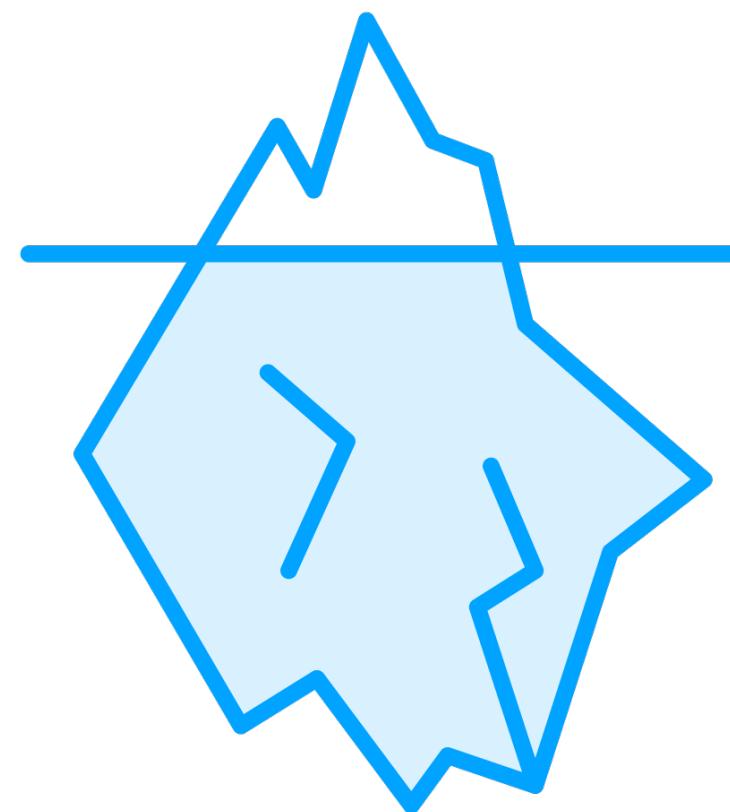


Creating Testable Components



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Anatomy of a React Application

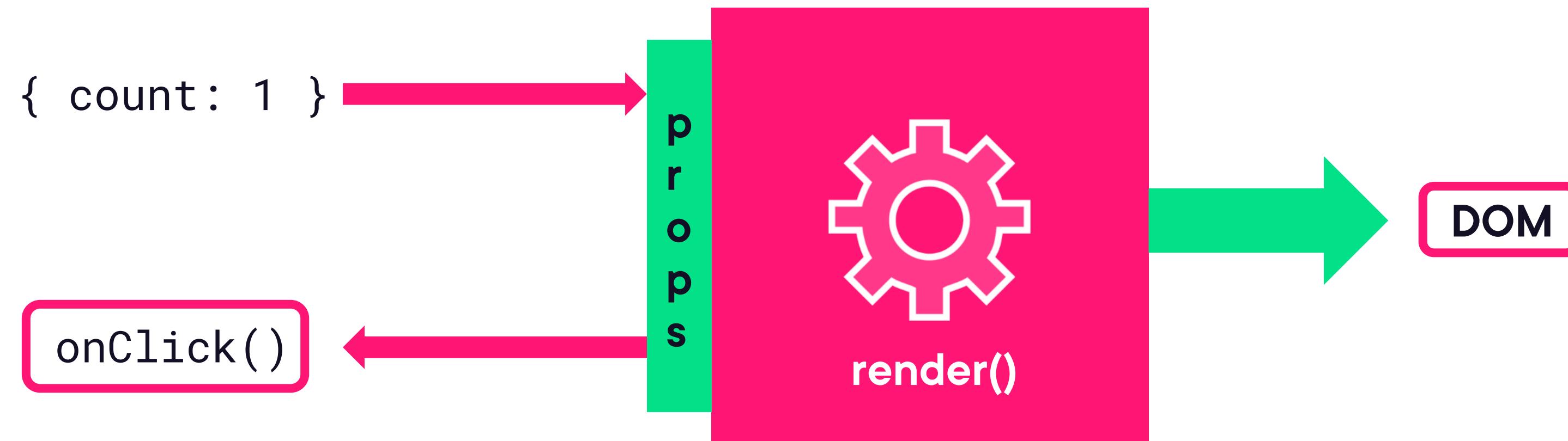


Most application code should not depend on React

- React components are harder to test
- Application logic should not be in React components



Designing Components to Be Testable



Barriers to Testability

Global Variables

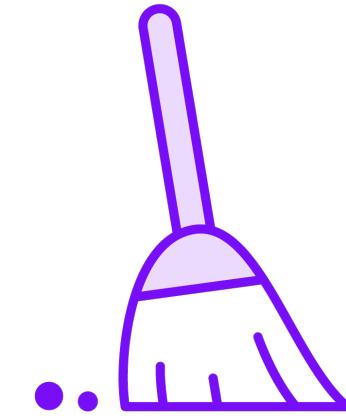
Context

useEffect Hook

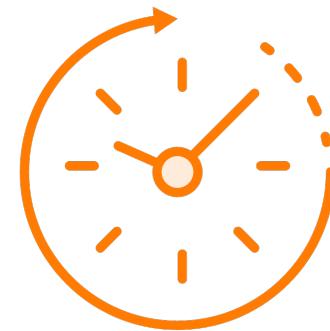
useState Hook



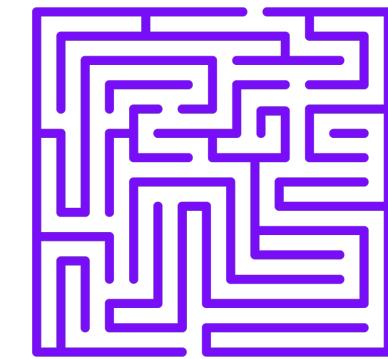
Testing Too Much



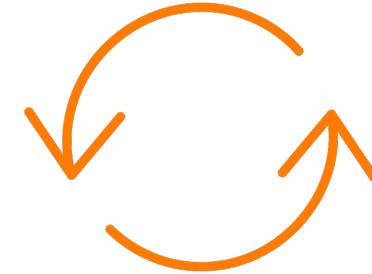
Tests not needed



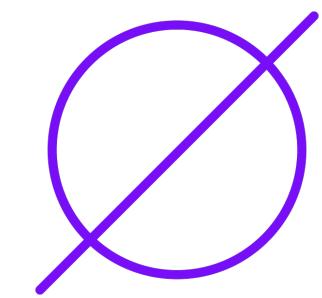
Take time



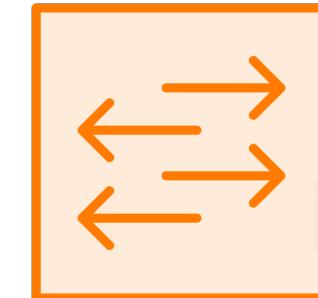
Add complexity



Slow feedback loop



False negatives



Refactoring friction



Improving Testability



Extract Pure Component

Before.js

```
const ParagraphCounter = () => {
  let [paras, setP] = React.useState(0);

  React.useEffect(()=>{
    setP(document.querySelectorAll('p').length);
  });

  return <div>
    This page contains {paras} paragraphs.
  </div>;
};
```

After.js

```
const ParagraphCount = ({count}) => {
  return <div>
    This page contains {count} paragraphs.
  </div>;
};

const ParagraphCounter = () => {
  let [paras, setP] = React.useState(0);
  React.useEffect(()=>{
    setP(document.querySelectorAll('p').length);
  });

  return <ParagraphCount count={paras} />
};
```



Extract Functionality

ParagraphCount.js

```
const ParagraphCount = ({count}) => {
  return <div>
    This page contains {count} paragraphs.
  </div>;
};

const ParagraphCounter = () => {
  let [paras, setP] = React.useState(0);
  React.useEffect(()=>{
    setP(document.querySelectorAll('p').length);
  });

  return <ParagraphCount count={paras} />
};
```

document_reflection.js

```
export function countParagraphs() {
  return document.querySelectorAll('p').length;
}
```



Extract Functionality

ParagraphCount.js

```
import { countParagraphs } from './document_reflection';

const ParagraphCount = ({count}) => {
  return <div>
    This page contains {count} paragraphs.
  </div>;
};

const ParagraphCounter = () => {
  let [paras, setP] = React.useState(0);
  React.useEffect(()=>{
    setP countParagraphs();
  });
  return <ParagraphCount count={paras} />
};


```

document_reflection.js

```
export function countParagraphs() {
  return document.querySelectorAll('p').length;
}
```



Summary

Design testable components

Test application logic outside of React components

Use “pure” components

