hellonoreact.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.
```

helloreact.html (Page 1 of 1)

```
 1: <!DOCTYPE html>
 2: <html>
 3:     <head>
 4:         <title>Hello</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>
20:
21:             'use strict';
22:
23:             //------------------------------------------------------------
24:
25:             function App() {
26:                 return (
27:                     React.createElement('div', null, 'Hello, world.')
28:                 );
29:             }
30:
31:             //------------------------------------------------------------
32:
33:             let domRoot = document.getElementById('root');
34:             let reactRoot = ReactDOM.createRoot(domRoot);
35:             reactRoot.render(
36:                 React.createElement(React.StrictMode, null,
37:                     React.createElement(App, null, null)
38:                 )
39:             );
40:
41:         </script>
42:     </body>
43: </html>
```

blank (Page 1 of 1)

1: This page is intentionally blank.

helloreactjsx.html (Page 1 of 1)

```
 1: <!DOCTYPE html>
 2: <html>
 3:     <head>
 4:         <title>Hello</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:                 return (
31:                     <div>
32:                         Hello, world.
33:                     </div>
34:                 );
35:             }
36:
37:             //-------------------------------------------------------------
38:
39:             let domRoot = document.getElementById('root');
40:             let reactRoot = ReactDOM.createRoot(domRoot);
41:             reactRoot.render(
42:                 <React.StrictMode>
43:                     <App />
44:                 </React.StrictMode>
45:             );
46:
47:         </script>
48:     </body>
49: </html>
50:
```

blank (Page 1 of 1)

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

echo1.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>
```

echo2.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>
```

echoreact1.html (Page 1 of 1)

```
 1: <!DOCTYPE html>
 2: <html>
 3:     <head>
 4:         <title>Echo</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 [enteredText, setEnteredText] = React.useState('');
31:
32:                 return (
33:                     <div>
34:                         <h1>Echo</h1>
35:                         Enter text to be echoed: 
36:                         <input
37:                             type='text'
38:                             onInput={ function (event) {
39:                                 setEnteredText(event.target.value);
40:                             }}
41:                             autoFocus
42:                         />
43:                         <hr />
44:                         You entered: {enteredText}
45:                     </div>
46:                 );
47:             }
48:
49:             //-----------------------------------------------------------
50:
51:             let domRoot = document.getElementById('root');
52:             let reactRoot = ReactDOM.createRoot(domRoot);
53:             reactRoot.render(
54:                 <React.StrictMode>
55:                     <App />
56:                 </React.StrictMode>
57:             );
58:
59:         </script>
60:     </body>
61: </html>
```

blank (Page 1 of 1)

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

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.
```

echoreact2.html (Page 1 of 1)

blank (Page 1 of 1)

1: This page is intentionally blank.

```
 1: <!DOCTYPE html>
 2: <html>
 3:     <head>
 4:         <title>Echo</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:             const App = () => {
30:                 const [enteredText, setEnteredText] = React.useState('');
31:
32:                 return (
33:                     <div>
34:                         <h1>Echo</h1>
35:                         Enter text to be echoed: 
36:                         <input
37:                             type='text'
38:                             onInput={ (event) => {
39:                                 setEnteredText(event.target.value);
40:                             }}
41:                             autoFocus
42:                         />
43:                         <hr />
44:                         You entered: {enteredText}
45:                     </div>
46:                 );
47:             }
48:
49:             //-----------------------------------------------------------
50:
51:             let domRoot = document.getElementById('root');
52:             let reactRoot = ReactDOM.createRoot(domRoot);
53:             reactRoot.render(
54:                 <React.StrictMode>
55:                     <App />
56:                 </React.StrictMode>
57:             );
58:
59:         </script>
60:     </body>
61: </html>
```

echoreact3.html (Page 1 of 1)

blank (Page 1 of 1)

1: This page is intentionally blank.

```
 1: <!DOCTYPE html>
 2: <html>
 3:     <head>
 4:         <title>Echo</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 [enteredText, setEnteredText] = React.useState('');
31:
32:                 return (
33:                     <div>
34:                         <h1>Echo</h1>
35:                         Enter text to be echoed: 
36:                         <input
37:                             type='text'
38:                             onInput={ (event) => {
39:                                 setEnteredText(event.target.value);
40:                             }}
41:                             autoFocus
42:                         />
43:                         <hr />
44:                         You entered: {enteredText}
45:                     </div>
46:                 );
47:             }
48:
49:             //-----------------------------------------------------------
50:
51:             let domRoot = document.getElementById('root');
52:             let reactRoot = ReactDOM.createRoot(domRoot);
53:             reactRoot.render(
54:                 <React.StrictMode>
55:                     <App />
56:                 </React.StrictMode>
57:             );
58:
59:         </script>
60:     </body>
61: </html>
```

echoreact4.html (Page 1 of 2)

```
 1: <!DOCTYPE html>
 2: <html>
 3:     <head>
 4:         <title>Echo</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 EchoInput(props) {
30:                 return (
31:                     <div>
32:                         Enter text to be echoed: 
33:                         <input
34:                             type='text'
35:                             onInput={ (event) => {
36:                                 props.callback(event.target.value);
37:                             }}
38:                             autoFocus
39:                         />
40:                     </div>
41:                 );
42:             }
43:
44:             //-----------------------------------------------------------
45:
46:             function EchoOutput(props) {
47:                 return (
48:                     <div>
49:                         You entered: {props.txt}
50:                     </div>
51:                 );
52:             }
53:
54:             //-----------------------------------------------------------
55:
56:             function App() {
57:                 const [enteredText, setEnteredText] = React.useState('');
58:                 return (
59:                     <div>
60:                         <h1>Echo Props</h1>
61:                         <EchoInput callback={setEnteredText} />
62:                         <hr />
```

echoreact4.html (Page 2 of 2)

```
63:                         <EchoOutput txt={enteredText} />
64:                     </div>
65:                 );
66:             }
67:
68:             //-----------------------------------------------------------
69:
70:             let domRoot = document.getElementById('root');
71:             let reactRoot = ReactDOM.createRoot(domRoot);
72:             reactRoot.render(
73:                 <React.StrictMode>
74:                     <App />
75:                 </React.StrictMode>
76:             );
77:
78:         </script>
79:     </body>
80: </html>
```

datetime.html (Page 1 of 1)

```
 1: <!DOCTYPE html>
 2: <html>
 3:     <head>
 4:         <title>DateTime</title>
 5:     </head>
 6:
 7:     <body>
 8:         <h1>Good <span id="ampmSpan"></span></h1>
 9:         The current date and time are<br>
10:         <span id="datetimeSpan"></span>
11:         <br/>
12:
13:         <script>
14:             'use strict';
15:
16:             function getAmPm() {
17:                 let dateTime = new Date();
18:                 let hours = dateTime.getHours();
19:                 let amPm = (hours < 12) ? 'morning' : 'afternoon';
20:                 let ampmSpan = document.getElementById('ampmSpan');
21:                 ampmSpan.innerHTML = amPm;
22:             }
23:
24:             function getDateTime() {
25:                 let dateTime = new Date();
26:                 let datetimeSpan =
27:                     document.getElementById('datetimeSpan');
28:                 datetimeSpan.innerHTML = dateTime.toLocaleString();
29:             }
30:
31:             function setupAmpm() {
32:                 getAmPm();
33:                 let apInterval = window.setInterval(getAmPm, 1000);
34:                 window.addEventListener('beforeunload',
35:                     function(e) {window.clearInterval(apInterval);})
36:             }
37:
38:             function setupDatetime() {
39:                 getDateTime();
40:                 let dtInterval = window.setInterval(getDateTime, 1000);
41:                 window.addEventListener('beforeunload',
42:                     function(e) {window.clearInterval(dtInterval);})
43:             }
44:
45:             function setup() {
46:                 setupAmpm();
47:                 setupDatetime();
48:             }
49:
50:             document.addEventListener('DOMContentLoaded', setup);
51:         </script>
52:
53:     </body>
54: </html>
```

blank (Page 1 of 1)

1: This page is intentionally blank.

datetimereact.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:
```

datetimereact.html (Page 2 of 2)

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

PennyReact/index.html (Page 1 of 3)

```
 1: <!DOCTYPE html>
 2: <html>
 3:     <head>
 4:         <title>Penny.com</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 PennyHeader() {
30:                 const [datetime, setDatetime] = React.useState(new Date());
31:
32:                 function updateHeader() {
33:                     let apInterval = window.setInterval(
34:                         () => {setDatetime(new Date());},
35:                         1000
36:                     );
37:                     return () => {window.clearInterval(apInterval);};
38:                 }
39:
40:                 React.useEffect(updateHeader, []);
41:
42:                 let hours = datetime.getHours();
43:                 let ampm = (hours < 12) ? 'morning' : 'afternoon';
44:                 return (
45:                     <div>
46:                         <hr />
47:                         Good {ampm} and welcome to Penny.com
48:                         <hr />
49:                     </div>
50:                 );
51:             }
52:
53:             //-------------------------------------------------------------
54:
55:             function PennySearch() {
56:                 const [books, setBooks] = React.useState([]);
57:
58:                 let request = null;
59:
60:                 function fetchBooks(author) {
61:                     function handleResponse() {
62:                         if (this.status !== 200) {
```

PennyReact/index.html (Page 2 of 3)

```
 63:                             alert('Error: Failed to fetch data from server');
 64:                             return;
 65:                         }
 66:                         let books = JSON.parse(this.response);
 67:                         setBooks(books);
 68:                     }
 69:
 70:                     function handleError() {
 71:                         alert('Error: Failed to fetch data from server');
 72:                     }
 73:
 74:                     let encodedAuthor = encodeURIComponent(author);
 75:                     let url = '/searchresults?author=' + encodedAuthor;
 76:                     if (request !== null)
 77:                         request.abort;
 78:                     request = new XMLHttpRequest();
 79:                     request.onload = handleResponse;
 80:                     request.onerror = handleError;
 81:                     request.open('GET', url);
 82:                     request.send();
 83:                 }
 84:
 85:                 let timer = null;
 86:
 87:                 function debouncedFetchBooks(author) {
 88:                     clearTimeout(timer);
 89:                     timer = setTimeout(()=>{fetchBooks(author);}, 500);
 90:                 }
 91:
 92:                 return (
 93:                     <div>
 94:                         <h1>Author Search</h1>
 95:                         Please enter an author name: 
 96:                         <input
 97:                             type='text'
 98:                             onInput={ (event) => {
 99:                                 debouncedFetchBooks(event.target.value);
100:                             }}
101:                             autoFocus
102:                         />
103:                         <hr />
104:                         {books.map((book) => (
105:                             <div key={book.isbn}>
106:                                 {book.isbn}: 
107:                                 <strong>{book.author}</strong>: 
108:                                 {book.title}
109:                                 <br />
110:                             </div>
111:                         ))}
112:                     </div>
113:                 );
114:             }
115:
116:             //-------------------------------------------------------------
117:
118:             function PennyFooter() {
119:                 const [datetime, setDatetime] = React.useState(new Date());
120:
121:                 function updateFooter() {
122:                     let dtInterval = window.setInterval(
123:                         () => {setDatetime(new Date());},
124:                         1000
125:                     );
126:                     return () => {window.clearInterval(dtInterval);};
127:                 }
```

PennyReact/index.html (Page 3 of 3)

```
128:
129:                React.useEffect(updateFooter, []);
130:
131:                return (
132:                    <div>
133:                        <hr />
134:                        Date and time: {datetime.toLocaleString()}
135:                        <br />
136:                        Created by 
137:                        <a href="https://www.cs.princeton.edu/~rdondero">
138:                        Bob Dondero</a>
139:                    </div>
140:                );
141:            }
142:
143:            //-------------------------------------------------------------
144:
145:            function App() {
146:                return (
147:                    <div>
148:                        <PennyHeader />
149:                        <PennySearch />
150:                        <PennyFooter />
151:                    </div>
152:                );
153:            }
154:
155:            //-------------------------------------------------------------
156:
157:            let domRoot = document.getElementById('root');
158:            let reactRoot = ReactDOM.createRoot(domRoot);
159:            reactRoot.render(
160:                <React.StrictMode>
161:                    <App />
162:                </React.StrictMode>
163:            );
164:
165:        </script>
166:    </body>
167: </html>
168:
```

blank (Page 1 of 1)

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();
```