Speak React Native

4

React Native course by U+_

Your homework?

Overview

- Synchronous vs. asynchronous operations
- Component lifecycle
- API

Synchronous vs. asynchronous operations

Sync vs. Async operations

- **Synchronous**
  - Subsequent client code does not execute until the operation finishes
  - Example: Assign value to variable

- **Asynchronous**
  - Client doesn’t wait for the end of the previous operation
  - Example: setState, HTTP requests

SetState

```
export default class Counter extends React.PureComponent {
  state = { counter: 0 }
  addOne = () => {
    this.setState(prevState => ({ counter: prevState.counter + 1 }), () =>
{
      console.log(this.state.counter) // Good
    })
  }
  render() {
    return <Button onPress={this.addOne}>+1</Button>
  }
}
```

Don’t use setState synchronously

```
export default class Counter extends React.PureComponent {
  state = { counter: 0 }
  addOne = () => {
    this.setState(prevState => ({ counter: prevState.counter + 1 }))
    console.log(this.state.counter) // Bad
  }
  render() {
    return <Button onPress={this.addOne}>+1</Button>
  }
}
```

Component lifecycle

Component lifecycle

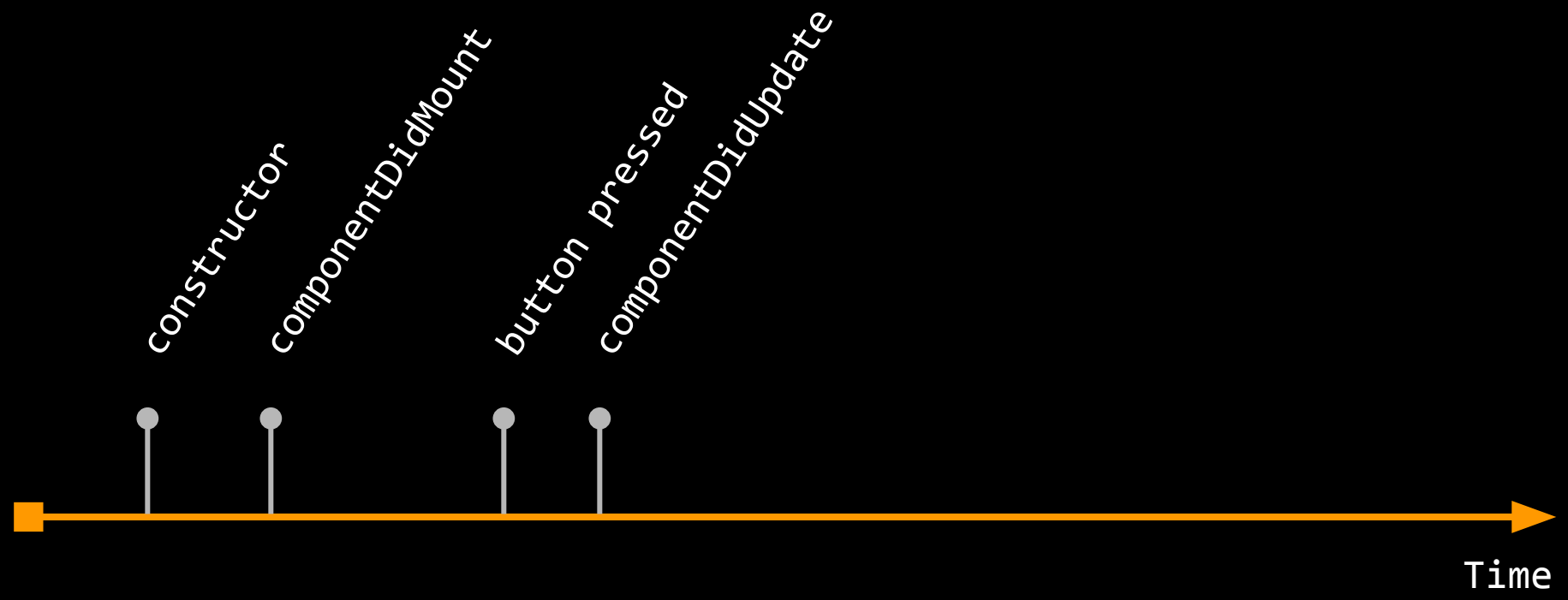
- Lifecycle methods are called automatically in specific cases. E. g.:
  - When component **is loaded** (componentDidMount)
  - When component **props/state is updated** (componentDidUpdate)
  - Right before component **is unmounted** (componentWillUnmount)
  - Etc...

Component lifecycle

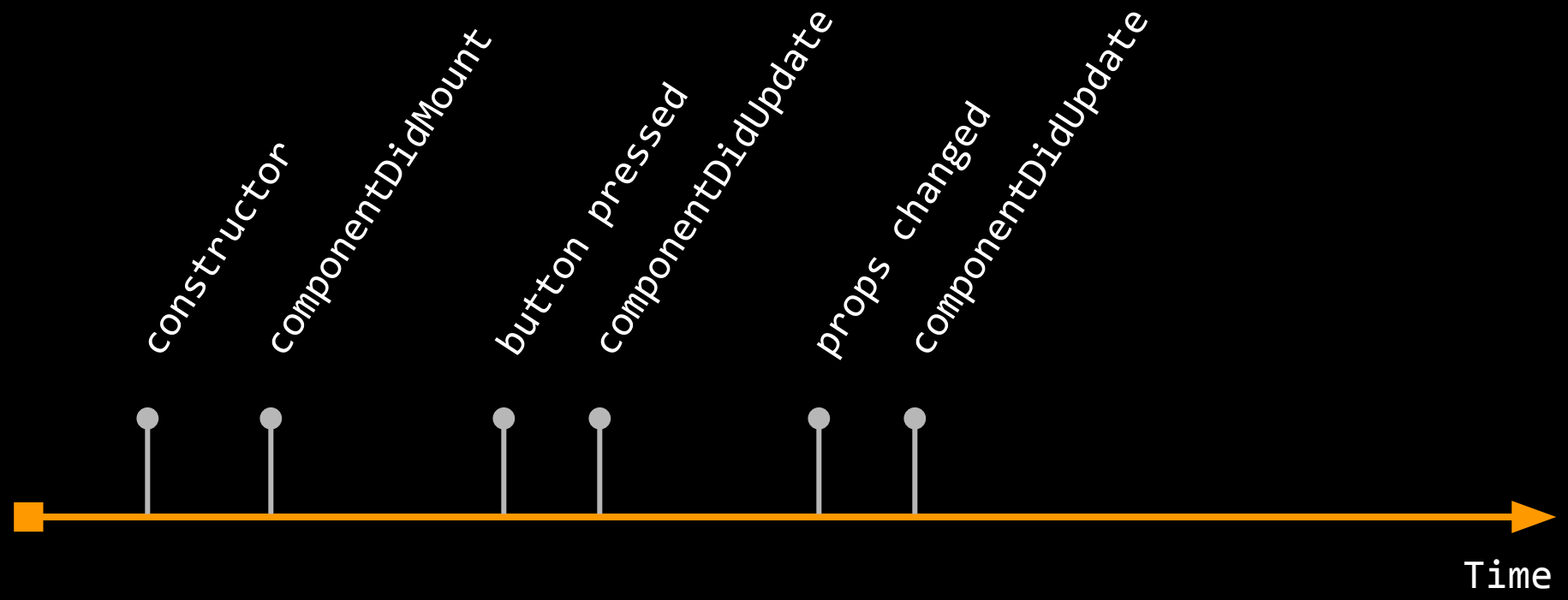
Component lifecycle

Component lifecycle

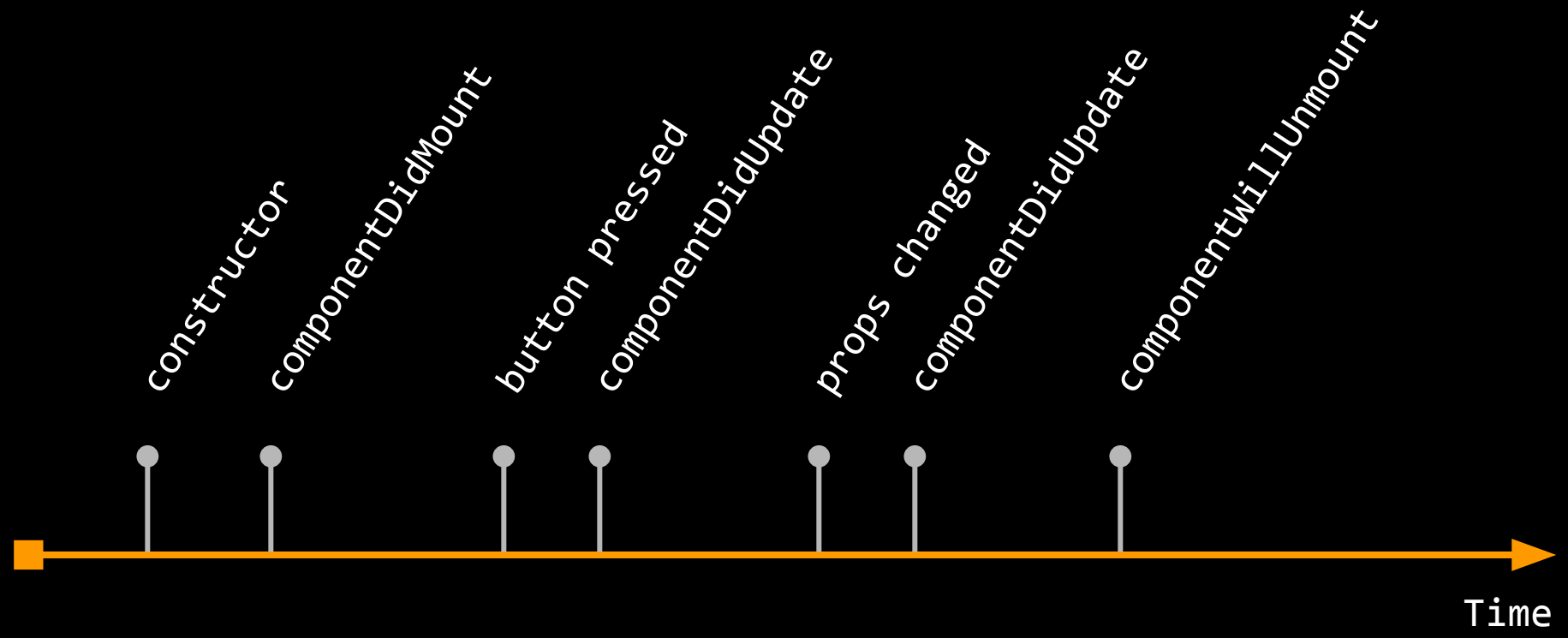
Component lifecycle



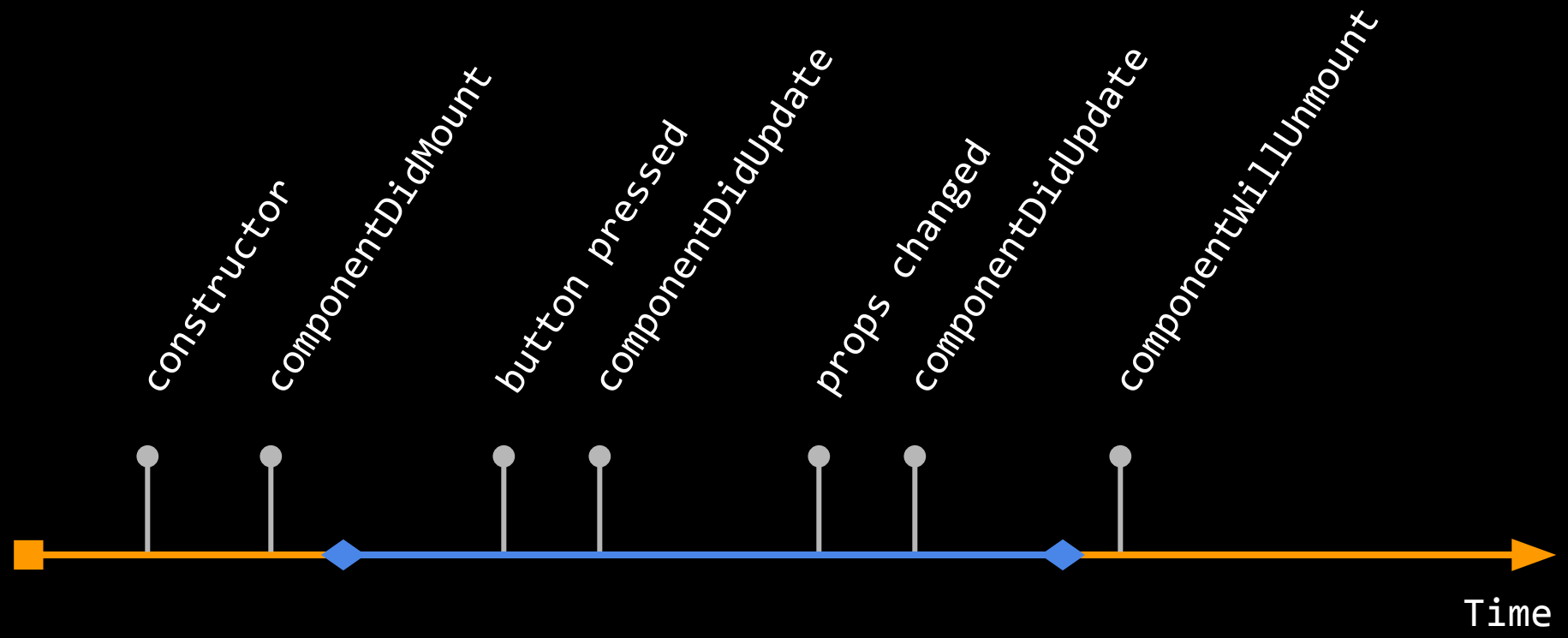
Component lifecycle



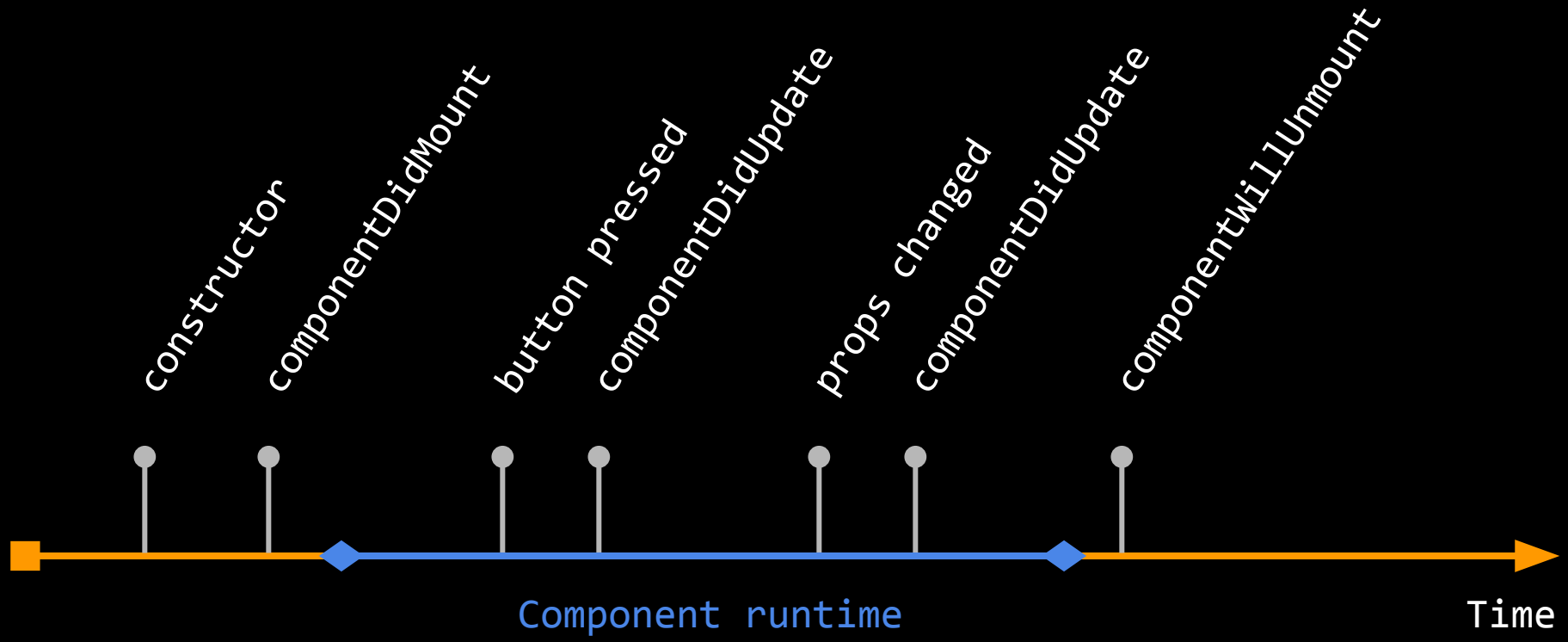
Component lifecycle



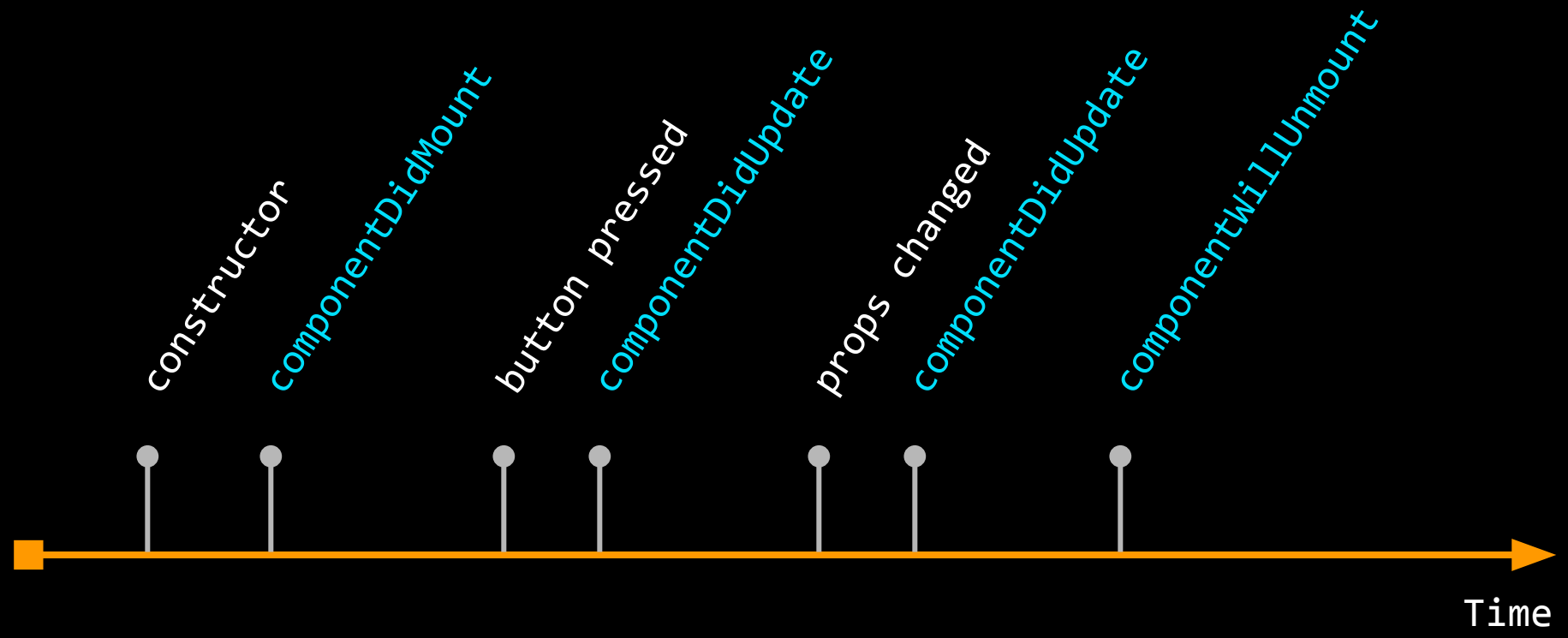
Component lifecycle



Component lifecycle



Component lifecycle methods



Why we need lifecycle methods

- For example we want get data from server when screen is loaded

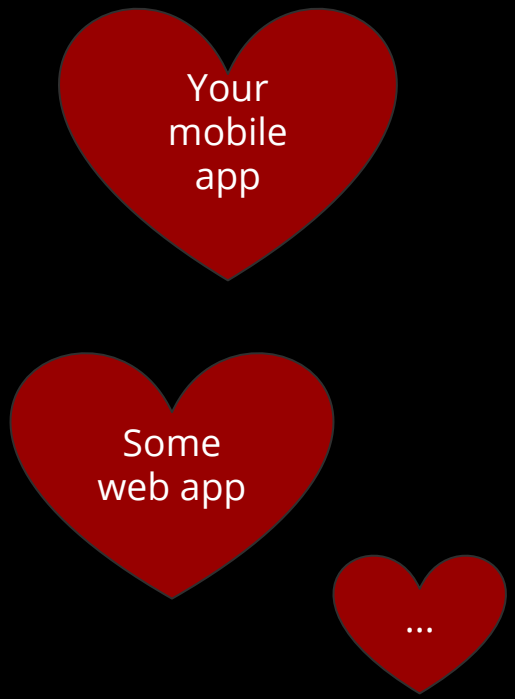
Why we need lifecycle methods

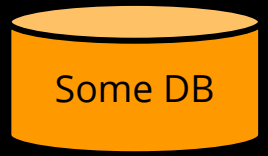
```
export default class App extends React.PureComponent {
  componentDidMount() {
    this.getDataFromApi()
  }
  getDataFromApi = () => {
    // @TODO
  }
  render() {
    return <Navigator />
  }
}
```

API

Why we use API

Why we use API

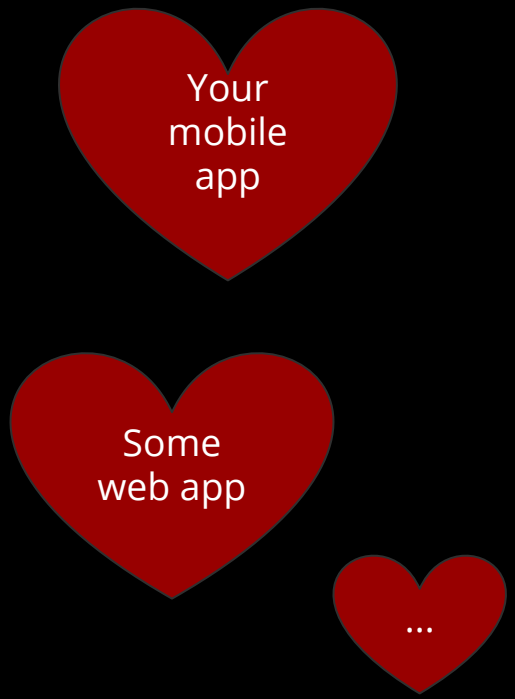


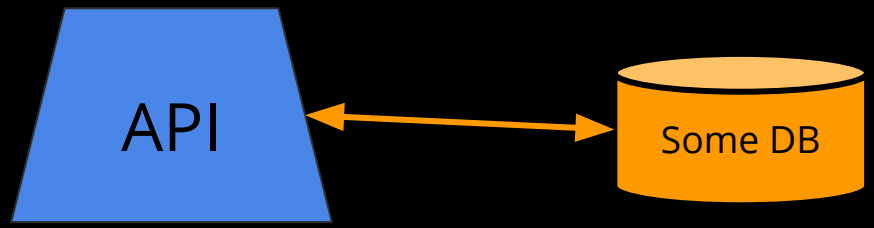


Stores all data

(including non-public)

Why we use API

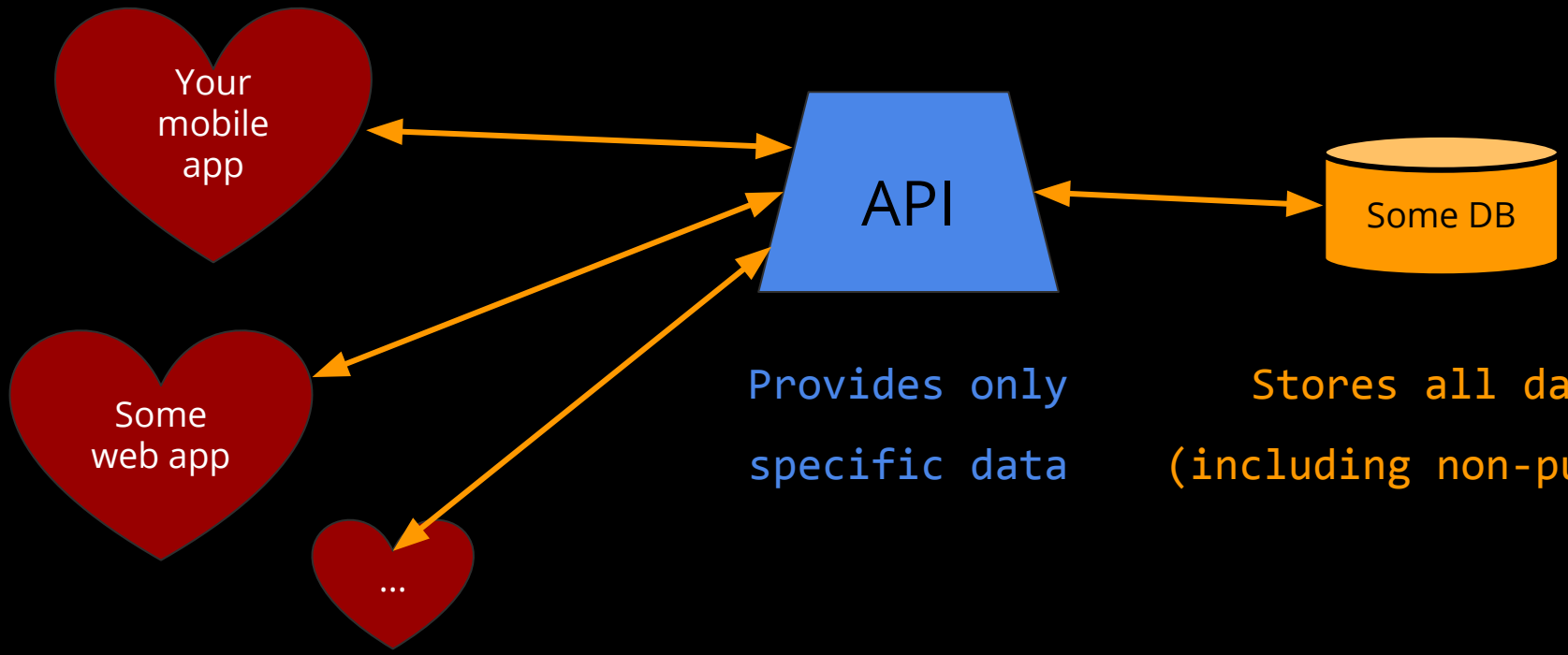




Provides only specific data

Stores all data (including non-public)

Why we use API



Provides only specific data

Stores all data (including non-public)

API

- HTTP Request & response
- Postman
- REST, GraphQL
- Axios

HTTP

- **H**yper**T**ext **T**ransfer **P**rotocol
- For requesting content from server and sending data

HTTP request

- Client requests some data from a server
- Headers
  - Content-type (application/json)
  - Method: GET, POST, PUT, DELETE,...
  - Authorization
- Body
  - Data

HTTP response

- Server sends back data in the requested format
- Headers
  - Meta information
  - E. g.: Content-type, status,...
- Body
  - Data which we requested

HTTP communication example

HTTP communication

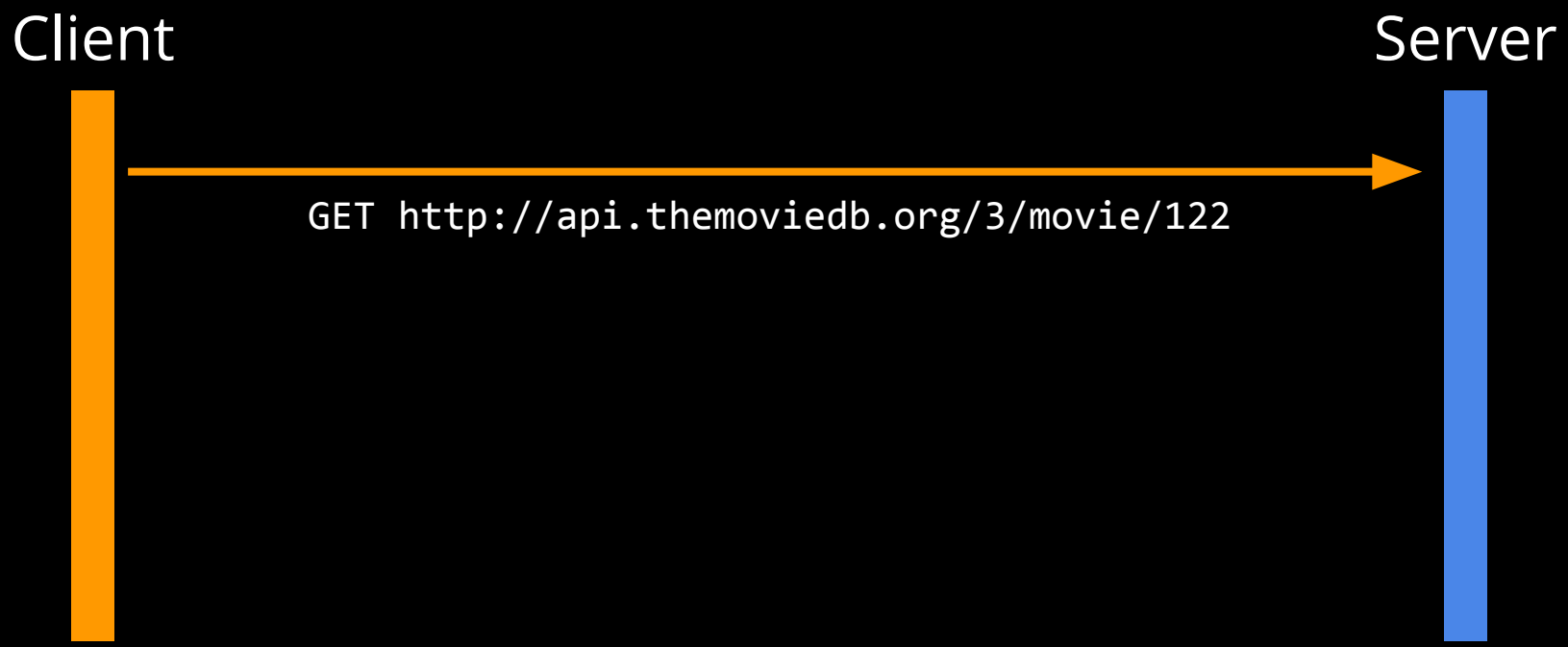
Client

Server

HTTP communication

HTTP communication

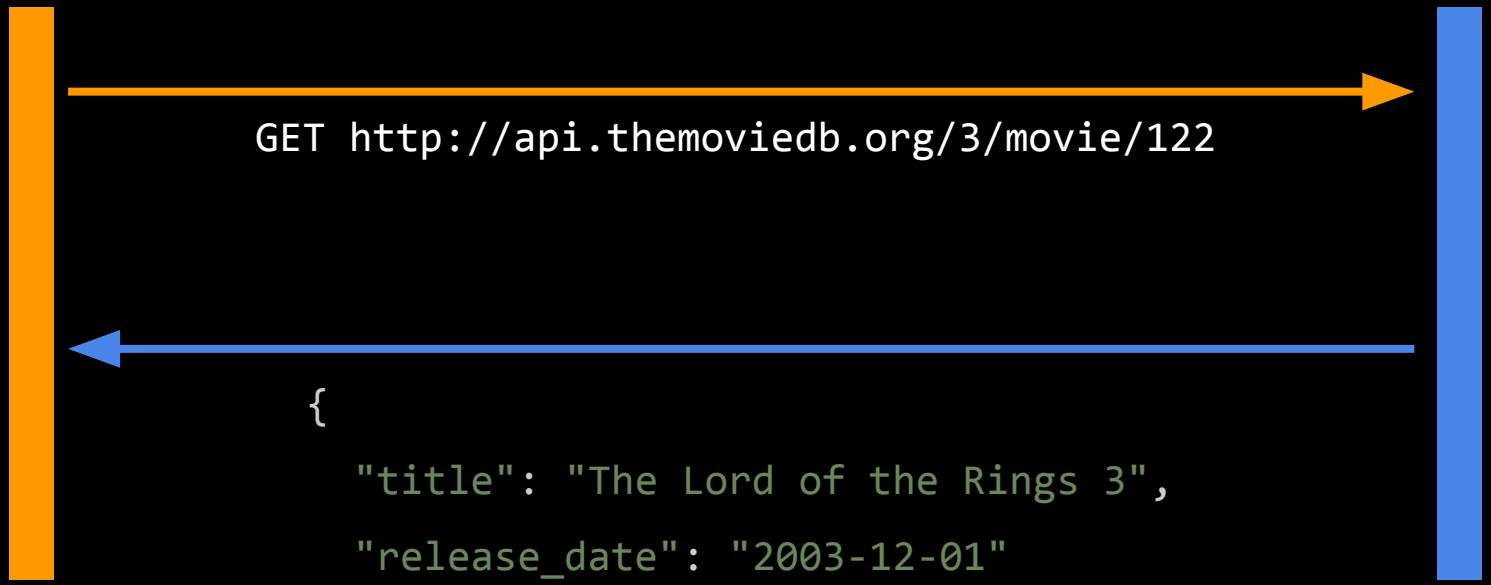
HTTP communication example



HTTP communication example

Client

Server




```
{
  "title": "The Lord of the Rings 3",
  "release_date": "2003-12-01"
  ,...
}
```

HTTP communication example

Client

Server

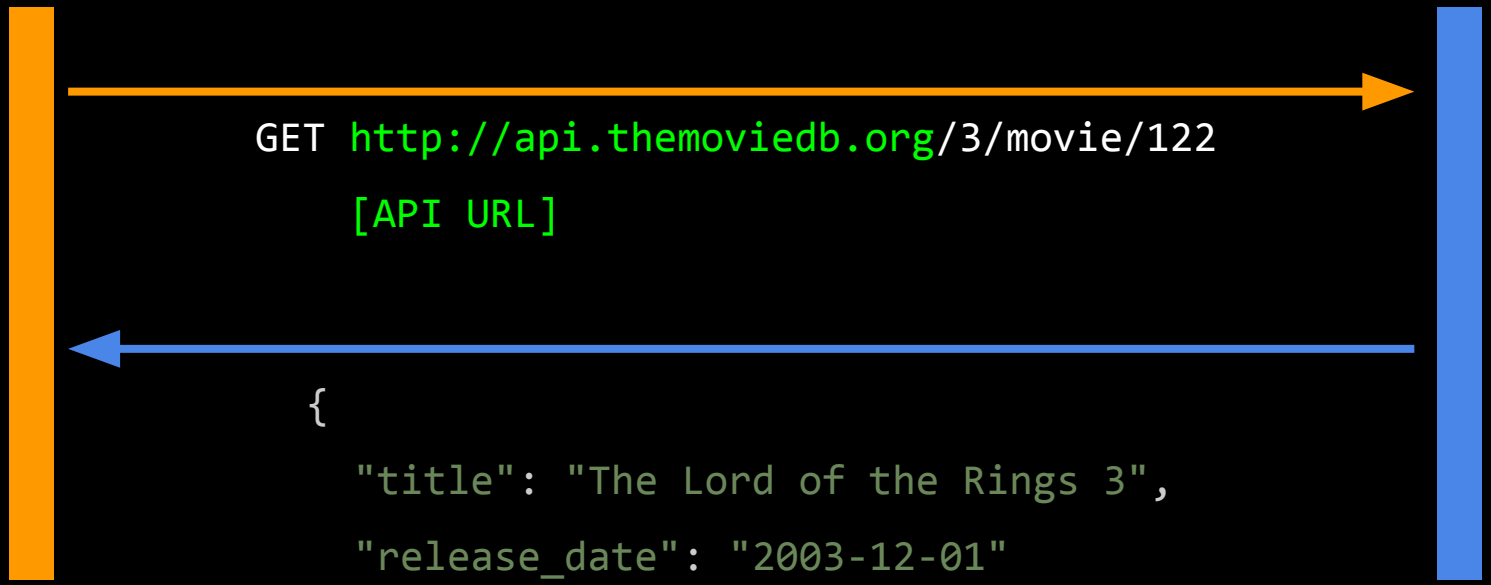
```
GET http://api.themoviedb.org/3/movie/122
[Method]
```

```
{
  "title": "The Lord of the Rings 3",
  "release_date": "2003-12-01"
  ,...
}
```

HTTP communication example

Client

Server



GET http://api.themoviedb.org/3/movie/122

[API URL]

```
{
  "title": "The Lord of the Rings 3",
  "release_date": "2003-12-01"
  ,...
}
```

HTTP communication example

Client

Server

GET http://api.themoviedb.org/3/movie/122

[endpoint]

```
{
  "title": "The Lord of the Rings 3",
  "release_date": "2003-12-01"
  ,...
}
```

Request methods (REST)

- **GET** – Get data from server
- **POST** – Create data on server
- **PUT** – Update data on server
- **DELETE** – Delete data on server

Status codes + examples

- 1.. – **Informational**
- 2.. – **Success** (200 – OK)
- 3.. – **Redirect** (301 – Moved permanently)
- 4.. – **Client error** (404 – Not found)
- 5.. – **Server error** (500 – Internal server error)

REST

- **R**epresentational **S**tate **T**ransfer
- “Standard” set of operations of a web service
- Basically a set of abstract recommendations on how an API should work

GraphQL

- Different approach to REST, but the same purpose
- Removes the need of different endpoints which results in less requests to the server
- More about it later

Postman

- An application for exploring or testing APIs
- Used for displaying data structure without writing code
- Download page
- Try The Movie DB API
  - https://developers.themoviedb.org/3/
  - Api key: `4aa883f95999ec813b8bfaf319f3972b`

API calls

Axios

- HTTP client library for handling requests
- Not necessary for making requests, but makes it much easier
- Has many alternatives

```
$ yarn add axios
```

Axios initialization

```
// api.js
import axiosLib from "axios"

export const axios = axiosLib.create({
  baseURL: "http://api.themoviedb.org/3/",
  timeout: 10000,
  headers: {
    "Content-Type": "application/json",
     Accept: "application/json",
  },
})
```

Making requests

```
// api.js

// define endpoint
export const loadMovies = () => {
  return axios.get(
    "/movie/top_rated?api_key=4aa883f95999ec813b8bfaf319f3972b"
  )
}
```

Making requests

```
// your screen
import { loadMovies } from "../api"

// ...

componentDidMount() {
  loadMovies().then(response => {
     this.setState({
       movies: response.data.results
     })
  })
}
```

Authorization

```
// not ideal when we have more endpoints
axios.get(
  "/movie/latest?api_key=4aa883f95999ec813b8bfaf319f3972b"
)
```

Authorization

```
// not ideal when we have more endpoints
axios.get(
  "/movie/latest?api_key=4aa883f95999ec813b8bfaf319f3972b"
)
```

Authorization

```
// better
const apiKey = "4aa883f95999ec813b8bfaf319f3972b"
axios.interceptors.request.use(request => {
 return {
   ...request,
   url: `${request.url}?api_key=${apiKey}`,
 }
})

axios.get(
  "/movie/latest"
)
```

Homework

Homework

- Create app with the list of top rated movies
  - https://developers.themoviedb.org/3/movies/get-top-rated-movies
- After click on movie navigate user to movie detail
  - https://developers.themoviedb.org/3/movies/get-movie-details
  - Don’t forget to pass movieID to MovieDetail screen
- Create new request for Movie detail
- For advanced developers:
  - Create infinite scroll for movie list

Questions?

?

Sources

- https://medium.com/@baphemot/understanding-react-react-16-3-component-life-cycle-23129bc7a705
- https://reactjs.org/docs/react-component.html