Skill Training

React JS

Narasimha

Sr. Corporate Trainer, Mentor

tnrao.trainer@gmail.com

Schedule for React JS Training

Day1 : State Management : Class Components

Day2 : State Management : Functional Components, Hooks

Day3 : Http Client Programming

Day4 : Working with Forms, Validations, Services

Day5 : Redux

Day6 : Unit Testing

Day7 : Routing – SPA in React JS

Day5
React-Redux

Narasimha

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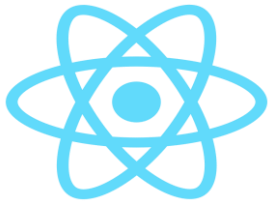
tnrao.trainer@gmail.com

Index – Day5

1. State management Libraires
2. Introduction to Redux
3. Key Players in Redux : Store, Action, Reducers
4. ReactJS - Redux concepts with examples



What is State management?

Narasimha

Sr. IT Trainer/Consultant

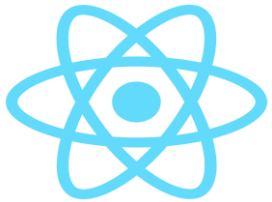
Statement Management

1. React applications are built using components and they manage their state internally and it works well for applications with few components, but when the application grows bigger, the complexity of managing states shared across components becomes difficult.
2. For example consider an e-commerce application, in which the status of multiple components will change when purchasing a product.

Statement Management -- Case Study

1. Add that product to the shopping list
2. Add product to customer history
3. Trigger count of purchased products
4. If developers do not have scalability in mind then it is really hard to find out what is happening when something goes wrong.

This is why you need state management in your application.

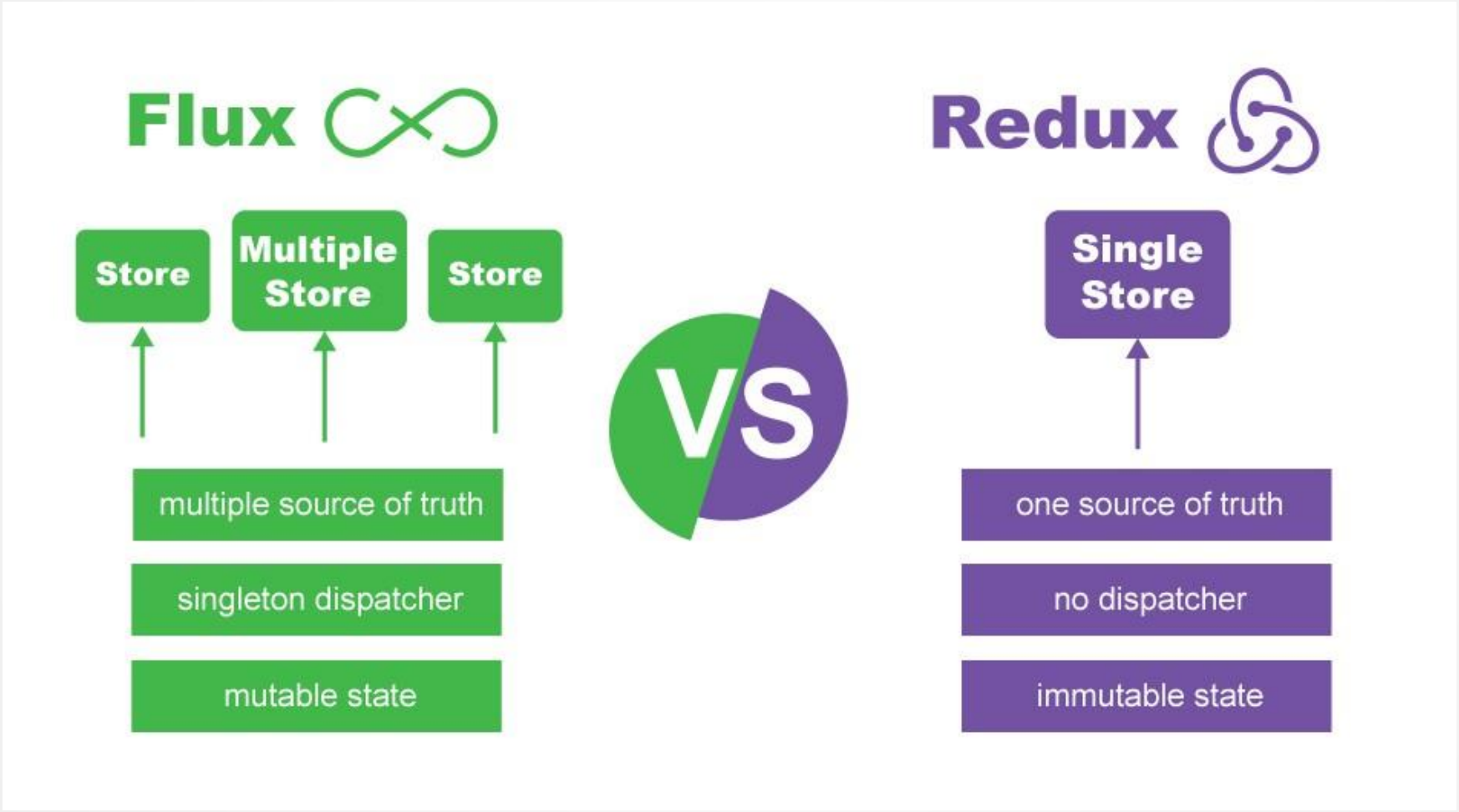


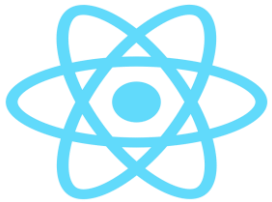
State management Libraires

Narasimha

Sr. IT Trainer/Consultant

Flux vs Redux





Introduction to Redux

Narasimha

Sr. IT Trainer/Consultant

What is Redux?

- Redux is a pattern and library for managing and updating application state, using events called “actions”.
- It serves as a centralized store for state that needs to be used across your entire application, with rules ensuring that the state can only be updated in a predictable fashion.

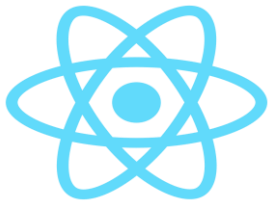
Introduction to Redux

- Redux is an open-source JavaScript library
- It is used for managing application state.
- It is most commonly used with libraries such as React or Angular for building user interfaces.
- Similar to Facebook's Flux architecture
- It was created by Dan Abramov and Andrew Clark.

A few things to consider before using redux

- You have large amounts of application state that are needed in many places in the app
- The app state is updated frequently
- The logic to update that state may be complex
- The app has a medium or large-sized codebase, and might be worked on by many people
- You need to see how that state is being updated over time

Key Players in Redux
(Store, Reducers, Actions)



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Exploring The Core Redux Concepts

1. Store
2. Actions
3. Reducers

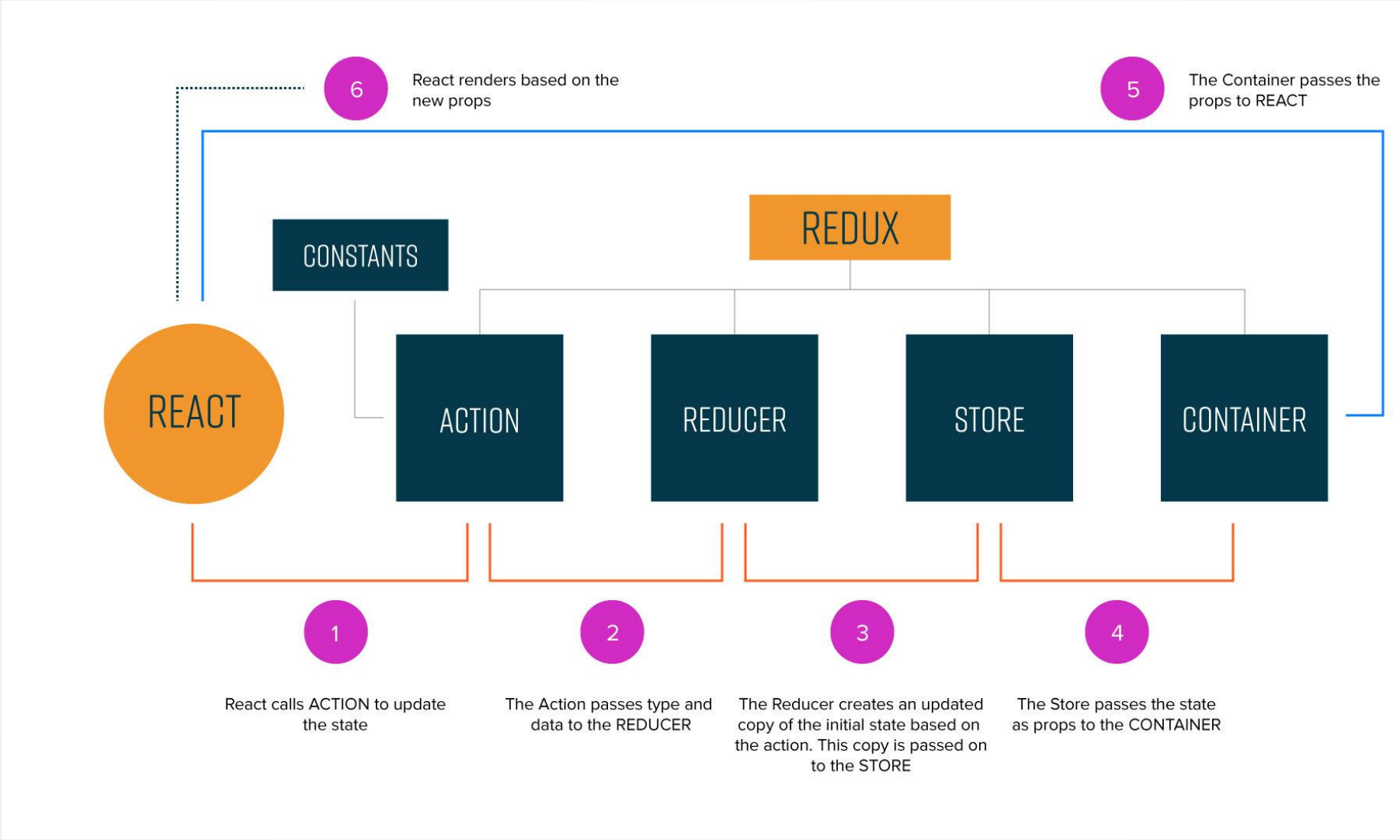
Store, Reducers, Actions

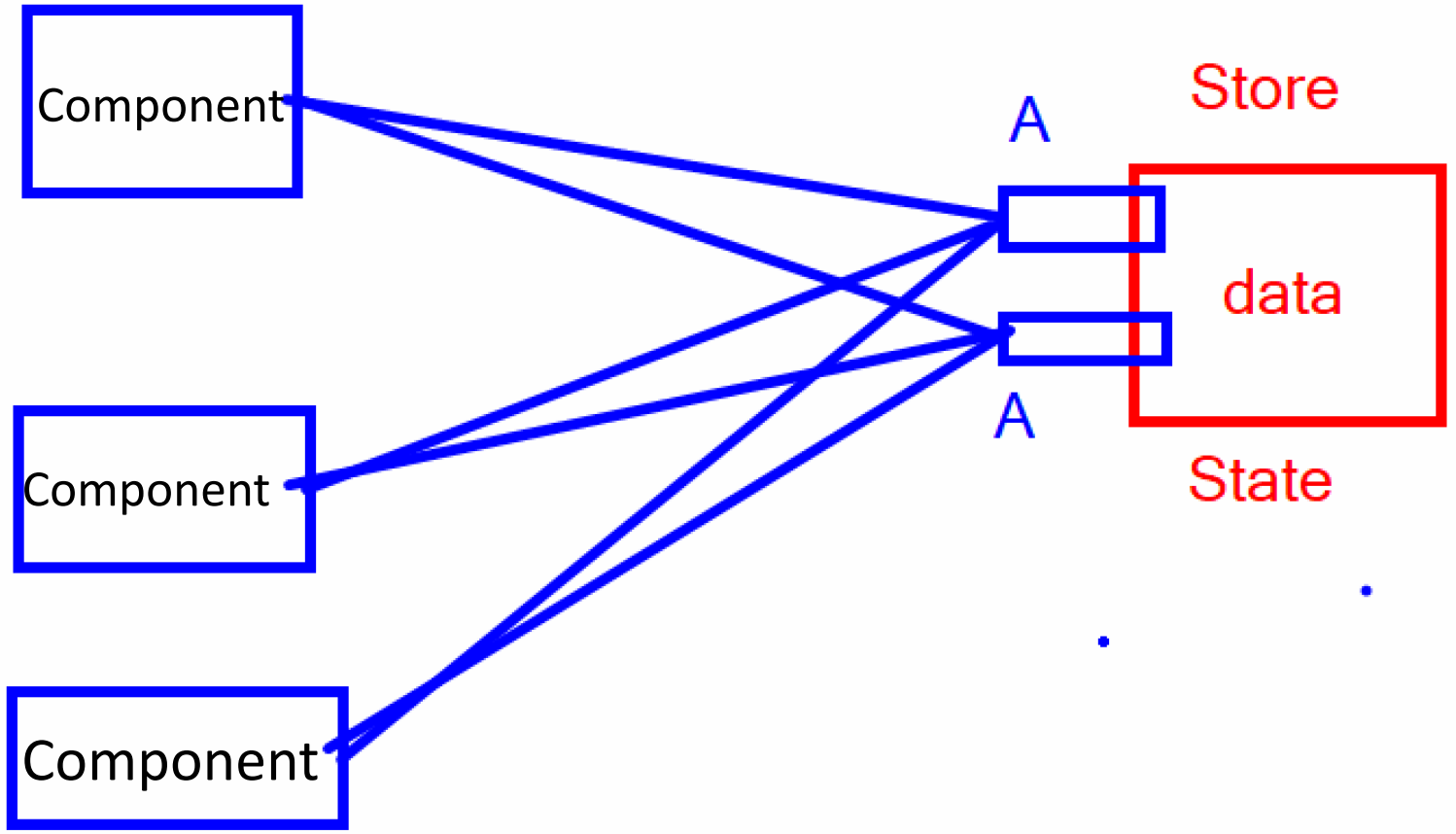
1. ***store***: it brings the actions and reducers together, holding and changing the state for the whole app — there is only one store.

2. ***actions***: these are objects that should have two properties, one describing the type of action, and one describing what should be changed in the app state.

3. ***reducers***: these are functions that implement the behavior of the actions. They change the state of the app, based on the action description and the state change description.

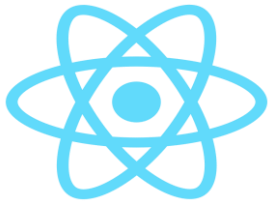
How Redux Works?




Component
Component
Component
A
A
Store
data
State

Environment Setup

1. npm i redux --save
2. npm i react-redux --save
3. npm i @reduxjs/toolkit --save



Redux Implementation

Narasimha

Sr. IT Trainer/Consultant

Steps

1. Create reducer function
2. Create Store using redux library with reducer function
3. Use <Provider/> to share the store to components
4. Use Redux hooks to communicate with store:
   useSelector, useDispatch
5. Perform the operations using dispatch

Steps1 & 2 : Create Reducer and Store

```
import { legacy_createStore as createStore } from 'redux';

// Reducer Function
const bankReducer = (state, action) =>
{

};

// Create Store
const bankStore = createStore(bankReducer);
export default bankStore;
```

Steps3: Share the store using Provider (index.js)

```
<Provider store={bankStore}>
            <BankApp  />
</Provider>
```

Steps4_5 : Communicate with store in Components

```
import { useSelector } from "react-redux";
import { useDispatch } from "react-redux";

function BankApp()
{
    const [amount, setAmount] = useState(0);
    let currentBalance = useSelector((state) => state.balance);
    const dispatch = useDispatch();
}
```

Steps4_5 : Communicate with store in Components

```
import { useSelector } from "react-redux";
import { useDispatch } from "react-redux";

function BankApp()
{
 ……
 function deposit_click() {

        dispatch({type:"DEPOSIT", amount:amountValue} );
        setAmount(0);   // clear textbox
    }
}
```

Practice Hands-Ons

Narasimha
Sr. Corporate Trainer, Mentor
tnrao.trainer@gmail.com

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Sr. Corporate Trainer, Mentor

tnrao.trainer@gmail.com