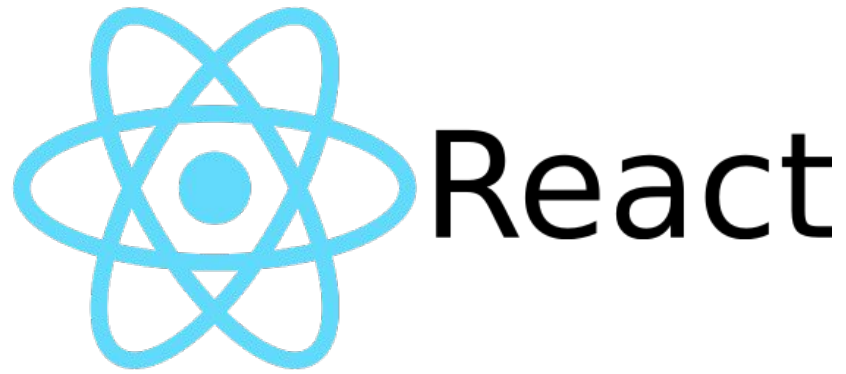


# REDUX

## IN MODERNEN REACT-WEB-ANWENDUNGEN

Lars Wiedemann Frontend-Entwickler | chemmedia AG

Martin Kutter Software-Designer | chemmedia AG



**create-react-app**

# A build tool for React apps.

CREATE REACT APP

```
create-react-app my-app
```

START DEV SERVER

```
npm start
```

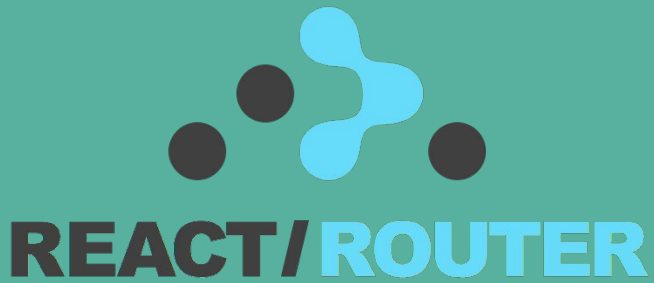
RUN TEST

```
npm test
```

CREATE BUILD

```
npm run build
```

<https://github.com/facebookincubator/create-react-app>



# React Router

SINGLE PAGE APP

## Client Routing without page reload

- change url with hashBang (#) or `history.push`
- components rendering for defined urls

## Javascript lazy loading

<https://reacttraining.com/react-router/>

# IMMUTABLE

## Immutable-js

### EXAMPLES

### Primitive Variables

```
let x = 2,  
    y = x;
```

```
x = 3;
```

```
console.log(x === y);
```

<https://facebook.github.io/immutable-js/docs/>

# IMMUTABLE

## Immutable-js

### EXAMPLES

### Primitive Variables

```
let x = 2,  
    y = x;
```

```
x = 3;
```

```
console.log(x === y); //false
```

```
(x = 3, y = 2)
```

<https://facebook.github.io/immutable-js/docs/>

# IMMUTABLE

## Immutable-js

EXAMPLES

### None Primitive Variables

```
let x = {a: 2},  
    y = x;
```

```
x.a = 3;
```

```
console.log(x === y);
```

<https://facebook.github.io/immutable-js/docs/>

# IMMUTABLE

## Immutable-js

### EXAMPLES

### None Primitive Variables

```
let x = {a: 2},  
    y = x;
```

```
x.a = 3;
```

```
console.log(x === y); //true
```

```
(x = y = {a: 3})
```

<https://facebook.github.io/immutable-js/docs/>



# IMMUTABLE

# Immutable-js

WHY WE NEED THIS?

## React Component Props

```
const products = [  
  {  
    'id': 1,  
    'name': 'Product 1'  
  },  
  {  
    'id': 2,  
    'name': 'Product 2'  
  }  
];
```

<https://facebook.github.io/immutable-js/docs/>

# IMMUTABLE

# Immutable-js

WHY WE NEED THIS?

## React Component Props

```
render() {  
  return (  
    <div>  
      {this.props.products.map((product) => {  
        return <Product product={product}/>;  
      })}  
    </div>  
  );  
};
```

<https://facebook.github.io/immutable-js/docs/>

**IMMUTABLE**

# Immutable-js

WHY WE NEED THIS?

## React Component Props

```
product[0].name = 'New Product 1';
```

<https://facebook.github.io/immutable-js/docs/>

# IMMUTABLE

# Immutable-js

WHY WE NEED THIS?

## React Component Props

```
render() {  
  return (  
    <div>  
      {this.props.products.map((product) => {  
        return <Product product={product}/>;  
      })}  
    </div>  
  );  
};
```

<https://facebook.github.io/immutable-js/docs/>

# IMMUTABLE

## Immutable-js

WHY WE NEED THIS?

### React Update Cycle

```
shouldComponentUpdate(newProps) {  
  return this.props !== newProps;  
};
```

<https://facebook.github.io/immutable-js/docs/>

# IMMUTABLE

## Immutable-js

### EXAMPLES

### Create New Instances

```
let x = {a: 2},  
    y = x;
```

```
x = Object.assign({}, x, {a: 3});
```

```
console.log(x === y);
```

<https://facebook.github.io/immutable-js/docs/>

# IMMUTABLE

## Immutable-js

### EXAMPLES

### Create New Instances

```
let x = {a: 2},  
    y = x;
```

```
x = Object.assign({}, x, {a: 3});
```

```
console.log(x === y); //false
```

```
(x = {a: 3}, y = {a: 2})
```

<https://facebook.github.io/immutable-js/docs/>

# IMMUTABLE

## Immutable-js

WHY WE NEED THIS?

### React Component Props

```
const products = [  
  {  
    'id': 1,  
    'name': 'Product 1'  
  },  
  {  
    'id': 2,  
    'name': 'Product 2'  
  }  
];
```

<https://facebook.github.io/immutable-js/docs/>



# REDUX









**MANAGE YOUR STATE  
IN A GLOBAL STORE**

Products











Basket 3








	LIPSTICK Intense Red-Orange	19.98€	+	Intense Red-Orange	19.98€	
	LIPSTICK Nude Rose	26.98€	+	Nude Rose	26.98€	
	LIPSTICK Electric Blue-Violet	22.98€	+	Green Balance	22.98€	
	LIPSTICK Energetic Rosé	20.98€	+			
	LIPSTICK Green Balance	22.98€	+			
					<b>69.94€</b>	

# SHELF COMPONENT

Products				Basket 3		
	LIPSTICK Intense Red-Orange	19.98€	+	Intense Red-Orange	19.98€	
	LIPSTICK Nude Rose	26.98€	+	Nude Rose	26.98€	
	LIPSTICK Electric Blue-Violet	22.98€	+	Green Balance	22.98€	
	LIPSTICK Energetic Rosé	20.98€	+			
	LIPSTICK Green Balance	22.98€	+			
					<b>69.94€</b>	












# SHELF COMPONENT

# BASKET COMPONENT

Products			⚙️	Basket 3		🛒
	LIPSTICK Intense Red-Orange	19.98€	+	Intense Red-Orange	19.98€	🗑️
	LIPSTICK Nude Rose	26.98€	+	Nude Rose	26.98€	🗑️
	LIPSTICK Electric Blue-Violet	22.98€	+	Green Balance	22.98€	🗑️
	LIPSTICK Energetic Rosé	20.98€	+			
	LIPSTICK Green Balance	22.98€	+			
					<b>69.94€</b>	

## SHELF COMPONENT

## BASKET COMPONENT

Products 	Basket <span>3</span> 									
<pre>[   {     'id': 1,     'category': 'Lipstick',     'name': 'Intense Red-Orange',     'color' : '#c05261',     'price': 19.98   },   {     'id': 2,     'category': 'Lipstick',     'name': 'Nude Rose',     'color' : '#b97871',     'price': 26.98   } ]</pre>	<table><tbody><tr><td data-bbox="1112 246 1483 318">Intense Red-Orange</td><td data-bbox="1483 246 1607 318">19.98€</td><td data-bbox="1607 246 1673 318"></td></tr><tr><td data-bbox="1112 318 1483 390">Nude Rose</td><td data-bbox="1483 318 1607 390">26.98€</td><td data-bbox="1607 318 1673 390"></td></tr><tr><td data-bbox="1112 390 1483 463">Green Balance</td><td data-bbox="1483 390 1607 463">22.98€</td><td data-bbox="1607 390 1673 463"></td></tr></tbody></table>	Intense Red-Orange	19.98€		Nude Rose	26.98€		Green Balance	22.98€	
Intense Red-Orange	19.98€									
Nude Rose	26.98€									
Green Balance	22.98€									
	<p data-bbox="1503 511 1588 540">69.94€</p>									

## SHELF COMPONENT

## BASKET COMPONENT

### Products

```
[
  {
    'id': 1,
    'category': 'Lipstick',
    'name': 'Intense Red-Orange',
    'color' : '#c05261',
    'price': 19.98
  },
  {
    'id': 2,
    'category': 'Lipstick',
    'name': 'Nude Rose',
    'color' : '#b97871',
    'price': 26.98
  }
]
```

### Basket 3

```
[
  {
    'id': 1,
    'category': 'Lipstick',
    'name': 'Intense Red-Orange',
    'color' : '#c05261',
    'price': 19.98
  },
  {
    'id': 2,
    'category': 'Lipstick',
    'name': 'Nude Rose',
    'color' : '#b97871',
    'price': 26.98
  }
]
```

# STORE

## SHELF

```
[
  {
    'id': 1,
    'category': 'Lipstick',
    'name': 'Intense Red-Orange',
    'color': '#c05261',
    'price': 19.98
  },
  {
    'id': 2,
    'category': 'Lipstick',
    'name': 'Nude Rose',
    'color': '#b97871',
    'price': 26.98
  }
]
```

## BASKET

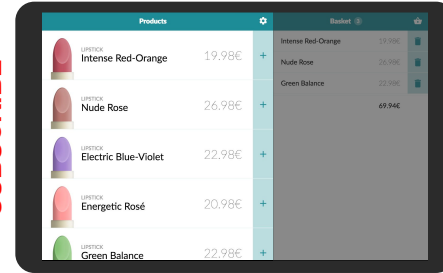
```
[
  {
    'id': 1,
    'category': 'Lipstick',
    'name': 'Intense Red-Orange',
    'color': '#c05261',
    'price': 19.98
  },
  {
    'id': 2,
    'category': 'Lipstick',
    'name': 'Nude Rose',
    'color': '#b97871',
    'price': 26.98
  }
]
```

# STORE

## SHELF

```
[
  {
    'id': 1,
    'category': 'Lipstick',
    'name': 'Intense Red-Orange',
    'color': '#c05261',
    'price': 19.98
  },
  {
    'id': 2,
    'category': 'Lipstick',
    'name': 'Nude Rose',
    'color': '#b97871',
    'price': 26.98
  }
]
```

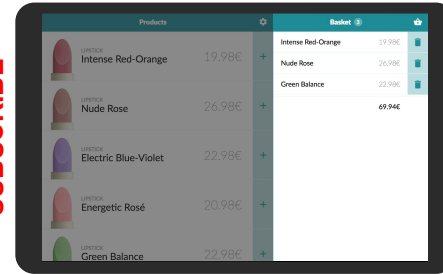
SUBSCRIBE



## BASKET

```
[
  {
    'id': 1,
    'category': 'Lipstick',
    'name': 'Intense Red-Orange',
    'color': '#c05261',
    'price': 19.98
  },
  {
    'id': 2,
    'category': 'Lipstick',
    'name': 'Nude Rose',
    'color': '#b97871',
    'price': 26.98
  }
]
```

SUBSCRIBE



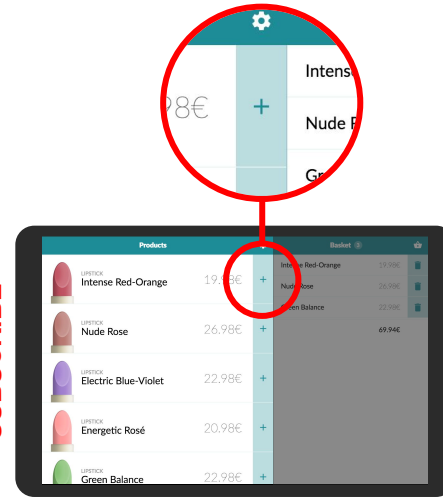


# STORE

## SHELF

```
[  
  {  
    'id': 1,  
    'category': 'Lipstick',  
    'name': 'Intense Red-Orange',  
    'color': '#c05261',  
    'price': 19.98  
  },  
  {  
    'id': 2,  
    'category': 'Lipstick',  
    'name': 'Nude Rose',  
    'color': '#b97871',  
    'price': 26.98  
  }  
]
```

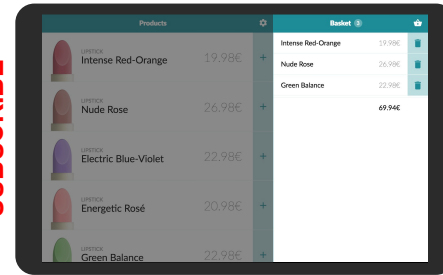
SUBSCRIBE



## BASKET

```
[  
  {  
    'id': 1,  
    'category': 'Lipstick',  
    'name': 'Intense Red-Orange',  
    'color': '#c05261',  
    'price': 19.98  
  },  
  {  
    'id': 2,  
    'category': 'Lipstick',  
    'name': 'Nude Rose',  
    'color': '#b97871',  
    'price': 26.98  
  }  
]
```

SUBSCRIBE



# STORE

## SHELF

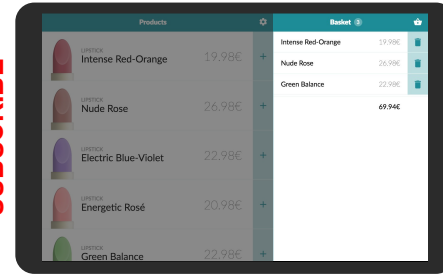
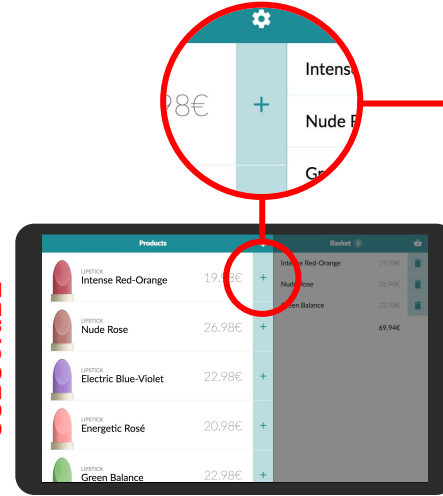
```
[  
  {  
    'id': 1,  
    'category': 'Lipstick',  
    'name': 'Intense Red-Orange',  
    'color': '#c05261',  
    'price': 19.98  
  },  
  {  
    'id': 2,  
    'category': 'Lipstick',  
    'name': 'Nude Rose',  
    'color': '#b97871',  
    'price': 26.98  
  }  
]
```

## BASKET

```
[  
  {  
    'id': 1,  
    'category': 'Lipstick',  
    'name': 'Intense Red-Orange',  
    'color': '#c05261',  
    'price': 19.98  
  },  
  {  
    'id': 2,  
    'category': 'Lipstick',  
    'name': 'Nude Rose',  
    'color': '#b97871',  
    'price': 26.98  
  }  
]
```

SUBSCRIBE

SUBSCRIBE



# ACTION

```
type: 'ADD_TO_BASKET',  
payload: {  
  'id': 1,  
  'category': 'Lipstick',  
  'name': 'Intense  
Red-Orange',  
  'color': '#c05261',  
  'price': 19.98  
},  
}
```

# REDUCER

SHELF REDUCER

BASKET REDUCER

# STORE

SHELF

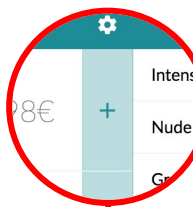
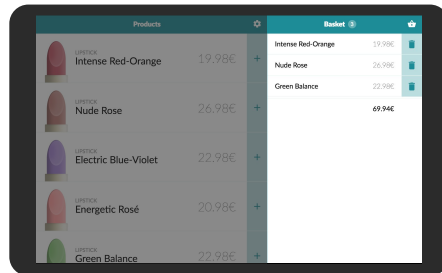
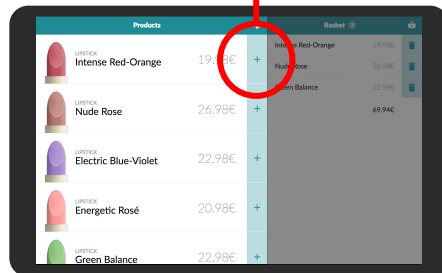
```
[  
  {  
    'id': 1,  
    'category': 'Lipstick',  
    'name': 'Intense Red-Orange',  
    'color': '#c05261',  
    'price': 19.98  
  },  
  {  
    'id': 2,  
    'category': 'Lipstick',  
    'name': 'Nude Rose',  
    'color': '#b97871',  
    'price': 26.98  
  }  
]
```

BASKET

```
[  
  {  
    'id': 1,  
    'category': 'Lipstick',  
    'name': 'Intense Red-Orange',  
    'color': '#c05261',  
    'price': 19.98  
  },  
  {  
    'id': 2,  
    'category': 'Lipstick',  
    'name': 'Nude Rose',  
    'color': '#b97871',  
    'price': 26.98  
  }  
]
```

SUBSCRIBE

SUBSCRIBE



# ACTION

```
type: 'ADD_TO_BASKET',  
payload: {  
  'id': 1,  
  'category': 'Lipstick',  
  'name': 'Intense  
Red-Orange',  
  'color': '#c05261',  
  'price': 19.98  
},  
}
```



# REDUCER

SHELF REDUCER

BASKET REDUCER

# STORE

SHELF

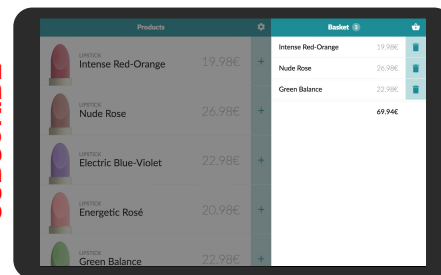
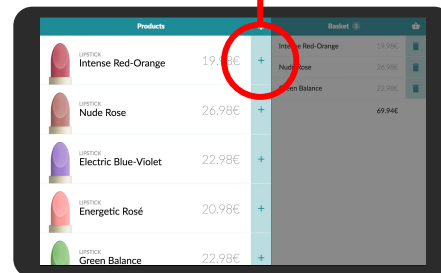
```
[  
  {  
    'id': 1,  
    'category': 'Lipstick',  
    'name': 'Intense Red-Orange',  
    'color': '#c05261',  
    'price': 19.98  
  },  
  {  
    'id': 2,  
    'category': 'Lipstick',  
    'name': 'Nude Rose',  
    'color': '#b97871',  
    'price': 26.98  
  }  
]
```

BASKET

```
[  
  {  
    'id': 1,  
    'category': 'Lipstick',  
    'name': 'Intense Red-Orange',  
    'color': '#c05261',  
    'price': 19.98  
  },  
  {  
    'id': 2,  
    'category': 'Lipstick',  
    'name': 'Nude Rose',  
    'color': '#b97871',  
    'price': 26.98  
  }  
]
```

SUBSCRIBE

SUBSCRIBE



# ACTION

```
type: 'ADD_TO_BASKET',  
payload: {  
  'id': 1,  
  'category': 'Lipstick',  
  'name': 'Intense  
Red-Orange',  
  'color': '#c05261',  
  'price': 19.98  
},  
}
```

**LIVE**

**SHOP APPLICATION  
WITH REDUX**

## REDUX DEV-TOOL

# Developers favorit.

### BENEFITS

Log/Inspect States

Dispatch Actions

Time Travel

Persist State

Import/Export

<https://github.com/gaearon/redux-devtools>

# REDUX

## Choose wisely.

REDUX STRATEGIES

Thunk

SAGA

redux-Observable

Angular ngrx (effect/router/db/notify)

<https://github.com/gaearon/redux-thunk>

<https://github.com/redux-saga/redux-saga>

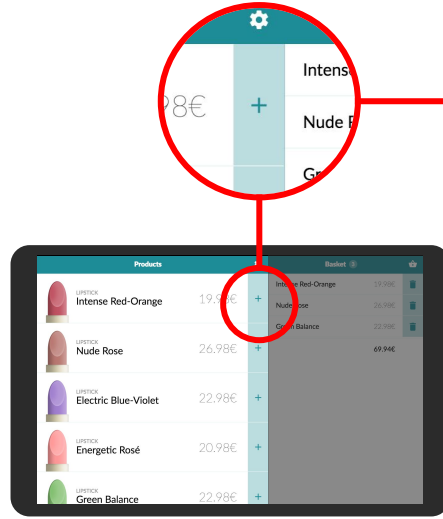
<https://github.com/redux-observable/redux-observable>

<https://github.com/ngrx>

# REDUCER

SHELF REDUCER

BASKET REDUCER



# ACTION

```
type: 'ADD_TO_BASKET',  
payload: {  
  'id': 1,  
  'category': 'Lipstick',  
  'name': 'Intense  
Red-Orange',  
  'color': '#c05261',  
  'price': 19.98  
},  
}
```



# THANK YOU

Source: <https://github.com/gernsdorfer/react-shop>

Demo: <https://gernsdorfer.github.io/react-shop/>

Meetup: <https://meetup.com/de-DE/Web-Developer-Chemnitz/>