

PennyAjax2/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
```

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```

PennyAjax2/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/~rdondero">
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 getDateTime() {
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>

```

PennyAjax2/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:    let request = null;
78:
79:    function getResults() {
80:      let authorInput = document.getElementById('authorInput');
81:      let author = authorInput.value;
82:      let encodedAuthor = encodeURIComponent(author);
83:      let url = '/searchresults?author=' + encodedAuthor;
84:      if (request !== null)
85:        request.abort();
86:      request = new XMLHttpRequest();
87:      request.onload = handleResponse;
88:      request.onerror = handleError;
89:      request.open('GET', url);
90:      request.send();
91:    }
92:
93:    function setupHeader() {
94:      getAmPm();
95:      let apInterval = window.setInterval(getAmPm, 1000);
96:      window.addEventListener('beforeunload',
97:        function(e) {window.clearInterval(apInterval);})
98:    }
99:
100:    function setupFooter() {
101:      getDateTime();
102:      let dtInterval = window.setInterval(getDateTime, 1000);
103:      window.addEventListener('beforeunload',
104:        function(e) {window.clearInterval(dtInterval);})
105:    }
106:
107:    function setup() {
108:      setupHeader();
109:      setupFooter();
110:      let authorInput = document.getElementById('authorInput');
111:      authorInput.addEventListener('input', getResults);
112:    }
113:
114:    document.addEventListener('DOMContentLoaded', setup);
115:  </script>
116: </body>
117: </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:     <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/~rdondero">
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 ampSpan = document.getElementById('ampmSpan');
29:        ampSpan.innerHTML = amPm;
30:      }
31:
32:      function getDateTime() {
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:  }
61: </body>
62: </html>

```

PennyAjax3/index.html (Page 2 of 2)

```

66:    function handleResponse() {
67:      if (this.status !== 200) {
68:        alert('Error: Failed to fetch data from server');
69:        return;
70:      }
71:      let books = JSON.parse(this.response);
72:      let html = convertToHtml(books);
73:      let resultsDiv = document.getElementById('resultsDiv');
74:      resultsDiv.innerHTML = html;
75:    }
76:
77:    function handleError() {
78:      alert('Error: Failed to fetch data from server');
79:    }
80:
81:    let request = null;
82:
83:    function getResults() {
84:      let authorInput = document.getElementById('authorInput');
85:      let author = authorInput.value;
86:      let encodedAuthor = encodeURIComponent(author);
87:      let url = '/searchresults?author=' + encodedAuthor;
88:      if (request !== null)
89:        request.abort();
90:      request = new XMLHttpRequest();
91:      request.onload = handleResponse;
92:      request.onerror = handleError;
93:      request.open('GET', url);
94:      request.send();
95:    }
96:
97:    let timer = null;
98:
99:    function debouncedGetResults() {
100:      clearTimeout(timer);
101:      timer = window.setTimeout(getResults, 500);
102:    }
103:
104:    function setupHeader() {
105:      getAmPm();
106:      let apInterval = window.setInterval(getAmPm, 1000);
107:      window.addEventListener('beforeunload',
108:        function(e) {window.clearInterval(apInterval);})
109:    }
110:
111:    function setupFooter() {
112:      getDateTime();
113:      let dtInterval = window.setInterval(getDateTime, 1000);
114:      window.addEventListener('beforeunload',
115:        function(e) {window.clearInterval(dtInterval);})
116:    }
117:
118:    function setup() {
119:      setupHeader();
120:      setupFooter();
121:      let authorInput = document.getElementById('authorInput');
122:      authorInput.addEventListener('input', debouncedGetResults);
123:    }
124:
125:    document.addEventListener('DOMContentLoaded', setup);
126:
127:  </script>
128: </body>
129: </html>

```

PennyAjax4/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() {

```

PennyAjax4/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:      let request = null;
81:
82:      function getResults() {
83:        let authorInput = document.getElementById('authorInput');
84:        let author = authorInput.value;
85:        let encodedAuthor = encodeURIComponent(author);
86:        let url = '/searchresults?author=' + encodedAuthor;
87:        if (request !== null)
88:          request.abort();
89:        request = new XMLHttpRequest();
90:        request.onload = handleResponse;
91:        request.onerror = handleError;
92:        request.open('GET', url);
93:        request.send();
94:      }
95:
96:      let timer = null;
97:
98:      function debouncedGetResults() {
99:        clearTimeout(timer);
100:        timer = window.setTimeout(getResults, 500);
101:      }
102:
103:      function setupHeader() {
104:        getAmPm();
105:        let apInterval = window.setInterval(getAmPm, 1000);
106:        window.addEventListener('beforeunload',
107:          function(e) {window.clearInterval(apInterval);})
108:      }
109:
110:      function setupFooter() {
111:        getDateTime();
112:        let dtInterval = window.setInterval(getDateTime, 1000);
113:        window.addEventListener('beforeunload',
114:          function(e) {window.clearInterval(dtInterval);})
115:      }
116:
117:      function setup() {
118:        setupHeader();
119:        setupFooter();
120:        let authorInput = document.getElementById('authorInput');
121:        authorInput.addEventListener('input', debouncedGetResults);
122:      }
123:
124:      document.addEventListener('DOMContentLoaded', setup);
125:
126:    </script>
127:  </body>
128: </html>

```

PennyjQuery/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:
12:    <h1>Author Search</h1>
13:    Please enter an author name:
14:    <input type="text" id="authorInput" autoFocus>
15:    <hr>
16:    <div id="resultsDiv"></div>
17:
18:    <hr>
19:    Date and time: <span id="datetimeSpan"></span><br>
20:    Created by <a href="https://www.cs.princeton.edu/~rdondero">
21:    Bob Dondero</a>
22:    <hr>
23:
24:    <script src=
25:      "https://cdn.jsdelivr.net/npm/jquery@3.7.1/dist/jquery.min.js">
26:    </script>
27:
28:    <script src=
29:      "https://cdn.jsdelivr.net/npm/mustache@4.2.0/mustache.min.js">
30:    </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 = '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 setupHeader() {
100:        getAmPm();
101:        let apInterval = window.setInterval(getAmPm, 1000);
102:        $(window).on('beforeunload',
103:          function(e) {window.clearInterval(apInterval);})
104:      }
105:
106:      function setupFooter() {
107:        getDateTime();
108:        let dtInterval = window.setInterval(getDateTime, 1000);
109:        $(window).on('beforeunload',
110:          function(e) {window.clearInterval(dtInterval);})
111:      }
112:
113:      function setup() {
114:        setupHeader();
115:        setupFooter();
116:        $('#authorInput').on('input', debouncedGetResults);
117:      }
118:
119:      $('document').ready(setup);
120:
121:    </script>
122:  </body>
123: </html>

```