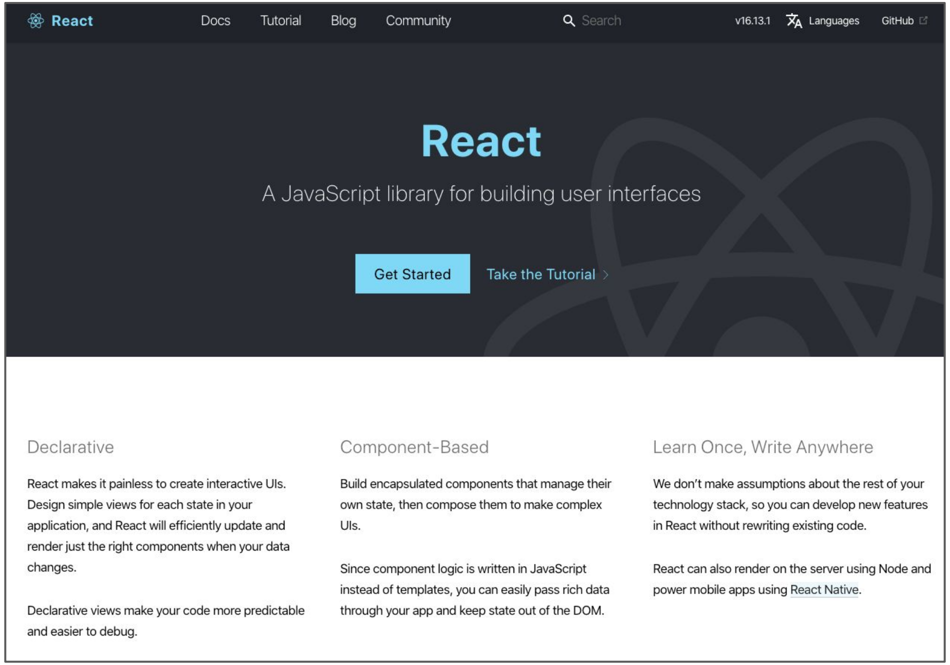
Tutorial #4
React

2020. 04. 14

[CS374] Introduction to HCI

What is React?



React

A JavaScript library for building user interfaces

Declarative

React makes it painless to create interactive UIs. Design simple views for each state in your application, and React will efficiently update and render just the right components when your data changes.

Declarative views make your code more predictable and easier to debug.

Component-Based

Build encapsulated components that manage their own state, then compose them to make complex UIs.

Since component logic is written in JavaScript instead of templates, you can easily pass rich data through your app and keep state out of the DOM.

Learn Once, Write Anywhere

We don't make assumptions about the rest of your technology stack, so you can develop new features in React without rewriting existing code.

React can also render on the server using Node and power mobile apps using React Native.

The most popular JavaScript Framework

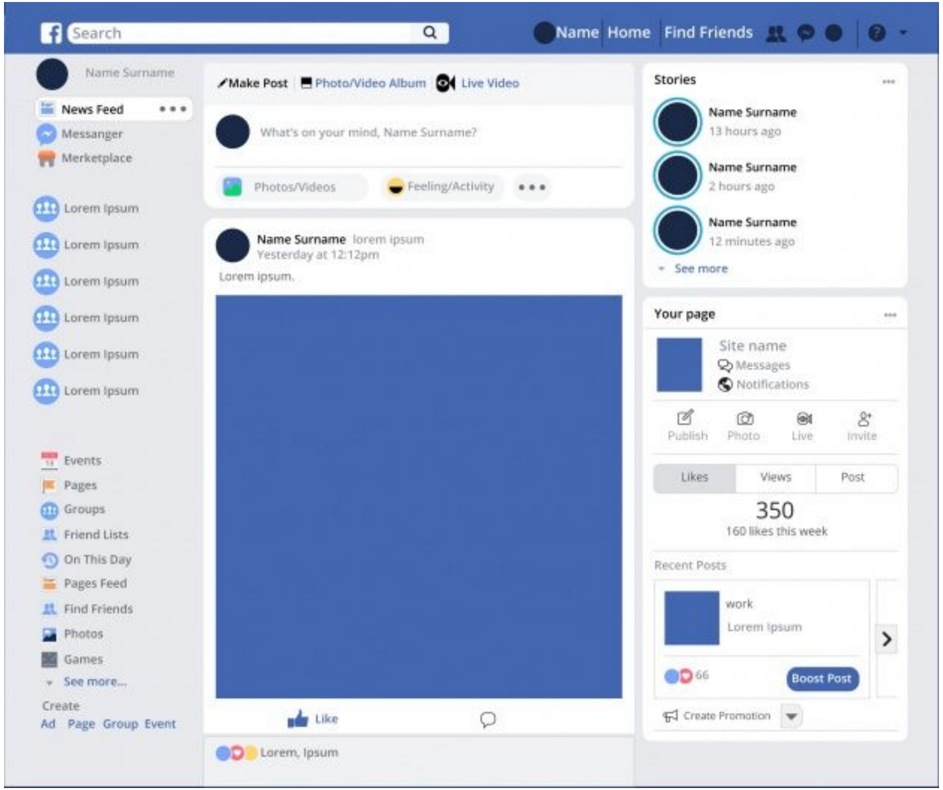
Single-Page-App (SPA)

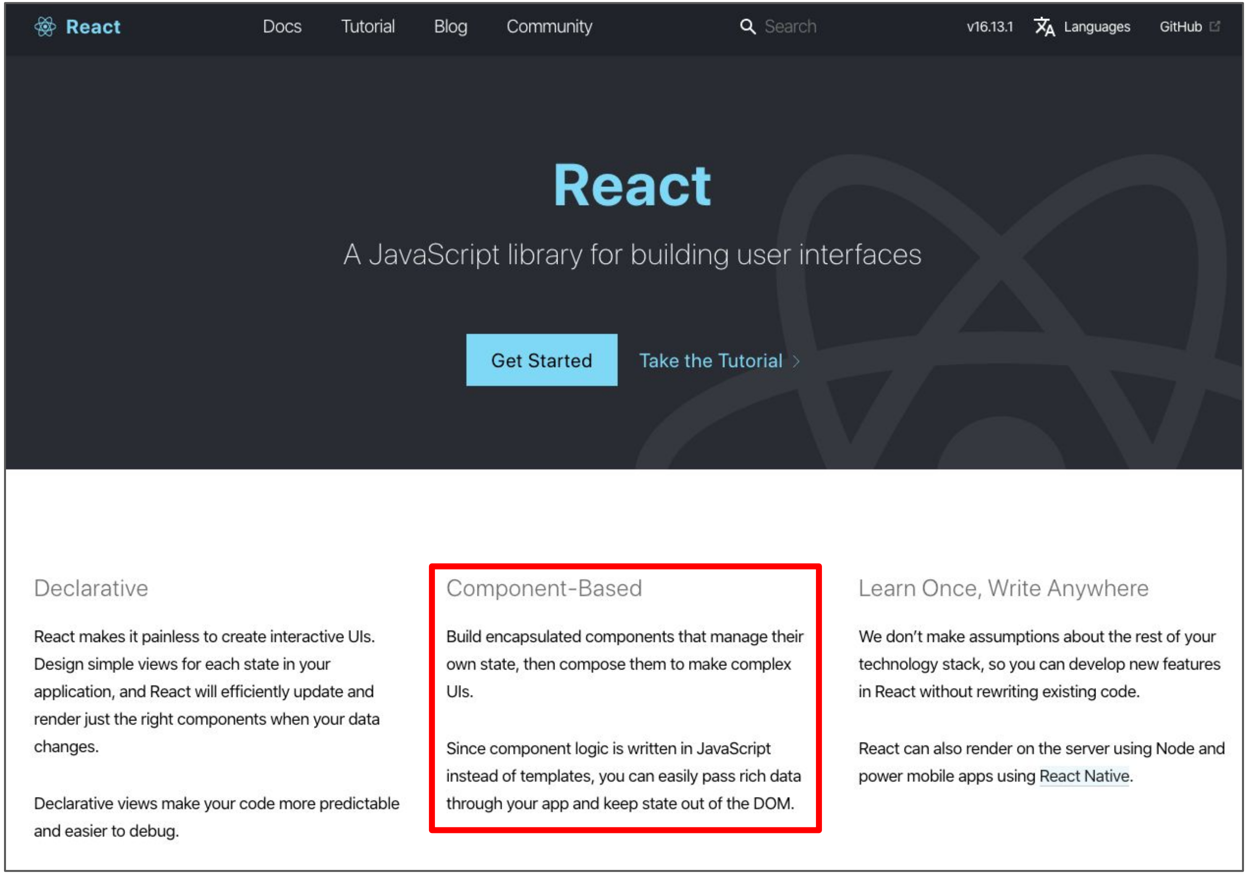
Rendering only the minimal unit of the UI

e.g.

- only `Like` button
- only `Stories` tab

Offers better speed to users





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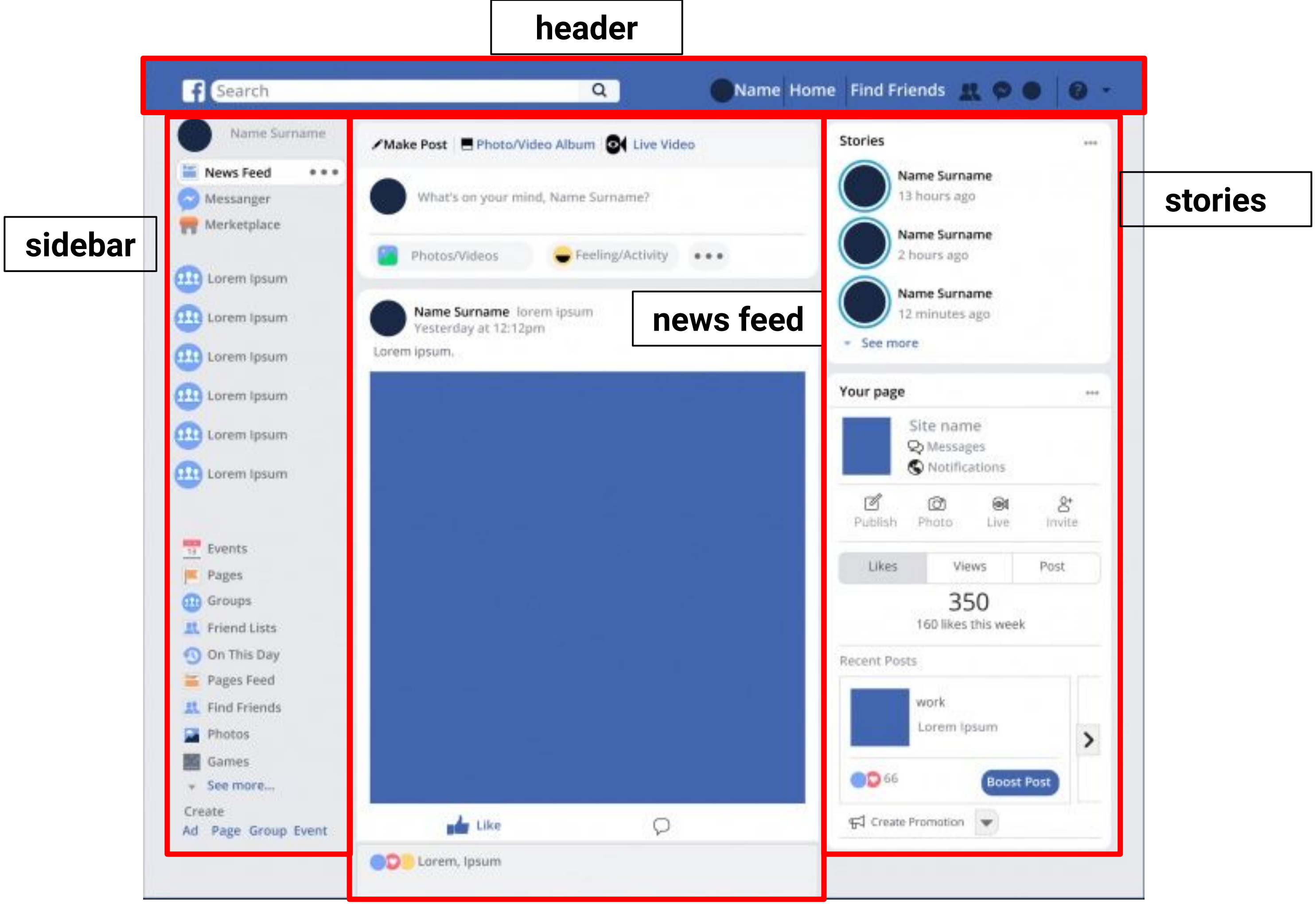


header

sidebar

news feed

stories

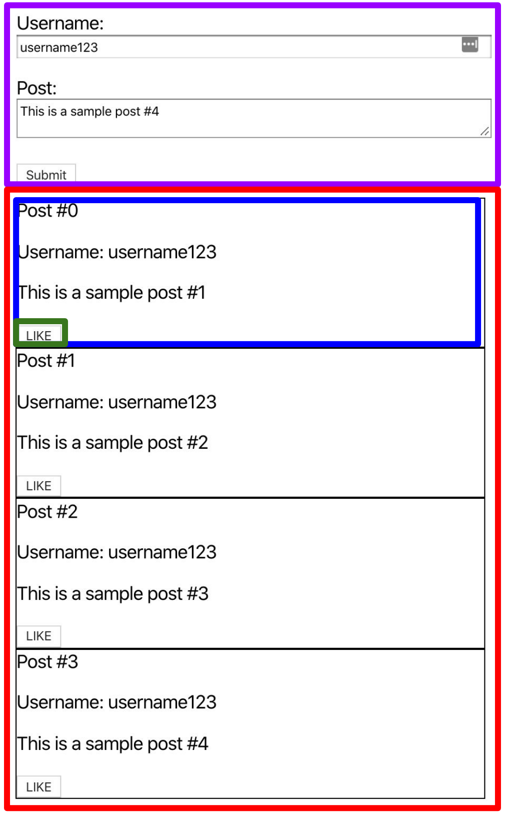
Goal

InputBox

NewsFeed

PostBox

LikeButton



Username:

username123

Post:

This is a sample post #4

Submit

Post #0

Username: username123

This is a sample post #1

LIKE

Post #1

Username: username123

This is a sample post #2

LIKE

Post #2

Username: username123

This is a sample post #3

LIKE

Post #3

Username: username123

This is a sample post #4

LIKE

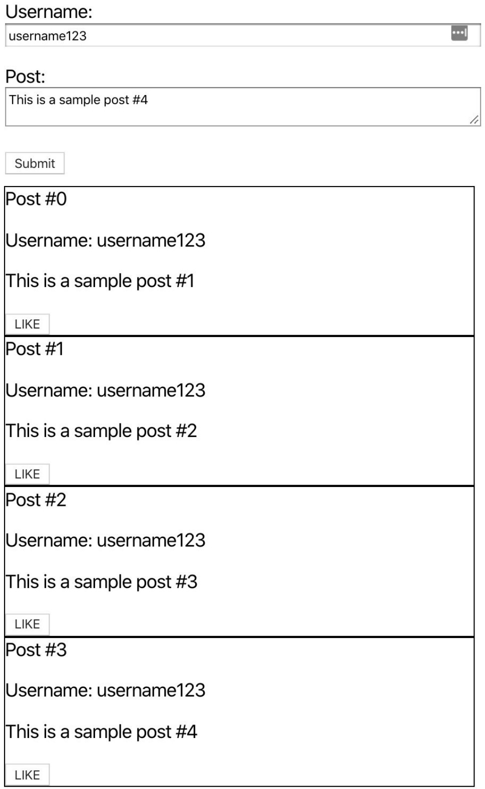
State

State

- Private and controlled by the component
- Can be overwritten

e.g.

- Username
- Count of likes



Username: username123

Post: This is a sample post #4

Post #0

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This is a sample post #1

Post #1

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Username: username123

This is a sample post #4

Props

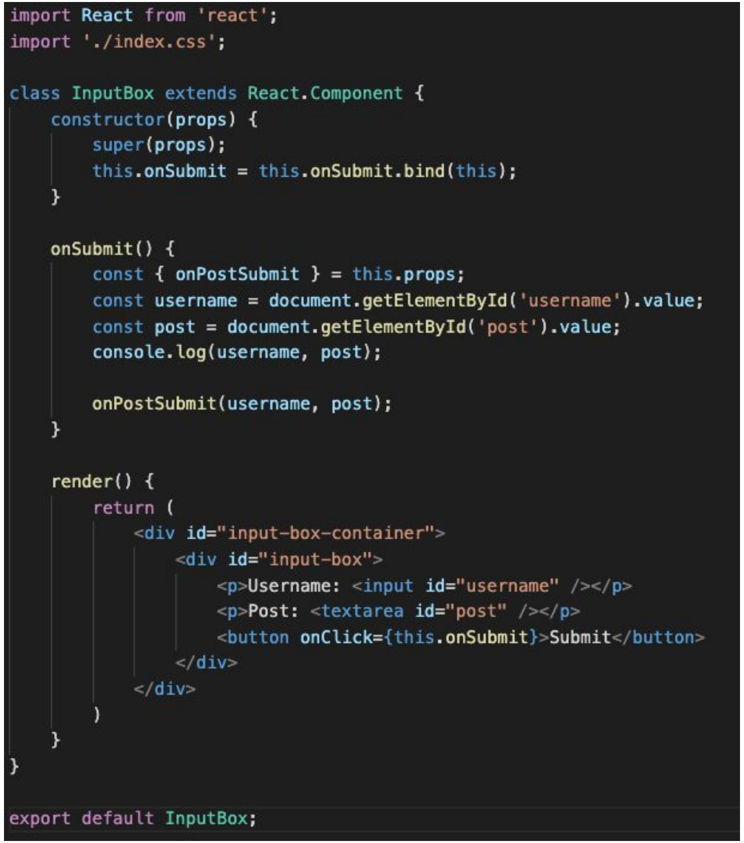
Props

- is simply “properties”
- Passing data from one component to another
- Uni-directional (parent → child)
- Read-only

Prerequisite

1. Basic knowledge of HTML, CSS, Javascript
    a. If you went over tutorial #1 & 2, it should be okay
2. Node version >= 8.10 and npm version >= 5.6
    a. https://reactjs.org/docs/create-a-new-react-app.html

class-based vs. functional component



```
import React from 'react';
import './index.css';

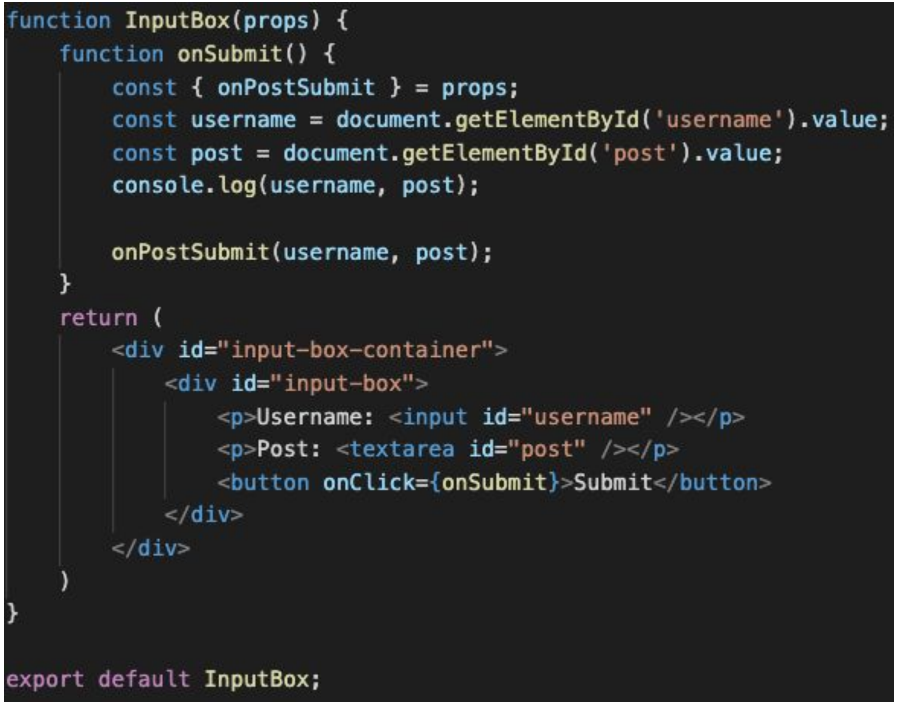
class InputBox extends React.Component {
    constructor(props) {
        super(props);
        this.onSubmit = this.onSubmit.bind(this);
    }

    onSubmit() {
        const { onPostSubmit } = this.props;
        const username = document.getElementById('username').value;
        const post = document.getElementById('post').value;
        console.log(username, post);

        onPostSubmit(username, post);
    }

    render() {
        return (
            <div id="input-box-container">
                <div id="input-box">
                    <p>Username: <input id="username" /></p>
                    <p>Post: <textarea id="post" /></p>
                    <button onClick={this.onSubmit}>Submit</button>
                </div>
            </div>
        )
    }
}

export default InputBox;
```



```
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React Plugin

https://chrome.google.com/webstore/detail/react-developer-tools/fmkadmapgofadopljbjfkapdkoienihi?hl=en