Lec 4 - Architecture

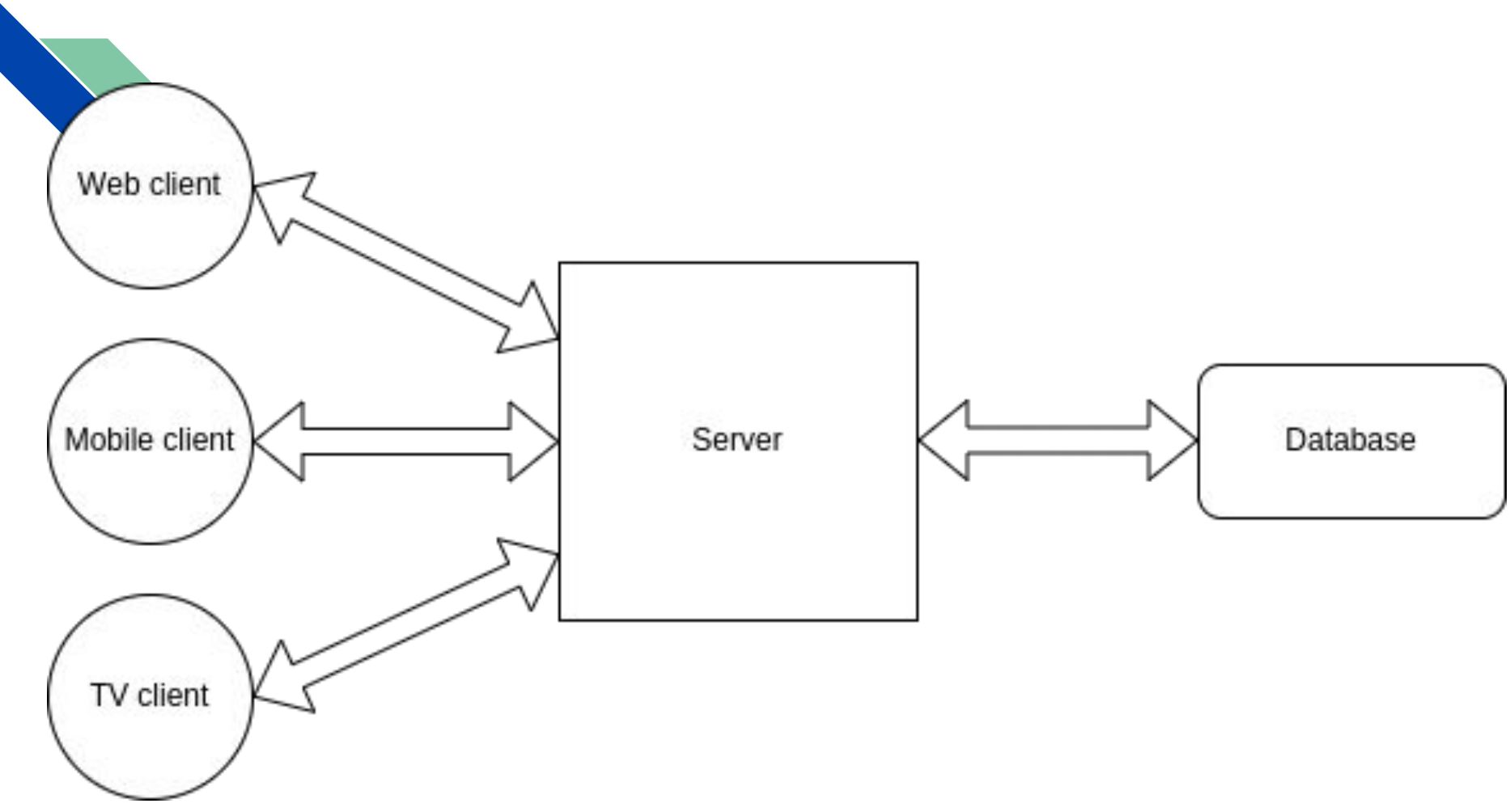
Decisions decisions

- Rest or graphQL? Django or Express? React or Angular?
- Monolith or microservices?
- Cloud provider or managed services?

Client-server/API?

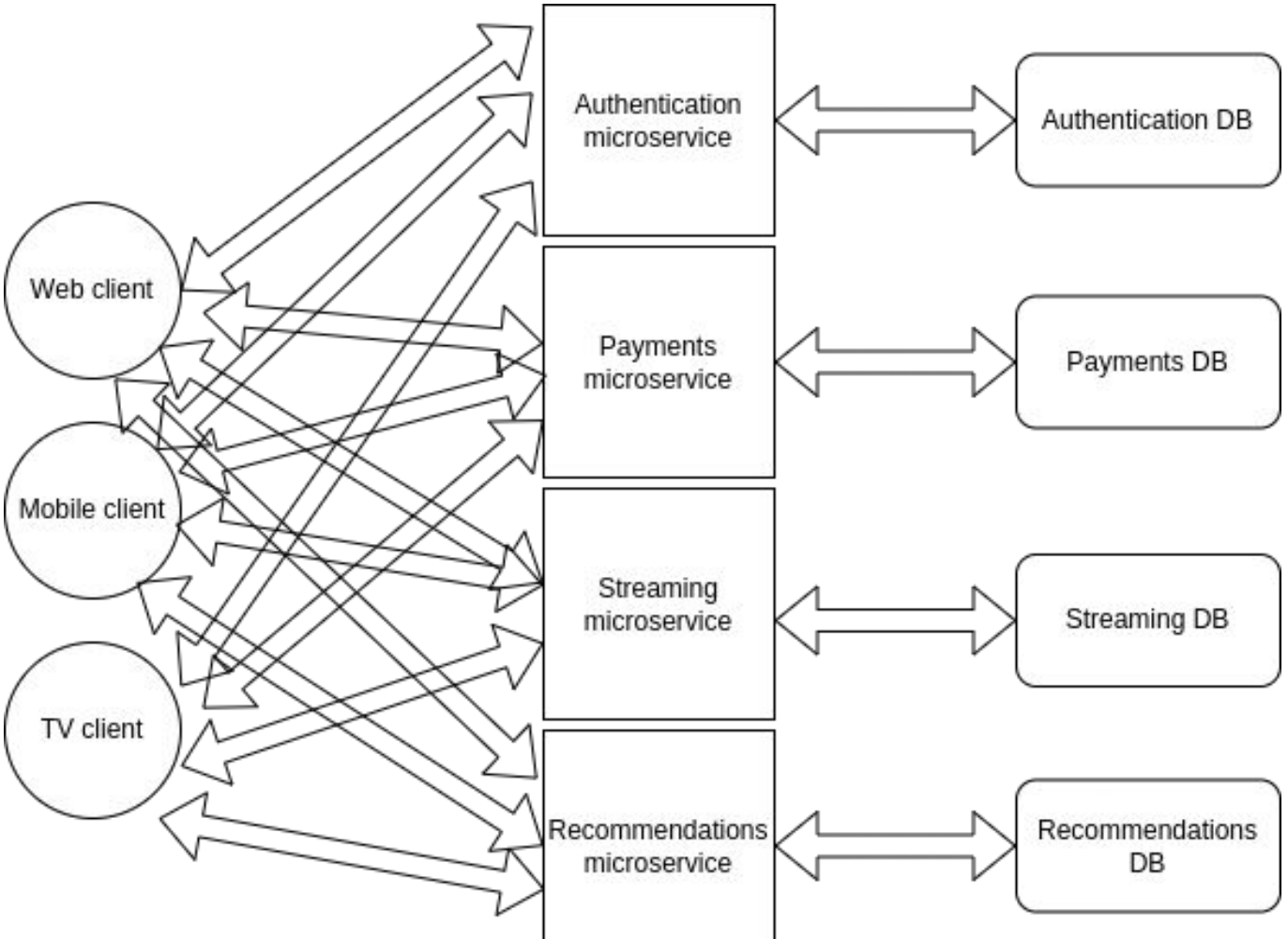
- Application Programming Interface
- Think of it like a contract
- Can be FE to BE, or BE to other services

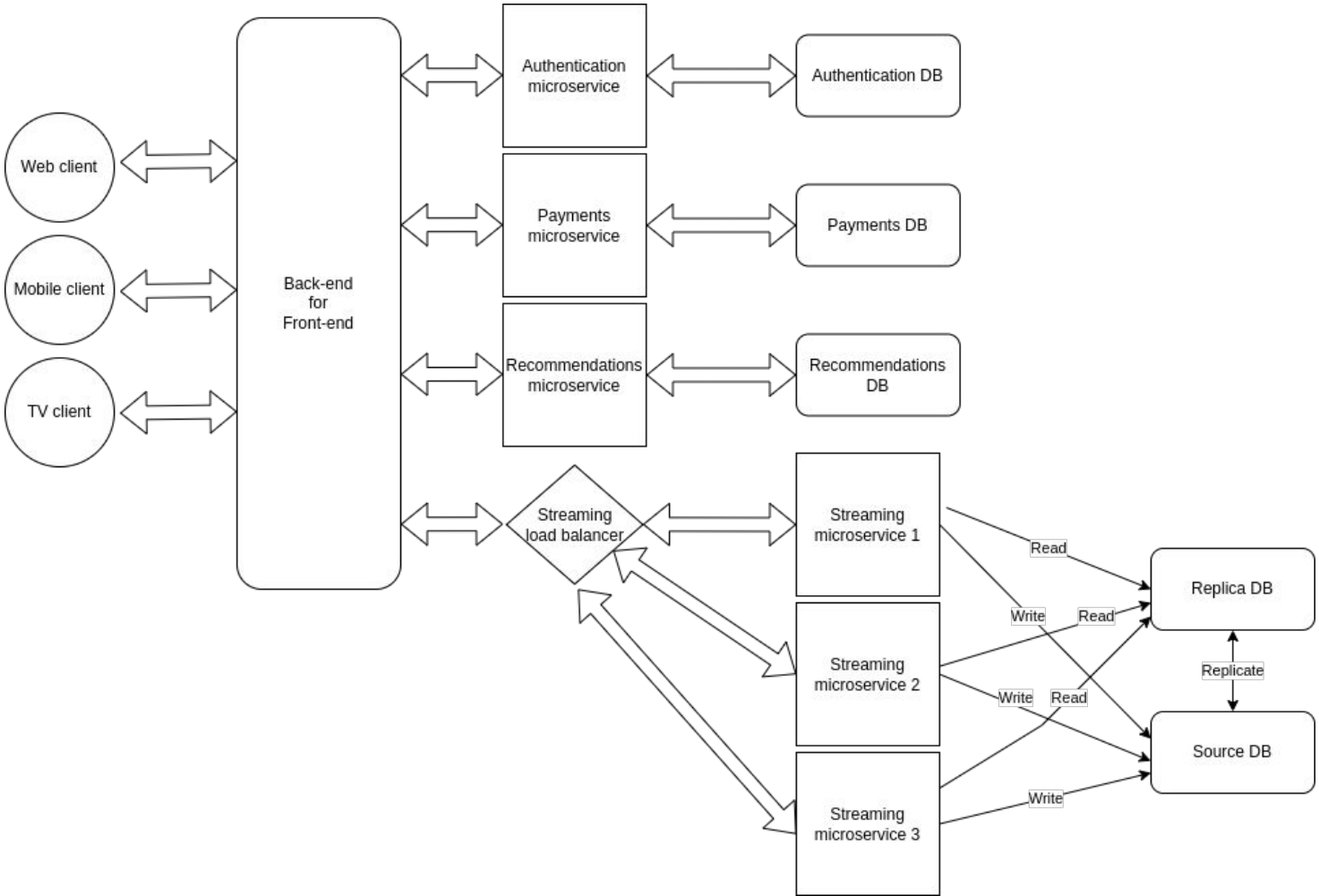
Live Example


Web client
Mobile client
TV client
Server
Database

Microservices

- As you scale (both app and team), you might run into bottlenecks
- Microservices is one of the main ways of dealing with it


Web client
Mobile client
TV client
Authentication microservice
Payments microservice
Streaming microservice
Recommendations microservice
Authentication DB
Payments DB
Streaming DB
Recommendations DB


Web client
Mobile client
TV client
Back-end
for
Front-end
Authentication
microservice
Payments
microservice
Recommendations
microservice
Streaming
load balancer
Authentication DB
Payments DB
Recommendations
DB
Streaming
microservice 1
Streaming
microservice 2
Streaming
microservice 3
Read
Write
Read
Write
Read
Write
Replica DB
Replicate
Source DB

MVC

- Model - View - Controller
- View -> Model
- View -> Controller -> Model
- Abstraction for better organization

MVVM

- Model - View - View Model
- How to keep data in sync with GUI, key: data binding

Declarative?

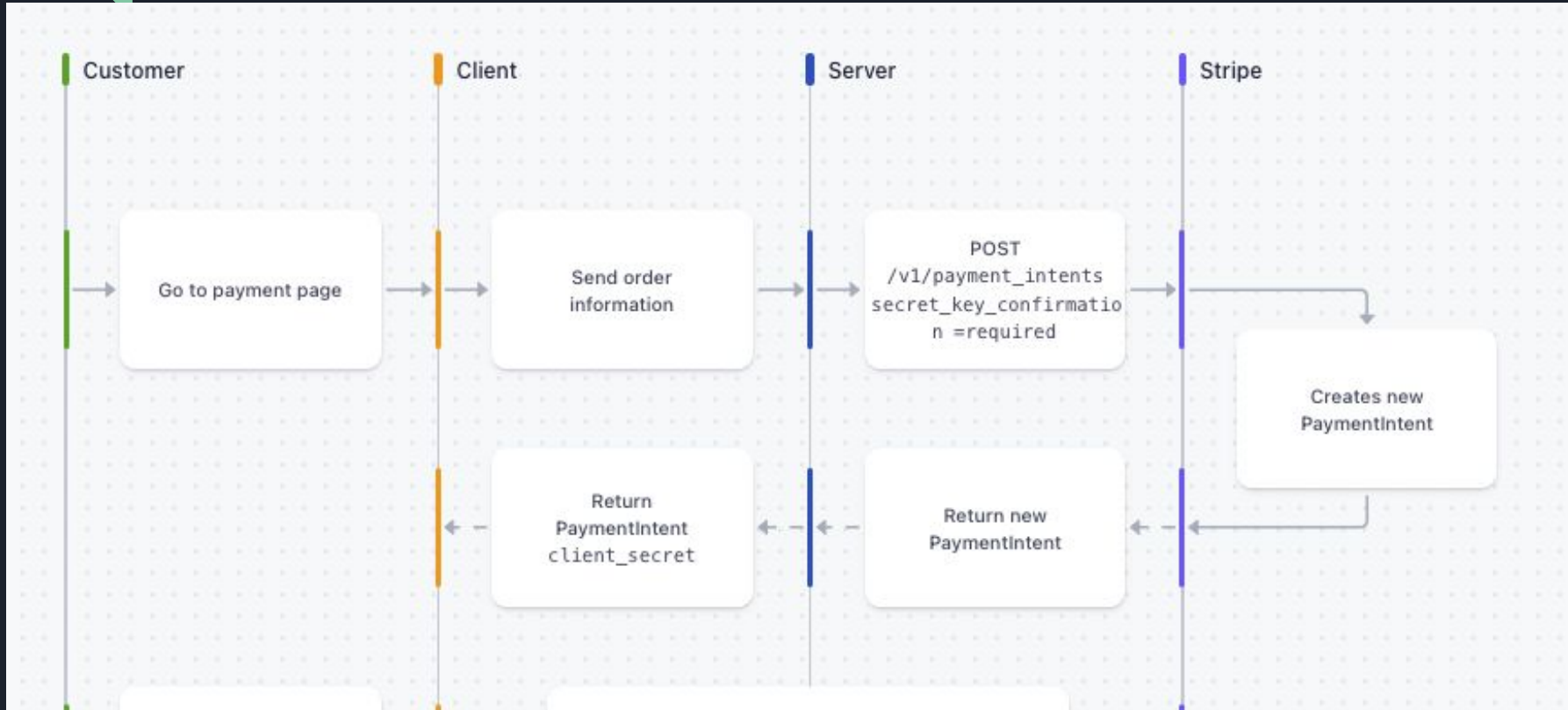
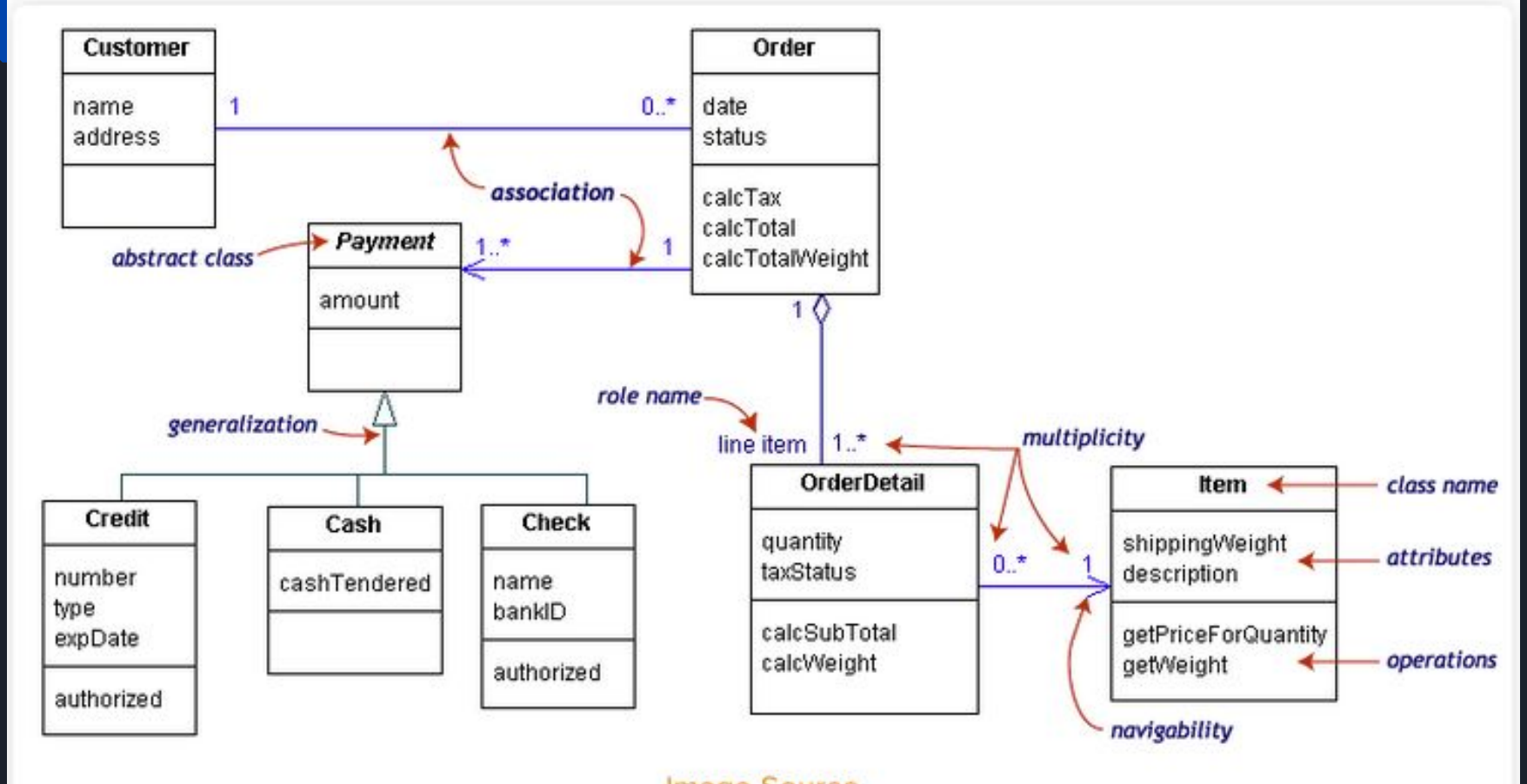
```
nav a:hover {
        background-color: red;
}
```

```
el.onmouseover = function () {
        this.style.backgroundColor = 'red'
}
el.onmouseout = function () {
        this.style.backgroundColor = '';
}
```

CRC diagram

- Refresher from CSC207
- Class - Responsibility - Collaborators
- What the class does and how does each relate to others

Sequence Diagram



Database Diagram