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4.React.js – HOL

1. Explain the Need and Benefits of Component Lifecycle

React components go through a lifecycle from creation, updating, and unmounting. Lifecycle methods allow developers to:

- Perform operations after component mounts (e.g., API calls)
- Handle errors gracefully
- Optimize performance
- Control component behavior during different phases

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2. Identify Various Lifecycle Hook Methods

Common Class Component Lifecycle Methods:

- **Mounting Phase**
    - constructor()
    - componentDidMount()
- **Updating Phase**
    - componentDidUpdate()
- **Unmounting Phase**
    - componentWillUnmount()
- **Error Handling**
    - componentDidCatch(error, info)

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3. List Sequence of Steps in Rendering a Component

1. constructor()

2. render()
3. componentDidMount()
4. componentDidUpdate() (when props/state changes)
5. componentWillUnmount() (before removal)
6. componentDidCatch() (on error)

Command : npx create-react-app blogapp

Post.js

```
class Post {
  constructor(id, title, body) {
    this.id = id;
    this.title = title;
    this.body = body;
  }
}
export default Post;
```

Posts.js

```
import React, { Component } from 'react';
import Post from './Post';
class Posts extends Component {
  constructor(props) {
    super(props);
    this.state = {
```

```
    posts: [],
    hasError: false
  };
}
loadPosts() {
  fetch('https://jsonplaceholder.typicode.com/posts')
    .then(response => response.json())
    .then(data => {
      const postObjects = data.slice(0, 10).map(item => new Post(item.id, item.title, item.body));
      this.setState({ posts: postObjects });
    })
    .catch(error => {
      console.error("Error fetching posts:", error);
    });
}
componentDidMount() {
  this.loadPosts();
}
componentDidCatch(error, info) {
  console.error("Error caught in Posts component:", error, info);
  alert("An error occurred in the Posts component.");
  this.setState({ hasError: true });
}
render() {
  if (this.state.hasError) {
```

```
    return <h2>Something went wrong while displaying posts.</h2>;
  }
  return (
    <div>
      <h1>Blog Posts</h1>
      {this.state.posts.map(post => (
        <div key={post.id} style={{ border: "1px solid #ccc", padding: "10px", margin: "10px 0" }}>
          <h3>{post.title}</h3>
          <p>{post.body}</p>
        </div>
      ))}
    </div>
  );
 }
}
export default Posts;
```

App.js

```
import React from 'react';
import Posts from './Posts';
function App() {
 return (
  <div className="App">
    <Posts />
  </div>
```

```
  );
}

export default App;
```

Command : npm start

Output :