

## PennyAjax1/penny.py (Page 1 of 1)

```
1: #!/usr/bin/env python
2:
3: #-----
4: # penny.py
5: # Author: Bob Dondero
6: #-----
7:
8: import json
9: import flask
10: import database
11:
12: #-----
13:
14: app = flask.Flask(__name__)
15:
16: #-----
17:
18: @app.route('/', methods=['GET'])
19: @app.route('/index', methods=['GET'])
20: def index():
21:
22:     return flask.send_file('index.html')
23:
24: #-----
25:
26: @app.route('/searchresults', methods=['GET'])
27: def search_results():
28:
29:     author = flask.request.args.get('author')
30:     if author is None:
31:         author = ''
32:     author = author.strip()
33:
34:     if author == '':
35:         books = []
36:     else:
37:         books = database.get_books(author) # Exception handling omitted
38:
39:     json_doc = json.dumps(books)
40:     response = flask.make_response(json_doc)
41:     response.headers['Content-Type'] = 'application/json'
42:     return response
```

## blank (Page 1 of 1)

1: This page is intentionally blank.

## PennyAjax1/index.html (Page 1 of 2)

```

1: <!DOCTYPE html>
2: <html>
3:   <head>
4:     <title>Penny.com</title>
5:   </head>
6:   <body>
7:     <hr>
8:     Good <span id="ampmSpan"></span> and welcome to
9:     <strong>Penny.com</strong>
10:    <hr>
11:    <h1>Author Search</h1>
12:    Please enter an author name:
13:    <input type="text" id="authorInput" autoFocus>
14:    <hr>
15:    <div id="resultsDiv"></div>
16:    <hr>
17:    Date and time: <span id="datetimeSpan"></span><br>
18:    Created by <a href="https://www.cs.princeton.edu/~rdonero">
19:    Bob Dondero</a>
20:    <hr>
21:    <script>
22:      'use strict';
23:
24:      function getAmPm() {
25:        let dateTime = new Date();
26:        let hours = dateTime.getHours();
27:        let amPm = (hours < 12) ? 'morning' : 'afternoon';
28:        let ampMspan = document.getElementById('ampmSpan');
29:        ampMspan.innerHTML = amPm;
30:      }
31:
32:      function getDateime() {
33:        let dateTime = new Date();
34:        let datetimeSpan =
35:        document.getElementById('datetimeSpan');
36:        datetimeSpan.innerHTML = dateTime.toLocaleString();
37:      }
38:
39:      function escape(s) {
40:        s = s.replace('&', '&amp;');
41:        s = s.replace('<', '&lt;');
42:        s = s.replace('>', '&gt;');
43:        s = s.replace('"', '&quot;');
44:        s = s.replace("'", '&apos;');
45:        return s;
46:      }
47:
48:      function convertToHtml(books) {
49:        let html = '';
50:        for (let book of books) {
51:          html += escape(book.isbn) + ': ';
52:          html += '<strong>';
53:          html += escape(book.author);
54:          html += '</strong>: ';
55:          html += escape(book.title) + '<br>';
56:        }
57:        return html;
58:      }
59:    </script>
60:  </body>
61: </html>

```

## PennyAjax1/index.html (Page 2 of 2)

```

62:    function handleResponse() {
63:      if (this.status !== 200) {
64:        alert('Error: Failed to fetch data from server');
65:        return;
66:      }
67:      let books = JSON.parse(this.response);
68:      let html = convertToHtml(books);
69:      let resultsDiv = document.getElementById('resultsDiv');
70:      resultsDiv.innerHTML = html;
71:    }
72:
73:    function handleError() {
74:      alert('Error: Failed to fetch data from server');
75:    }
76:
77:    function getResults() {
78:      let authorInput = document.getElementById('authorInput');
79:      let author = authorInput.value;
80:      let encodedAuthor = encodeURIComponent(author);
81:      let url = '/searchresults?author=' + encodedAuthor;
82:      let request = new XMLHttpRequest();
83:      request.onload = handleResponse;
84:      request.onerror = handleError;
85:      request.open('GET', url);
86:      request.send();
87:    }
88:
89:    function setup() {
90:      getAmPm();
91:      window.setInterval(getAmPm, 1000);
92:      getDateime();
93:      window.setInterval(getDateime, 1000);
94:      let authorInput = document.getElementById('authorInput');
95:      authorInput.addEventListener('input', getResults);
96:    }
97:
98:    document.addEventListener('DOMContentLoaded', setup);
99:  </script>
100: </body>
101: </html>

```

## PennyAjax2/index.html (Page 1 of 2)

```

1: <!DOCTYPE html>
2: <html>
3:   <head>
4:     <title>Penny.com</title>
5:   </head>
6:
7:   <body>
8:
9:     <hr>
10:    Good <span id="ampmSpan"></span> and welcome to
11:    <strong>Penny.com</strong>
12:    <hr>
13:
14:    <h1>Author Search</h1>
15:    Please enter an author name:
16:    <input type="text" id="authorInput" autoFocus>
17:    <hr>
18:    <div id="resultsDiv"></div>
19:
20:    <hr>
21:    Date and time: <span id="datetimeSpan"></span><br>
22:    Created by <a href="https://www.cs.princeton.edu/~rdondero">
23:    Bob Dondero</a>
24:    <hr>
25:
26:    <script src=
27:      "https://cdn.jsdelivr.net/npm/mustache@4.2.0/mustache.min.js">
28:    </script>
29:
30:    <!-- <script src="/static/mustache.min.js"></script> -->
31:
32:    <script>
33:
34:      'use strict';
35:
36:      function getAmPm() {
37:        let dateTime = new Date();
38:        let hours = dateTime.getHours();
39:        let amPm = (hours < 12) ? 'morning' : 'afternoon';
40:        let ampMspan = document.getElementById('ampmSpan');
41:        ampMspan.innerHTML = amPm;
42:      }
43:
44:      function getDateTime() {
45:        let dateTime = new Date();
46:        let datetimeSpan =
47:          document.getElementById('datetimeSpan');
48:        datetimeSpan.innerHTML = dateTime.toLocaleString();
49:      }
50:
51:      function convertToHtml(books) {
52:        let template = `
53:          {{#books}}
54:            {{isbn}}:
55:            <strong>{{author}}</strong>:
56:            {{title}}
57:            <br>
58:          {{/books}}
59:        `;
60:        let map = {books: books};
61:        let html = Mustache.render(template, map);
62:        return html;
63:      }
64:
65:      function handleResponse() {

```

## PennyAjax2/index.html (Page 2 of 2)

```

66:        if (this.status !== 200) {
67:          alert('Error: Failed to fetch data from server');
68:          return;
69:        }
70:        let books = JSON.parse(this.response);
71:        let html = convertToHtml(books);
72:        let resultsDiv = document.getElementById('resultsDiv');
73:        resultsDiv.innerHTML = html;
74:      }
75:
76:      function handleError() {
77:        alert('Error: Failed to fetch data from server');
78:      }
79:
80:      function getResults() {
81:        let authorInput = document.getElementById('authorInput');
82:        let author = authorInput.value;
83:        let encodedAuthor = encodeURIComponent(author);
84:        let url = '/searchresults?author=' + encodedAuthor;
85:        let request = new XMLHttpRequest();
86:        request.onload = handleResponse;
87:        request.onerror = handleError;
88:        request.open('GET', url);
89:        request.send();
90:      }
91:
92:      function setup() {
93:        getAmPm();
94:        window.setInterval(getAmPm, 1000);
95:        getDateTime();
96:        window.setInterval(getDateTime, 1000);
97:        let authorInput = document.getElementById('authorInput');
98:        authorInput.addEventListener('input', getResults);
99:      }
100:
101:      document.addEventListener('DOMContentLoaded', setup);
102:
103:    </script>
104:  </body>
105: </html>

```

## PennyAjax3/index.html (Page 1 of 2)

```

1: <!DOCTYPE html>
2: <html>
3:   <head>
4:     <title>Penny.com</title>
5:   </head>
6:   <body>
7:
8:
9:     <hr>
10:    Good <span id="ampmSpan"></span> and welcome to
11:    <strong>Penny.com</strong>
12:    <hr>
13:
14:    <h1>Author Search</h1>
15:    Please enter an author name:
16:    <input type="text" id="authorInput" autoFocus>
17:    <hr>
18:    <div id="resultsDiv"></div>
19:
20:    <hr>
21:    Date and time: <span id="datetimeSpan"></span><br>
22:    Created by <a href="https://www.cs.princeton.edu/~rdondero">
23:    Bob Dondero</a>
24:    <hr>
25:
26:    <script src=
27:    "https://cdn.jsdelivr.net/npm/mustache@4.2.0/mustache.min.js">
28:    </script>
29:
30:    <script>
31:
32:      'use strict';
33:
34:      function getAmPm() {
35:        let dateTime = new Date();
36:        let hours = dateTime.getHours();
37:        let amPm = (hours < 12) ? 'morning' : 'afternoon';
38:        let ampMspan = document.getElementById('ampmSpan');
39:        ampMspan.innerHTML = amPm;
40:      }
41:
42:      function getDateime() {
43:        let dateTime = new Date();
44:        let datetimeSpan =
45:        document.getElementById('datetimeSpan');
46:        datetimeSpan.innerHTML = dateTime.toLocaleString();
47:      }
48:
49:      function convertToHtml(books) {
50:        let template = `
51:          {{#books}}
52:            {{isbn}}:
53:            <strong>{{author}}</strong>:
54:            {{title}}
55:            <br>
56:          {{/books}}
57:        `;
58:        let map = {books: books};
59:        let html = Mustache.render(template, map);
60:        return html;
61:      }
62:
63:      function handleResponse() {
64:        if (this.status !== 200) {
65:          alert('Error: Failed to fetch data from server');

```

## PennyAjax3/index.html (Page 2 of 2)

```

66:          return;
67:        }
68:        let books = JSON.parse(this.response);
69:        let html = convertToHtml(books);
70:        let resultsDiv = document.getElementById('resultsDiv');
71:        resultsDiv.innerHTML = html;
72:      }
73:
74:      function handleError() {
75:        alert('Error: Failed to fetch data from server');
76:      }
77:
78:      let request = null;
79:
80:      function getResults() {
81:        let authorInput = document.getElementById('authorInput');
82:        let author = authorInput.value;
83:        let encodedAuthor = encodeURIComponent(author);
84:        let url = '/searchresults?author=' + encodedAuthor;
85:        if (request !== null)
86:          request.abort();
87:        request = new XMLHttpRequest();
88:        request.onload = handleResponse;
89:        request.onerror = handleError;
90:        request.open('GET', url);
91:        request.send();
92:      }
93:
94:      function setup() {
95:        getAmPm();
96:        window.setInterval(getAmPm, 1000);
97:        getDateime();
98:        window.setInterval(getDateime, 1000);
99:        let authorInput = document.getElementById('authorInput');
100:        authorInput.addEventListener('input', getResults);
101:      }
102:
103:      document.addEventListener('DOMContentLoaded', setup);
104:
105:    </script>
106:  </body>
107: </html>

```

## PennyAjax4/index.html (Page 1 of 2)

```

1: <!DOCTYPE html>
2: <html>
3:   <head>
4:     <title>Penny.com</title>
5:   </head>
6:   <body>
7:
8:
9:     <hr>
10:    Good <span id="ampmSpan"></span> and welcome to
11:    <strong>Penny.com</strong>
12:    <hr>
13:
14:    <h1>Author Search</h1>
15:    Please enter an author name:
16:    <input type="text" id="authorInput" autoFocus>
17:    <hr>
18:    <div id="resultsDiv"></div>
19:
20:    <hr>
21:    Date and time: <span id="datetimeSpan"></span><br>
22:    Created by <a href="https://www.cs.princeton.edu/~rdondero">
23:    Bob Dondero</a>
24:    <hr>
25:
26:    <script src=
27:    "https://cdn.jsdelivr.net/npm/mustache@4.2.0/mustache.min.js">
28:    </script>
29:
30:    <script>
31:
32:      'use strict';
33:
34:      function getAmPm() {
35:        let dateTime = new Date();
36:        let hours = dateTime.getHours();
37:        let amPm = (hours < 12) ? 'morning' : 'afternoon';
38:        let ampMspan = document.getElementById('ampmSpan');
39:        ampMspan.innerHTML = amPm;
40:      }
41:
42:      function getDateime() {
43:        let dateTime = new Date();
44:        let datetimeSpan =
45:        document.getElementById('datetimeSpan');
46:        datetimeSpan.innerHTML = dateTime.toLocaleString();
47:      }
48:
49:      function convertToHtml(books) {
50:        let template = `
51:          {{#books}}
52:            {{isbn}}:
53:            <strong>{{author}}</strong>:
54:            {{title}}
55:            <br>
56:          {{/books}}
57:        `;
58:        let map = {books: books};
59:        let html = Mustache.render(template, map);
60:        return html;
61:      }
62:
63:      function handleResponse() {
64:        if (this.status !== 200) {
65:          alert('Error: Failed to fetch data from server');

```

## PennyAjax4/index.html (Page 2 of 2)

```

66:          return;
67:        }
68:        let books = JSON.parse(this.response);
69:        let html = convertToHtml(books);
70:        let resultsDiv = document.getElementById('resultsDiv');
71:        resultsDiv.innerHTML = html;
72:      }
73:
74:      function handleError() {
75:        alert('Error: Failed to fetch data from server');
76:      }
77:
78:      let request = null;
79:
80:      function getResults() {
81:        let authorInput = document.getElementById('authorInput');
82:        let author = authorInput.value;
83:        let encodedAuthor = encodeURIComponent(author);
84:        let url = '/searchresults?author=' + encodedAuthor;
85:        if (request !== null)
86:          request.abort();
87:        request = new XMLHttpRequest();
88:        request.onload = handleResponse;
89:        request.onerror = handleError;
90:        request.open('GET', url);
91:        request.send();
92:      }
93:
94:      let timer = null;
95:
96:      function debouncedGetResults() {
97:        clearTimeout(timer);
98:        timer = window.setTimeout(getResults, 500);
99:      }
100:
101:      function setup() {
102:        getAmPm();
103:        window.setInterval(getAmPm, 1000);
104:        getDateime();
105:        window.setInterval(getDateime, 1000);
106:        let authorInput = document.getElementById('authorInput');
107:        authorInput.addEventListener('input', debouncedGetResults);
108:      }
109:
110:      document.addEventListener('DOMContentLoaded', setup);
111:
112:    </script>
113:  </body>
114: </html>

```

## PennyjQuery/index.html (Page 1 of 2)

```

1: <!DOCTYPE html>
2: <html>
3:   <head>
4:     <title>Penny.com</title>
5:   </head>
6:
7:   <body>
8:     <hr>
9:     Good <span id="ampmSpan"></span> and welcome to
10:    <strong>Penny.com</strong>
11:    <hr>
12:
13:    <h1>Author Search</h1>
14:    Please enter an author name:
15:    <input type="text" id="authorInput" autoFocus>
16:    <hr>
17:    <div id="resultsDiv"></div>
18:
19:    <hr>
20:    Date and time: <span id="datetimeSpan"></span><br>
21:    Created by <a href="https://www.cs.princeton.edu/~rdondero">
22:    Bob Dondero</a>
23:    <hr>
24:
25:    <script src=
26:      "https://cdn.jsdelivr.net/npm/jquery@3.7.1/dist/jquery.min.js">
27:    </script>
28:
29:    <script src=
30:      "https://cdn.jsdelivr.net/npm/mustache@4.2.0/mustache.min.js">
31:    </script>
32:
33:    <script>
34:      'use strict';
35:
36:      function getAmPm() {
37:        let dateTime = new Date();
38:        let hours = dateTime.getHours();
39:        let amPm = 'morning';
40:        if (hours >= 12)
41:          amPm = 'afternoon';
42:        $('#ampmSpan').html(amPm);
43:      }
44:
45:      function getDateTime() {
46:        let dateTime = new Date();
47:        $('#datetimeSpan').html(dateTime.toLocaleString());
48:      }
49:
50:      function convertToHtml(books) {
51:        let template = `
52:          {{#books}}
53:            {{isbn}}:
54:            <strong>{{author}}</strong>:
55:            {{title}}
56:            <br>
57:          {{/books}}
58:        `;
59:        let map = {books: books};
60:        let html = Mustache.render(template, map);
61:        return html;
62:      }
63:
64:      function handleResponse(books) {

```

## PennyjQuery/index.html (Page 2 of 2)

```

66:        let html = convertToHtml(books);
67:        $('#resultsDiv').html(html);
68:      }
69:
70:      function handleError(request) {
71:        if (request.statusText !== 'abort')
72:          alert('Error: Failed to fetch data from server');
73:      }
74:
75:      let request = null;
76:
77:      function getResults() {
78:        let author = $('#authorInput').val();
79:        let encodedAuthor = encodeURIComponent(author);
80:        let url = '/searchresults?author=' + encodedAuthor;
81:        if (request !== null)
82:          request.abort();
83:        let requestData = {
84:          type: 'GET',
85:          url: url,
86:          success: handleResponse,
87:          error: handleError
88:        };
89:        request = $.ajax(requestData);
90:      }
91:
92:      let timer = null;
93:
94:      function debouncedGetResults() {
95:        clearTimeout(timer);
96:        timer = window.setTimeout(getResults, 500);
97:      }
98:
99:      function setup() {
100:        getAmPm();
101:        window.setInterval(getAmPm, 1000);
102:        getDateTime();
103:        window.setInterval(getDateTime, 1000);
104:        $('#authorInput').on('input', debouncedGetResults);
105:      }
106:
107:      $('document').ready(setup);
108:
109:    </script>
110:  </body>
111: </html>

```