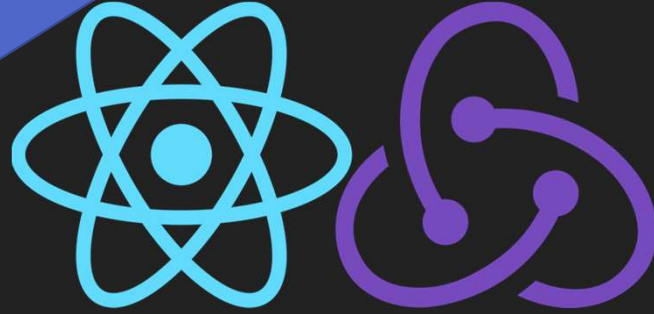




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PART - 1



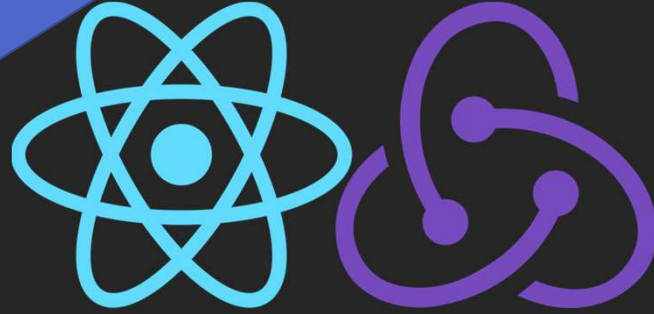
React Redux

Crash Course



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React Redux

Crash Course

Prerequisites

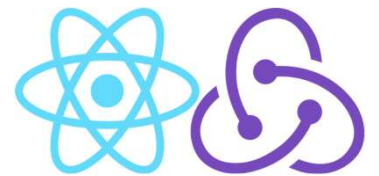
You should be familiar with:

- JavaScript
- ReactJS basics such as State, Props, Components etc.,
- ✓ NodeJS should be already installed in your system.

<https://nodejs.org/en/download/>



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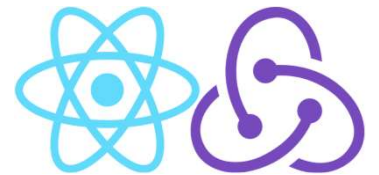


Contents

- **Redux Introduction**
- Redux Practical
- React Redux Practical
- Redux Advantages and Disadvantages

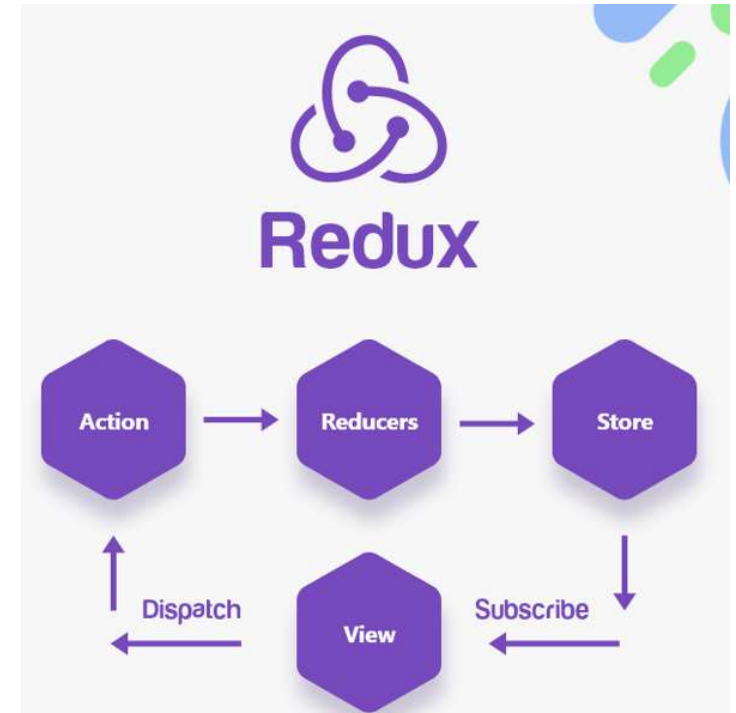


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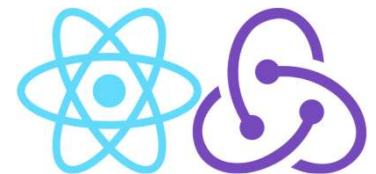


Redux Introduction

- Redux is a State Management **JavaScript Library**.
- A **Predictable State Container** for **JavaScript Apps**.
- ✓ **Predictable** = able to be known
- ✓ **State Container** = *global state for entire app(store)*
- ✓ **JavaScript Apps** = **React, Angular, Vue etc.,**
- It is most commonly used with libraries such as React or Angular for building user interfaces.
- Redux was created by Dan Abramov and Andrew Clark in 2015.
- Official Website: <https://redux.js.org/>



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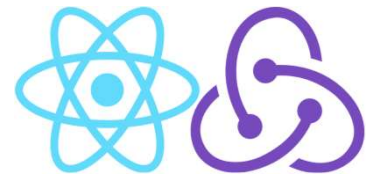


Are there any similar libraries?

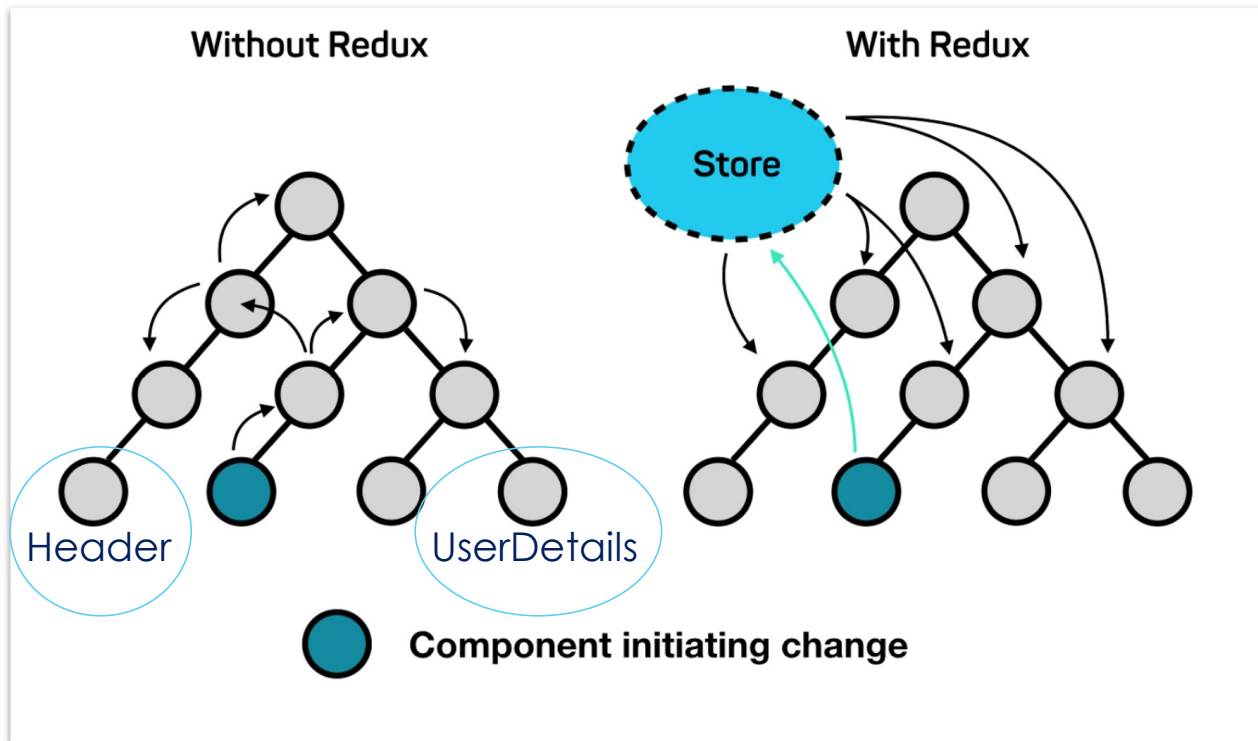
- Yes, we have few more libraries similar to Redux which are Flux and MobX.
- Flux and MobX supports multiple stores.
- Redux is more popular among three.
- If you already learned React then Redux will definitely added advantage to your resume.



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Why Redux?



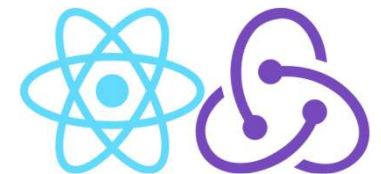
Component **Header** is searching for username state value which is present in Component **UserDetails**.

Without Redux: We need to check all the components.

With Redux: We can directly access the global state without checking all the components.



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Let's take an example scenario



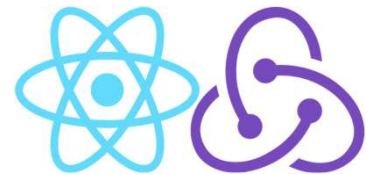
Siva wanted to "BUY_LAPTOP"



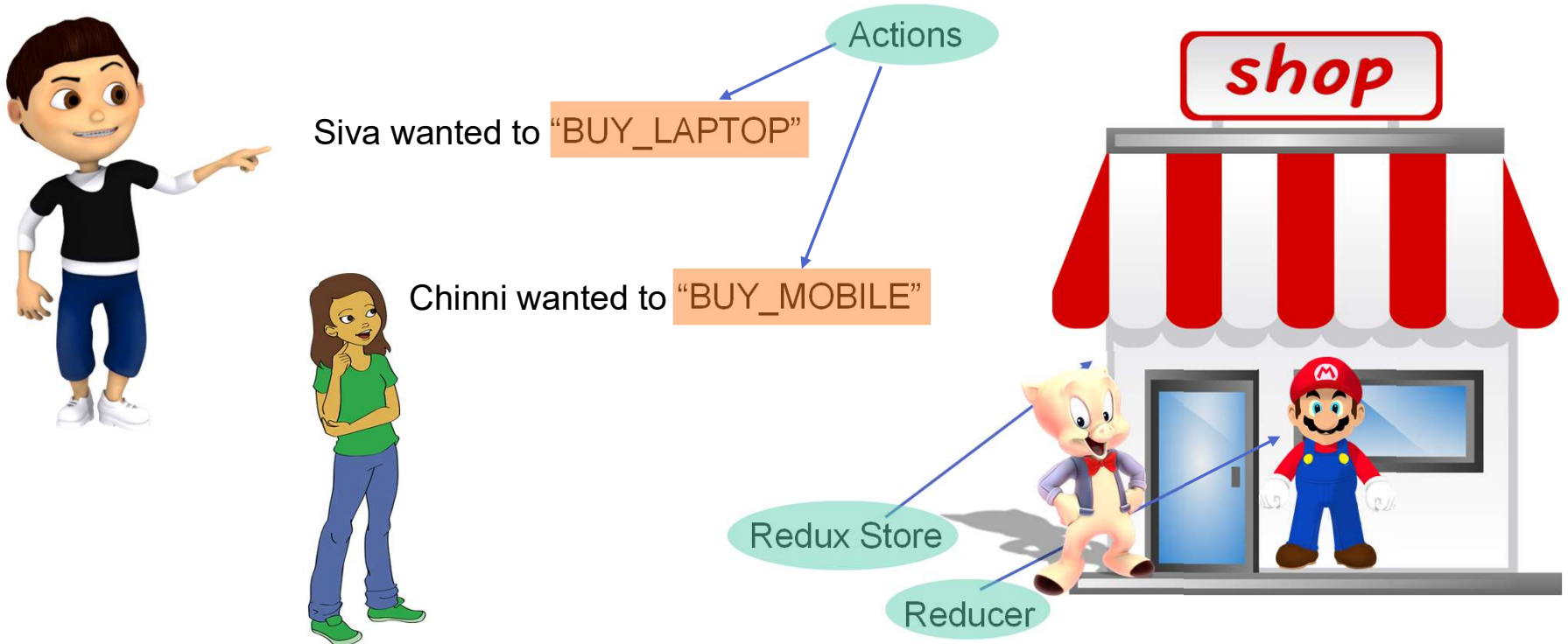
Chinni wanted to "BUY_MOBILE"



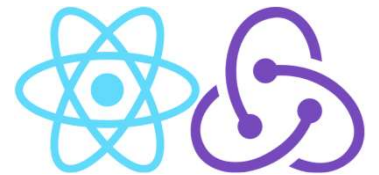
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Let's take an example scenario



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Redux Core Concepts

1.Store

Example:

2.Action

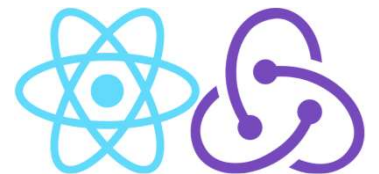
Let's take a shop where customers can buy laptops, mobiles, adapters etc.,

3.Reducer

1. Shop = **Store**
2. A Customer wanted to BUY_LAPTOP = **Action**
3. Laptop Seller = **Reducer**



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Redux Principles

1. "The state of your whole application is stored in an object tree within a single store"

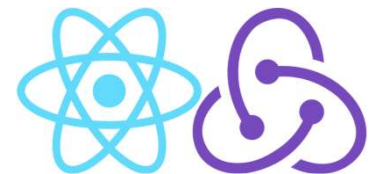
Shop:

Let's assume that we are tracking the number of laptops in the shop.

```
{  
  numOfLaptops: 100  
}
```



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Redux Principles

2."The only way to change the state is to emit an action, an object describing what happened"

Not allowed to directly update the state object.

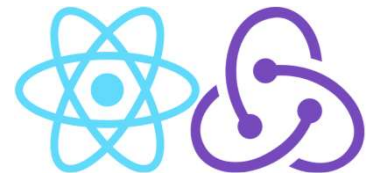
Shop:

Let the laptop seller know about our action – BUY_LAPTOP

```
{  
  type: "BUY_LAPTOP"  
}
```



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Redux Principles

3."To specify how the state tree is transformed by actions, you write pure functions/reducers"

Reducer – (previousState, action) => newState

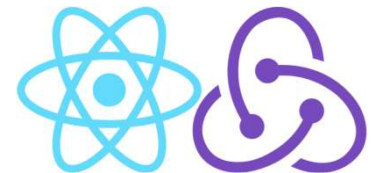
Shop:

Laptop seller is the Reducer.

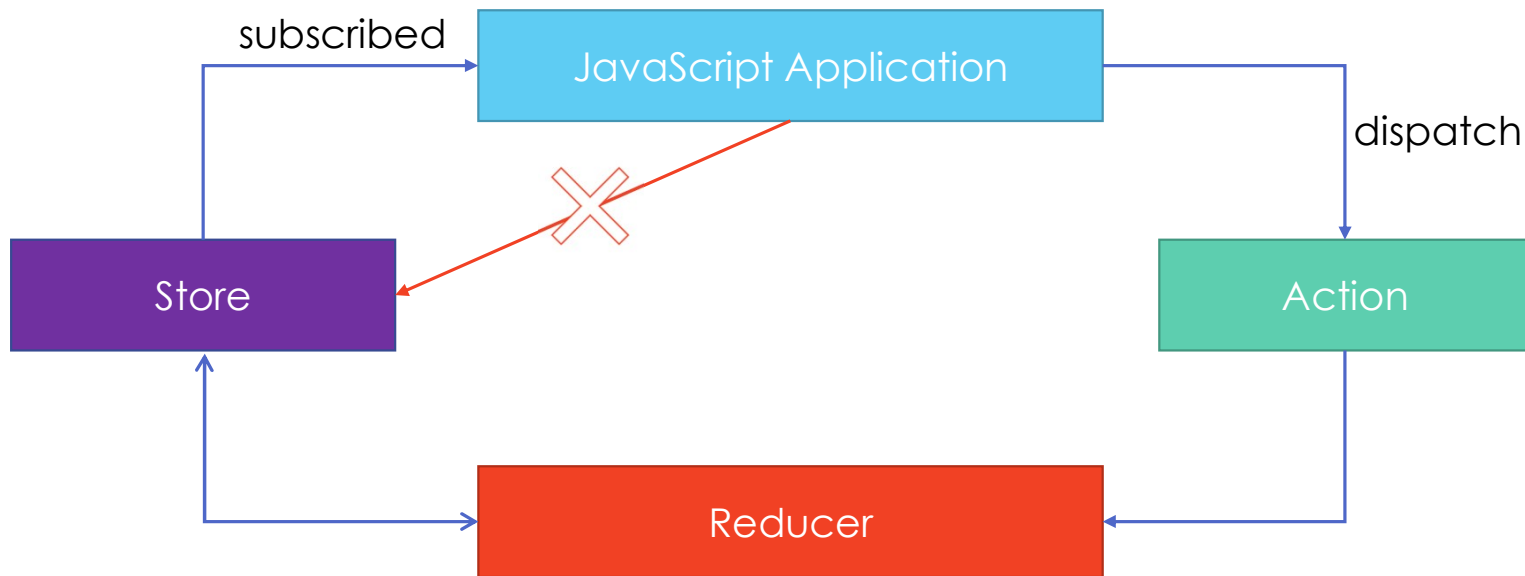
```
const initialState={ numOfLaptops:100 }  
const reducer = (state=initialState,action)=>{  
  if(action.type==="BUY_LAPTOP"){  
    return { numOfLaptops: state.numOfLaptops-1 }  
  }  
}
```



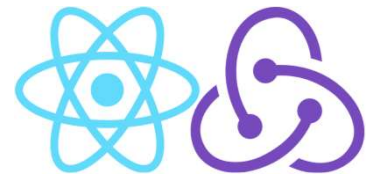
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Redux Principles All Together



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Redux Practical

Create a simple node project:

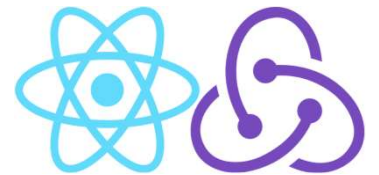
➤ **npm init -y**

Install Redux Package:

➤ **npm install redux**



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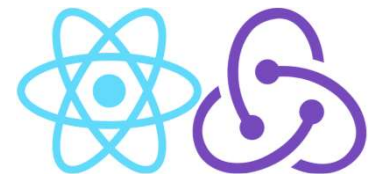


Middleware

- To extend the redux with custom functionality.
- It provides a third-party extension point between dispatching an action, and the moment it reaches the reducer.
- Usually middleware used for logging, performing asynchronous operations etc.,
- Let's try **redux-logger**



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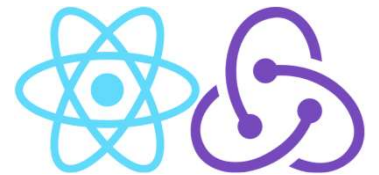


Async Operations

- If you want to do some async operations as actions which usually takes sometime to give output, then we can use **redux-thunk** as middleware.



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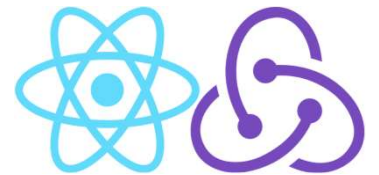


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React Redux Practical

Create a simple node project:

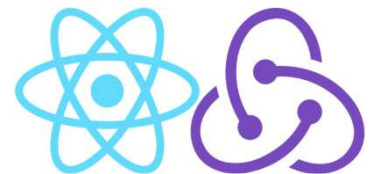
➤ **npx create-react-app react-redux-crash-course**

Install Packages:

➤ **npm install redux react-redux redux-logger redux-thunk**



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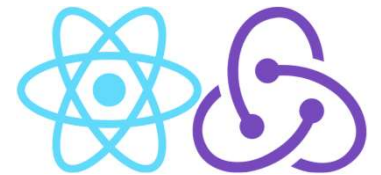


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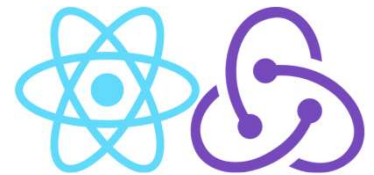


Redux Advantages

- ✓ We can maintain a single store for the entire application to understand the flow of the application easily.
- ✓ Redux can be used in Medium to Large applications.
- ✓ The use of "pure" reducer functions makes logic easier to test, and enables useful features like "time-travel debugging".
- ✓ Of course, many companies are giving preference to the developers who have knowledge in Redux.



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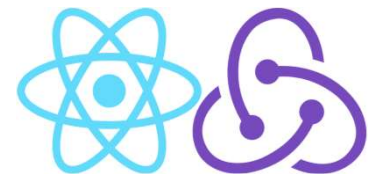


Redux Disadvantages

- ✓ **No encapsulation.** Any component can access the data which can cause security issues.
- ✓ **Boilerplate code. Restricted design.** (But we have many readymade boilerplate codes for using redux quickly without doing setup, once we know the flow.)
- ✓ As state is immutable in redux, the reducer updates the state by returning a **new state every time** which can cause **excessive use of memory**.
- ✓ Developers will get confused if they use redux in smaller applications because of the redux structure.



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Thank you for watching



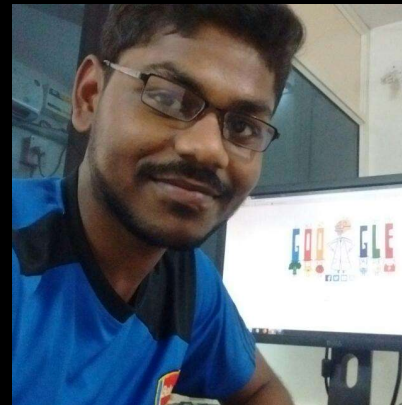
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