Towards Frontends and Finale!

CS 240 - The University of Illinois
Wade Fagen-Ulmschneider
November 30, 2021
Frontend Technologies
Frontend Technologies

[Application Native Frontends]:
Frontend Technologies

[Frontend Abstraction Libraries]:
Native Frontend Technologies

[HTML]:
Native Frontend Technologies

+CSS:
Native Frontend Technologies

[Native Desktop]:
Native Frontend Technologies

[Native Mobile]:
HTML
CS 240: Introduction to Computer Systems
Fall 2021, University of Illinois

Upcoming Deadlines

Homework 10: Practice for Midterm 2
  • Due: December 3, 2021

MIX Project Part III - Towards a Course-wide Service
  • Due: December 5, 2021

Lecture: Every Tuesday/Thursday at 12:30pm in 2035 CIF

Lecture #24: Authentication with SAML2 (SSO Login)
  • Lecture Handout
  • Lecture Slides

Assignments:
  • Homework 10 (Exam Review)
  November 18, 2021

Lecture #23: Security and Authentication
  • Lecture Handout
  • Lecture Slides
  November 16, 2021

Lecture #22: Content Delivery Networks (CDNs)
  • Lecture Handout
  • Lecture Slides

Lecture #21: Domain Name System (DNS)
  • Lecture Handout
  • Lecture Slides
  • Lecture Video

Assignments:
  Lecture Handout
  Lecture Slides
  Lecture Video
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  - Lecture Slides
  - Lecture Video

Assignments:
- Lecture Handout
- Lecture Slides
- Lecture Video

Lecture #20: Caching
  - Lecture Handout
  - Lecture Slides

Assignments:
Lecture #24: Authentication with SAML2 (SSO Login)

- Lecture Handout
- Lecture Slides

Assignments:
- Homework 10 (Exam Review)

November 18, 2021
HTML Data Structure

Internally, this HTML is maintained inside of a data structure in your web browser called the _______________________.

...every time we change the website, we update this data structure!
Changing the DOM
Interacting with the DOM Directly

```javascript
const e = document.querySelector(selectors);
```
Using a Library to Change the DOM

e = $(selectors)
Using a Framework to Manipulate the DOM
class Timer extends React.Component {
    constructor(props) {
        super(props);
        this.state = { seconds: 0 };
    }

    tick() {
        this.setState(state => ({
            seconds: state.seconds + 1
        }));
    }

    componentDidMount() {
        this.interval = setInterval(() => this.tick(), 1000);
    }

    componentWillUnmount() {
        clearInterval(this.interval);
    }

    render() {
        return (
            <div>Seconds: {this.state.seconds}</div>
        );
    }
}

ReactDOM.render(<Timer />, document.getElementById('timer-example'));
fetch("http://cs240-adm.cs.illinois.edu:8000/time", {  
    method: "PUT",
    body: JSON.stringify(data),
    ...many other options...
}).then( response => console.log(response) )