



Skills
Network

Introduction to Front-End Frameworks and React

IBM

What you will learn



Compare and contrast libraries and frameworks



Define front-end frameworks



Describe React along with its prominent features

Introduction

React:

- Widely adopted for building modern web applications

Libraries and frameworks:

- Essential tools in software development
- Serve distinct purposes



Libraries

- Repository of pre-written code segments
- Provide reusable functions and routines
- Target specific tasks or functionalities
- Offer flexibility for integration
- Examples: jQuery, Lodash, D3.js and React



Frameworks

- A comprehensive software development platform
- Provide foundation and structure for application building
- Handle user requests
- Manage data flow
- Impose architecture
- Example: AngularJS, Ember JS, Svelte, and Vue.js



Front-end frameworks

- User-facing
- Leverage HTML, CSS, and JavaScript
- Create dynamic and interactive user interfaces

Examples:



React



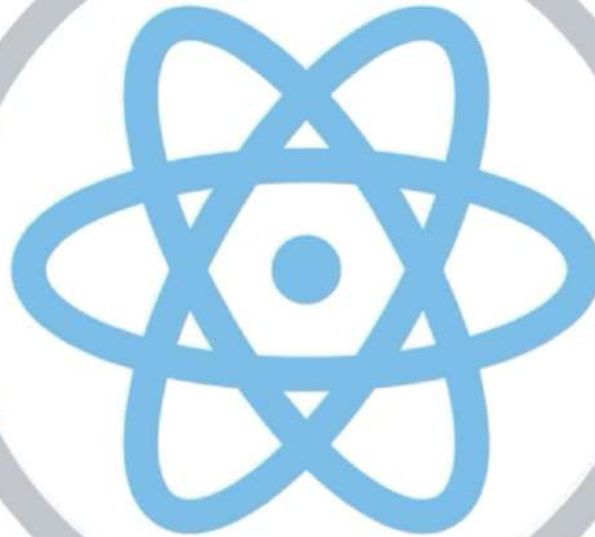
AngularJS



Vue.js

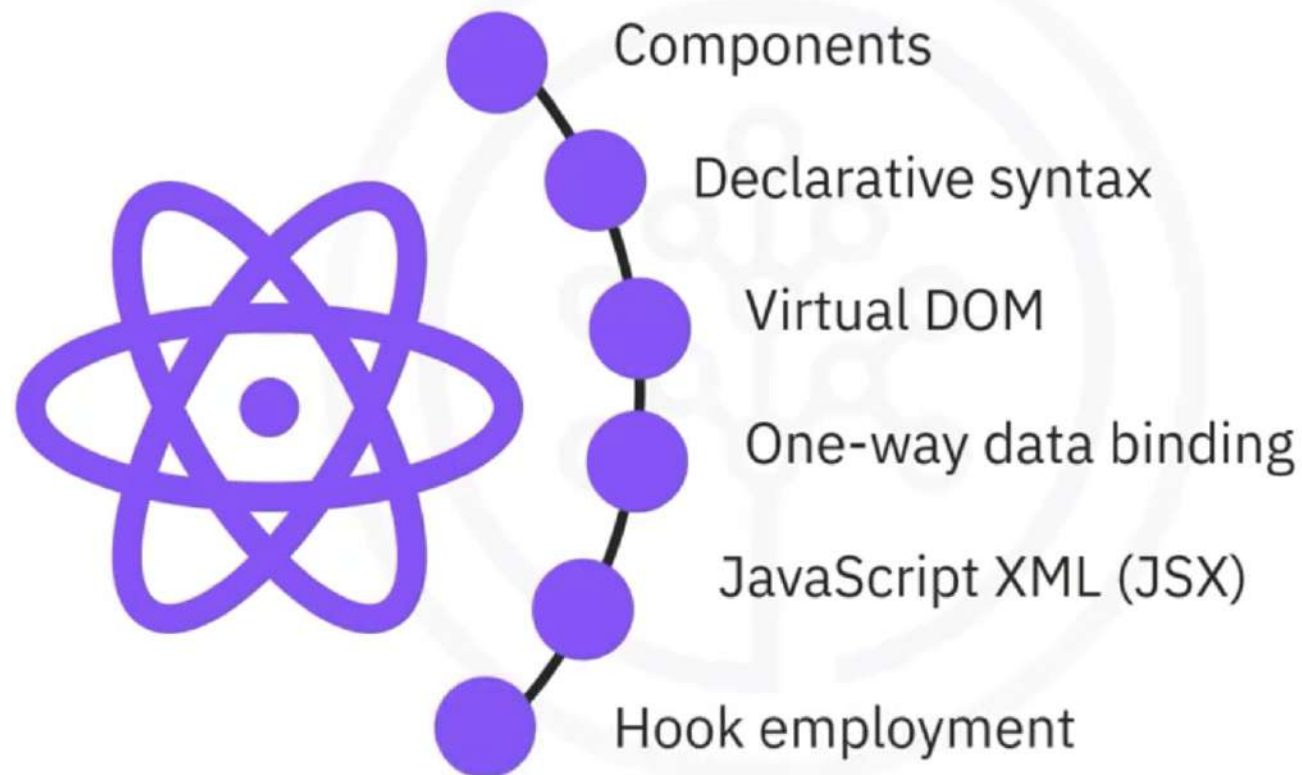
React

An open-source
JavaScript library



Facilitates the creation
of interactive user
interfaces

Features of React



Component-based architecture

- Emphasizes reusable UI elements
- Composing independent components
- Encapsulates UI functionality in individual files
- Easy to use without duplication



Declarative syntax



UI behavior based on states

Focuses on behavior

Manages the underlying DOM

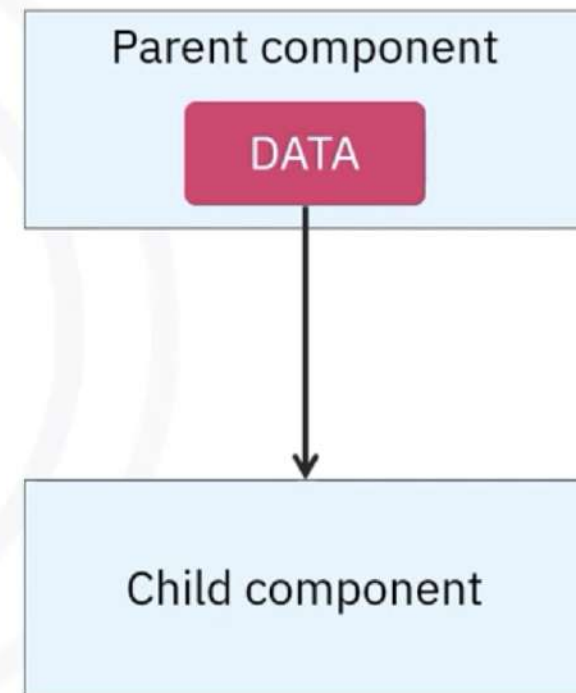
Virtual DOM

- Generates virtual DOM copies
- Compares to real DOM
- Updates essential segments
- Optimizes performance
- Minimizes DOM modifications



One-way data binding

- Data flows unidirectionally
- Simplifies data management
- Reduces bugs



JavaScript XML

JavaScript

HTML

```
function App ()  
  { return (  
    <div>  
      <p><This is a sample list></p>  
      <ul>  
        <li>List item no. 1 </li>  
        <li>List item no. 2 </li>  
      </ul>  
    </div>  
  ); }
```

Hook employment

- Handle states
- No need for class components
- Simplify component logic
- Promote code reuse
- Easily manage stateful behavior



Recap

In this video, you learned that:

- Libraries offer reusable code components, while frameworks provide a comprehensive structure for building applications
- Front-end frameworks focus on building the user-facing side of web applications
- React is an open-source JavaScript library developed by Facebook that facilitates the creation of dynamic and interactive user interfaces for web applications
- React features include component-based architecture, declarative syntax, virtual DOM optimization, one-way data binding, JSX integration, and React Hooks employment