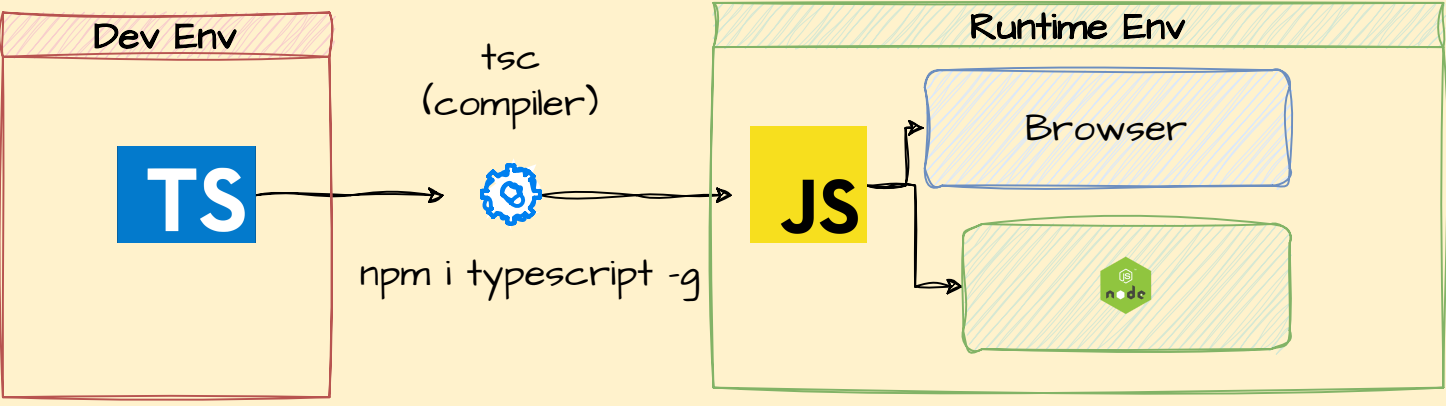
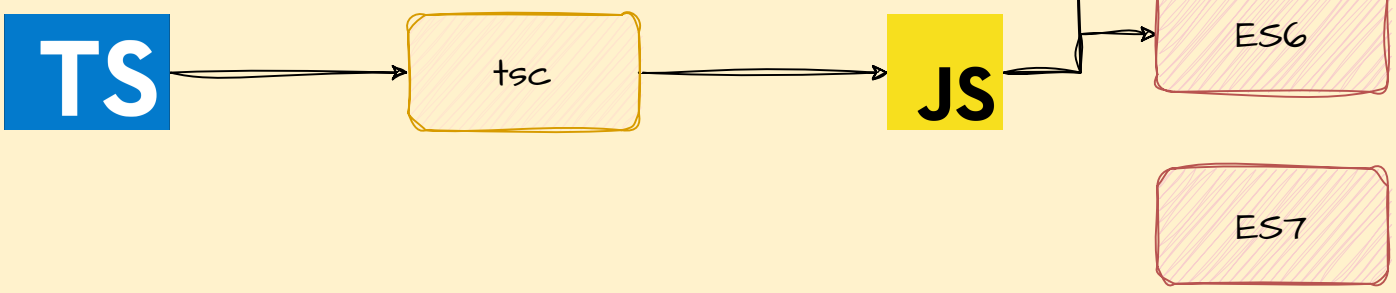
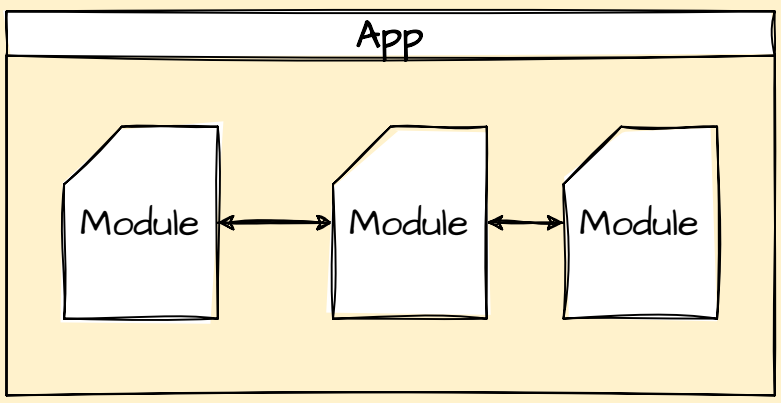
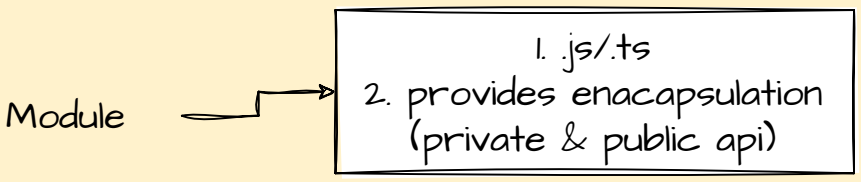
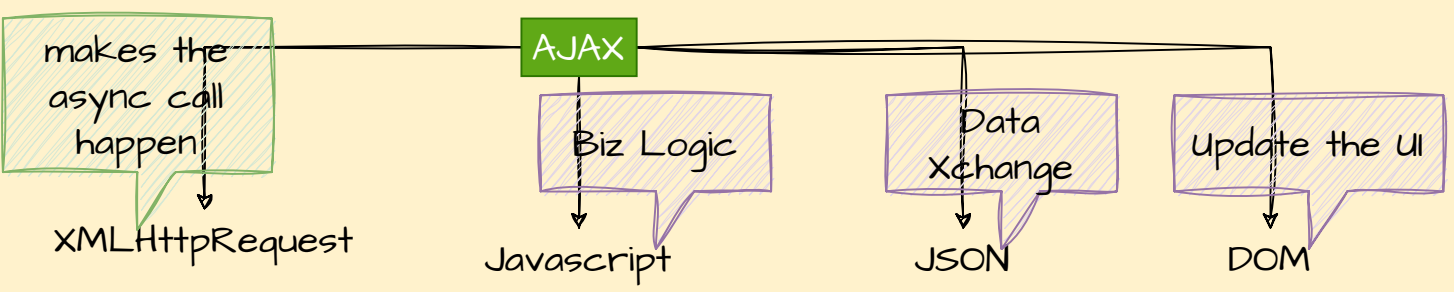

Dev Env
TS
tsc
(compiler)
npm i typescript -g
Runtime Env
JS
Browser
node

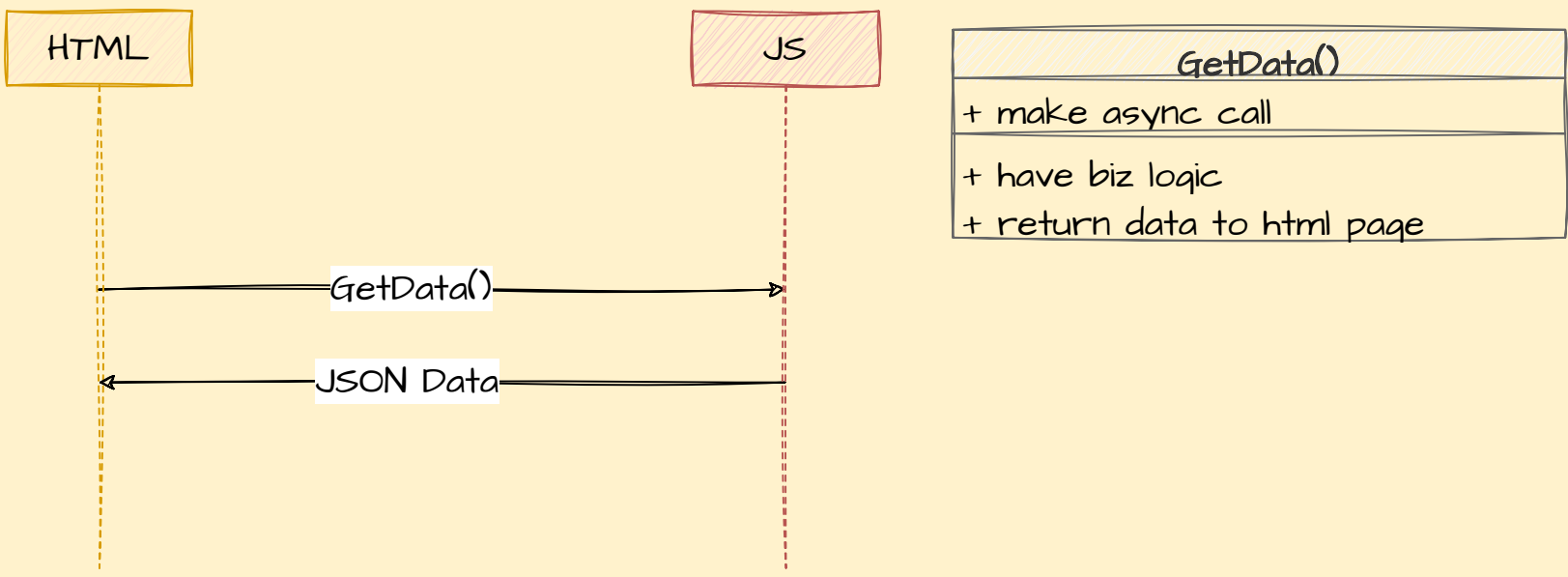
default

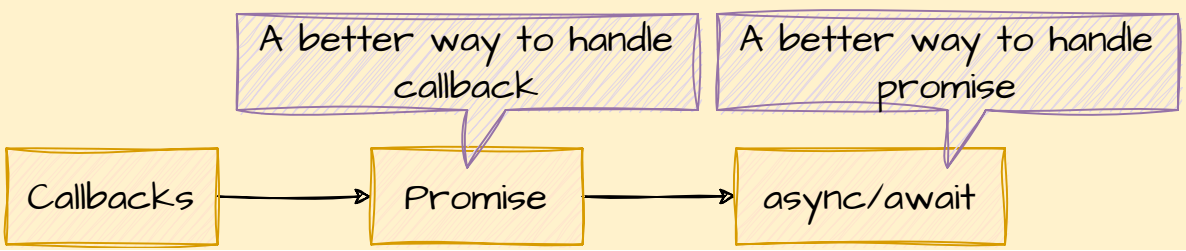

TS
tsc
JS
ES5
ES6
ES7


App
Module
Module
Module

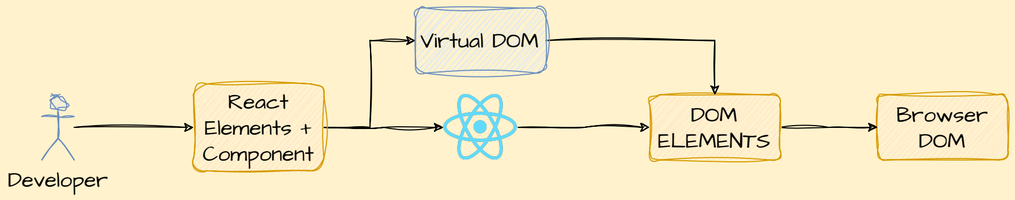

Module
1. .js/.ts
2. provides enacapsulation
(private & public api)

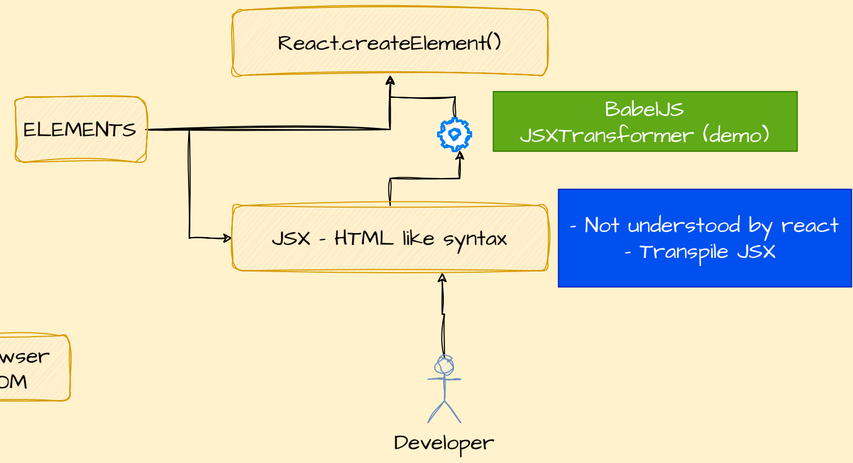

makes the async call happen
XMLHttpRequest
AJAX
Biz Logic
Javascript
Data Xchange
JSON
Update the UI
DOM


HTML
JS
GetData()
JSON Data
GetData()
+ make async call
+ have biz logic
+ return data to html page


A better way to handle callback
A better way to handle promise
Callbacks
Promise
async/await

React
- A JS library
- JSX
- Virtual DOM
- Components for UI



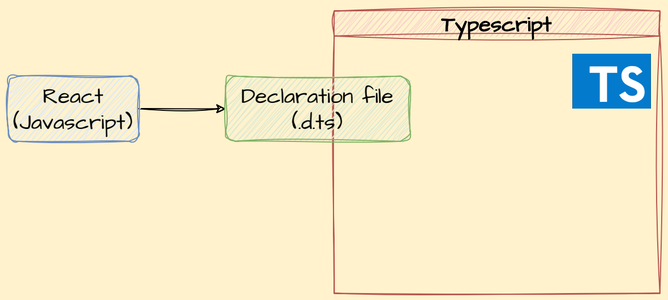


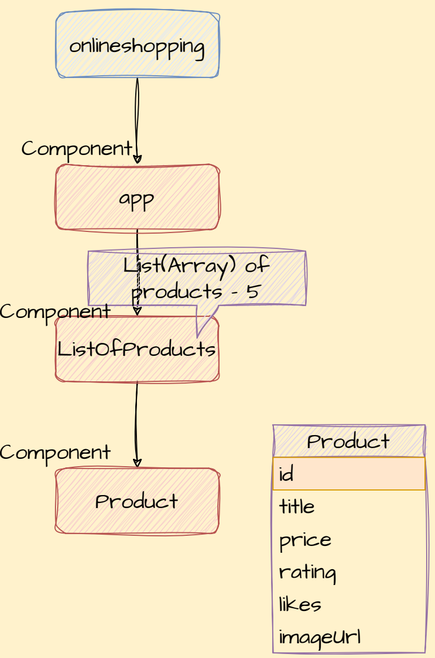
Components
- Reusable (UI + Biz logic)
- Composable
- Maintenable
- Configurable
- Modular
- Testable

npm i create-react-app -g

create-react-app nameofapp --template typescript

} npx create-react-app my-first-app --template typescript

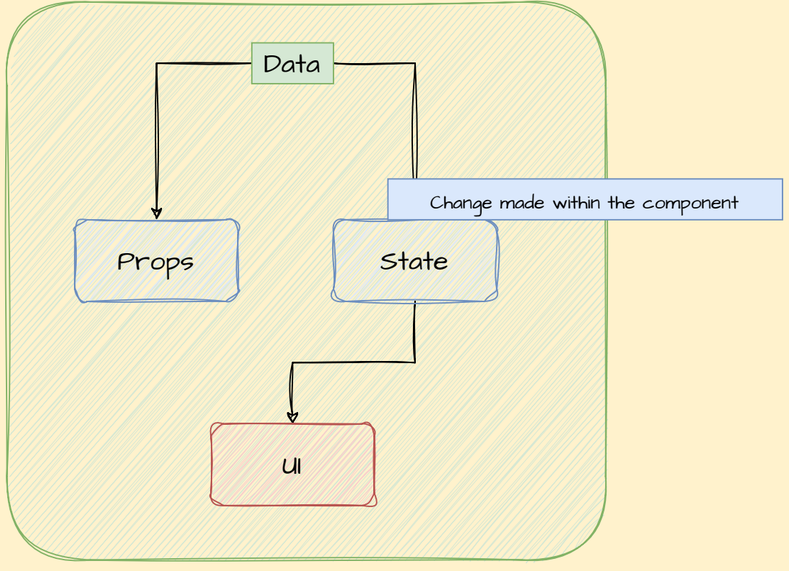




<input type="button ">

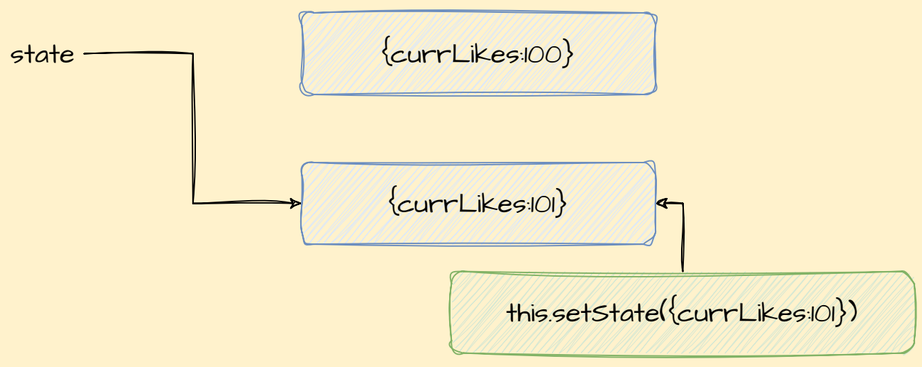
<input type="text ">

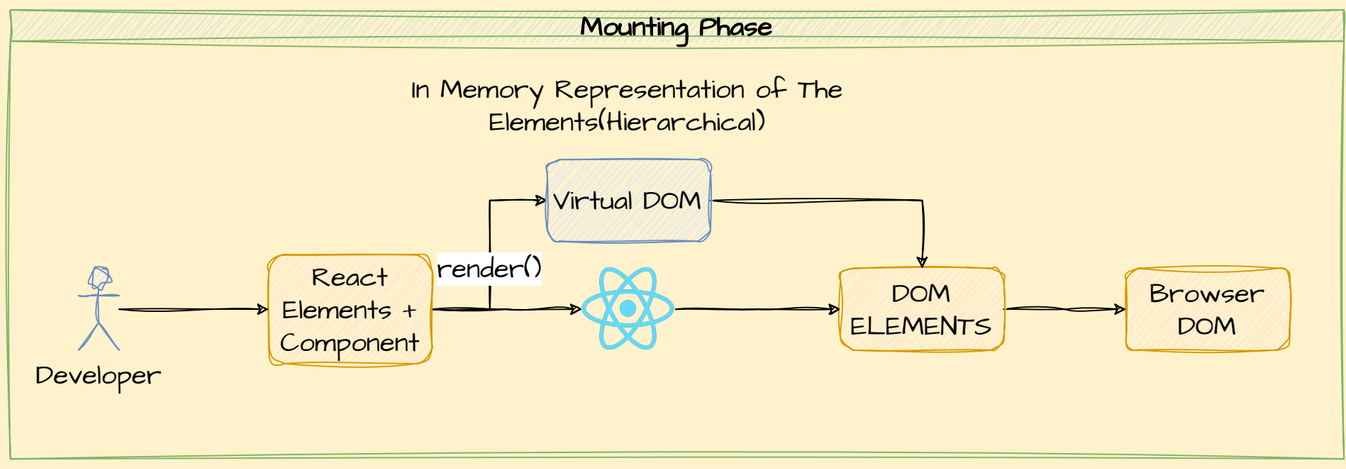
State -> Current values of attributes

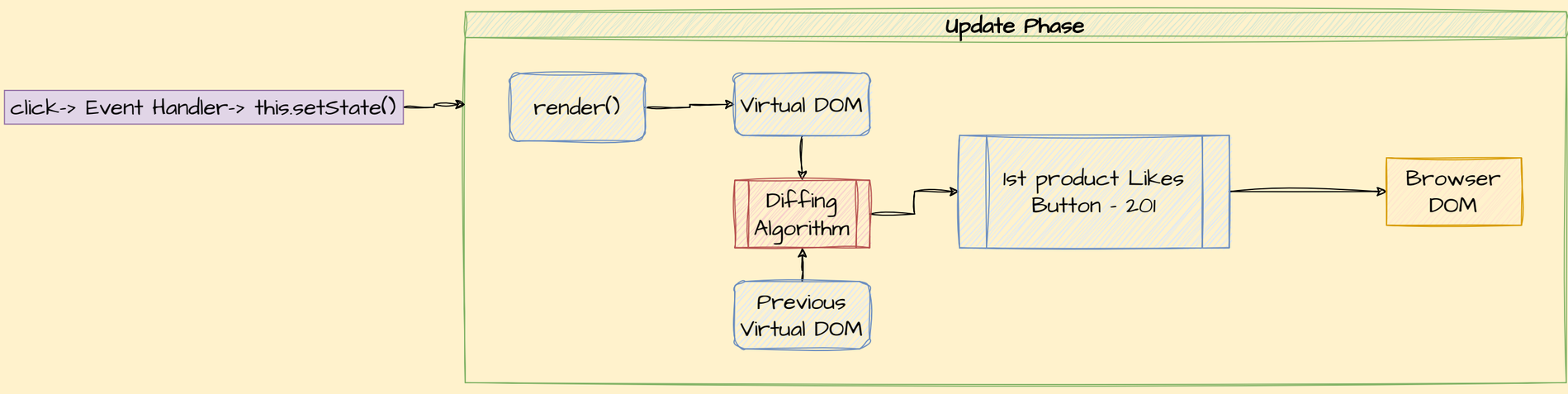


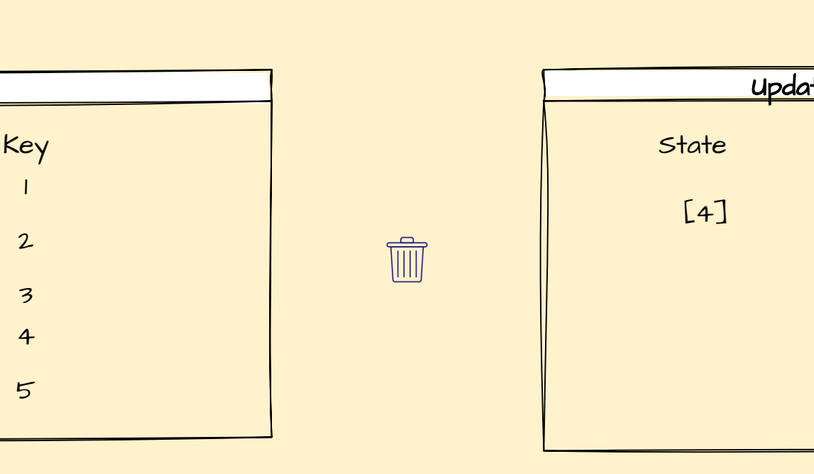
Stack

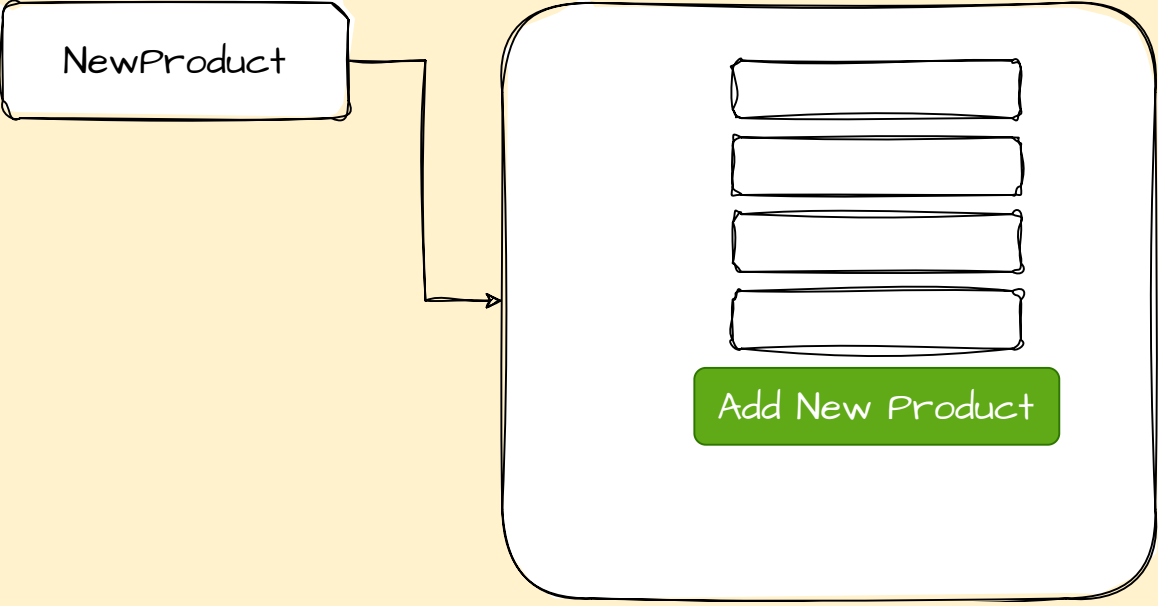
Heap

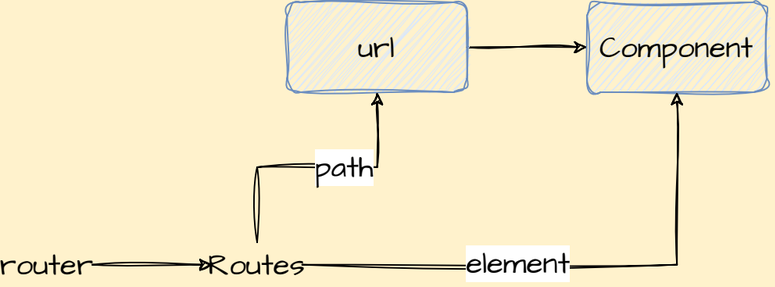






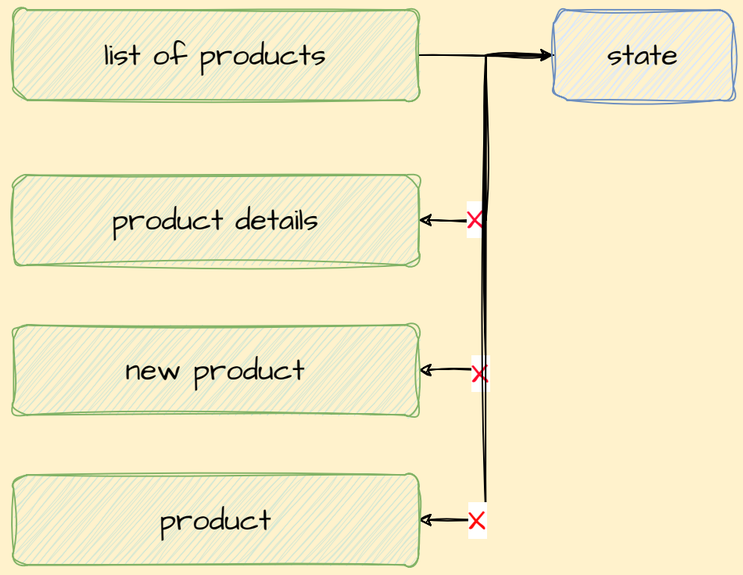


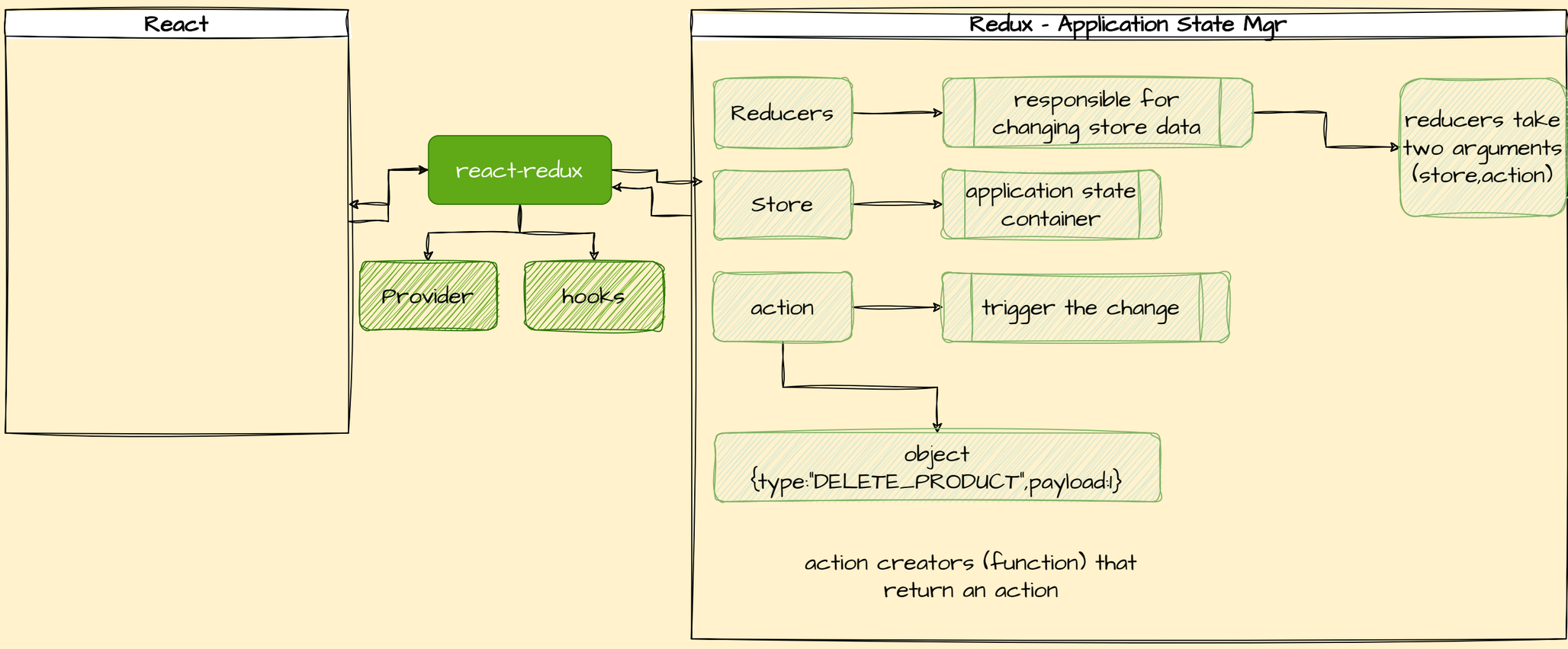

NewProduct
Add New Product



Routing parameters → pass dynamic values in the url

/productdetails/:id





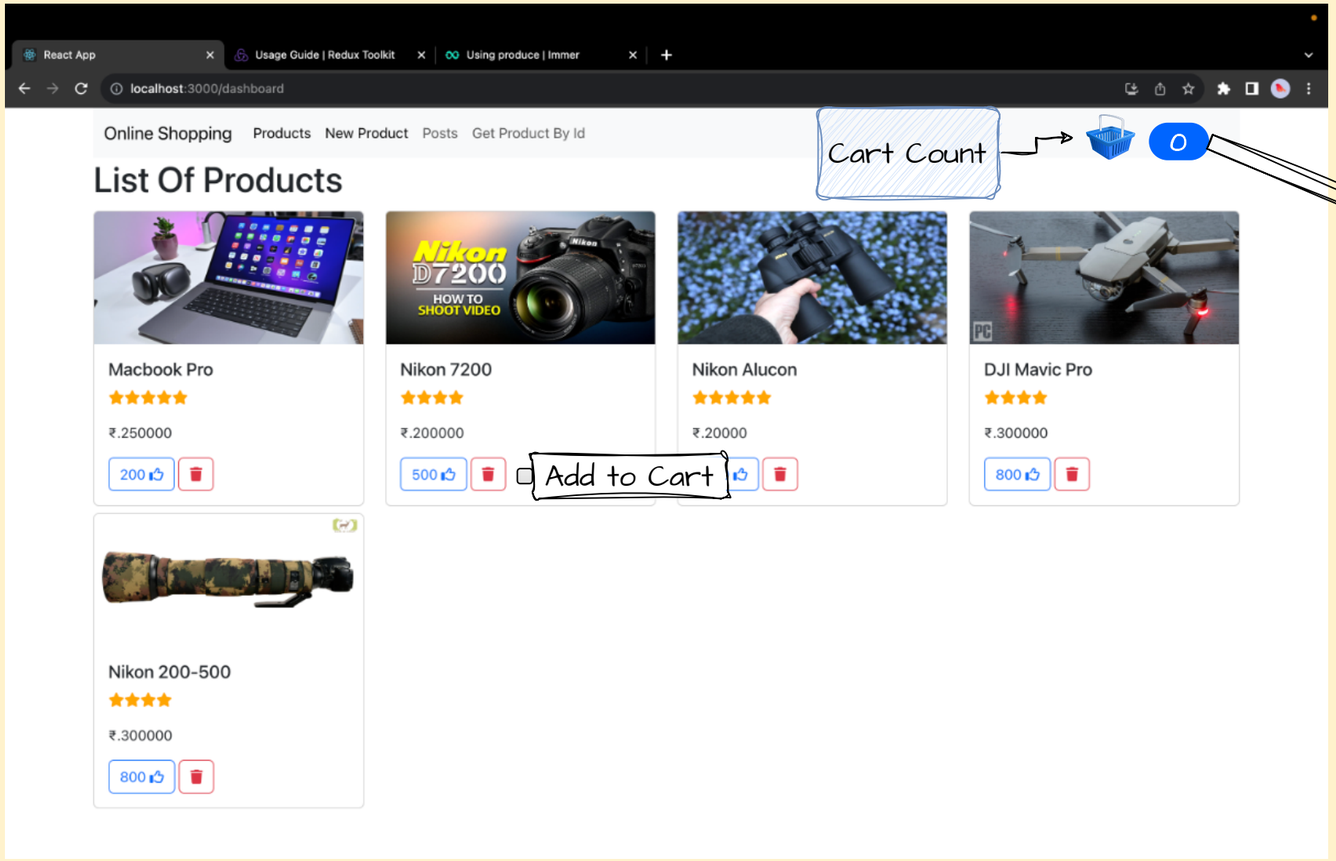
Store ⟶ Immutable

```
[
  {..... likes},
{..... , likes:500},
  {..... , likes}
]
```

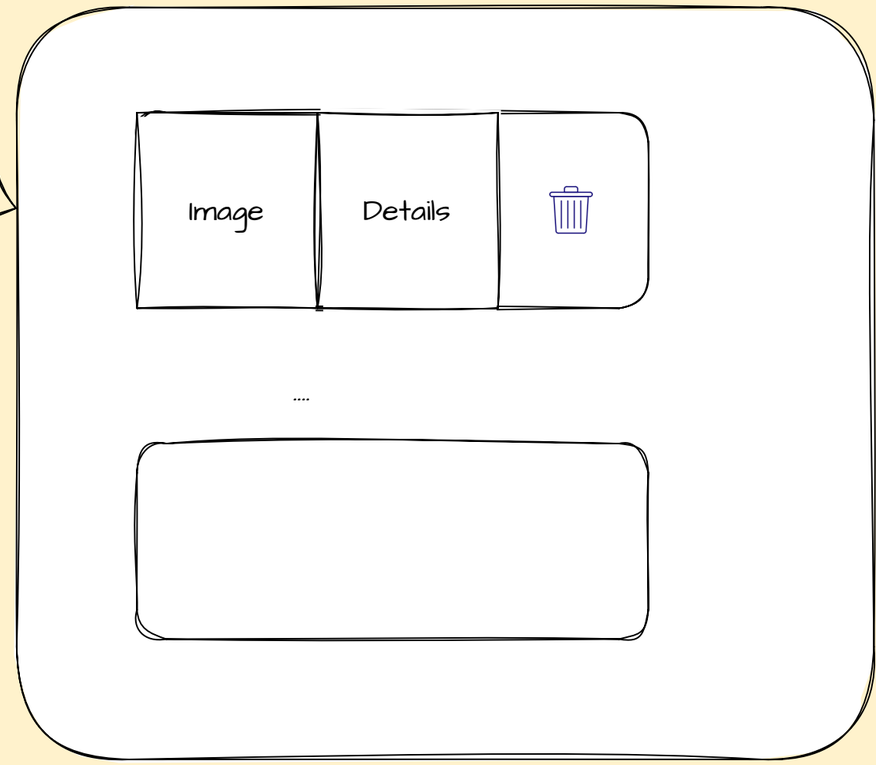
Text

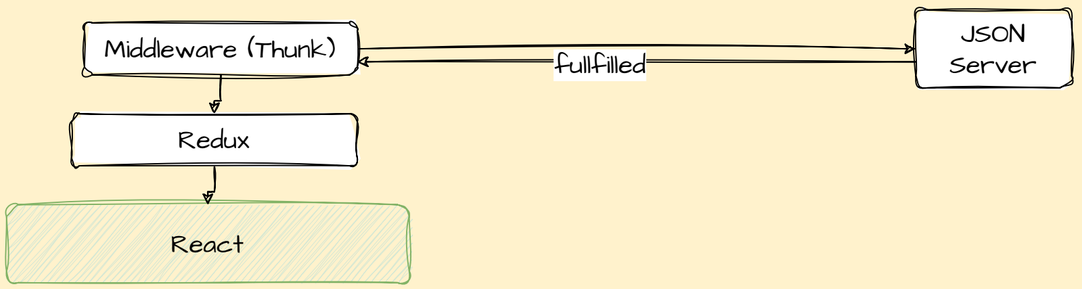
↓

props.children

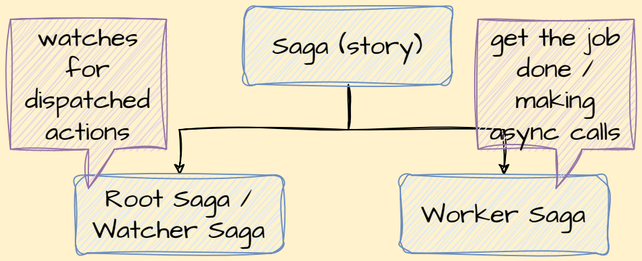


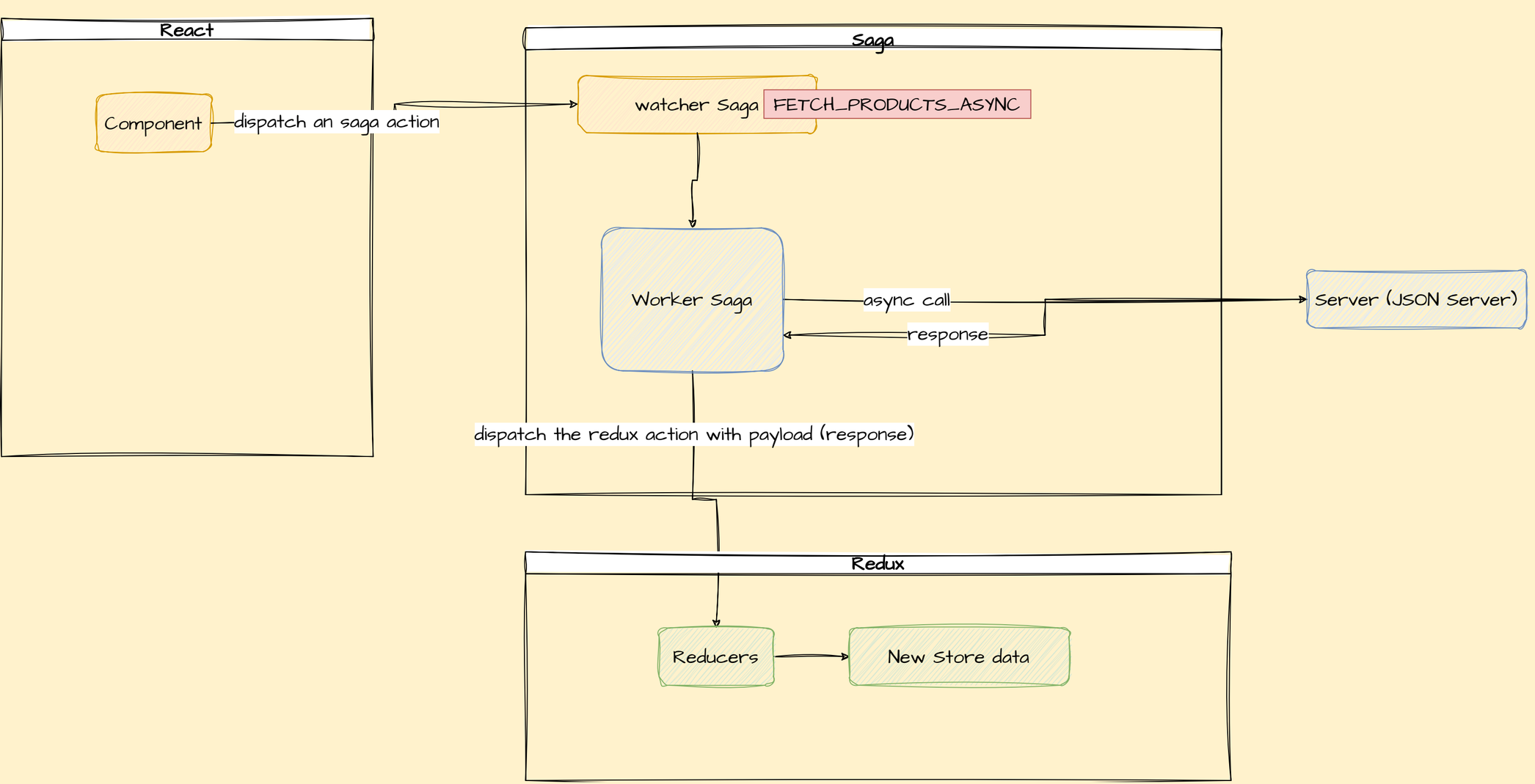
Cart Summary

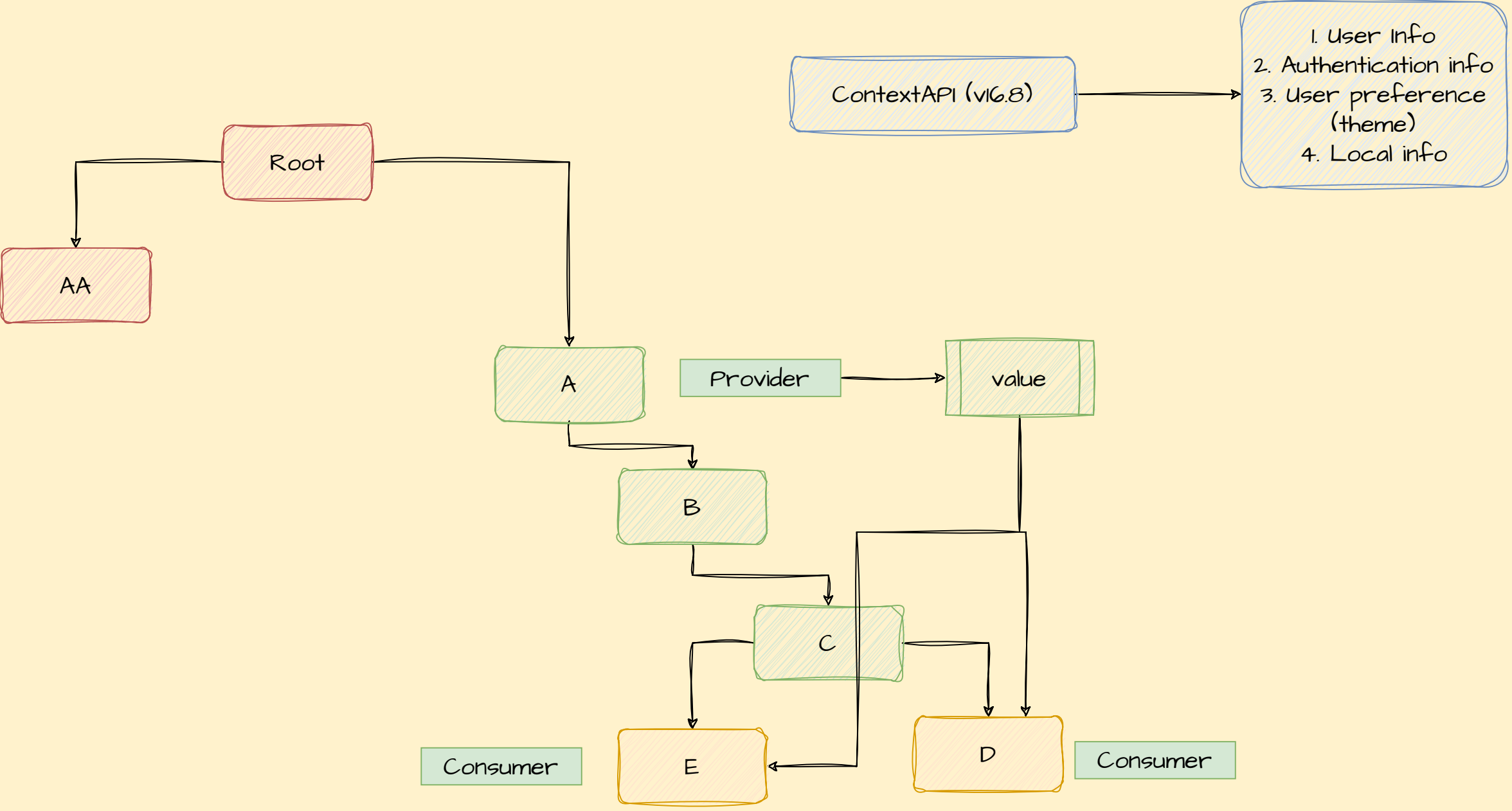


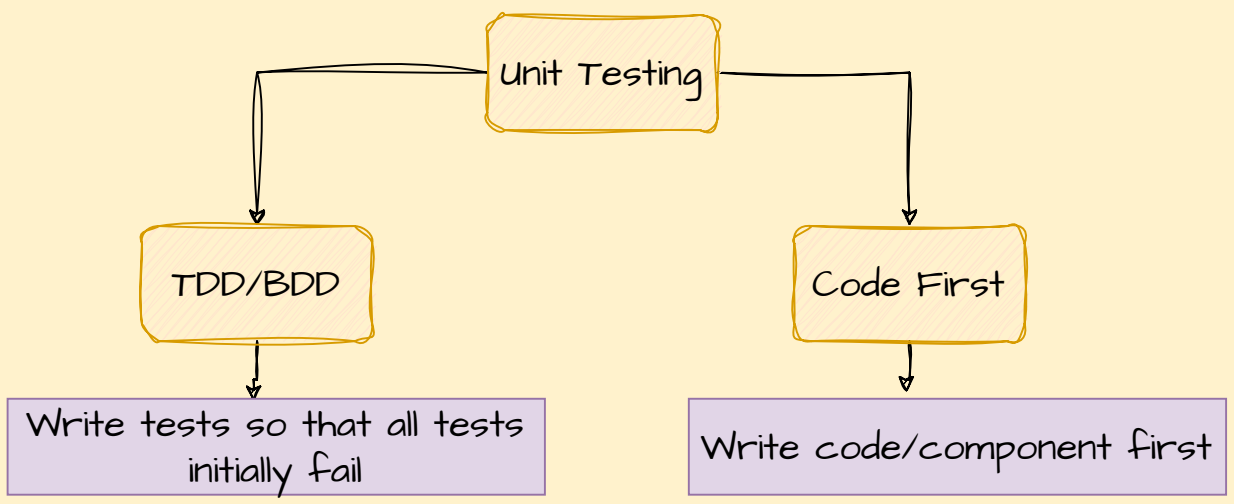


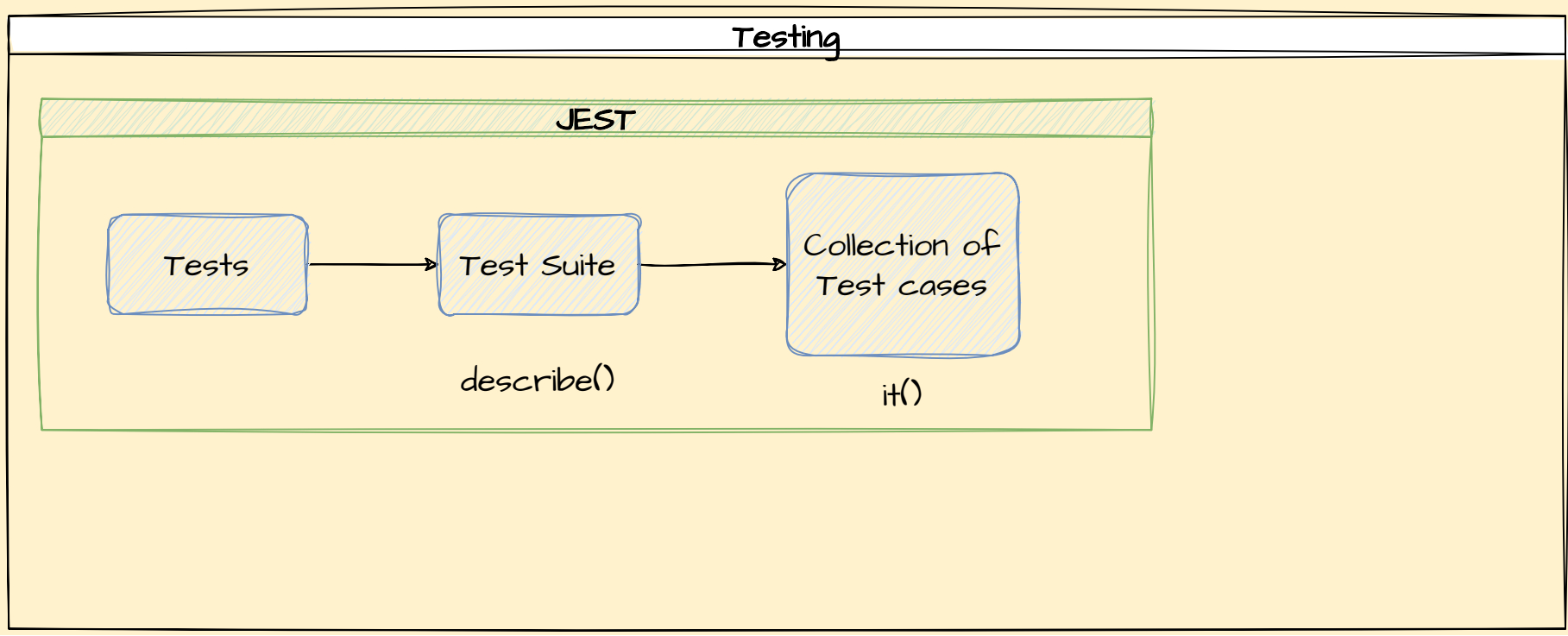
middlewares (are extra features)

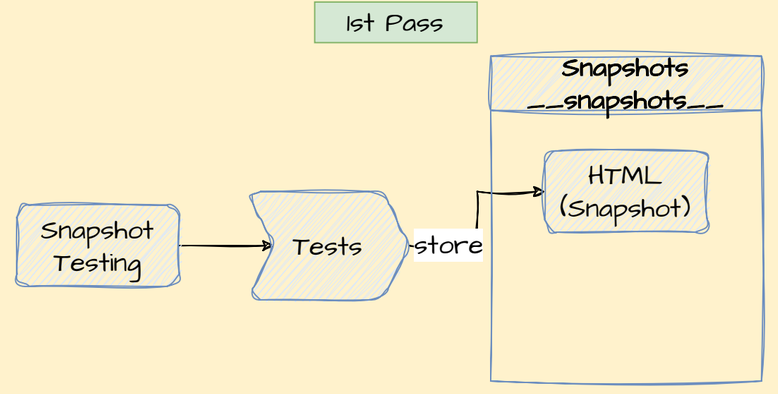


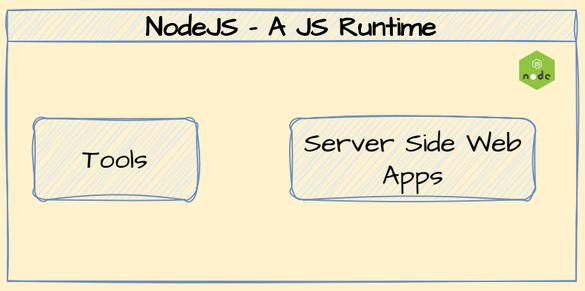



ContextAPI (v16.8)
1. User Info
2. Authentication info
3. User preference (theme)
4. Local info
Root
AA
A
Provider
value
B
C
Consumer
E
D
Consumer

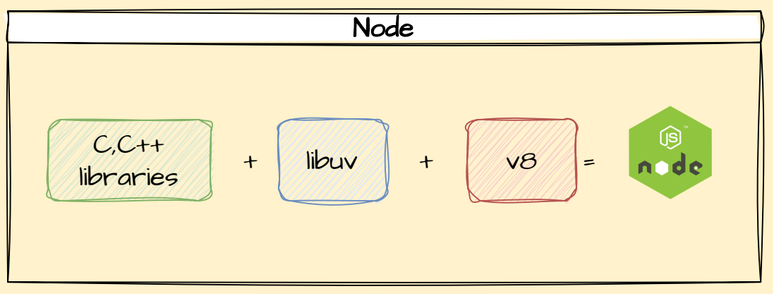

Unit Testing
TDD/BDD
Code First
Write tests so that all tests initially fail
Write code/component first

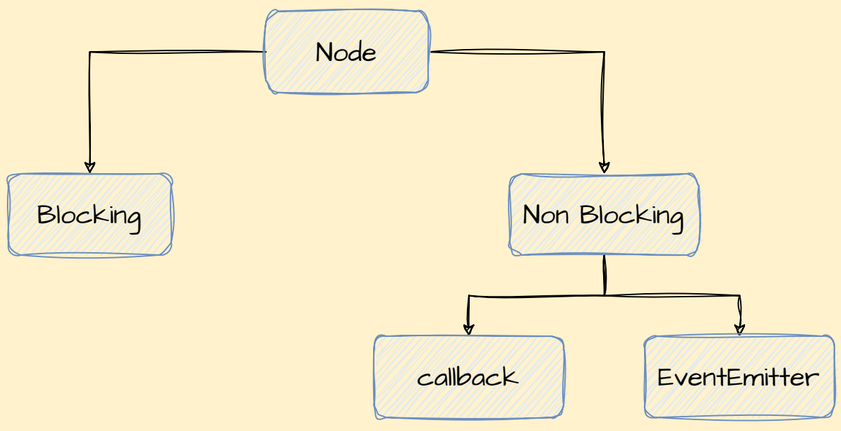

Testing
JEST
Tests
Test Suite
Collection of Test cases
describe()
it()

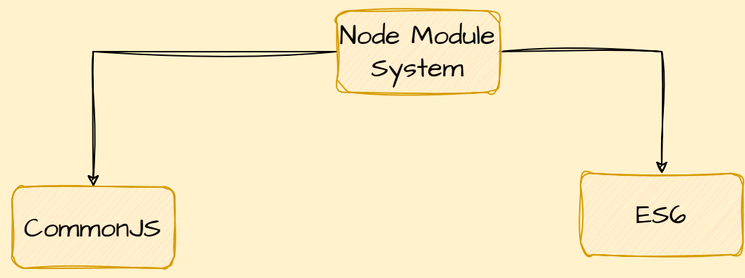


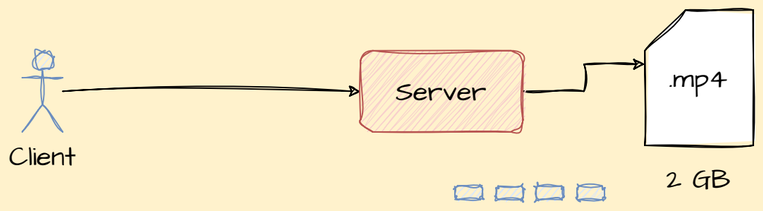


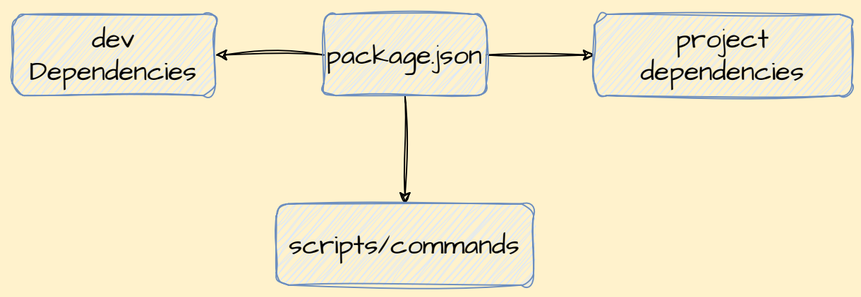
REPL -
READ
EVALUATE
PRINT
LOOP

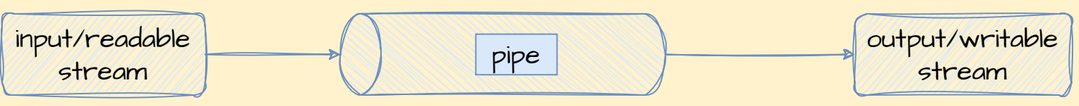


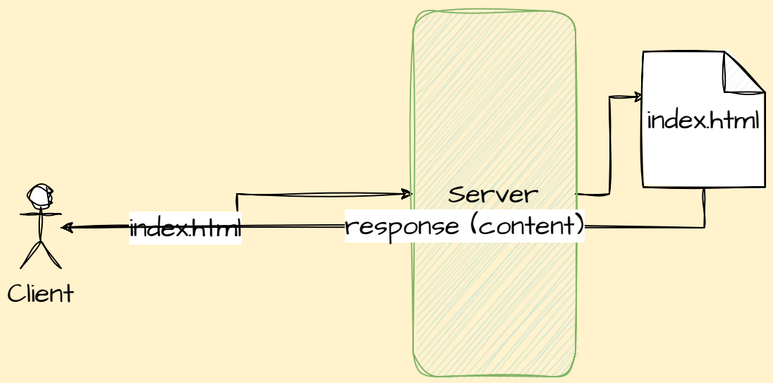


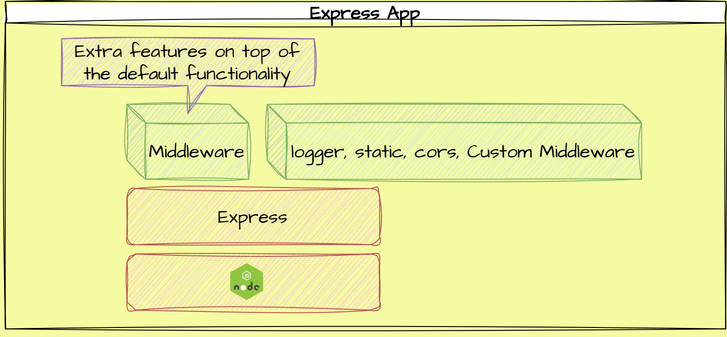


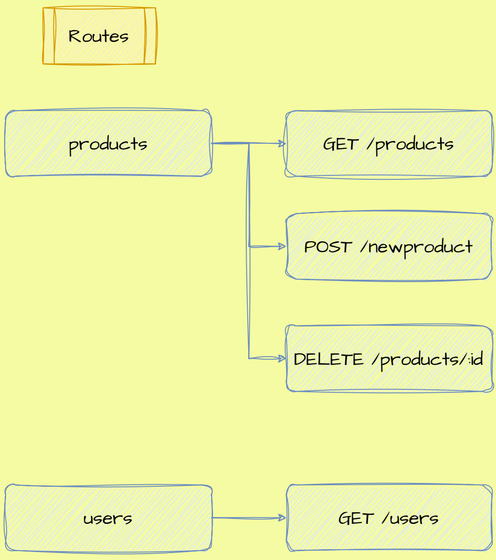


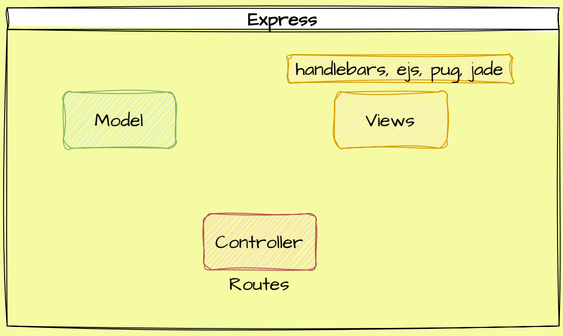


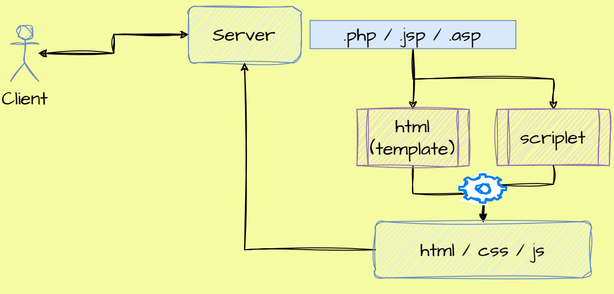




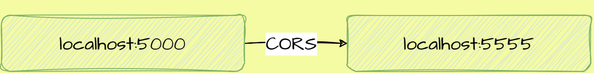


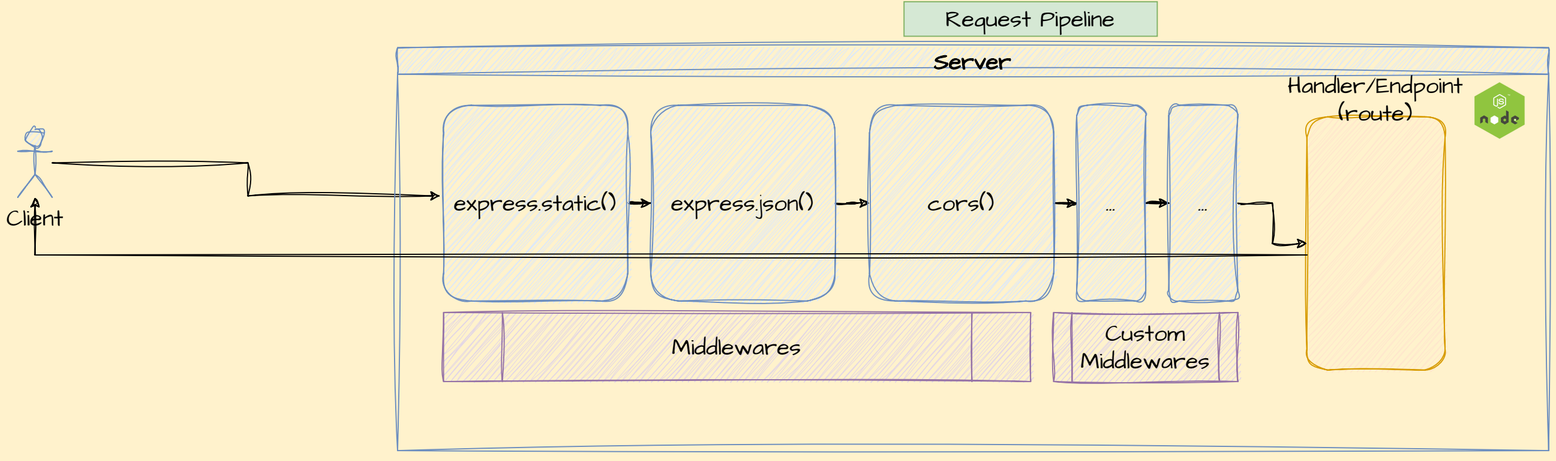


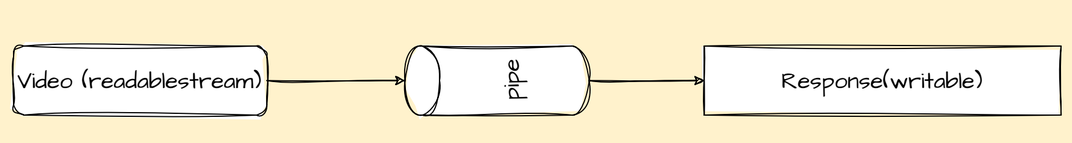


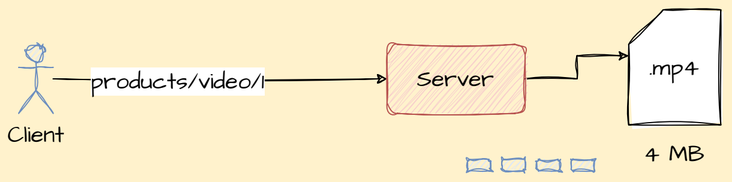


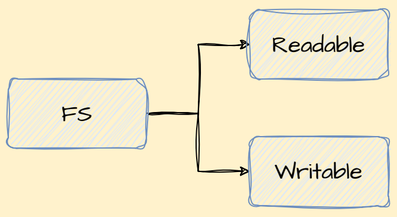
CORS - CROSS ORIGIN RESOURCE SHARING



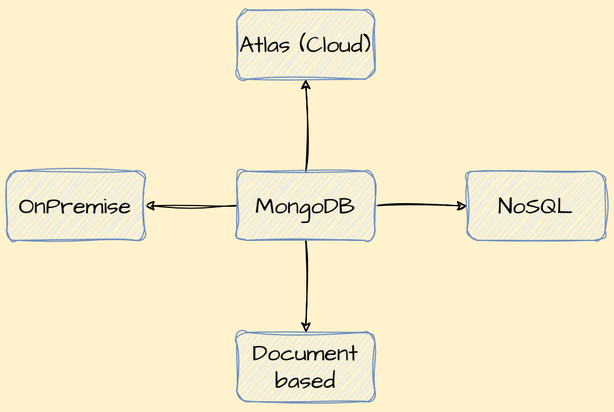

Request Pipeline
Server
Handler/Endpoint
(route)
Client
express.static()
express.json()
cors()
...
...
Middlewares
Custom
Middlewares

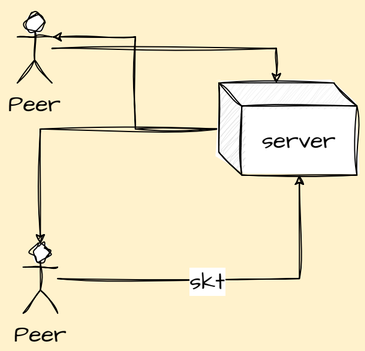

Video (readablestream)
Pipe
Response(writable)

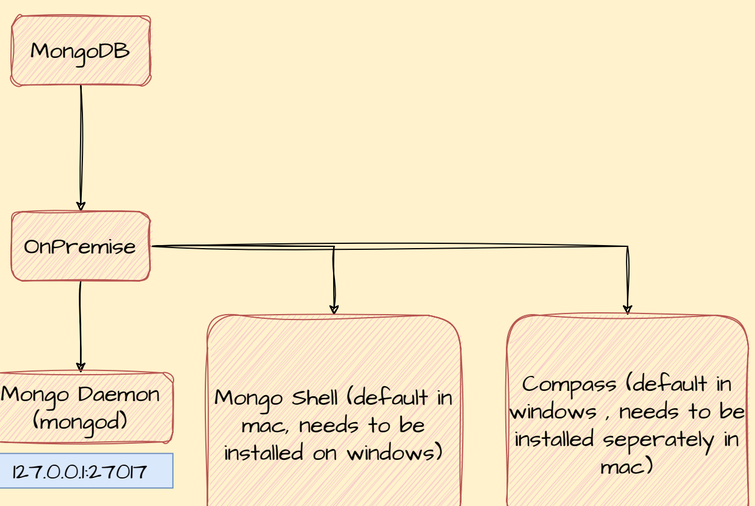

Client
products/video/1
Server
.mp4
4 MB

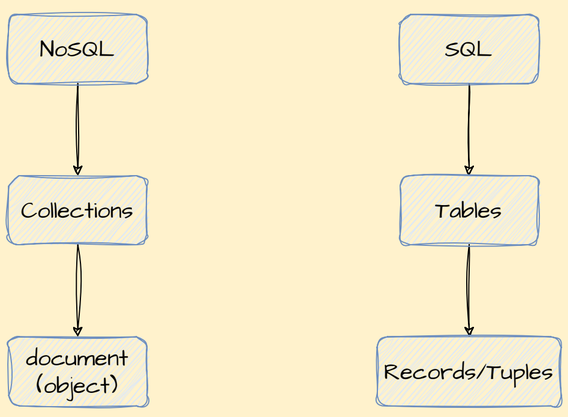

FS
Readable
Writable

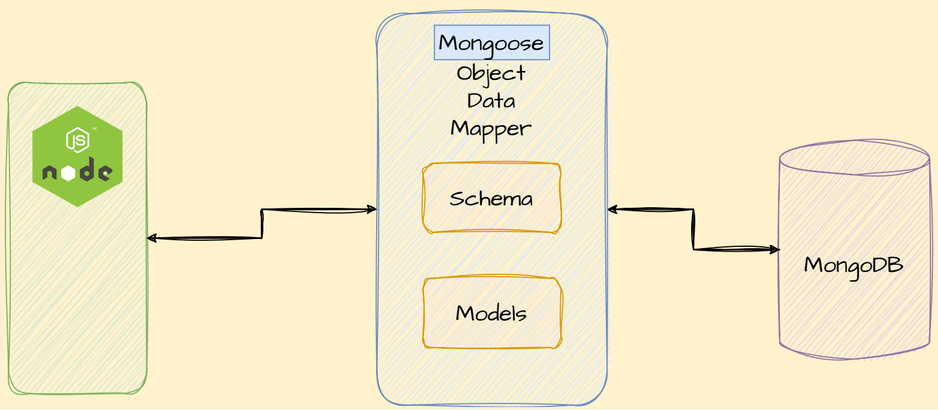
Duplex
Stream
Read & Write at the same time !


Atlas (Cloud)
OnPremise
MongoDB
NoSQL
Document
based

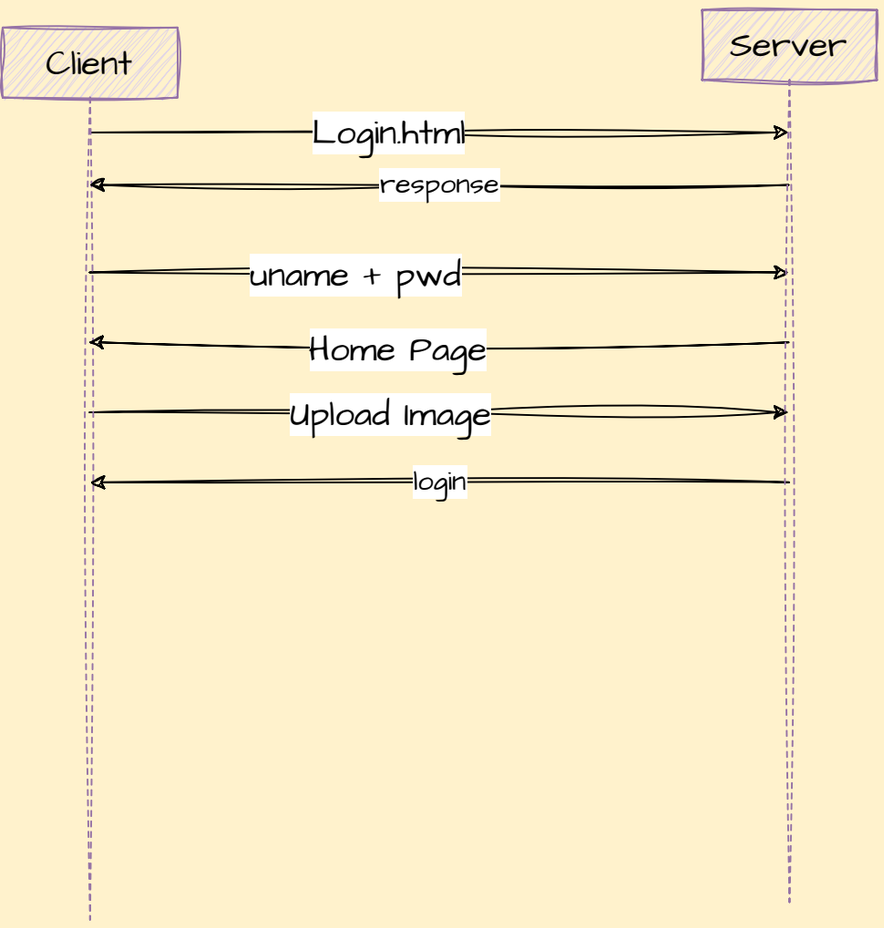

Peer
server
skt
Peer

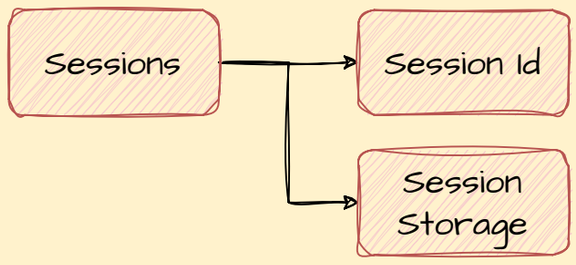

MongoDB
OnPremise
Mongo Daemon
(mongod)
127.0.0.1:27017
Mongo Shell (default in
mac, needs to be
installed on windows)
Compass (default in
windows , needs to be
installed seperately in
mac)

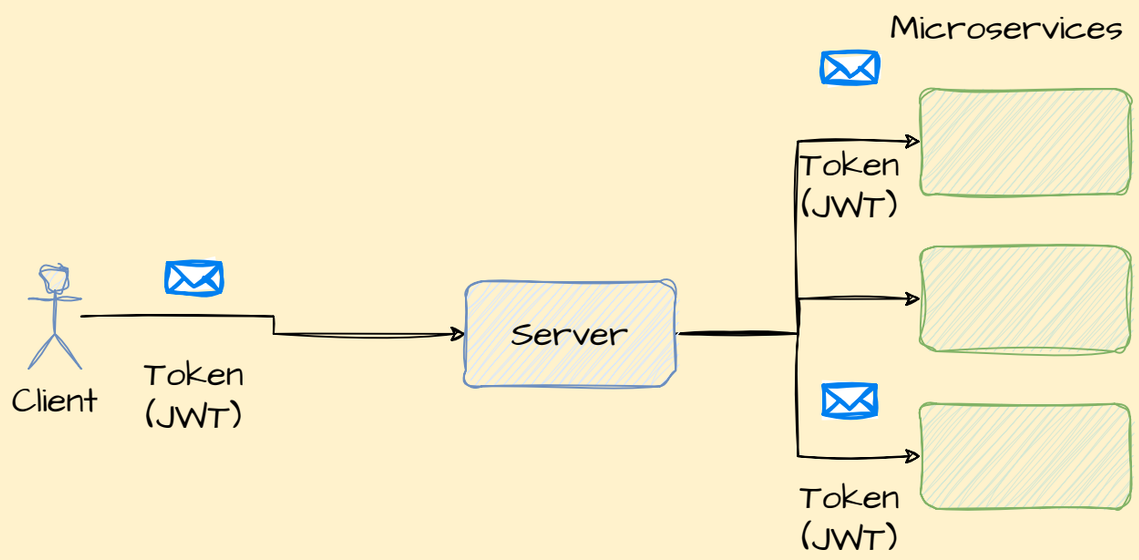

NoSQL
Collections
document
(object)
SQL
Tables
Records/Tuples

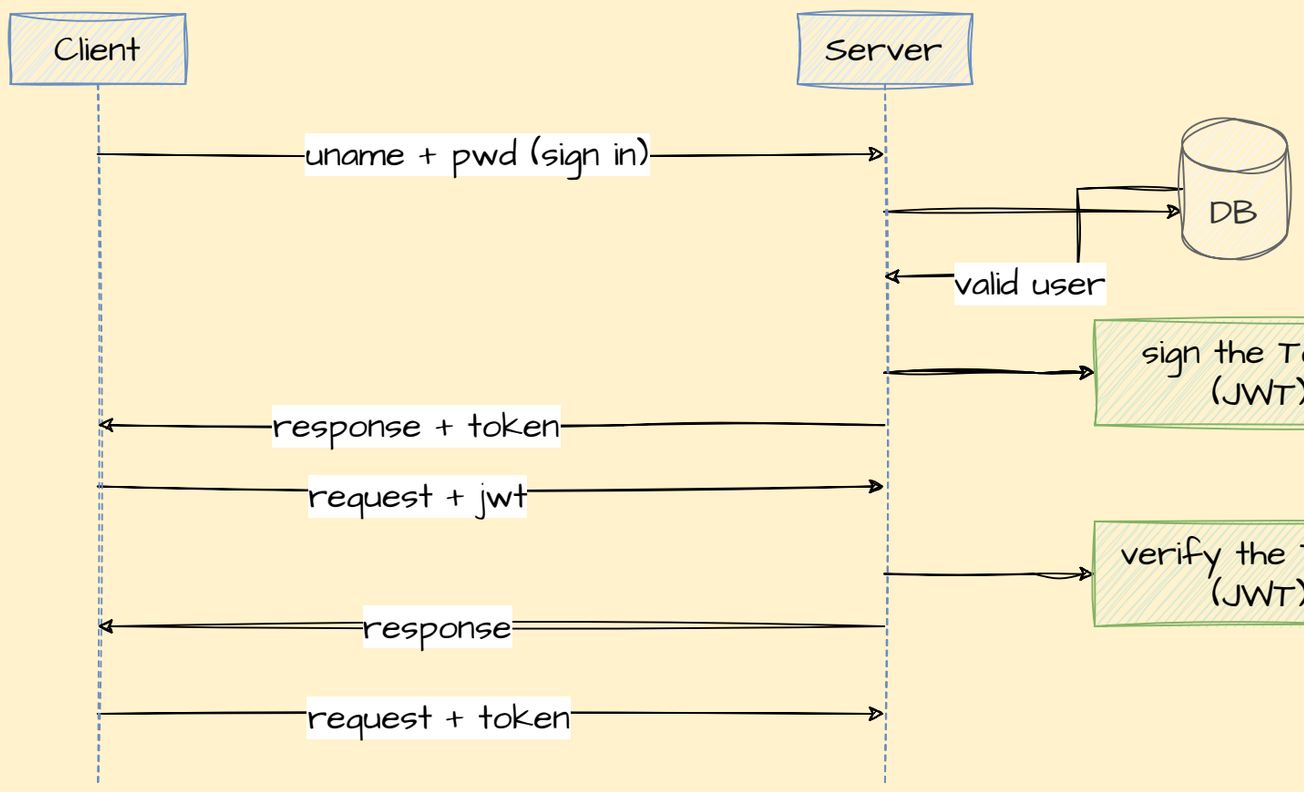

Mongoose
Object
Data
Mapper
Schema
Models
MongoDB

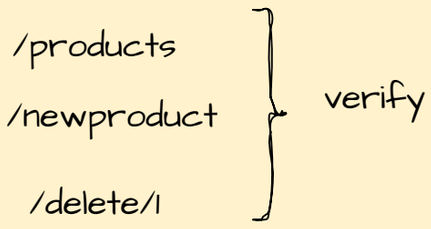
Http is a stateless protocol

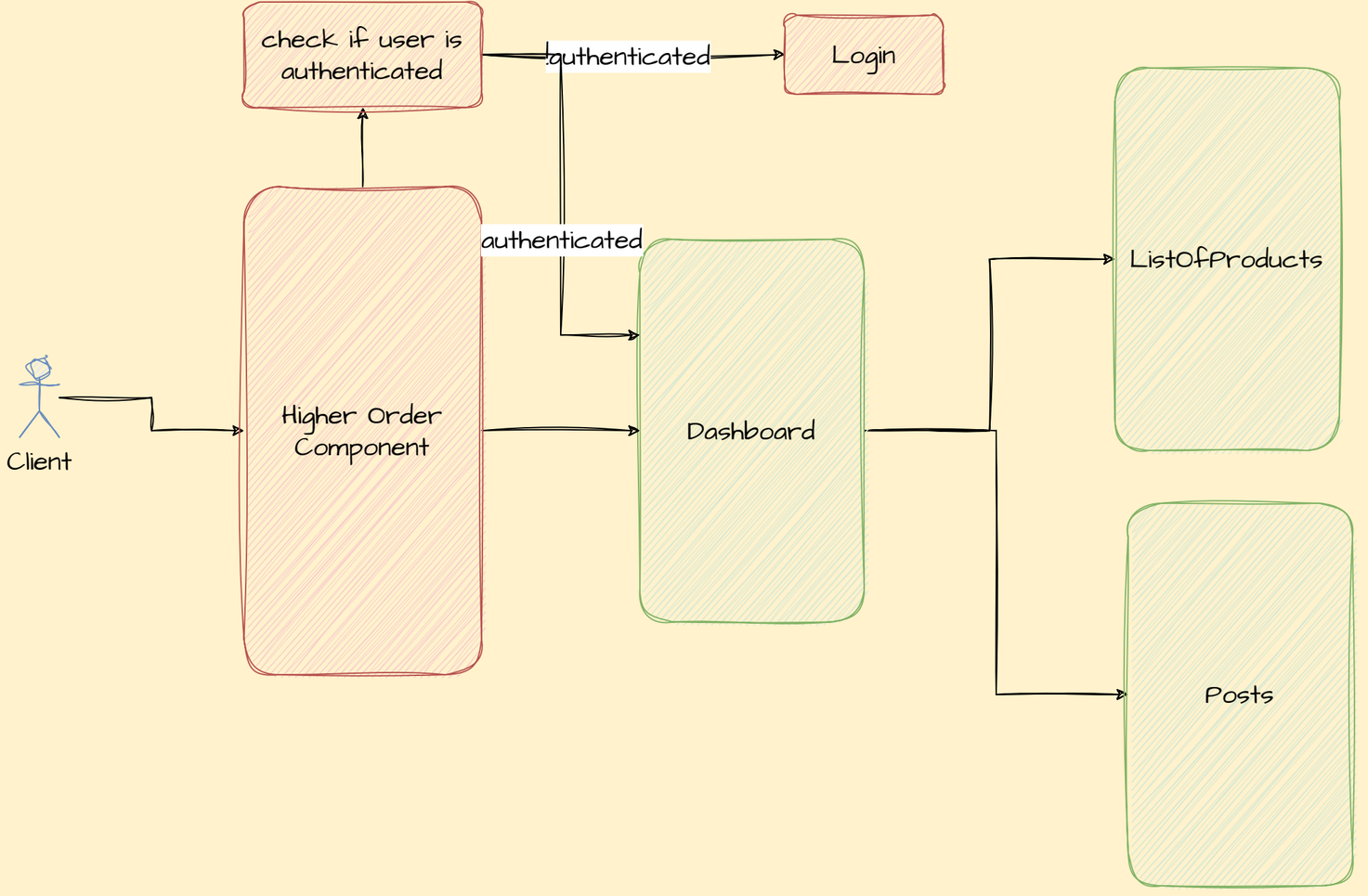








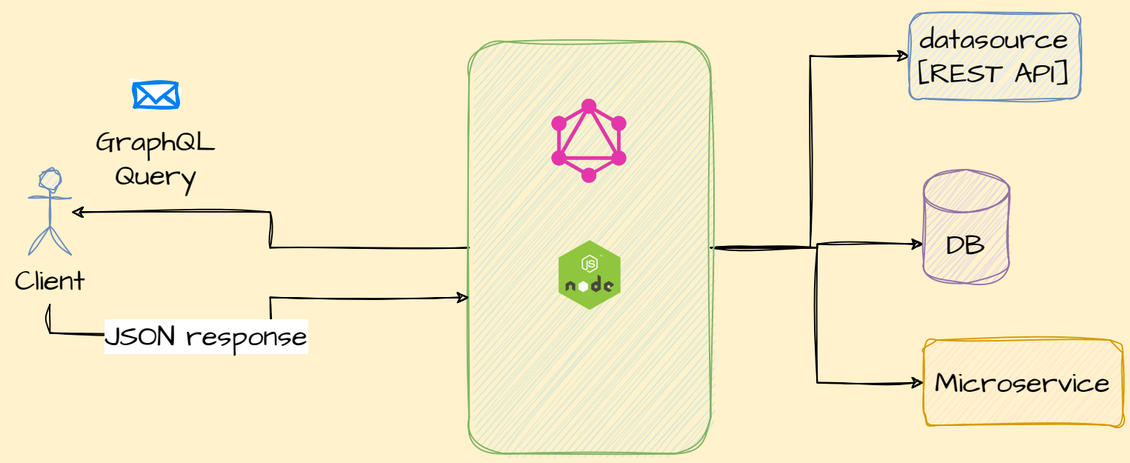




REST API
Fixed Endpoints
The structure of the data (that endpoint returns) is fixed
Cannot query selective data
Related data fetched using multiple request

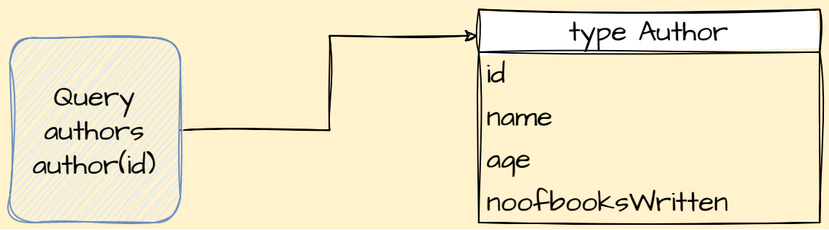
vs

GraphQL
flexible querries
The structure of returned data is not fixed
Can query selective data
Related data can be fetched in the same query



Terminologies
Type Definitions
Resolvers : functions that resolve the data (biz logic)
Query client sends | Server : rootQuery

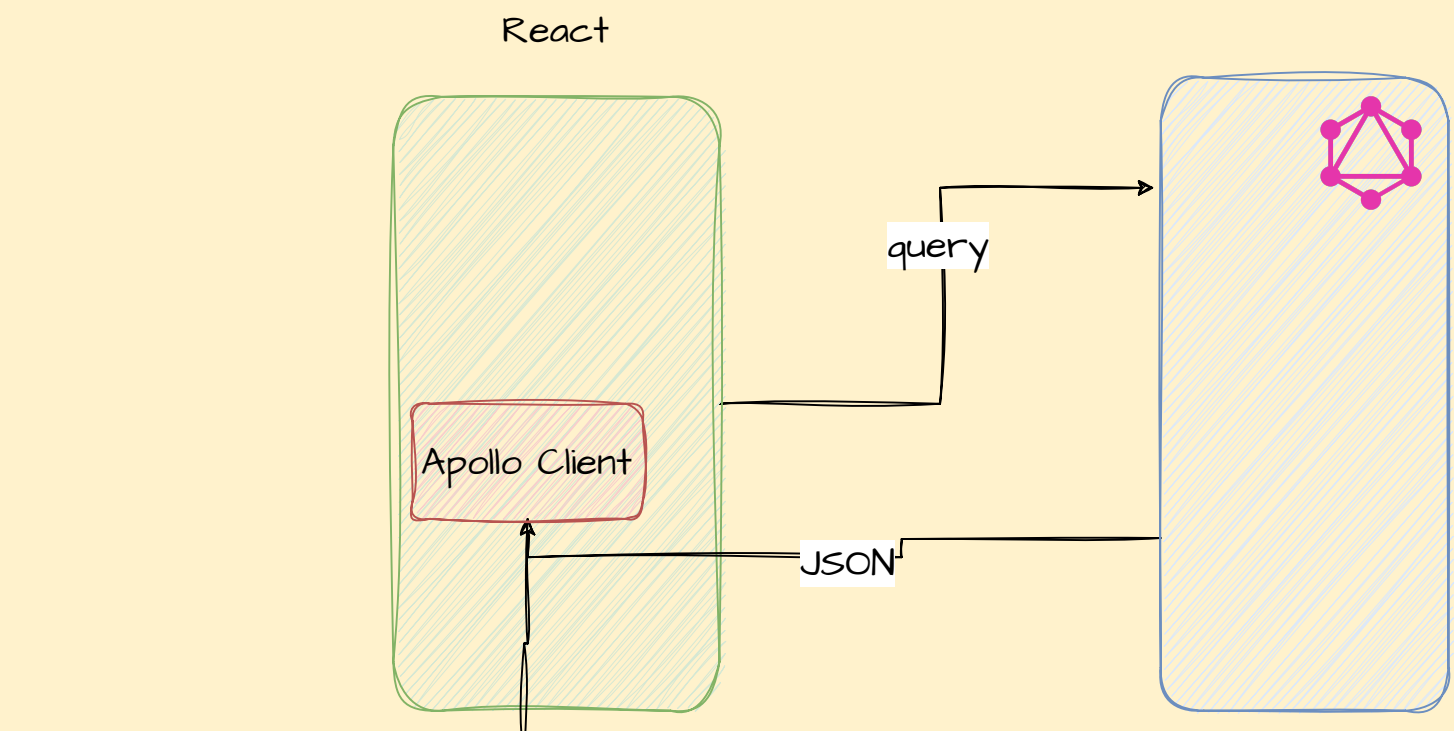
Responsibilities
Define the Type System (describe data)
Parse query
Process the query

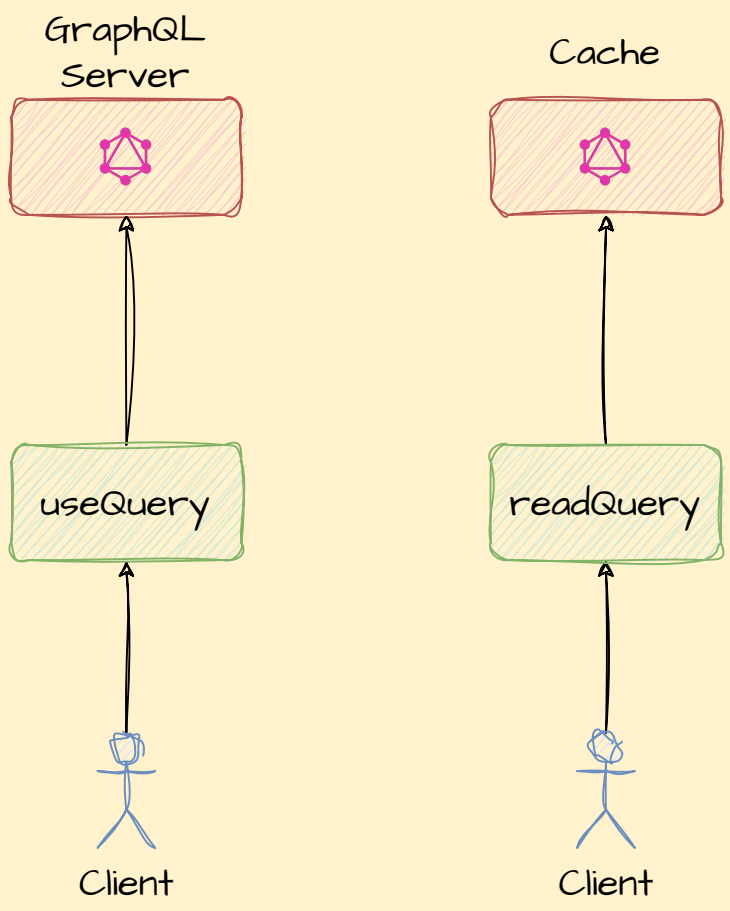


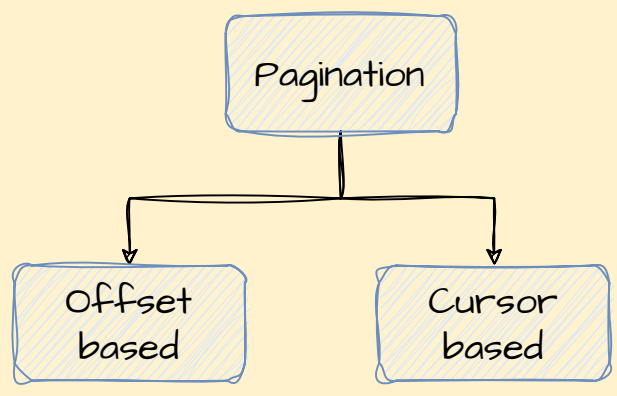
Apollo Server as an Express Middleware

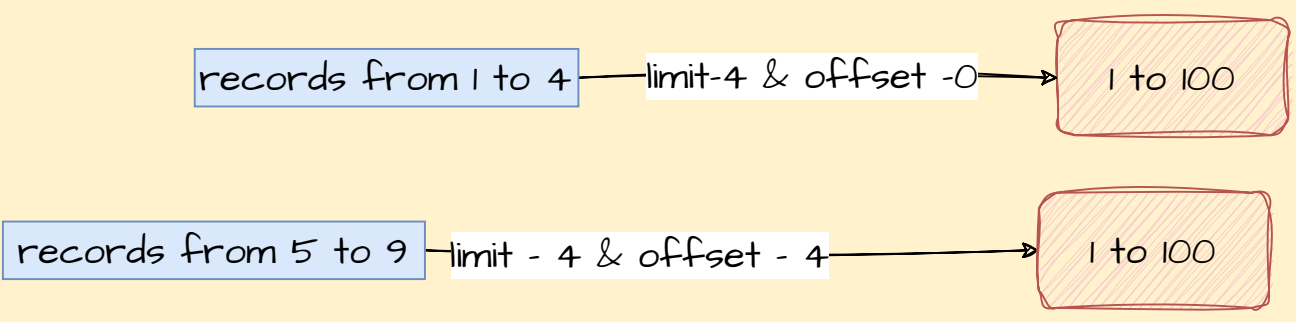
GraphQL Server (Apollo Server)

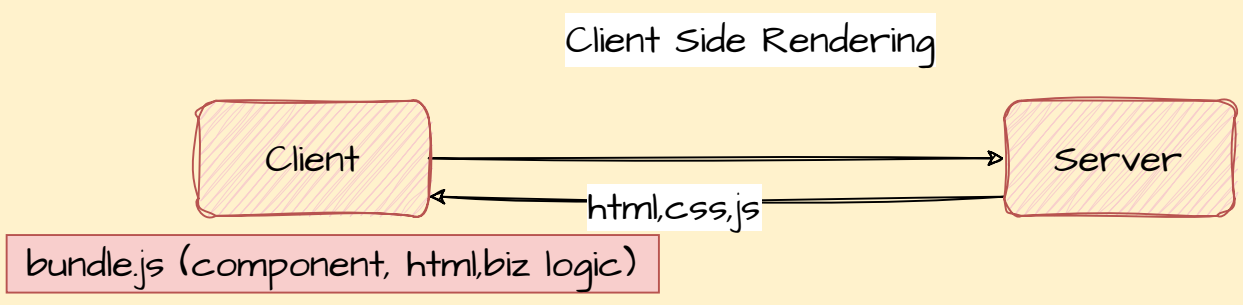
Express

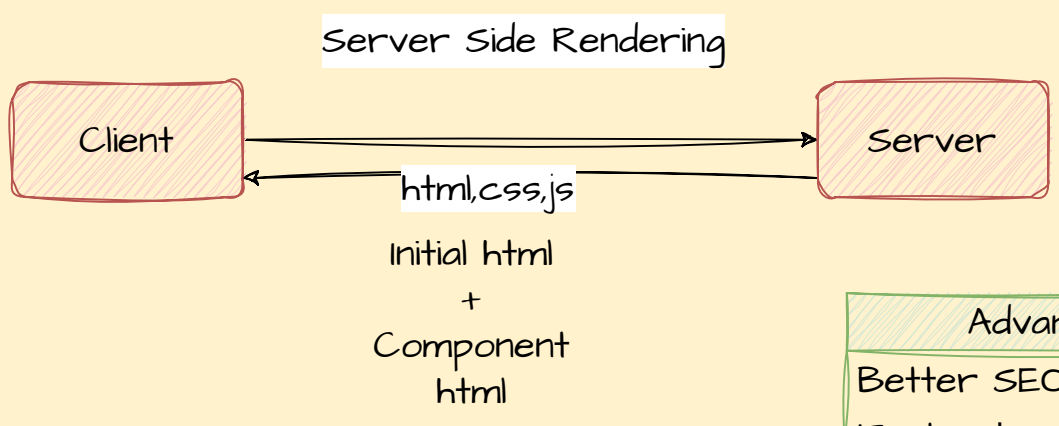

React
query
Apollo Client
JSON
Cache
5 Products


GraphQL Server
Cache
useQuery
readQuery
Client
Client


Pagination
Offset based
Cursor based


records from 1 to 4
limit-4 & offset -0
1 to 100
records from 5 to 9
limit - 4 & offset - 4
1 to 100


Client Side Rendering
Client
Server
html,css,js
bundle.js (component, html,biz logic)


Server Side Rendering
Client
Server
html,css,js
Initial html
+
Component
html
Advantages
Better SEO
Faster Landing Page