## noreacthello.html (Page 1 of 1)

```
 1: <!DOCTYPE html>
 2: <html>
 3:    <head>
 4:       <title>Hello</title>
 5:    </head>
 6:
 7:    <body>
 8:       Hello, world.
 9:    </body>
10: </html>
```

## blank (Page 1 of 1)

1: This page is intentionally blank.

## reacthello.html (Page 1 of 1)

```
<!DOCTYPE html>
<html>
   <head>
      <title>Hello</title>
   </head>

   <body>

      <div id="root"></div>

      <script src=
         "https://cdn.jsdelivr.net/npm/react@18.3.1/umd/react.production
.min.js">
      </script>

      <script src=
         "https://cdn.jsdelivr.net/npm/react-dom@18.3.1/umd/react-dom.pr
oduction.min.js">
      </script>

      <script src=
         "https://cdn.jsdelivr.net/npm/babel-standalone@6.26.0/babel.min
.js">
      </script>

      <script type="text/babel">

         'use strict';

         //------------------------------------------------------------

         function App() {
            return (
               <div>
                  Hello, world.
               </div>
            );
         }

         //------------------------------------------------------------

         let domRoot = document.getElementById('root');
         let reactRoot = ReactDOM.createRoot(domRoot);
         reactRoot.render(
            <React.StrictMode>
               <App />
            </React.StrictMode>
         );

      </script>
   </body>
</html>

```

## blank (Page 1 of 1)

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## noreactecho1.html (Page 1 of 1)

```
 1: <!DOCTYPE html>
 2: <html>
 3:    <head>
 4:       <title>Echo</title>
 5:    </head>
 6:
 7:    <body>
 8:
 9:       <h1>Echo</h1>
10:       Enter text to be echoed: 
11:       <input type='text' id="myInput" autoFocus>
12:       <hr />
13:       You entered: <span id="myOutput"></span>
14:
15:       <script>
16:          "use strict";
17:
18:          function handleInput() {
19:             let myInput = document.getElementById('myInput');
20:             let inputValue = myInput.value;
21:             let myOutput = document.getElementById('myOutput');
22:             myOutput.innerHTML = inputValue;
23:          }
24:
25:          function setup() {
26:             let inputNode = document.getElementById('myInput');
27:             inputNode.addEventListener('input', handleInput);
28:          }
29:
30:          document.addEventListener('DOMContentLoaded', setup);
31:       </script>
32:    </body>
33: </html>
```

## noreactecho2.html (Page 1 of 1)

```
 1: <!DOCTYPE html>
 2: <html>
 3:    <head>
 4:       <title>Echo</title>
 5:    </head>
 6:
 7:    <body>
 8:
 9:       <h1>Echo</h1>
10:       Enter text to be echoed: 
11:       <input type='text' autoFocus oninput=
12:          "document.getElementById('myOutput').innerHTML = this.value;"
13:       >
14:       <hr />
15:       You entered: <span id="myOutput"></span>
16:
17:    </body>
18: </html>
```

## reactecho1.html (Page 1 of 1)

```
<!DOCTYPE html>
<html>
   <head>
      <title>Echo</title>
   </head>

   <body>

      <div id="root"></div>

      <script src=
         "https://cdn.jsdelivr.net/npm/react@18.3.1/umd/react.production
.min.js">
      </script>

      <script src=
         "https://cdn.jsdelivr.net/npm/react-dom@18.3.1/umd/react-dom.pr
oduction.min.js">
      </script>

      <script src=
         "https://cdn.jsdelivr.net/npm/babel-standalone@6.26.0/babel.min
.js">
      </script>

      <script type="text/babel">

         'use strict';

         //-------------------------------------------------------------

         function App() {
            const [enteredText, setEnteredText] = React.useState('');

            return (
               <div>
                  <h1>Echo</h1>
                  Enter text to be echoed: 
                  <input
                      type='text'
                      onInput={ function (event) {
                         setEnteredText(event.target.value);
                      }}
                      autoFocus
                  />
                  <hr />
                  You entered: {enteredText}
               </div>
            );
         }

         //-------------------------------------------------------------

         let domRoot = document.getElementById('root');
         let reactRoot = ReactDOM.createRoot(domRoot);
         reactRoot.render(
            <React.StrictMode>
               <App />
            </React.StrictMode>
         );

      </script>
   </body>
</html>
```

## blank (Page 1 of 1)

```
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```

## arrow.js (Page 1 of 1)

```
    1: //---------------------------------------------------------------------
    2: // arrow.js
    3: // Author: Bob Dondero
    4: //---------------------------------------------------------------------
    5:
    6: 'use strict';
    7:
    8: function square1(i) {return i * i;}
    9: let square2 = function(i) {return i * i;};
   10: let square3 = (i) => {return i * i;};
   11: let square4 = (i) => i * i;
   12: let square5 = i => i * i;
   13:
   14: function prod1(i, j) {return i * j;}
   15: let prod2 = function(i, j) {return i * j;};
   16: let prod3 = (i, j) => {return i * j;};
   17: let prod4 = (i, j) => i * j;
   18:
   19: function greet1() {process.stdout.write('hi\n');}
   20: let greet2 = function() {process.stdout.write('hi\n');};
   21: let greet3 = () => {process.stdout.write('hi\n');};
   22: let greet4 = () => process.stdout.write('hi\n');
   23:
   24: function main() {
   25:    process.stdout.write(String(square1(5)) + '\n');
   26:    process.stdout.write(String(square2(5)) + '\n');
   27:    process.stdout.write(String(square3(5)) + '\n');
   28:    process.stdout.write(String(square4(5)) + '\n');
   29:    process.stdout.write(String(square5(5)) + '\n');
   30:
   31:    process.stdout.write(String(prod1(5, 6)) + '\n');
   32:    process.stdout.write(String(prod2(5, 6)) + '\n');
   33:    process.stdout.write(String(prod3(5, 6)) + '\n');
   34:    process.stdout.write(String(prod4(5, 6)) + '\n');
   35:
   36:    greet1();
   37:    greet2();
   38:    greet3();
   39:    greet4();
   40: }
   41:
   42: if (require.main === module)
   43:    main();
```

## blank (Page 1 of 1)

```
    1: This page is intentionally blank.
```

## reactecho2.html (Page 1 of 1)

```
<!DOCTYPE html>
<html>
   <head>
      <title>Echo</title>
   </head>

   <body>

      <div id="root"></div>

      <script src=
         "https://cdn.jsdelivr.net/npm/react@18.3.1/umd/react.production
.min.js">
      </script>

      <script src=
         "https://cdn.jsdelivr.net/npm/react-dom@18.3.1/umd/react-dom.pr
oduction.min.js">
      </script>

      <script src=
         "https://cdn.jsdelivr.net/npm/babel-standalone@6.26.0/babel.min
.js">
      </script>

      <script type="text/babel">

         'use strict';

         //-------------------------------------------------------------

         const App = () => {
            const [enteredText, setEnteredText] = React.useState('');

            return (
               <div>
                  <h1>Echo</h1>
                  Enter text to be echoed: 
                  <input
                      type='text'
                      onInput={ (event) => {
                         setEnteredText(event.target.value);
                      }}
                      autoFocus
                  />
                  <hr />
                  You entered: {enteredText}
               </div>
            );
         }

         //-------------------------------------------------------------

         let domRoot = document.getElementById('root');
         let reactRoot = ReactDOM.createRoot(domRoot);
         reactRoot.render(
            <React.StrictMode>
               <App />
            </React.StrictMode>
         );

      </script>
   </body>
</html>
```

## blank (Page 1 of 1)

```
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```

## reactecho3.html (Page 1 of 1)

```
<!DOCTYPE html>
<html>
   <head>
      <title>Echo</title>
   </head>

   <body>

      <div id="root"></div>

      <script src=
         "https://cdn.jsdelivr.net/npm/react@18.3.1/umd/react.production
.min.js">
      </script>

      <script src=
         "https://cdn.jsdelivr.net/npm/react-dom@18.3.1/umd/react-dom.pr
oduction.min.js">
      </script>

      <script src=
         "https://cdn.jsdelivr.net/npm/babel-standalone@6.26.0/babel.min
.js">
      </script>

      <script type="text/babel">

         'use strict';

         //-------------------------------------------------------------

         function App() {
            const [enteredText, setEnteredText] = React.useState('');

            return (
               <div>
                  <h1>Echo</h1>
                  Enter text to be echoed: 
                  <input
                      type='text'
                      onInput={ (event) => {
                         setEnteredText(event.target.value);
                      }}
                      autoFocus
                  />
                  <hr />
                  You entered: {enteredText}
               </div>
            );
         }

         //-------------------------------------------------------------

         let domRoot = document.getElementById('root');
         let reactRoot = ReactDOM.createRoot(domRoot);
         reactRoot.render(
            <React.StrictMode>
               <App />
            </React.StrictMode>
         );

      </script>
   </body>
</html>
```

## blank (Page 1 of 1)

```
This page is intentionally blank.
```

## reactecho4.html (Page 1 of 2)

```
<!DOCTYPE html>
<html>
   <head>
      <title>Echo</title>
   </head>

   <body>

      <div id="root"></div>

      <script src=
         "https://cdn.jsdelivr.net/npm/react@18.3.1/umd/react.production
.min.js">
      </script>

      <script src=
         "https://cdn.jsdelivr.net/npm/react-dom@18.3.1/umd/react-dom.pr
oduction.min.js">
      </script>

      <script src=
         "https://cdn.jsdelivr.net/npm/babel-standalone@6.26.0/babel.min
.js">
      </script>

      <script type="text/babel">

         'use strict';

         //-------------------------------------------------------------

         function EchoInput(props) {
            return (
               <div>
                  <h1>Echo Props</h1>
                  Enter text to be echoed: 
                  <input
                      type='text'
                      onInput={ (event) => {
                         props.callback(event.target.value);
                      }}
                      autoFocus
                  />
               </div>
            );
         }

         //-------------------------------------------------------------

         function EchoOutput(props) {
            return (
               <div>
                  {props.txt}
               </div>
            );
         }

         //-------------------------------------------------------------

         function Echo() {
            const [enteredText, setEnteredText] = React.useState('');

            return (
               <div>
                  <EchoInput callback={setEnteredText} />
```

## reactecho4.html (Page 2 of 2)

```
                  <hr />
                  <EchoOutput txt={enteredText} />
               </div>
            );
         }

         //-------------------------------------------------------------

         function App() {
            return (
               <Echo />
            );
         }

         //-------------------------------------------------------------

         let domRoot = document.getElementById('root');
         let reactRoot = ReactDOM.createRoot(domRoot);
         reactRoot.render(
            <React.StrictMode>
               <App />
            </React.StrictMode>
         );

      </script>
   </body>
</html>
```

## noreactdatetime.html (Page 1 of 1)

```
<!DOCTYPE html>
<html>
   <head>
      <title>DateTime</title>
   </head>

   <body>
      <h1>Good <span id="ampmSpan"></span></h1>
      The current date and time are<br>
      <span id="datetimeSpan"></span>
      <br/>

      <script>
         'use strict';

         function getAmPm() {
            let dateTime = new Date();
            let hours = dateTime.getHours();
            let amPm = (hours < 12) ? 'morning' : 'afternoon';
            let ampmSpan = document.getElementById('ampmSpan');
            ampmSpan.innerHTML = amPm;
         }

         function getDateTime() {
            let dateTime = new Date();
            let datetimeSpan =
               document.getElementById('datetimeSpan');
            datetimeSpan.innerHTML = dateTime.toLocaleString();
         }

         function setupAmpm() {
            getAmPm();
            let apInterval = window.setInterval(getAmPm, 1000);
            window.addEventListener('beforeunload',
               function(e) {window.clearInterval(apInterval);})
         }

         function setupDatetime() {
            getDateTime();
            let dtInterval = window.setInterval(getDateTime, 1000);
            window.addEventListener('beforeunload',
               function(e) {window.clearInterval(dtInterval);})
         }

         function setup() {
            setupAmpm();
            setupDatetime();
         }

         document.addEventListener('DOMContentLoaded', setup);
      </script>

   </body>
</html>
```

## blank (Page 1 of 1)

```
This page is intentionally blank.
```

## reactdatetime.html (Page 1 of 2)

```
 1: <!DOCTYPE html>
 2: <html>
 3:    <head>
 4:       <title>DateTime</title>
 5:    </head>
 6:
 7:    <body>
 8:
 9:       <div id="root"></div>
10:
11:       <script src=
12:          "https://cdn.jsdelivr.net/npm/react@18.3.1/umd/react.production
.min.js">
13:       </script>
14:
15:       <script src=
16:          "https://cdn.jsdelivr.net/npm/react-dom@18.3.1/umd/react-dom.pr
oduction.min.js">
17:       </script>
18:
19:       <script src=
20:          "https://cdn.jsdelivr.net/npm/babel-standalone@6.26.0/babel.min
.js">
21:       </script>
22:
23:       <script type="text/babel">
24:
25:          'use strict';
26:
27:          //------------------------------------------------------------
28:
29:          function App() {
30:             const [datetime, setDatetime] = React.useState(new Date());
31:
32:             function updateDatetime() {
33:                let dtInterval = window.setInterval(
34:                   () => {setDatetime(new Date());},
35:                   1000
36:                );
37:                return () => {window.clearInterval(dtInterval);};
38:             }
39:
40:             React.useEffect(updateDatetime, []);
41:
42:             let hours = datetime.getHours();
43:             let ampm = (hours < 12) ? 'morning' : 'afternoon';
44:             return (
45:                <div>
46:                   <h1>Good {ampm}</h1>
47:                   The current date and time are<br/>
48:                   {datetime.toLocaleString()}
49:                </div>
50:             );
51:          }
52:
53:          //------------------------------------------------------------
54:
55:          let domRoot = document.getElementById('root');
56:          let reactRoot = ReactDOM.createRoot(domRoot);
57:          reactRoot.render(
58:             <React.StrictMode>
59:                <App />
60:             </React.StrictMode>
61:          );
62:
```

## reactdatetime.html (Page 2 of 2)

```
63:       </script>
64:    </body>
65: </html>
66:
```

## PennyReact1/index.html (Page 1 of 3)

```
<!DOCTYPE html>
<html>
   <head>
      <title>Penny.com</title>
   </head>

   <body>

      <div id="root"></div>

      <script src=
         "https://cdn.jsdelivr.net/npm/react@18.3.1/umd/react.production
.min.js">
      </script>

      <script src=
         "https://cdn.jsdelivr.net/npm/react-dom@18.3.1/umd/react-dom.pr
oduction.min.js">
      </script>

      <script src=
         "https://cdn.jsdelivr.net/npm/babel-standalone@6.26.0/babel.min
.js">
      </script>

      <script type="text/babel">

         'use strict';

         //-------------------------------------------------------------

         function PennyHeader() {
            const [datetime, setDatetime] = React.useState(new Date());

            function updateHeader() {
               let apInterval = window.setInterval(
                  () => {setDatetime(new Date());},
                  1000
               );
               return () => {window.clearInterval(apInterval);};
            }

            React.useEffect(updateHeader, []);

            let hours = datetime.getHours();
            let ampm = (hours < 12) ? 'morning' : 'afternoon';
            return (
               <div>
                  <hr />
                  Good {ampm} and welcome to Penny.com
                  <hr />
               </div>
            );
         }

         //-------------------------------------------------------------

         function PennySearch() {
            const [books, setBooks] = React.useState([]);

            let request = null;

            function fetchBooks(author) {
               function handleResponse() {
                  if (this.status !== 200) {
```

## PennyReact1/index.html (Page 2 of 3)

```
                     alert('Error: Failed to fetch data from server');
                     return;
                  }
                  let books = JSON.parse(this.response);
                  setBooks(books);
               }

               function handleError() {
                  alert('Error: Failed to fetch data from server');
               }

               let encodedAuthor = encodeURIComponent(author);
               let url = '/searchresults?author=' + encodedAuthor;
               if (request !== null)
                  request.abort;
               request = new XMLHttpRequest();
               request.onload = handleResponse;
               request.onerror = handleError;
               request.open('GET', url);
               request.send();
               return () => {request.abort();};
            }

            let timer = null;

            function debouncedFetchBooks(author) {
               clearTimeout(timer);
               timer = setTimeout(()=>{fetchBooks(author);}, 500);
            }

            return (
               <div>
                  <h1>Author Search</h1>
                  Please enter an author name: 
                  <input
                      type='text'
                      onInput={ (event) => {
                         debouncedFetchBooks(event.target.value);
                      }}
                      autoFocus
                  />
                  <hr />
                  {books.map((book) => (
                     <div key={book.isbn}>
                        {book.isbn}: 
                        <strong>{book.author}</strong>: 
                        {book.title}
                        <br />
                     </div>
                  ))}
               </div>
            );
         }

         //-------------------------------------------------------------

         function PennyFooter() {
            const [datetime, setDatetime] = React.useState(new Date());

            function updateFooter() {
               let dtInterval = window.setInterval(
                  () => {setDatetime(new Date());},
                  1000
               );
               return () => {window.clearInterval(dtInterval);};
```

## PennyReact1/index.html (Page 3 of 3)

```
            }

            React.useEffect(updateFooter, []);

            return (
               <div>
                  <hr />
                  Date and time: {datetime.toLocaleString()}
                  <br />
                  Created by 
                  <a href="https://www.cs.princeton.edu/~rdondero">
                  Bob Dondero</a>
               </div>
            );
         }

         //-------------------------------------------------------------

         function App() {
            return (
               <div>
                  <PennyHeader />
                  <PennySearch />
                  <PennyFooter />
               </div>
            );
         }

         //-------------------------------------------------------------

         let domRoot = document.getElementById('root');
         let reactRoot = ReactDOM.createRoot(domRoot);
         reactRoot.render(
            <React.StrictMode>
               <App />
            </React.StrictMode>
         );

      </script>
   </body>
</html>

```

## blank (Page 1 of 1)

```
1: This page is intentionally blank.
```

## PennyReact2/index.html (Page 1 of 3)

```
<!DOCTYPE html>
<html>
   <head>
      <title>Penny.com</title>
   </head>

   <body>

      <div id="root"></div>

      <script src=
         "https://cdn.jsdelivr.net/npm/react@18.3.1/umd/react.production
.min.js">
      </script>

      <script src=
         "https://cdn.jsdelivr.net/npm/react-dom@18.3.1/umd/react-dom.pr
oduction.min.js">
      </script>

      <script src=
         "https://cdn.jsdelivr.net/npm/babel-standalone@6.26.0/babel.min
.js">
      </script>

      <script type="text/babel">

         'use strict';

         //-------------------------------------------------------------

         function PennyHeader() {
            const [datetime, setDatetime] = React.useState(new Date());

            function updateHeader() {
               let apInterval = window.setInterval(
                  () => {setDatetime(new Date());},
                  1000
               );
               return () => {window.clearInterval(apInterval);};
            }

            React.useEffect(updateHeader, []);

            let hours = datetime.getHours();
            let ampm = (hours < 12) ? 'morning' : 'afternoon';
            return (
               <div>
                  <hr />
                  Good {ampm} and welcome to Penny.com
                  <hr />
               </div>
            );
         }

         //-------------------------------------------------------------

         function PennyInput(props) {
            return (
               <div>
                  <h1>Author Search</h1>
                  Please enter an author name: 
                  <input
                      type='text'
                      onInput={ (event) => {
```

## PennyReact2/index.html (Page 2 of 3)

```
                         props.callback(event.target.value);
                      }}
                      autoFocus
                  />
                  <hr />
               </div>
            );
         }

         //-------------------------------------------------------------

         function PennyOutput(props) {
            return (
               <div>
                  {props.books.map((book) => (
                     <div key={book.isbn}>
                        {book.isbn}: 
                        <strong>{book.author}</strong>: 
                        {book.title}
                        <br />
                     </div>
                  ))}
               </div>
            );
         }

         //-------------------------------------------------------------

         function PennySearch() {
            const [books, setBooks] = React.useState([]);

            let request = null;

            function fetchBooks(author) {
               function handleResponse() {
                  if (this.status !== 200) {
                     alert('Error: Failed to fetch data from server');
                     return;
                  }
                  let books = JSON.parse(this.response);
                  setBooks(books);
               }

               function handleError() {
                  alert('Error: Failed to fetch data from server');
               }

               let encodedAuthor = encodeURIComponent(author);
               let url = '/searchresults?author=' + encodedAuthor;
               if (request !== null)
                  request.abort();
               request = new XMLHttpRequest();
               request.onload = handleResponse;
               request.onerror = handleError;
               request.open('GET', url);
               request.send();
               return () => {request.abort();}
            }

            let timer = null;
            function debouncedFetchBooks(author) {
               clearTimeout(timer);
               timer = setTimeout(()=>{fetchBooks(author);}, 500);
            }

```

## PennyReact2/index.html (Page 3 of 3)

```
            return (
               <div>
                   <PennyInput callback={debouncedFetchBooks} />
                   <PennyOutput books={books} />
               </div>
            );
         }

         //-------------------------------------------------------------

         function PennyFooter() {
            const [datetime, setDatetime] = React.useState(new Date());

            function updateFooter() {
               let dtInterval = window.setInterval(
                  () => {setDatetime(new Date());},
                  1000
               );
               return () => {window.clearInterval(dtInterval);};
            }

            React.useEffect(updateFooter, []);

            return (
               <div>
                  <hr />
                  Date and time: {datetime.toLocaleString()}
                  <br />
                  Created by 
                  <a href="https://www.cs.princeton.edu/~rdondero">
                  Bob Dondero</a>
               </div>
            );
         }

         //-------------------------------------------------------------

         function App() {
            return (
               <div>
                  <PennyHeader />
                  <PennySearch />
                  <PennyFooter />
               </div>
            );
         }

         //-------------------------------------------------------------

         let domRoot = document.getElementById('root');
         let reactRoot = ReactDOM.createRoot(domRoot);
         reactRoot.render(
            <React.StrictMode>
               <App />
            </React.StrictMode>
         );

      </script>
   </body>
</html>
```

## blank (Page 1 of 1)

This page is intentionally blank.

## arrow1.js (Page 1 of 1)

```
 1: //-------------------------------------------------------------------------
 2: // arrow1.js
 3: // Author: Bob Dondero
 4: //-------------------------------------------------------------------------
 5:
 6: 'use strict';
 7:
 8: class Car {
 9:
10:    constructor(color) {
11:       this._color = color;
12:    }
13:
14:    writeColor() {
15:       // Error: this is undefined.
16:       setTimeout(
17:          function () { process.stdout.write(this._color + '\n'); },
18:          2000
19:       );
20:    }
21: }
22:
23: function main() {
24:    let blueCar = new Car('blue');
25:    blueCar.writeColor();
26: }
27:
28: if (require.main === module)
29:    main();
```

## arrow2.js (Page 1 of 1)

```
 1: //-------------------------------------------------------------------------
 2: // arrow2.js
 3: // Author: Bob Dondero
 4: //-------------------------------------------------------------------------
 5:
 6: 'use strict';
 7:
 8: class Car {
 9:
10:    constructor(color) {
11:       this._color = color;
12:    }
13:
14:    writeColor() {
15:       let self = this;
16:       setTimeout(
17:          function () { process.stdout.write(self._color + '\n'); },
18:          2000
19:       );
20:    }
21: }
22:
23: function main()
24: {
25:    let blueCar = new Car('blue');
26:    blueCar.writeColor();
27: }
28:
29: if (require.main === module)
30:    main();
```

## arrow3.js (Page 1 of 1)

```
    1: //---------------------------------------------------------------------
    2: // arrow3.js
    3: // Author: Bob Dondero
    4: //---------------------------------------------------------------------
    5:
    6: 'use strict';
    7:
    8: class Car {
    9:
   10:    constructor(color) {
   11:       this._color = color;
   12:    }
   13:
   14:    writeColor() {
   15:       setTimeout(
   16:          () => { process.stdout.write(this._color + '\n'); },
   17:          2000
   18:       );
   19:    }
   20: }
   21:
   22: function main() {
   23:    let blueCar = new Car('blue');
   24:    blueCar.writeColor();
   25: }
   26:
   27: if (require.main === module)
   28:    main();
```