

REACT JS

Lifecycle Methods

Sreekanth M. E.

Freelance Trainer & Consultant

<http://www.SreekanthME.com>

A React component has several Lifecycle Methods that can be overridden to run code at particular times in the process. Also called Lifecycle Hooks.

React component has three lifecycle stages or phases.

- Mounting Phase
- Updating Phase
- Unmounting Phase

MOUNTING PHASE:

These methods are called when an instance of a component is being created and inserted into the DOM:

- `constructor(props)`
- `componentWillMount()`
- `render()`
- `componentDidMount()`

UPDATING PHASE:

An update can be caused by changes to props or state. These methods are called when a component is being re-rendered:

- `componentWillReceiveProps(nextProps)`
- `shouldComponentUpdate(nextProps, nextState)`
- `componentWillUpdate(nextProps, nextState)`
- `render()`
- `componentDidUpdate(prevProps, prevState)`

UNMOUNTING PHASE

This method is called when a component is being removed from the DOM:

- `componentWillUnmount()`

Methods prefixed with **WILL** are called right before something happens, and methods prefixed with **DID** are called right after something happens.

Methods of the Updating Phase are **NOT** called during Mounting Phase.

MOUNTING PHASE METHODS

CONSTRUCTOR(PROPS)

- Constructor(props) is called before component is mounted.
- Inside constructor, call `super(props)` before any other statement. Otherwise, `this.props` will be `undefined` in the constructor.
- Props argument is optional.
- It is the right place to initialize state and to bind methods.
- If no need to initialize state or to bind methods then constructor need not be implemented.

COMPONENTWILLMOUNT()

`componentWillMount()` is invoked before mounting occurs (after `constructor()` and before `render()`).

State must not be initialized here. Use `constructor()` instead to initialize state.

DOM should not be accessed as DOM is not yet ready.

AJAX calls should not be made.

`setState()` can be called but best to avoid.

RENDER()

render() MUST be a pure function this means:

- State must not be updated.
- AJAX calls should not be made.
- DOM should not be accessed.

In addition to “Mounting Phase”, it is also called in “Updating Phase” each time a component gets updated with new state or props data.

This method is mandatory in a component.

It can return null or false to indicate nothing needs to be rendered.

COMPONENTDIDMOUNT()

`componentDidMount()` is invoked immediately after a component is mounted (after `render()`).

State can be updated. Can call `setState()`.

AJAX calls can be made.

DOM can be accessed.

Event listeners can be added.

Timers can be set.

UPDATING PHASE METHODS

COMPONENTWILLRECEIVEPROPS(NEXTPROPS):

`componentWillReceiveProps(nextProps)` is invoked before a mounted component receives **new props** (not state).

This is the first lifecycle method in updating phase.

Its primary purpose is to provide a mechanism for a component to update its own state based on the props passed into it.

It has access to both the next props (via `nextProps`), and current props (via `this.props`).

Can call `setState()`.

Note that React may call `componentWillReceiveProps()` method even if the props have not changed.

For example, when the parent component causes child component to re-render.

SHOULDCOMPONENTUPDATE(NEXTPROPS, NEXTSTATE)

shouldComponentUpdate(nextProps, nextState) is invoked before rendering when **new props or state** are being received.

It returns **true** by default.

If it returns **false**, component update is aborted.

Best practice is to return false only if performance problems are encountered.

Cannot call setState().

COMPONENTWILLUPDATE(NEXTPROPS, NEXTSTATE)

`componentWillUpdate(nextProps, nextState)` is invoked immediately before rendering when new props or state are being received.

Cannot call `setState()`.

COMPONENTDIDUPDATE(PREVPROPS, PREVSTATE)

`componentDidUpdate(prevProps, prevState)` is invoked immediately after updating occurs (after `render()`).

AJAX calls can be made.

DOM can be accessed.

Can call `setState()`.

UNMOUNTING PHASE METHODS

COMPONENTWILLUNMOUNT()

`componentWillUnmount()` is invoked immediately before a component is unmounted and destroyed.

Any necessary cleanup can be done in this method:

- Invalidating timers
- Canceling AJAX requests
- Cleaning up any DOM
- Removing event listeners

Cannot call `setState()`.

Only the following methods can update state or call `setState()`:

- `componentWillMount()`
- `componentDidMount()`
- `componentWillReceiveProps()`
- `componentDidUpdate()`

Best practice is that apart from `constructor()` and `render()`, other lifecycle methods must be used sparingly.

But it's not an ideal world, and sometimes a little more control over the component is desirable.

END OF CHAPTER

APPENDIX