Agenda.

- → Monolithic
  - Advantages
  - Disadvantages
- → Microservices
  - Advantages
  - Disadvantages
- → When to use what?
- → Communication b/w Microservices.

Year - 2008.

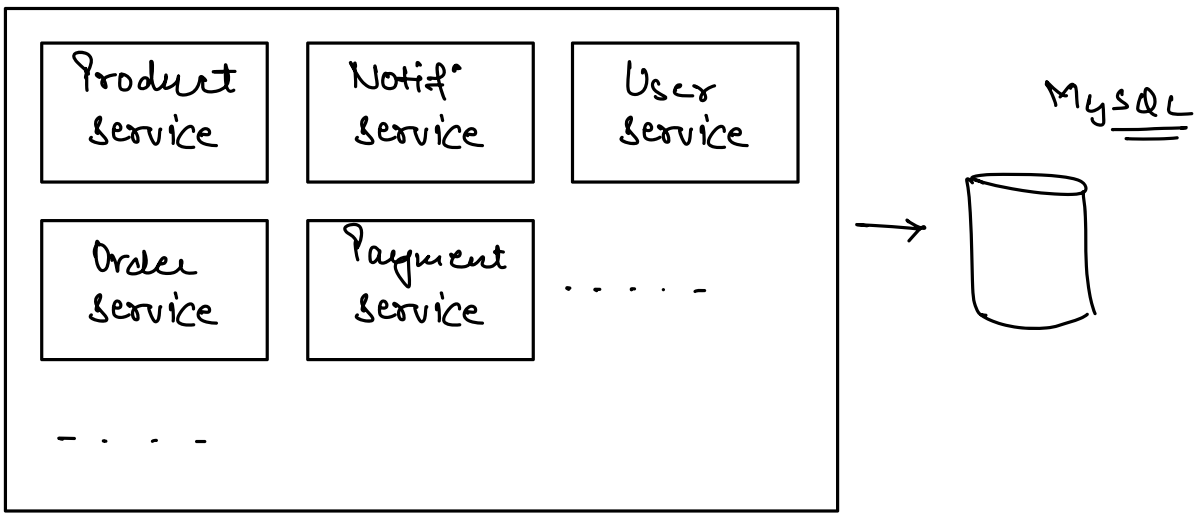
Sachin → Shipkart.com

→ E commerce.

Modules | Services.

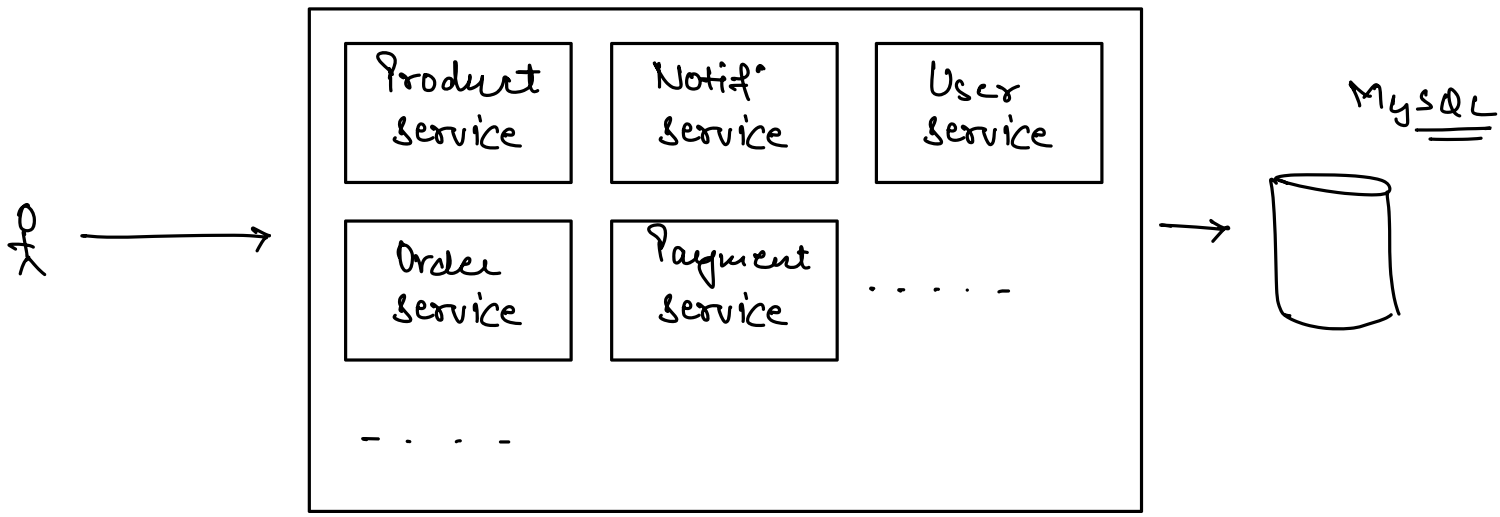
1) Product Catalog Service
2) Search Service
3) Cart Service
4) Order Service
5) Payment Service
6) Logistics Management Service
7) Tracking Service
8) Delivery Service

9) Notifications Service

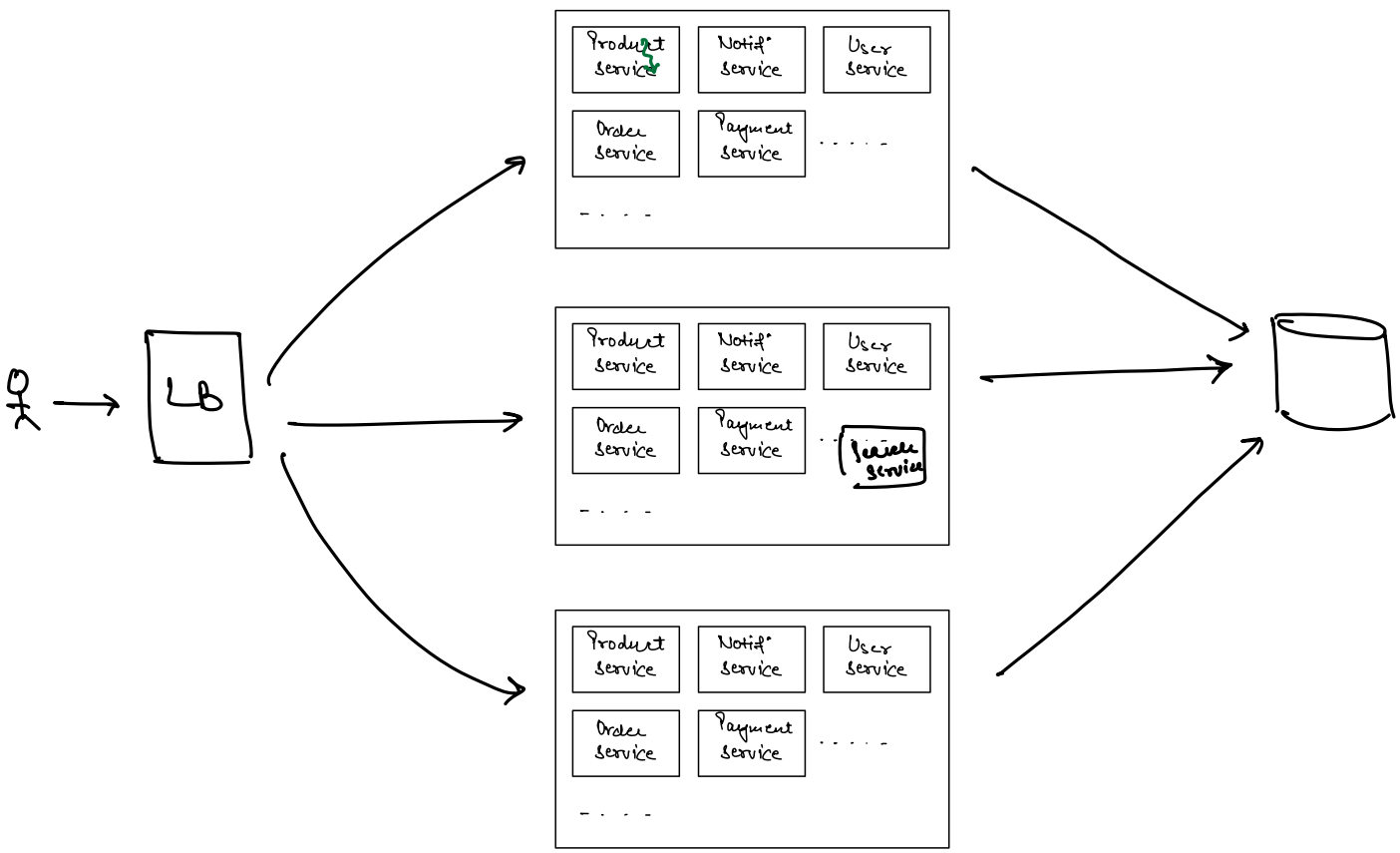


Spree (ROR)

2008. : 10-20 orders | Day.



2012 : 2000 orders | Day.



⇒ 3 servers.

⇒ Single executable file running on n servers.

2015 : 200,000 orders | Day.

↳ 300-400 developers.

↳ 300 servers.

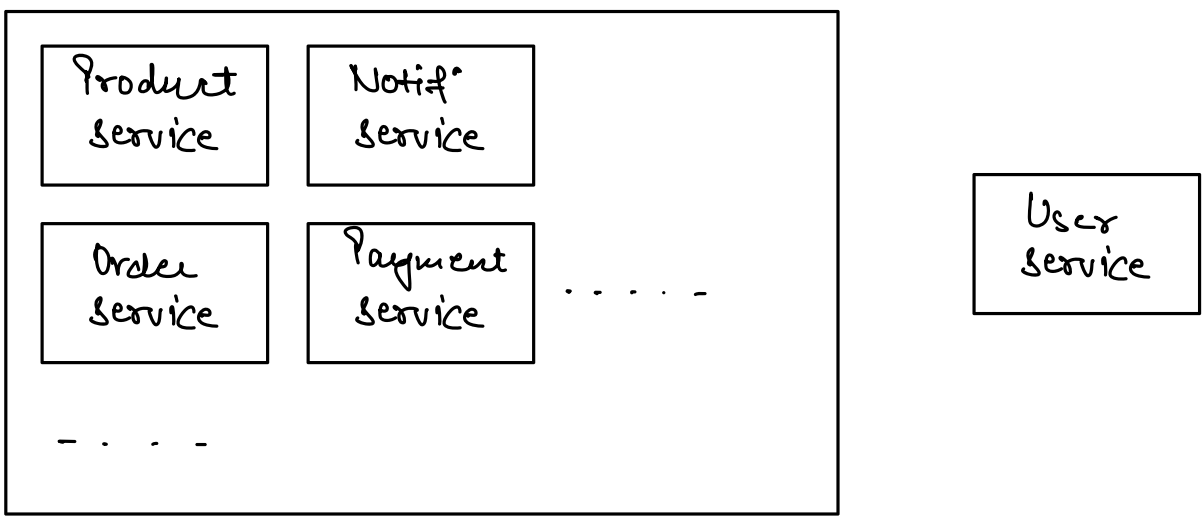
Monolithic Architecture : Single Codebase that Consists of all the Services | modules.

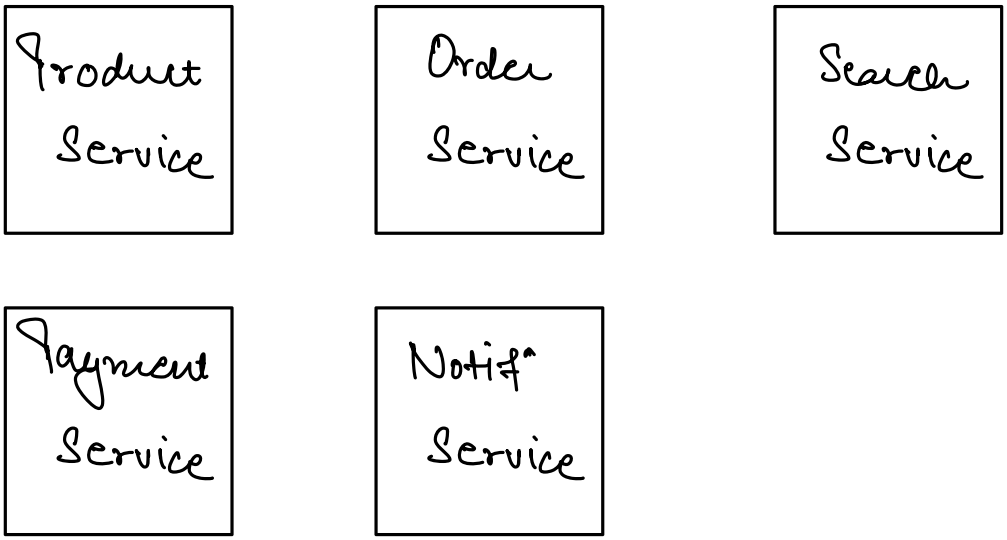
Pros :-

1) Single deployment.
2) Different modules can talk to each other via a simple fun call.
3) Easy to test End to End.
4) Cost Effective.
5) Easy to maintain & monitor.

Cons.

1) Developer onboarding becomes very difficult.
2) Cascading failures.
   ↳ A small issue in of the service can bring the entire app^n down.
3) No selective scaling
4) Huge deployment time.
5) Development becomes difficult.
6) No tech stack flexibility.





Pros.

1) No cascading failures.
2) Selective scaling is possible.
3) Developer onboarding is easy.
4) Tech stack flexibility.
5) Individually deployment of services.
6) Bug fixing becomes easy.

Cons.

1) Lot of deployments
2) Monitoring becomes difficult.
3) Different services will talk to each via a n/w call & that will extra latency.

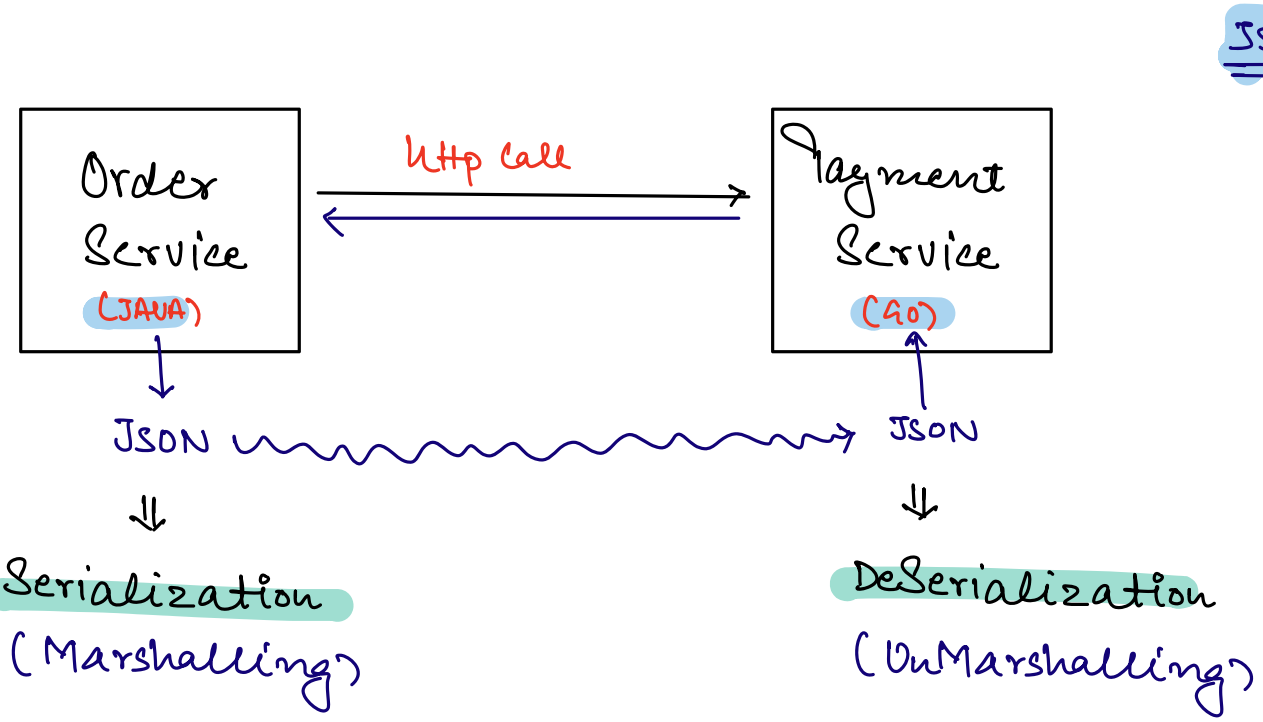
Communication b/w Microservices.

1) REST | HTTP call.

2) gRPC + Protobuf

3) Event Driven architecture

REST | HTTP Call.



→ Synchronous communication.

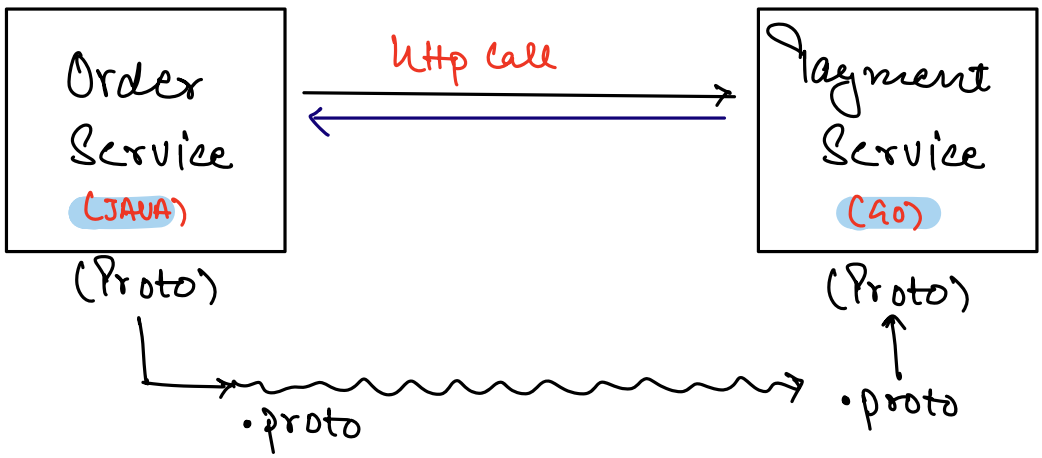
→ Serialization & DeSerialization will add extra latency in the API call.

gRPC + Protobuf

↳ Binary.

Remote Procedure Call.

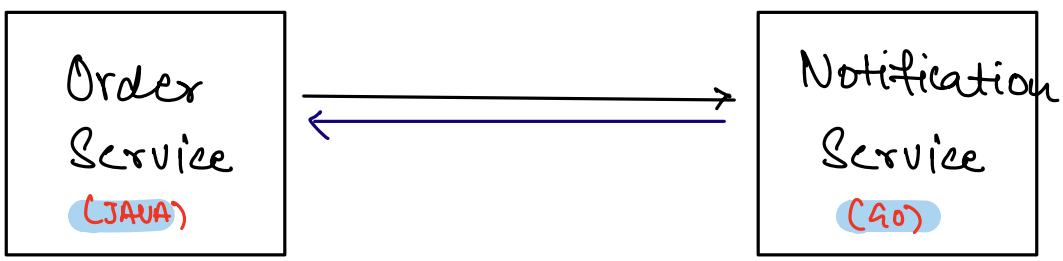
→ Google.

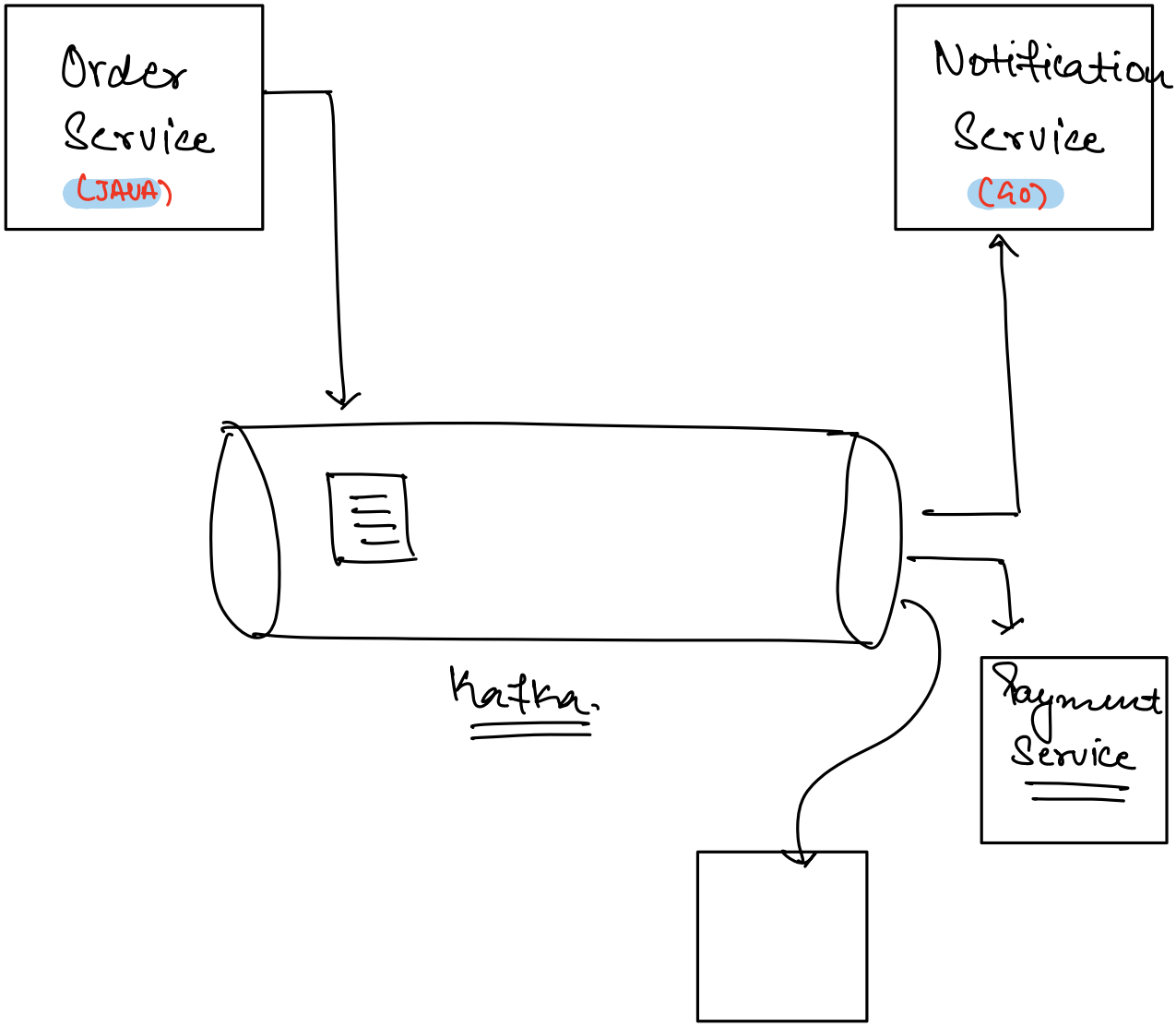


⇒ No Serialization & DeSerialization is required.

→ Synchronous communication.

Event Driven Architecture.





=> Asynchronous communication.