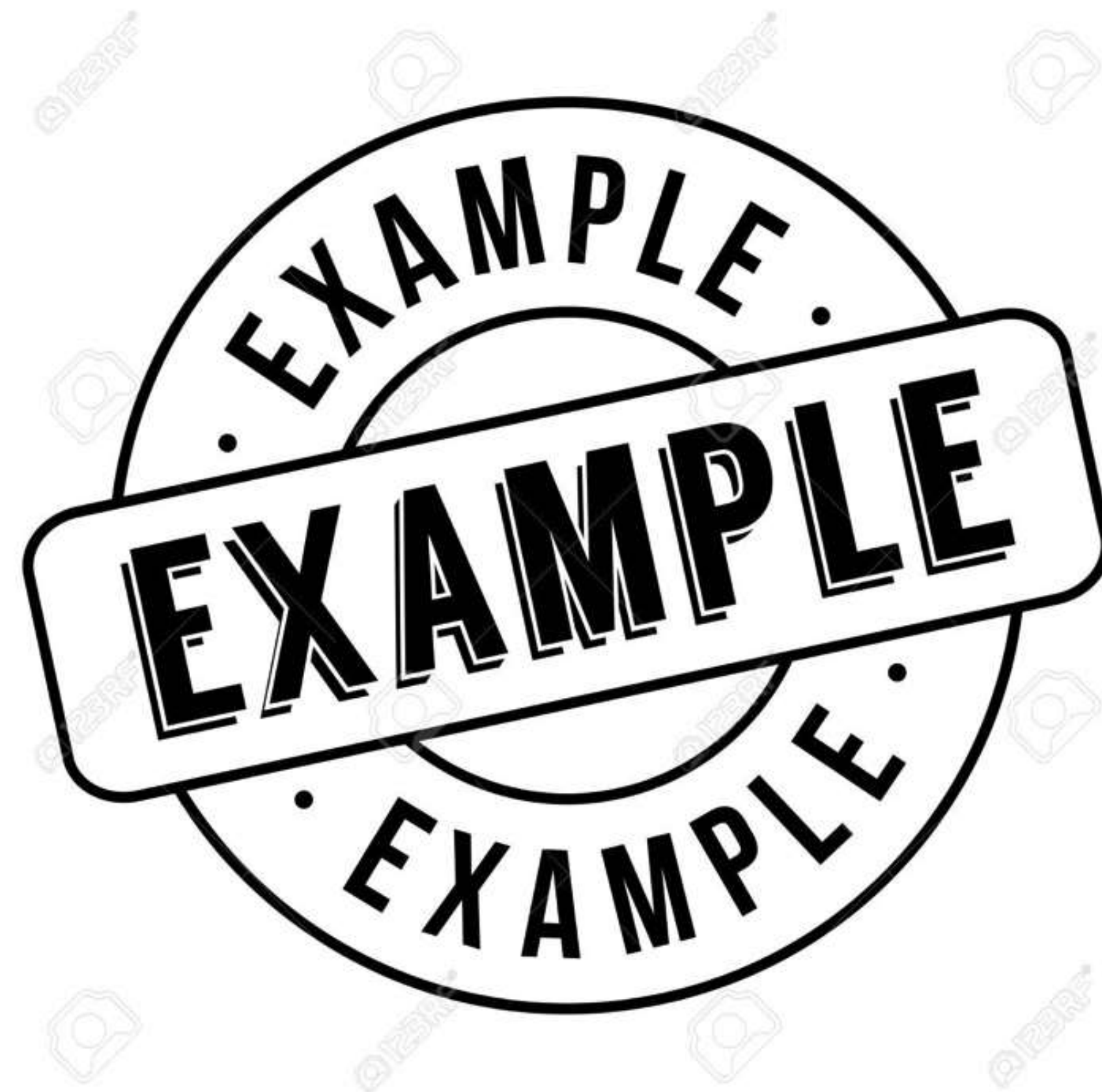




CACHING

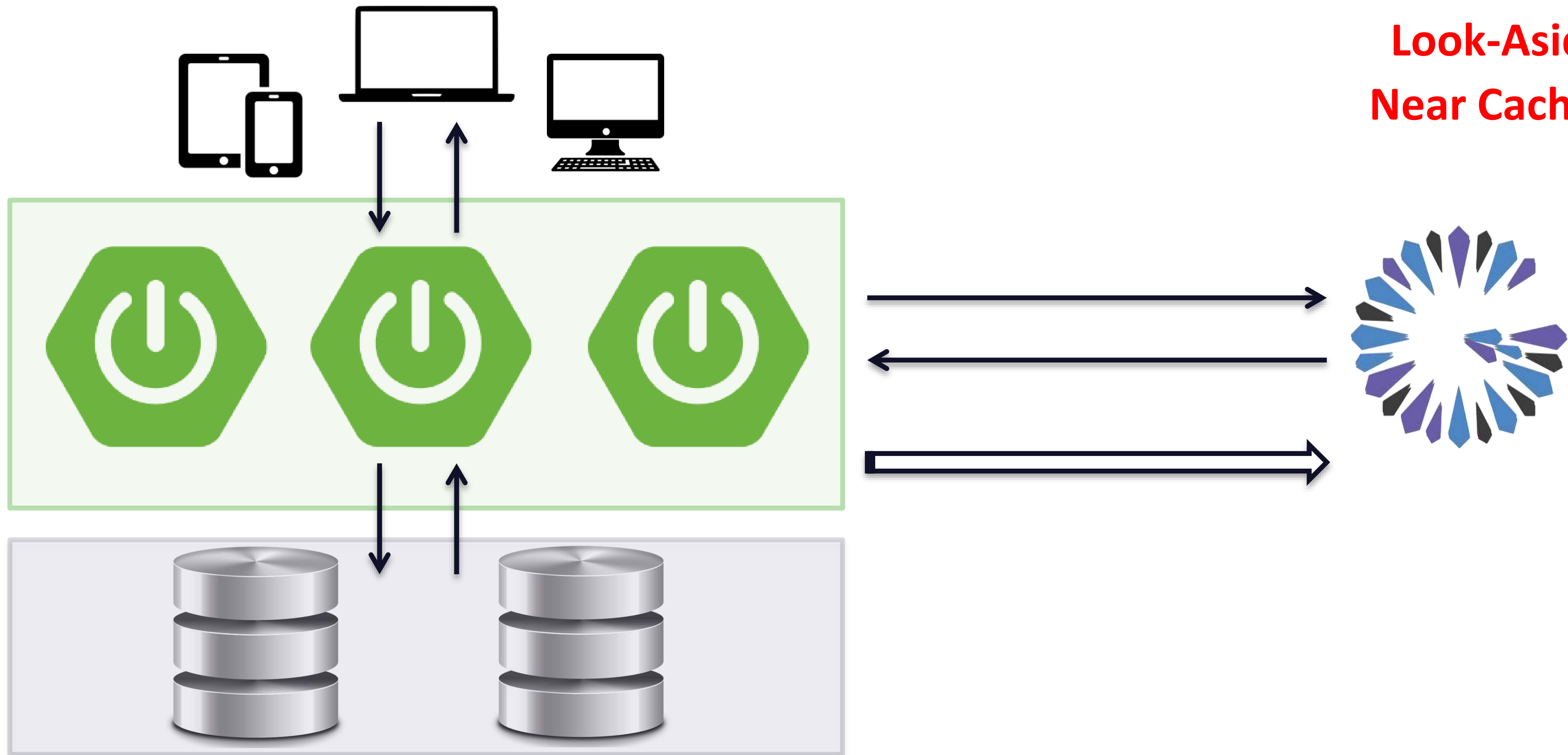
Look-Aside

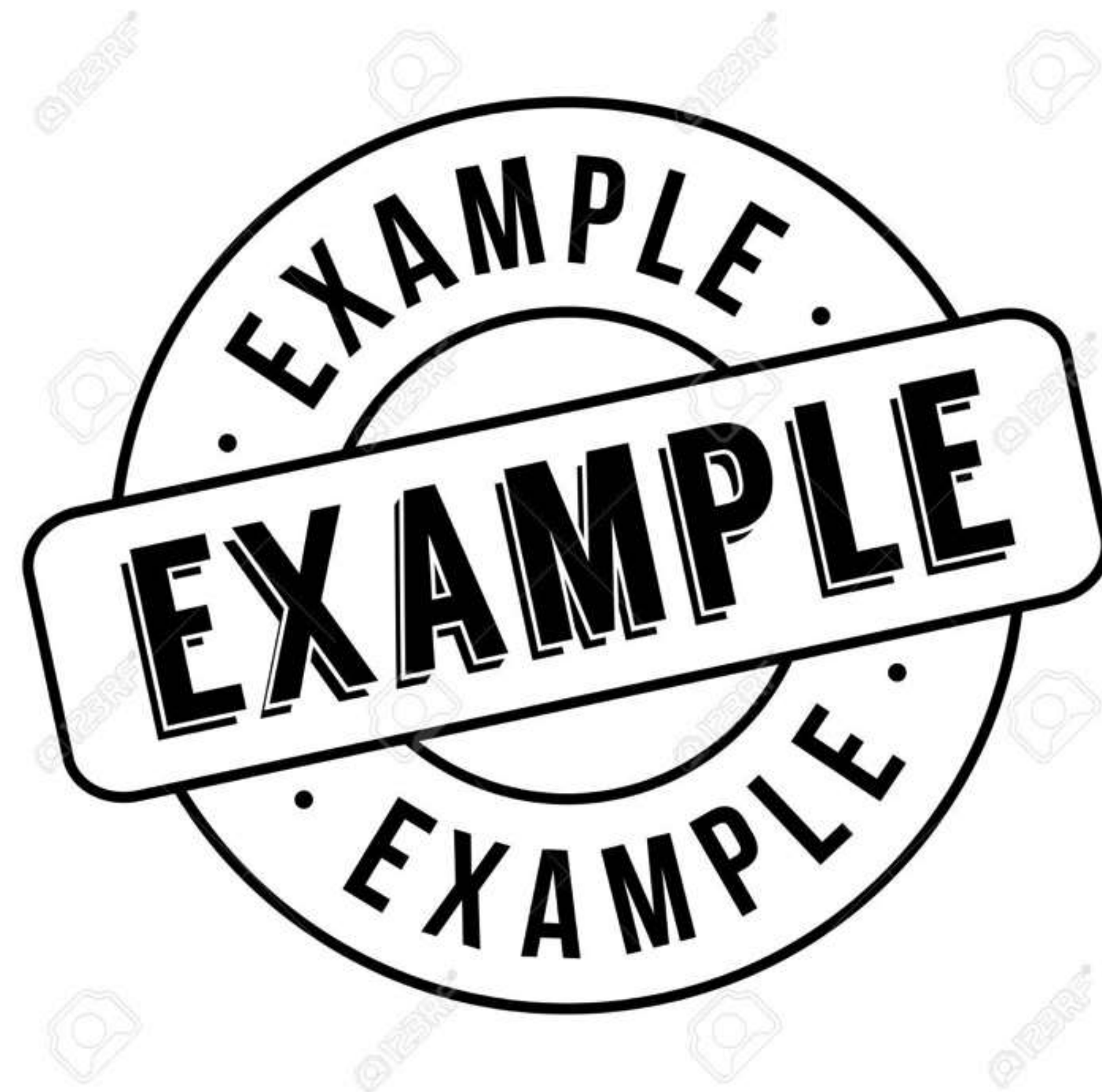




CACHING

Look-Aside
Near Caching





CACHING

Look-Aside

Near Caching

Inline Caching

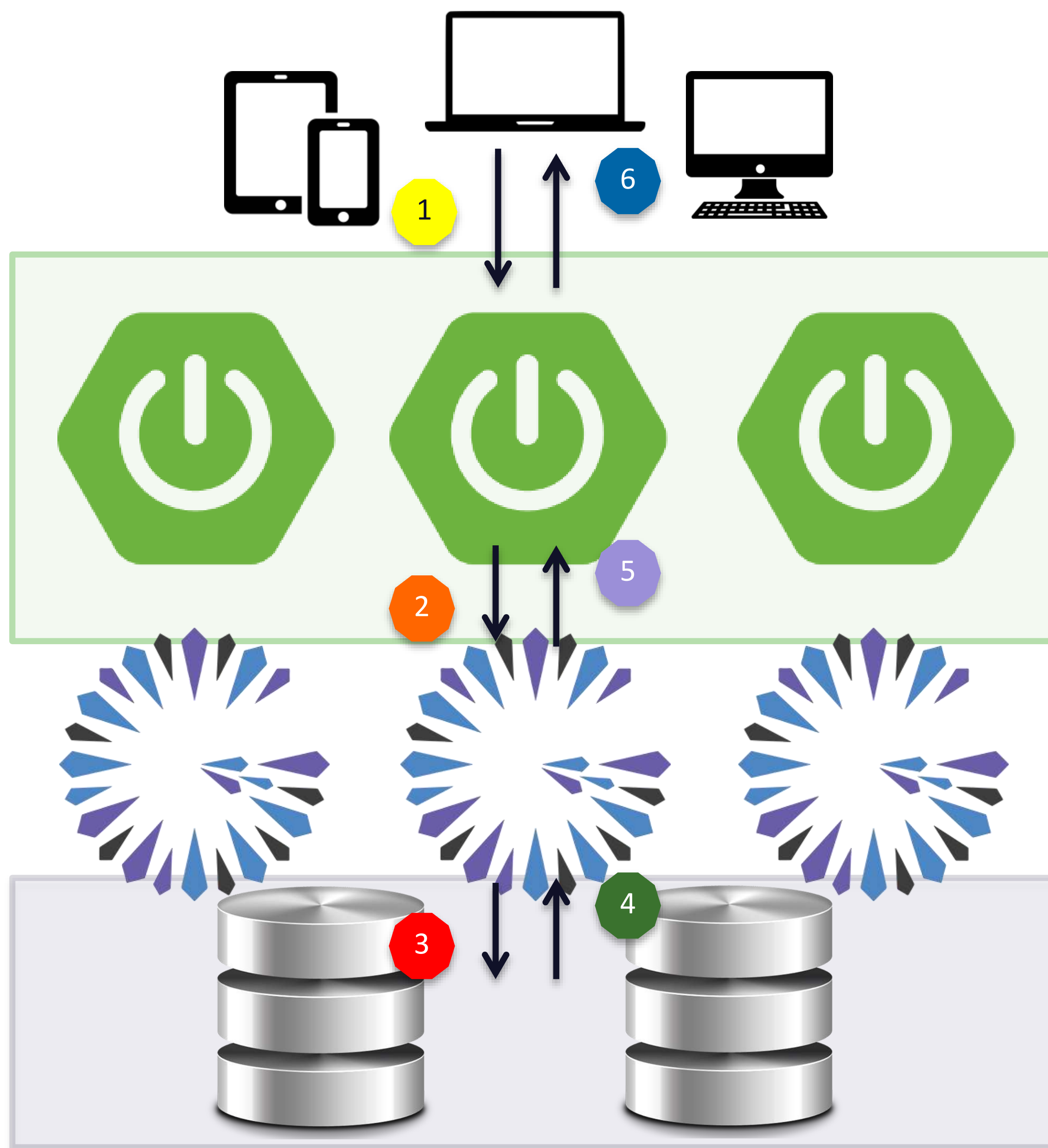


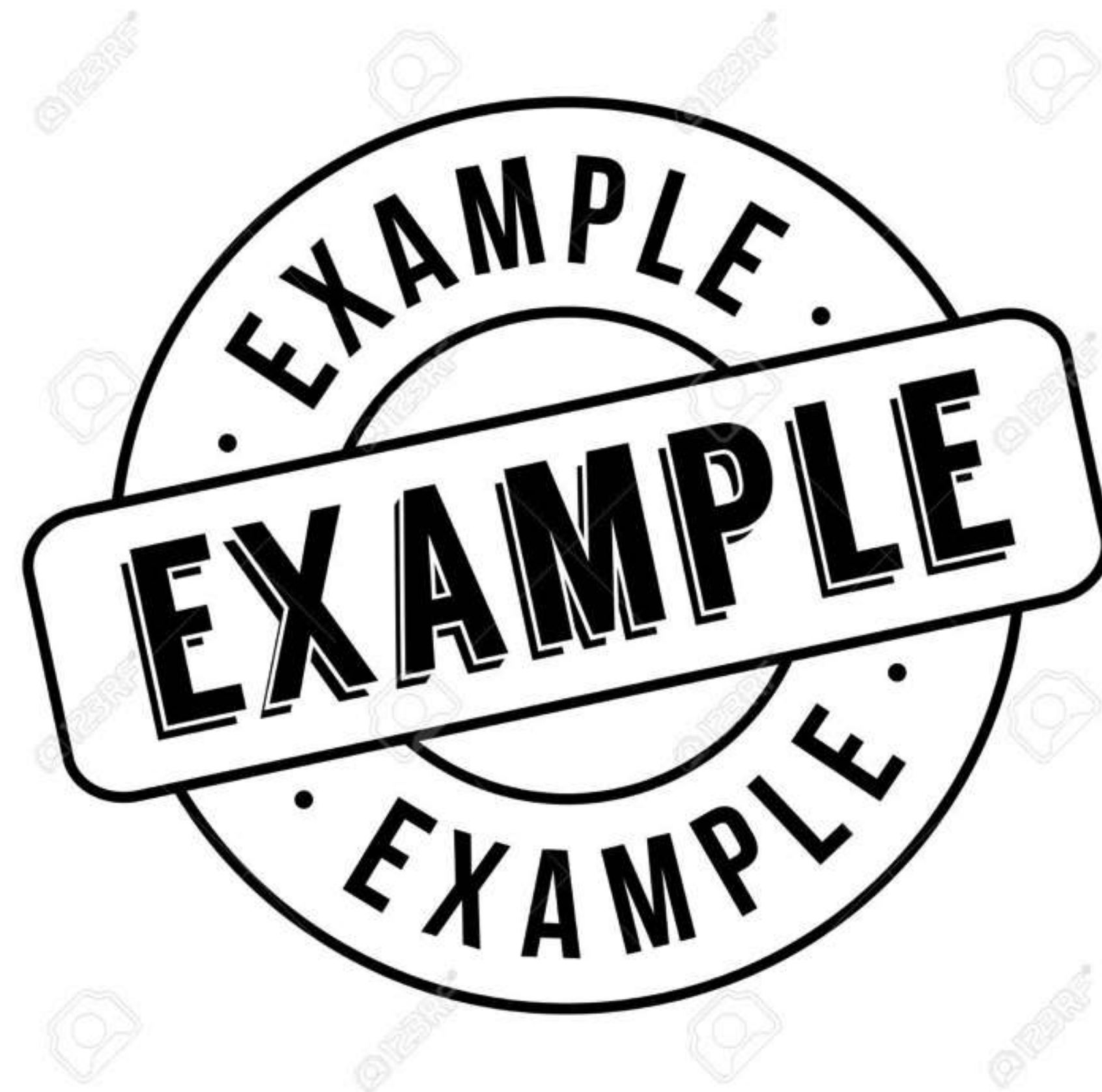
CACHING

Look-Aside

Near Caching

Inline Caching



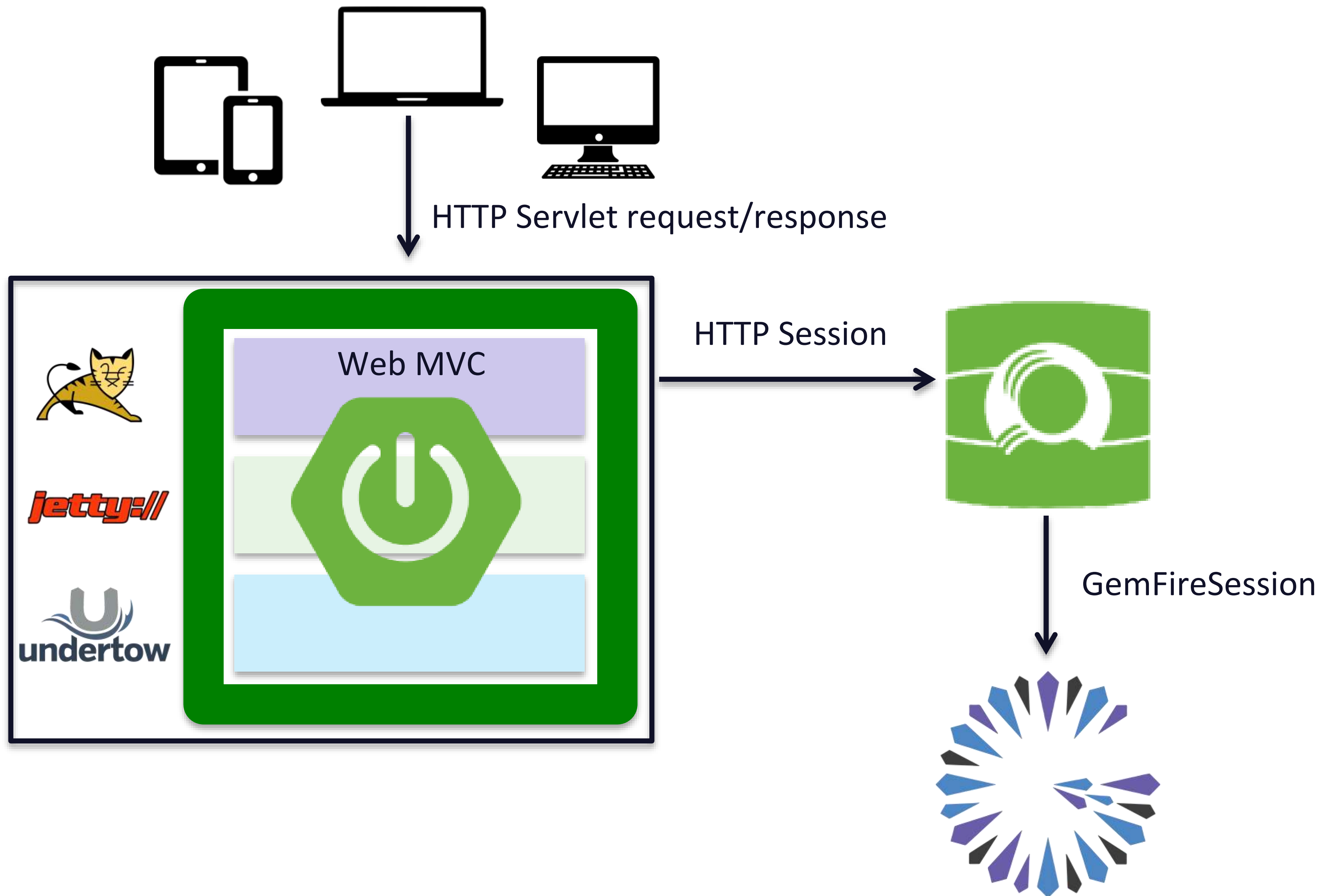


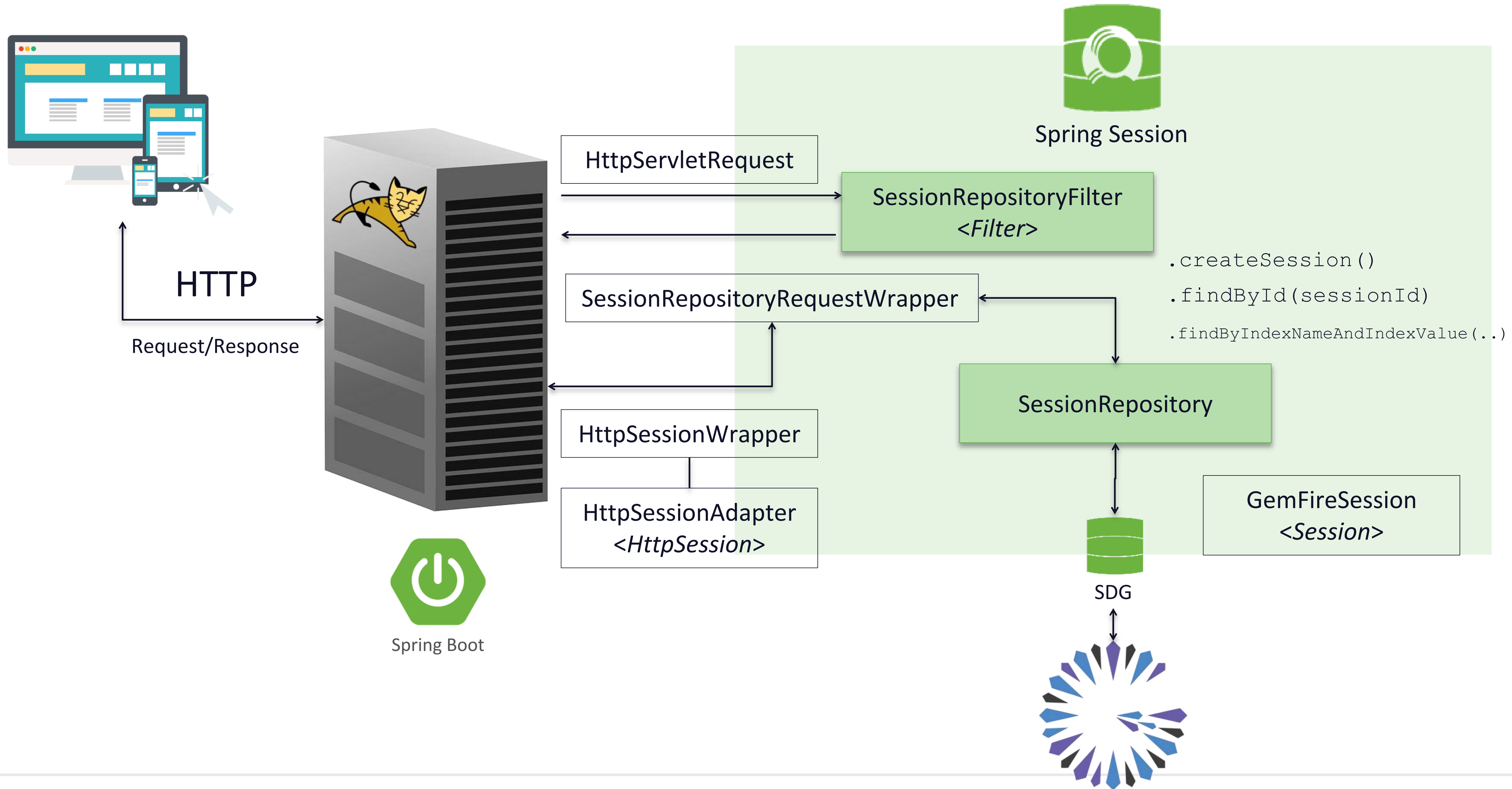
Uses for Caching

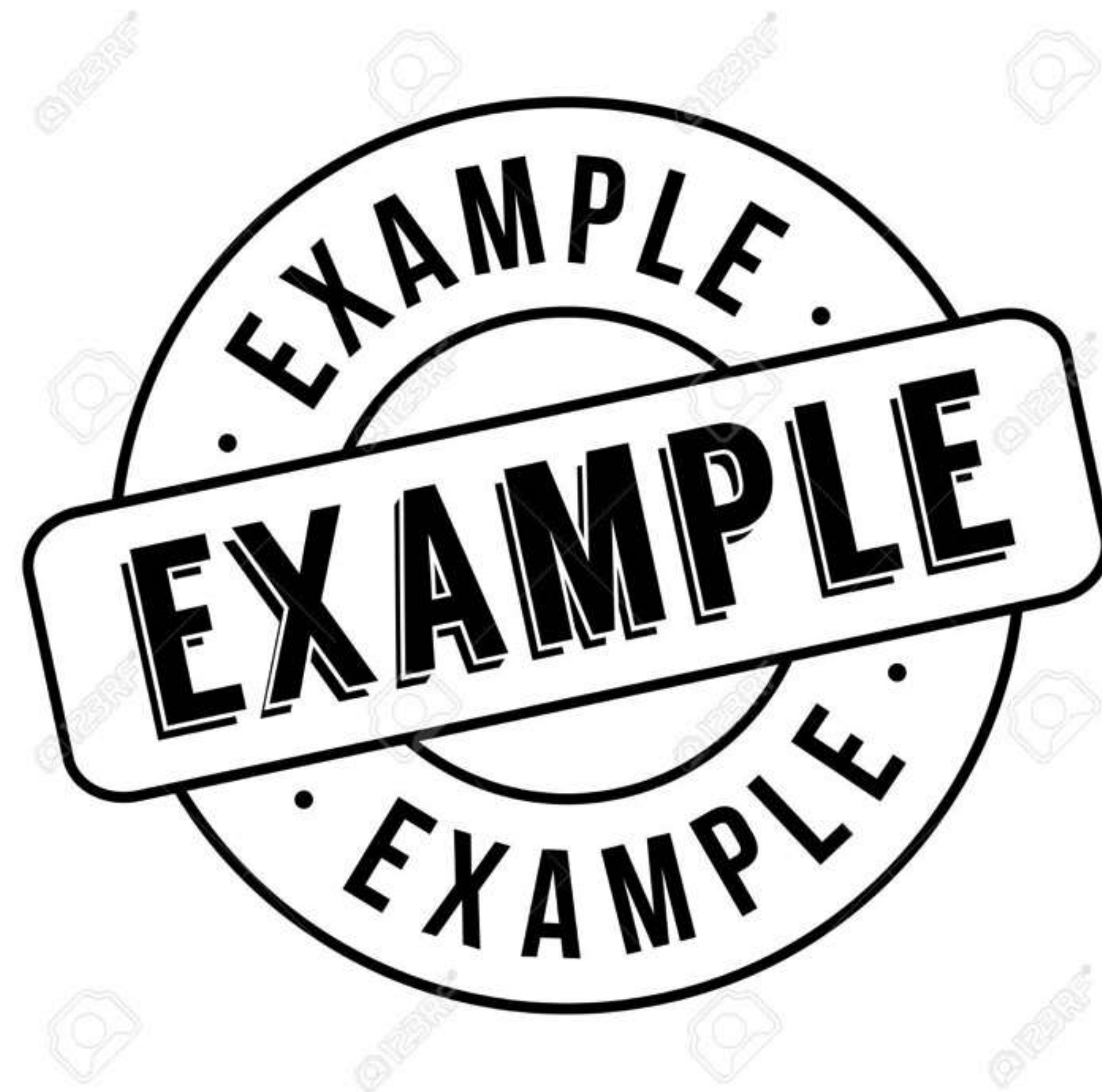
- ✧ Service Level Caching
- ✧ (HTTP) Session State Caching

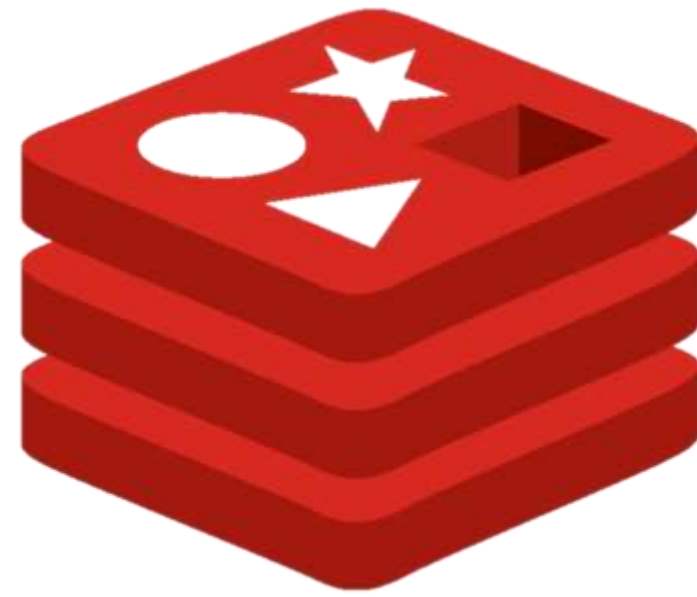
CACHING

(HTTP) Session State Caching











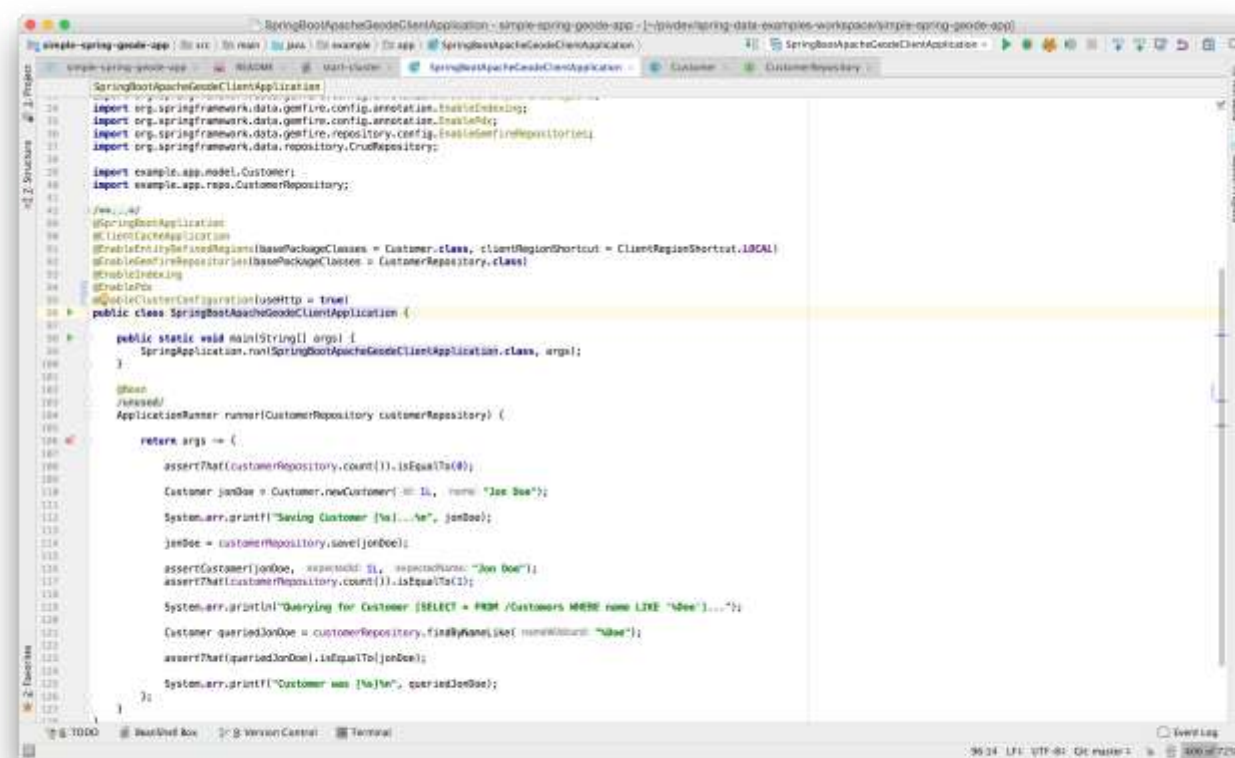
Apache Geode



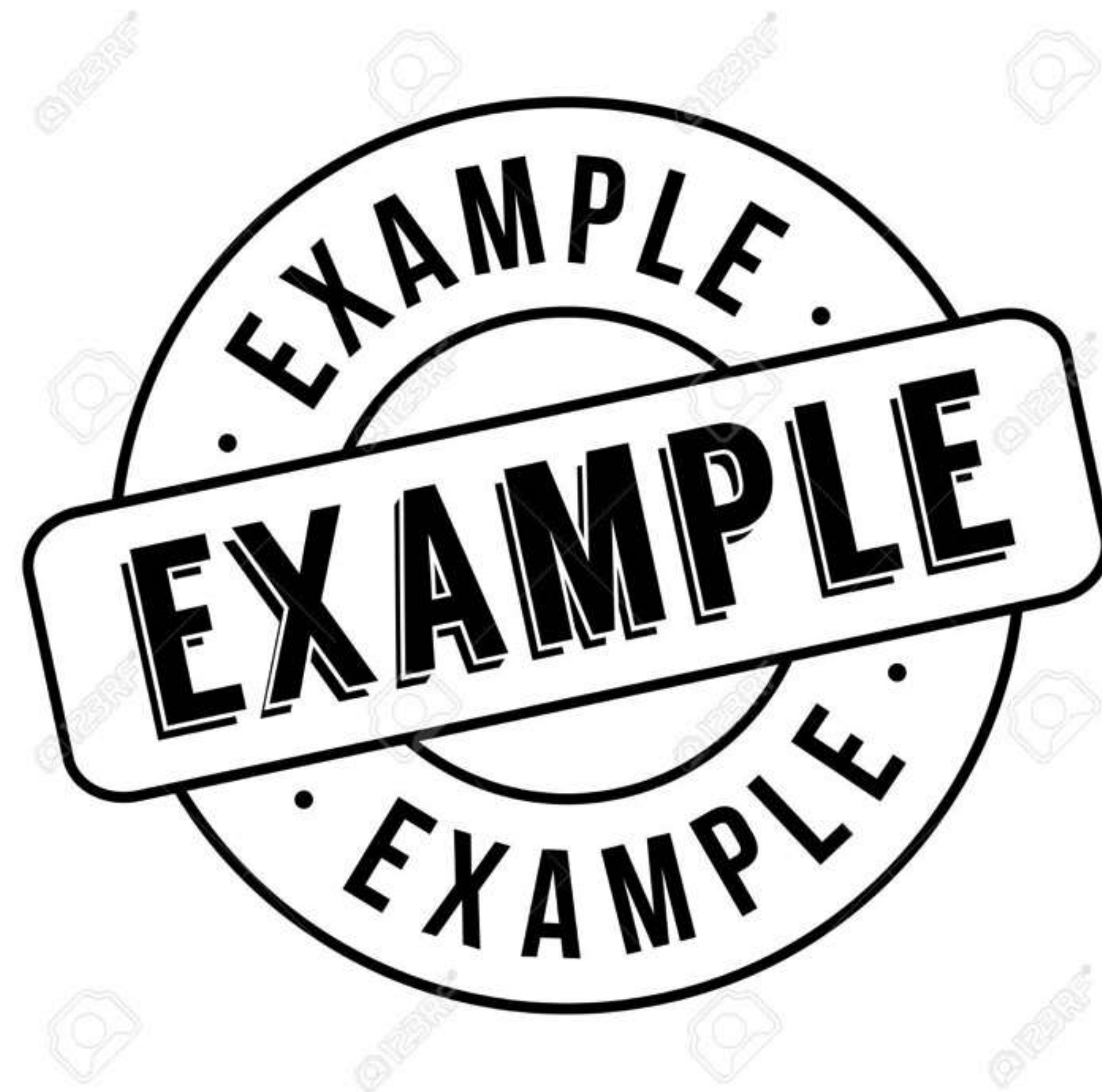
Pivotal Cloud Cache



Pivotal
Cloud Cache



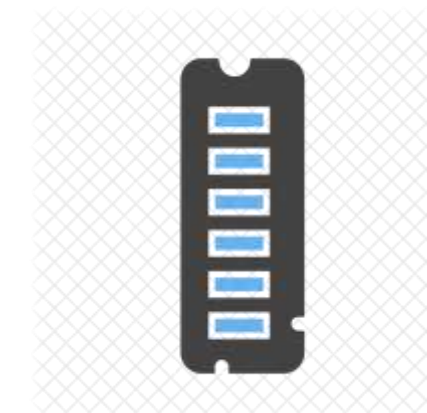
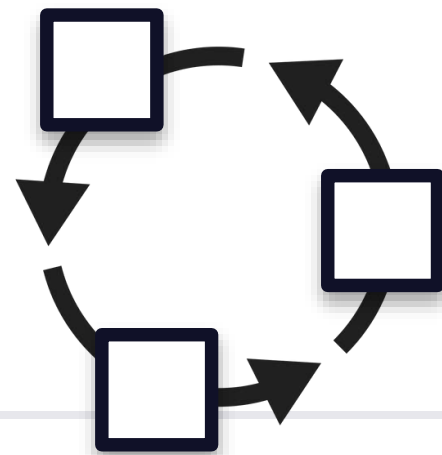
Pivotal
Cloud Foundry®



Cloud-Native Data Patterns

In-Memory, Clustered & Distributed

- ✧ Data Modeling (KV)
- ✧ Partitioning (Sharding), Grouping, Replication/Redundancy
- ✧ Collocation, Indexing
- ✧ Eviction/Expiration Policies
- ✧ Distributed Compute (Map/Reduce)
- ✧ Off-Heap Memory, Compression
- ✧ Topologies: client/server, multi-site (WAN)
- ✧ Management, Monitoring, Security



Shifting Responsibility...

References

- Spring Boot for Apache Geode & Pivotal Cloud Cache:
 - <https://github.com/spring-projects/spring-boot-data-geode>
- Apache Geode
 - <https://geode.apache.org/>
- Pivotal Cloud Cache
 - <https://docs.pivotal.io/p-cloud-cache/1-7/index.html>
- Examples
 - <https://github.com/jxblum/counter-service>



Thank You

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