互联网应用开发技术

Web Application Development

第4课
WEB前端-REACT实例

Episode Four

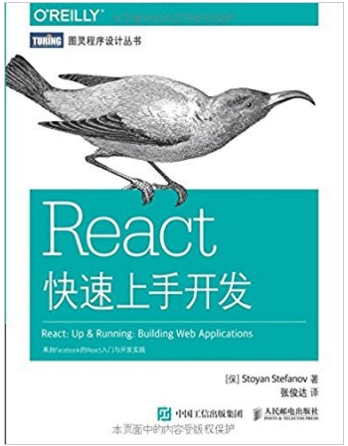
React Samples

陈昊鹏

chen-hp@sjtu.edu.cn

React

- Download
  - https://github.com/facebook/react/
- Reference
  - React快速上手开发
  - https://github.com/stoyan/reactbook



  - React报错 TypeError: Cannot read property 'setState' of undefined
  - https://blog.csdn.net/huanghanqian/article/details/80548100
  - JavaScript: Arrow Functions for Beginners
  - https://hackernoon.com/javascript-arrow-functions-for-beginners-926947fc0cdc
  - JavaScript初学者必看“箭头函数”
  - https://www.cnblogs.com/fundebug/p/6904753.html

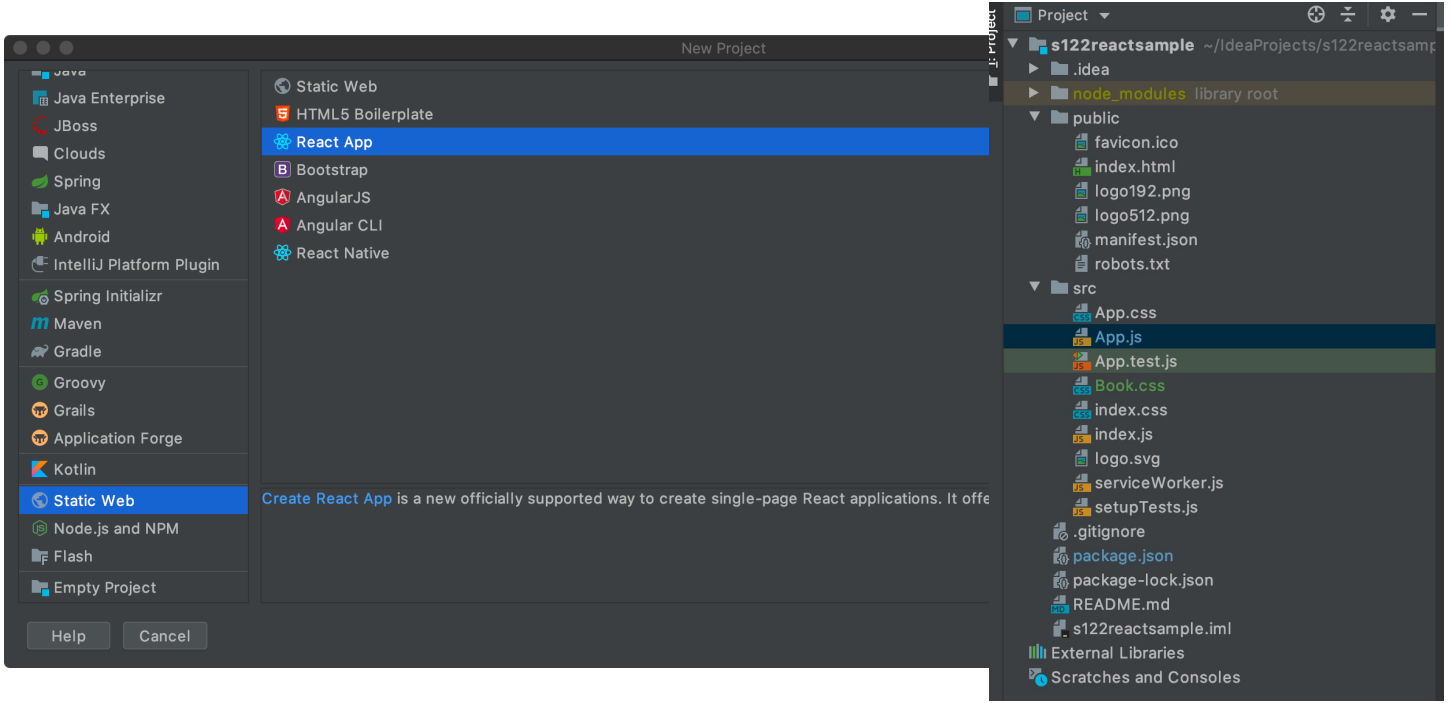
An Complex Example

Search | Export JSON | Export CSV

Book	Author	Language	Published ↓	Sales
Dream of the Red Chamber	Cao Xueqin	Chinese	1754-1791	100 million
She: A History of Adventure	H. Rider Haggard	English	1887	100 million
The Hobbit	J. R. R. Tolkien	English	1937	100 million
And Then There Were None	Agatha Christie	English	1939	100 million
Le Petit Prince (The Little Prince)	Antoine de Saint-Exupéry	French	1943	140 million
The Lord of the Rings	J. R. R. Tolkien	English	1954-1955	150 million
Harry Potter and the Philosopher's Stone	J. K. Rowling	English	1997	107 million

An Complex Example

REliable, INtelligent & Scalable Systems



An Complex Example

- App.js

```
import React from 'react';
import ReactDOM from 'react-dom';
import PropTypes from 'prop-types';
import './Book.css';

const headers = ["Book", "Author", "Language", "Published", "Sales"];
const data = [
 ["The Lord of the Rings", "J. R. R. Tolkien", "English", "1954-1955", "150 million"],
 ["Le Petit Prince (The Little Prince)", "Antoine de Saint-Exupéry", "French", "1943", "140 million"],
 ["Harry Potter and the Philosopher's Stone", "J. K. Rowling", "English", "1997", "107 million"],
 ["And Then There Were None", "Agatha Christie", "English", "1939", "100 million"],
 ["Dream of the Red Chamber", "Cao Xueqin", "Chinese", "1754-1791", "100 million"],
 ["The Hobbit", "J. R. R. Tolkien", "English", "1937", "100 million"],
 ["She: A History of Adventure", "H. Rider Haggard", "English", "1887", "100 million"],
];
```

An Complex Example


```
class Excel extends React.Component {
   constructor(props) {
       super(props);
       this.state = {
           data: this.props.initialData,
           sortby: null,
           descending: false,
           edit: null,
           search: false,
           preSearchData: null,
       };
   }

   render = () => {
       return (
           <div>
               {this.renderToolbar()}
               {this.renderTable()}
           </div>
       );
   };
```

An Complex Example


```
renderToolbar = () => {
    return (
        <div className="toolbar">
            <button onClick={this.toggleSearch}>Search</button>
            <a onClick={this.download.bind(this, 'json')}
               href="data.json">Export JSON</a>
            <a onClick={this.download.bind(this, 'csv')}
               href="data.csv">Export CSV</a>
        </div>
    );
};

renderTable = () => {
    return (
        <table>
            <thead onClick={this.sort}>
            <tr>{
                this.props.headers.map(function (title, idx) {
                    if (this.state.sortby === idx) {
                        title += this.state.descending ? ' \u2191' : ' \u2193';
                    }
                    return <th key={idx}>{title}</th>;
                }, this)
            }</tr>
            </thead>
            <tbody onDoubleClick={this.showEditor}>
            {this.renderSearch()}
```

An Complex Example


```
            {this.state.data.map(function (row, rowidx) {
                return (
                    <tr key={rowidx}>{
                        row.map(function (cell, idx) {
                            let content = cell;
                            let edit = this.state.edit;
                            if (edit && edit.row === rowidx && edit.cell === idx) {
                                content = (
                                    <form onSubmit={this.save}>
                                        <input type="text" defaultValue={cell}/>
                                    </form>
                                );
                            }
                            return <td key={idx} data-row={rowidx}>{content}</td>;
                        }, this)}
                    </tr>
                );
            }, this)}
            </tbody>
        </table>
    );
}
```

An Complex Example


```
sort = (e) => {
    let column = e.target.cellIndex;
    let data = this.state.data.slice();
    let descending = this.state.sortby === column
                                    && !this.state.descending;
    data.sort(function (a, b) {
        return descending
            ? (a[column] < b[column] ? 1 : -1)
            : (a[column] > b[column] ? 1 : -1);
    });
    this.setState({
        data: data,
        sortby: column,
        descending: descending,
    });
};
```

An Complex Example


```
showEditor = (e) => {
    this.setState({
        edit: {
            row: parseInt(e.target.dataset.row, 10),
            cell: e.target.cellIndex,
        }
    });
};

save = (e) => {
    e.preventDefault();
    let input = e.target.firstChild;
    let data = this.state.data.slice();
    data[this.state.edit.row][this.state.edit.cell] = input.value;
    this.setState({
        edit: null,
        data: data,
    });
};
```

An Complex Example


```
toggleSearch = () => {
    if (this.state.search) {
        this.setState({
            data: this.preSearchData,
            search: false,
        });
        this.preSearchData = null;
    } else {
        this.preSearchData = this.state.data;
        this.setState({
            search: true,
        });
    }
};
```

An Complex Example


```
search = (e) => {
    let needle = e.target.value.toLowerCase();
    if (!needle) {
        this.setState({data: this.preSearchData});
        return;
    }
    let idx = e.target.dataset.idx;
    let searchdata = this.preSearchData.filter(function (row) {
        return row[idx].toString().toLowerCase().indexOf(needle) > -1;
    });
    this.setState({data: searchdata});
};

renderSearch = () =>  {
    if (!this.state.search) {
        return null;
    }
    return (
        <tr onChange={this.search}>
            {this.props.headers.map(function (ignore, idx) {
                return <td key={idx}><input type="text" data-idx={idx}/></td>;
            })}
        </tr>
    );
};
```

An Complex Example


```
download(format, ev) {
    let contents = format === 'json'
        ? JSON.stringify(this.state.data)
        : this.state.data.reduce(function (result, row) {
            return result
                + row.reduce(function (rowresult, cell, idx) {
                    return rowresult
                        + '"'
                        + cell.replace(/"/g, '""')
                        + '"'
                        + (idx < row.length - 1 ? ',' : '');
                }, '')
                + "\n";
        }, '');

    let URL = window.URL || window.webkitURL;
    let blob = new Blob([contents], {type: 'text/' + format});
    ev.target.href = URL.createObjectURL(blob);
    ev.target.download = 'data.' + format;
};
```

An Complex Example


```
Excel.propTypes = {
    headers: PropTypes.arrayOf(
        PropTypes.string
    ),
    initialData: PropTypes.arrayOf(
        PropTypes.arrayOf(
            PropTypes.string
        )
    ),
};

function App() {
    return (
        ReactDOM.render(
            React.createElement(Excel, {
                headers: headers,
                initialData: data
            }),
            document.getElementById("root")
        )
    );
}

export default App;
```

- *Web开发技术*
- *Web Application Development*

Thank You!