The Built in React Hooks useState, useEffect and useReducer

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Three React Hooks Covered in This Module

useState

useEffect

useReducer

The 15 Built in React Hooks

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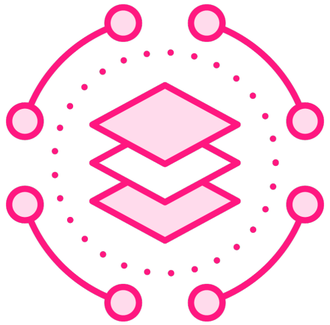
Basic Hooks



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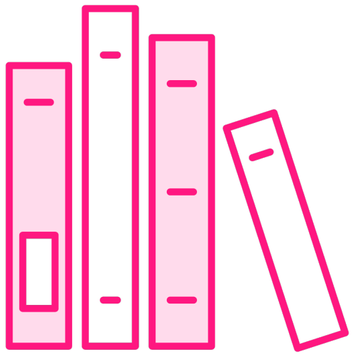

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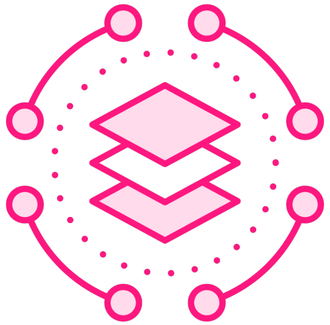

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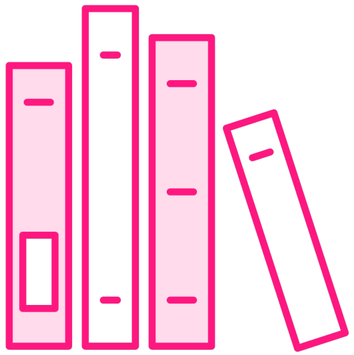

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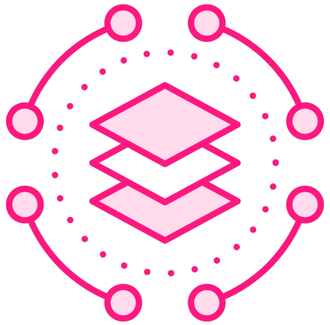

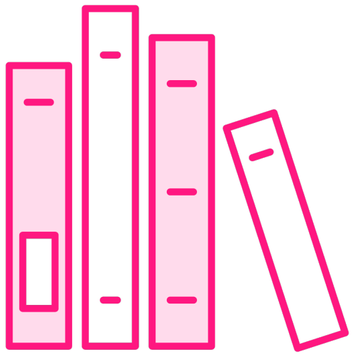

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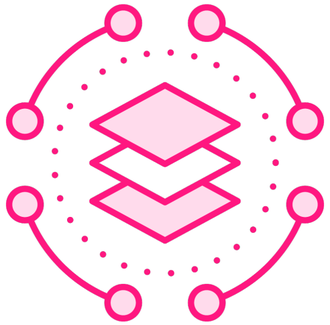

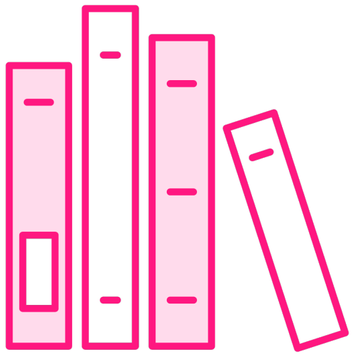

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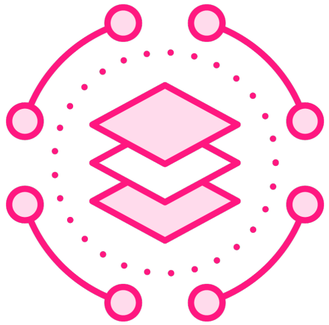

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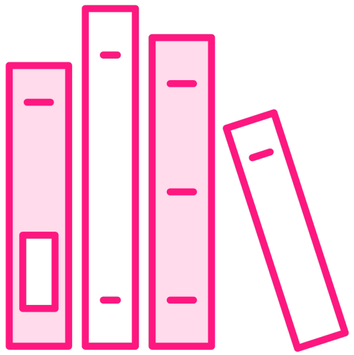

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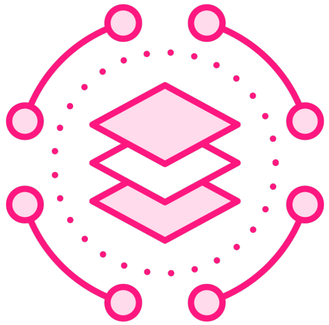

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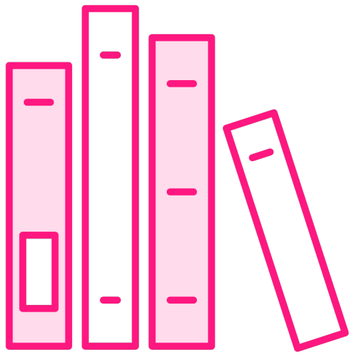

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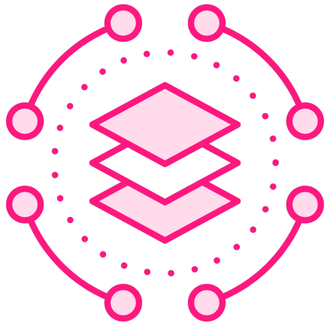

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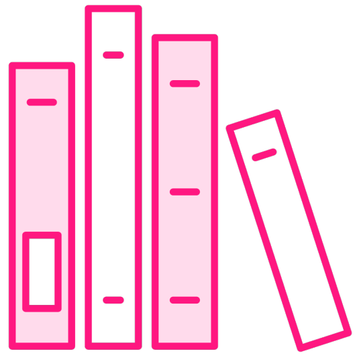

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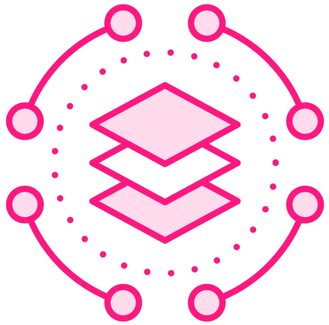

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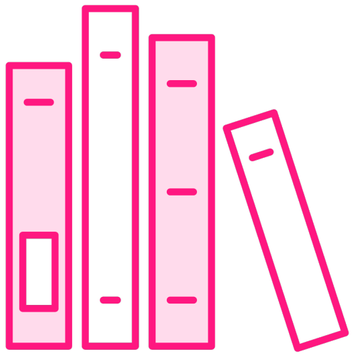

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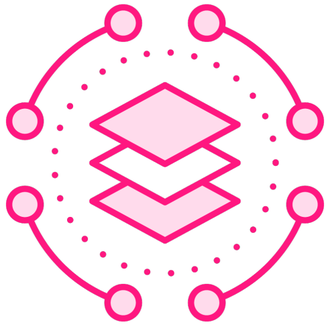

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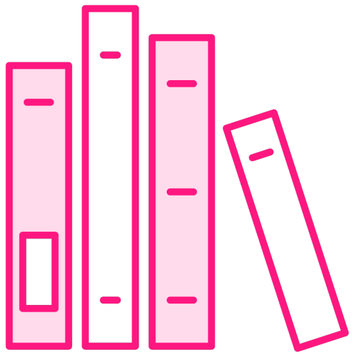

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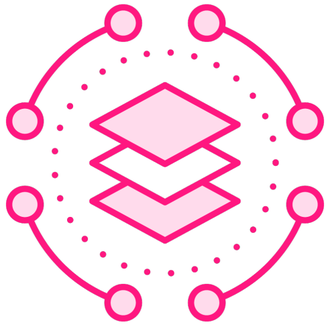

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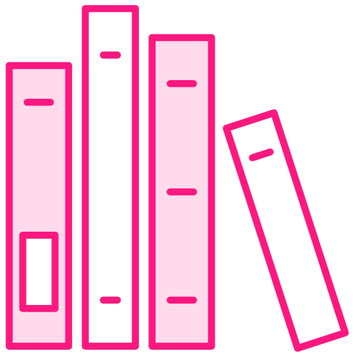

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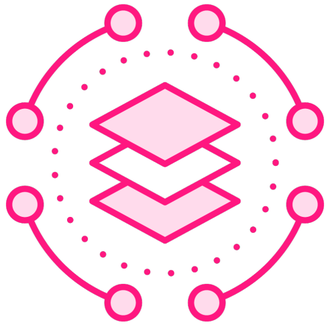

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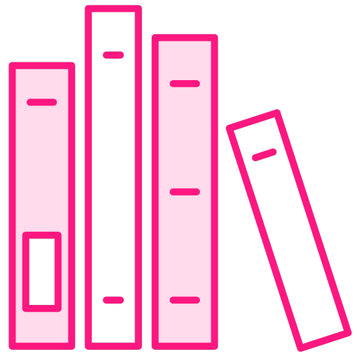

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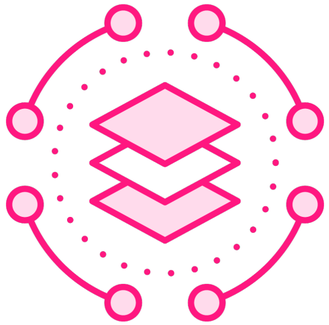

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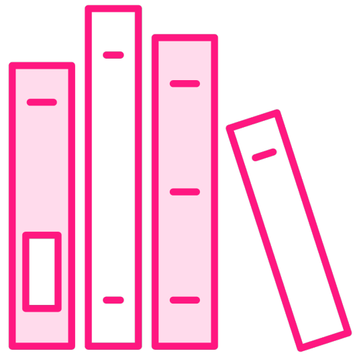

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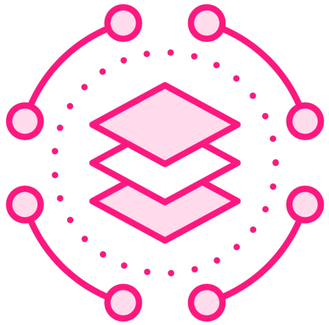

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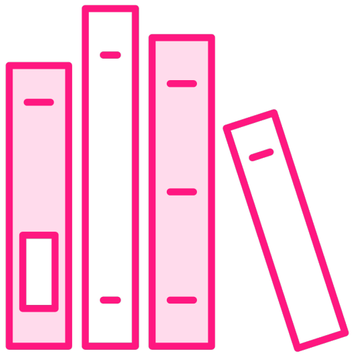

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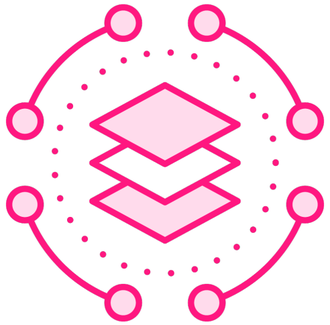

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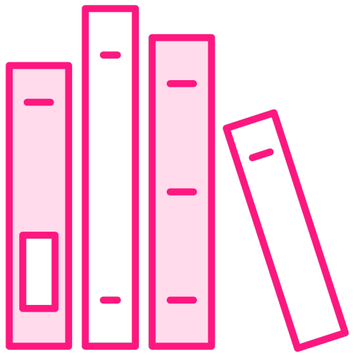

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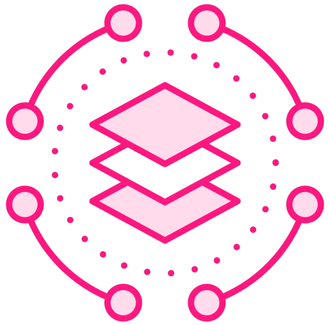

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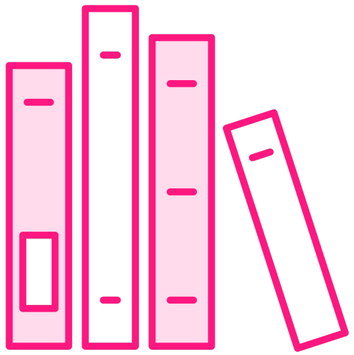

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Basic Hooks

useState and useEffect Working Together to Manage State

Review of useState and useEffect

/pages/demo-review.js

```
import { useState } from "react";
export default function Demo() {
  const [cnt, setCnt] = useState(100);

  function incrementCnt() {
    setCnt(cnt + 1);
  }

  return <button onClick={incrementCnt}>
    {cnt}</button>;
}
```

```jsx
import { useState } from "react";
export default function Demo() {
  const [cnt, setCnt] = useState(100);

  function incrementCnt() {
    setCnt((previousState) => {
      return previousState + 1;
    });
  }

  return <button onClick={incrementCnt}>
    {cnt}</button>;
}
```

```jsx
import { useState, useEffect } from "react";
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    setCnt((previousState) => {
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    });
  }

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}
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Benefits of Passing a Function into State Setter

Helpful when new state is based on a calculation from old state

Multiple useState calls will get batched

Guarantee previous state value is from before render

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```jsx
import { useState, useEffect } from "react";
export default function Demo() {
  const [cnt, setCnt] = useState(100);

  useEffect(() => {});

  function incrementCnt() {
    setCnt((previousState) => {
      return previousState + 1;
    });
  }

  return <button onClick={incrementCnt}>
    {cnt}</button>;
}
```

```jsx
import { useState, useEffect } from "react";
export default function Demo() {
  const [cnt, setCnt] = useState(100);

  useEffect(() => {
    console.log
      ("example: subscribe to events");
  });

  function incrementCnt() {
    setCnt((previousState) => {
      return previousState + 1;
    });
  }

  return <button onClick={incrementCnt}>
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}
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import { useState, useEffect } from "react";
export default function Demo() {
  const [cnt, setCnt] = useState(100);

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  });

  function incrementCnt() {
    setCnt((previousState) => {
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    });
  }

  return <button onClick={incrementCnt}>
    {cnt}</button>;
}
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import { useState, useEffect } from "react";
export default function Demo() {
  const [cnt, setCnt] = useState(100);

  useEffect(() => {
    console.log
      ("example: subscribe to events");
    return () => console.log("unsubscribe");
  } ,[]);

  function incrementCnt() {
    setCnt((previousState) => {
      return previousState + 1;
    });
  }

  return <button onClick={incrementCnt}>
    {cnt}</button>;
}
```

END OF Review of useState and useEffect

/pages/demo-review.js

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Explaining reducers is hard

The reducer pattern is an odd pattern

It has been around a long time because it’s powerful

Next, the useReducer parameters and returns explained

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const [state, dispatch] =
  useReducer(reducer, initialArg, init);
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reducer: A function that takes in 2 parameters, state and action and returns a new state.

initialArg: The starting value of state.

init: A function that returns the starting state

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reducer: A function that takes in 2 parameters, state and action and returns a new state.

initialArg: The starting value of state.

init: A function that returns the starting state

state: The returned local component state managed by the reducer

dispatch: The function that gets called whose parameters are passed into the reducer as the second parameter.

Learn useReducer Basics

/pages/demo-reducer.js

```
import { useState } from "react";
export default function demo() {
  const [cnt, setCnt] = useState(10);

  return <button onClick={
    () => setCnt(cnt + 1)}>{cnt}</button>
}
```

Learn useReducer Basics

/pages/demo-reducer.js

```
import { useReducer } from "react";

function reducer(state, action) {
switch (action.type) {
case "increment":
return state + action.incrementValue;
default:
return action;
}
}

export default function demo() {
const [state, dispatch] =
useReducer(reducer, 10);
return (
<button
onClick={() =>
dispatch({
type: "increment",
incrementValue: 1,
})
}
```

```
import { useState } from "react";

export default function demo() {
  const [cnt, setCnt] =
    useState(10);

  return (
    <button onClick={
            () => setCnt(cnt + 1)}>
      {cnt}
    </button>
  )
}
```

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import { useReducer } from "react";

function reducer(state, action) {
  switch (action.type) {
    case "increment":
      return state +
                action.incrementValue;
    default:
      return action;
  }
}

export default function demo() {
  const [state, dispatch] =
    useReducer(reducer, 10);
    return <button
      onClick={() =>
         dispatch({
           type: "increment",
           incrementValue: 1,
         })}>{state}</button>
}
```

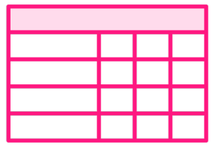
Title and Two Tabs

/pages/demo-no-reducer.js

/pages/demo-with-reducer.js

What We Know About useReducer

How to call useReducer



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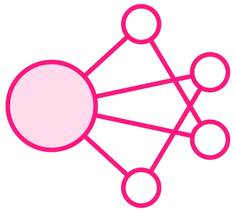

How to use the reducer's dispatch method

What We Know About useReducer

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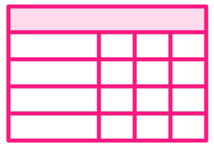

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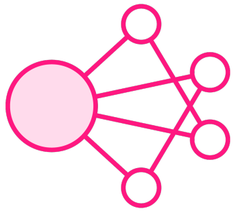
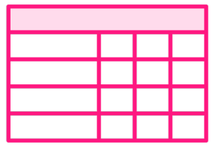


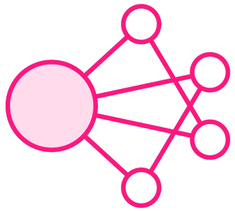
How to use the reducer's dispatch method

What We Know About useReducer

How to call useReducer



How to use the returned state



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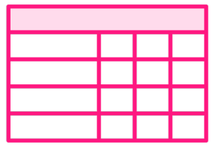
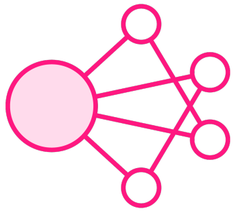


How to use the returned state



How to use the reducer’s dispatch method

There should be a reducer function that lets useReducer work exactly like useState

The code coming up is a little tricky and includes more advanced JavaScript then you've seen so far.

It's OK not to understand it all and just follow along.

Learn useReducer Basics

/pages/demo-reducer.js

```
import { useState } from "react";
export default function demo() {
  const [cnt, setCnt] = useState(10);

  return <button onClick={
    () => setCnt(cnt + 1)}>{cnt}</button>
}
```

Learn useReducer Basics

/pages/demo-reducer.js

```
import { useState, useReducer } from "react";
export default function demo() {
  const [cnt, setCnt] = useState(10);

  return <button onClick={
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}
```

Learn useReducer Basics

/pages/demo-reducer.js

```
import { useState, useReducer } from "react";
export default function demo() {
  const [cnt, setCnt] =
    useReducer((_, action) => action, 10);

  return <button onClick={
    () => setCnt(cnt + 1)}>{cnt}</button>
}
```

Learn useReducer Basics

/pages/demo-reducer.js

```
import { useState, useReducer } from "react";
export default function demo() {
  const [cnt, setCnt] =
    useReducer((_, action) => {
      return action
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/pages/demo-reducer.js

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    () => setCnt(cnt + 1)}>{cnt}</button>
}
```

Learn useReducer Basics

/pages/demo-reducer.js

```
import { useState, useReducer } from "react";
export default function demo() {
  const [cnt, setCnt] =
    useReducer((state, action) => {
      switch (action.type) {
        case "increment":
        default:
      }

    }, 10);

  return <button onClick={
    () => setCnt(cnt + 1)}>{cnt}</button>
}
```

Learn useReducer Basics

/pages/demo-reducer.js

```
import { useState, useReducer } from "react";
export default function demo() {
  const [cnt, setCnt] =
    useReducer((state, action) => {
      switch (action.type) {
        case "increment":
          return state + action.incrementValue;
        default:
          return action;
      }

    }, 10);

  return <button onClick={
    () => setCnt(cnt + 1)}>{cnt}</button>
}
```

Learn useReducer Basics

/pages/demo-reducer.js

```
import { useState, useReducer } from "react";
export default function demo() {
  const [cnt, setCnt] =
    useReducer((state, action) => {
      switch (action.type) {
        case "increment":
          return state + action.incrementValue;
        default:
          return action;
      }

    }, 10);

  return <button onClick={
    () => setCnt({
            type: "increment",
            incrementValue: 1,
          })}>{cnt}</button>
}
```

Learn useReducer Basics

/pages/demo-reducer.js

```
import { useState, useReducer } from "react";
export default function demo() {
  const [cnt, dispatch] =
    useReducer((state, action) => {
      switch (action.type) {
        case "increment":
          return state + action.incrementValue;
        default:
          return action;
      }

    }, 10);

  return <button onClick={
    () => dispatch({
            type: "increment",
            incrementValue: 1,
          })}>{cnt}</button>
}
```

Demo

Replace useState code in conference app speaker list component with useReducer

Up Next:

The Built-in React Hooks useRef, useContext, useMemo and useCallback