```
1    <!DOCTYPE html>
2
3    <html>
4        <head>
5            <script src="https://code.jquery.com/jquery-latest.min.js"></script>
6            <script>
7
8                function quote()
9                {
10                   $.getJSON("/quote", {symbol: $("#symbol").val()}, function(data) {
11                       alert(data.price);
12                   });
13               }
14
15           </script>
16           <title>ajax0</title>
17       </head>
18       <body>
19           <form onsubmit="quote(); return false;">
20               <input autocomplete="off" autofocus id="symbol" placeholder="Symbol" type="text"/>
21               <input type="submit" value="Get Quote"/>
22           </form>
23       </body>
24   </html>
```

```
1    <!DOCTYPE html>
2
3    <html>
4        <head>
5            <script src="https://code.jquery.com/jquery-latest.min.js"></script>
6            <script>
7
8                $(document).ready(function() {
9
10                   $("#quote").submit(function() {
11
12                       $.getJSON("/quote", {symbol: $("#symbol").val()}, function(data) {
13                           alert(data.price);
14                       });
15                       return false;
16
17                   });
18
19               });
20
21           </script>
22           <title>ajax1</title>
23       </head>
24       <body>
25           <form id="quote">
26               <input autocomplete="off" autofocus id="symbol" placeholder="Symbol" type="text"/>
27               <input type="submit" value="Get Quote"/>
28           </form>
29       </body>
30   </html>
```

```html
1    <!DOCTYPE html>
2
3    <html>
4        <head>
5            <script src="https://code.jquery.com/jquery-latest.min.js"></script>
6            <script>
7
8                function quote()
9                {
10                   $.getJSON("/quote", {symbol: $("#symbol").val()}, function(data) {
11                       $("#quote").html(`A share of ${data.name} costs $${data.price}.`);
12                       $("#symbol").val("");
13                   });
14               }
15
16           </script>
17           <title>ajax2</title>
18       </head>
19       <body>
20           <form onsubmit="quote(); return false;">
21               <input autocomplete="off" autofocus id="symbol" placeholder="Symbol" type="text"/>
22               <input type="submit" value="Get Quote"/>
23           </form>
24           <p id="quote"></p>
25       </body>
26   </html>
```

```python
 1    import csv
 2    import os
 3    import urllib.request
 4
 5    from flask import Flask, jsonify, render_template, request
 6    from flask.exthook import ExtDeprecationWarning
 7    from warnings import simplefilter
 8    simplefilter("ignore", ExtDeprecationWarning)
 9    from flask_autoindex import AutoIndex
10
11    app = Flask(__name__)
12    AutoIndex(app, browse_root=os.path.curdir)
13
14    @app.route("/quote")
15    def quote():
16        symbol = request.args.get("symbol")
17        url = f"https://www.alphavantage.co/query?apikey=NAJXWIA8D6VN6A3K&datatype=csv&function=TIME_SERIES_INTRADAY&interval=1min&symbol={symbol}"
18        webpage = urllib.request.urlopen(url)
19        datareader = csv.reader(webpage.read().decode("utf-8").splitlines())
20        next(datareader)
21        row = next(datareader)
22        return jsonify({
23            "name": symbol.upper(),
24            "price": float(row[4]),
25            "symbol": symbol.upper()
26        })
27
28
29    @app.route("/register")
30    def register():
31        return "You're registered! (Well, not really.)"
```

```
1    <!DOCTYPE html>
2
3    <html>
4        <head>
5            <script>
6
7                // toggles visibility of greeting
8                function blink()
9                {
10                   let div = document.getElementById("greeting");
11                   if (div.style.visibility == "hidden")
12                   {
13                       div.style.visibility = "visible";
14                   }
15                   else
16                   {
17                       div.style.visibility = "hidden";
18                   }
19               }
20
21               // blink every 500ms
22               window.setInterval(blink, 500);
23
24           </script>
25           <title>blink</title>
26       </head>
27       <body>
28           <div id="greeting">
29               hello, world
30           </div>
31       </body>
32   </html>
```

```
1    <!DOCTYPE html>
2
3    <html>
4        <head>
5            <script>
6
7                function greet()
8                {
9                    alert(`hello, ${document.getElementById("name").value}!`);
10               }
11
12           </script>
13           <title>dom0</title>
14       </head>
15       <body>
16           <form id="demo" onsubmit="greet(); return false;">
17               <input autocomplete="off" autofocus id="name" placeholder="Name" type="text"/>
18               <input type="submit"/>
19           </form>
20       </body>
21   </html>
```

```html
1    <!DOCTYPE html>
2
3    <html>
4        <head>
5            <title>dom1</title>
6        </head>
7        <body>
8            <form id="demo">
9                <input autocomplete="off" autofocus id="name" placeholder="Name" type="text"/>
10               <input type="submit"/>
11           </form>
12           <script>
13
14               document.getElementById("demo").onsubmit = function() {
15                   alert("hello, " + document.getElementById("name").value + "!");
16                   return false;
17               };
18
19           </script>
20       </body>
21   </html>
```

```html
1    <!DOCTYPE html>
2
3    <html>
4        <head>
5            <script src="https://code.jquery.com/jquery-latest.min.js"></script>
6            <script>
7
8                $(document).ready(function() {
9                    $("#demo").submit(function(event) {
10                       alert(`hello, ${$("#name").val()}!`);
11                       event.preventDefault();
12                   });
13               });
14
15           </script>
16           <title>dom2</title>
17       </head>
18       <body>
19           <form id="demo">
20               <input autocomplete="off" autofocus id="name" placeholder="Name" type="text"/>
21               <input type="submit"/>
22           </form>
23       </body>
24   </html>
```

```
 1    <!DOCTYPE html>
 2
 3    <html>
 4        <head>
 5            <title>form0</title>
 6        </head>
 7        <body>
 8            <form action="/register" method="get">
 9                <input autocomplete="off" autofocus name="email" placeholder="Email" type="text"/>
10                <input name="password" placeholder="Password" type="password"/>
11                <input name="confirmation" placeholder="Password (again)" type="password"/>
12                <input name="agreement" type="checkbox"/> I agree
13                <input type="submit" value="Register"/>
14            </form>
15        </body>
16    </html>
```

```html
1    <!DOCTYPE html>
2
3    <html>
4        <head>
5            <title>form1</title>
6        </head>
7        <body>
8            <form action="/register" id="registration" method="get">
9                <input autocomplete="off" autofocus name="email" placeholder="Email" type="text"/>
10               <input name="password" placeholder="Password" type="password"/>
11               <input name="confirmation" placeholder="Password (again)" type="password"/>
12               <input name="agreement" type="checkbox"/> I agree
13               <input type="submit" value="Register"/>
14           </form>
15           <script>
16
17               let form = document.getElementById("registration");
18               form.onsubmit = function() {
19
20                   if (!form.email.value)
21                   {
22                       alert("missing email");
23                       return false;
24                   }
25                   else if (!form.password.value)
26                   {
27                       alert("missing password");
28                       return false;
29                   }
30                   else if (form.password.value != form.confirmation.value)
31                   {
32                       alert("passwords don't match");
33                       return false;
34                   }
35                   else if (!form.agreement.checked)
36                   {
37                       alert("checkbox unchecked");
38                       return false;
39                   }
40                   return true;
41
42               };
43
44           </script>
```

```
45        </body>
46    </html>
```

```html
1    <!DOCTYPE html>
2
3    <html>
4        <head>
5            <script src="https://code.jquery.com/jquery-latest.min.js"></script>
6            <script>
7
8                $(document).ready(function() {
9
10                   $("#registration").submit(function() {
11
12                       if (!$("#registration input[name=email]").val())
13                       {
14                           alert("missing email");
15                           return false;
16                       }
17                       else if (!$("#registration input[name=password]").val())
18                       {
19                           alert("missing password");
20                           return false;
21                       }
22                       else if ($("#registration input[name=password]").val() != $("#registration input
[name=confirmation]").val())
23                       {
24                           alert("passwords don't match");
25                           return false;
26                       }
27                       else if (!$("#registration input[name=agreement]").is(":checked"))
28                       {
29                           alert("checkbox unchecked");
30                           return false;
31                       }
32                       return true;
33
34                   });
35
36               });
37
38           </script>
39           <title>form2</title>
40       </head>
41       <body>
42           <form action="/register" id="registration" method="get">
43               <input autocomplete="off" autofocus name="email" placeholder="Email" type="text"/>
44               <input name="password" placeholder="Password" type="password"/>
```

```
45            <input name="confirmation" placeholder="Password (again)" type="password"/>
46            <input name="agreement" type="checkbox"/> I agree
47            <input type="submit" value="Register"/>
48        </form>
49      </body>
50    </html>
```

```python
from cs50 import SQL
from flask import Flask, render_template, redirect, request

app = Flask(__name__)

db = SQL("sqlite:///froshims4.db")

@app.route("/")
def index():
    return render_template("index.html")


@app.route("/register", methods=["GET", "POST"])
def register():
    if request.method == "GET":
        return render_template("register.html")
    elif request.method == "POST":
        if not request.form.get("name") or not request.form.get("dorm"):
            return render_template("failure.html")
        db.execute("INSERT INTO registrants (name, dorm) VALUES(:name, :dorm)",
                    name=request.form.get("name"), dorm=request.form.get("dorm"))
        return render_template("success.html")


@app.route("/registrants")
def registrants():
    rows = db.execute("SELECT * FROM registrants")
    return render_template("registrants.html", registrants=rows)


@app.route("/unregister", methods=["GET", "POST"])
def unregister():
    if request.method == "GET":
        rows = db.execute("SELECT * FROM registrants")
        return render_template("unregister.html", registrants=rows)
    elif request.method == "POST":
        if request.form["id"]:
            db.execute("DELETE FROM registrants WHERE id = :id", id=request.form.get("id"))
        return redirect("/")
```

```
1   {% extends "layout.html" %}
2
3   {% block body %}
4       <ul>
5           <li><a href="/registrants">registrants</a></li>
6           <li><a href="/register">register</a></li>
7           <li><a href="/unregister">unregister</a></li>
8       </ul>
9   {% endblock %}
```

```
1    {% extends "layout.html" %}
2
3    {% block body %}
4        You must provide your name and dorm!
5    {% endblock %}
```

```
 1    <!DOCTYPE html>
 2
 3    <html>
 4        <head>
 5            <meta content="initial-scale=1, width=device-width" name="viewport"/>
 6            <title>froshims4</title>
 7        </head>
 8        <body>
 9            <h1>Frosh IMs</h1>
10            {% block body %}{% endblock %}
11        </body>
12    </html>
```

```
1    {% extends "layout.html" %}
2
3    {% block body %}
4        <form action="/register" method="post">
5            <input autocomplete="off" autofocus name="name" placeholder="Name" type="text"/>
6            <select name="dorm">
7                <option disabled selected value="">Dorm</option>
8                <option value="Apley Court">Apley Court</option>
9                <option value="Canaday">Canaday</option>
10               <option value="Grays">Grays</option>
11               <option value="Greenough">Greenough</option>
12               <option value="Hollis">Hollis</option>
13               <option value="Holworthy">Holworthy</option>
14               <option value="Hurlbut">Hurlbut</option>
15               <option value="Lionel">Lionel</option>
16               <option value="Matthews">Matthews</option>
17               <option value="Mower">Mower</option>
18               <option value="Pennypacker">Pennypacker</option>
19               <option value="Stoughton">Stoughton</option>
20               <option value="Straus">Straus</option>
21               <option value="Thayer">Thayer</option>
22               <option value="Weld">Weld</option>
23               <option value="Wigglesworth">Wigglesworth</option>
24           </select>
25           <input type="submit" value="Register"/>
26       </form>
27   {% endblock %}
```

```
1   {% extends "layout.html" %}
2
3   {% block body %}
4       <ul>
5           {% for registrant in registrants %}
6               <li>{{ registrant.name }} from {{ registrant.dorm }}</li>
7           {% endfor %}
8       </ul>
9   {% endblock %}
```

```
1    {% extends "layout.html" %}
2
3    {% block body %}
4        <form action="{{ url_for('unregister') }}" method="post">
5            <select name="id">
6                <option disabled selected value="">Registrant</option>
7                {% for registrant in registrants %}
8                    <option value="{{ registrant.id }}"/>{{ registrant.name }} from {{ registrant.dorm }}</option>
9                {% endfor %}
10           </select>
11           <input type="submit" value="Unregister"/>
12       </form>
13   {% endblock %}
```

```
1   {% extends "layout.html" %}
2
3   {% block body %}
4       You are registered! (Really.)
5   {% endblock %}
```

```python
from flask import Flask, render_template, redirect, request
from flask_sqlalchemy import SQLAlchemy

app = Flask(__name__)

# Flask-SQLAlchemy
app.config["SQLALCHEMY_TRACK_MODIFICATIONS"] = False
app.config["SQLALCHEMY_DATABASE_URI"] = "sqlite:///froshims5.db"
app.config["SQLALCHEMY_ECHO"] = True
db = SQLAlchemy(app)

class Registrant(db.Model):

    __tablename__ = "registrants"
    id = db.Column(db.Integer, primary_key=True)
    name = db.Column(db.Text)
    dorm = db.Column(db.Text)

    def __init__(self, name, dorm):
        self.name = name
        self.dorm = dorm


@app.route("/")
def index():
    return render_template("index.html")


@app.route("/register", methods=["GET", "POST"])
def register():
    if request.method == "GET":
        return render_template("register.html")
    elif request.method == "POST":
        if not request.form.get("name") or not request.form.get("dorm"):
            return render_template("failure.html")
        registrant = Registrant(request.form.get("name"), request.form.get("dorm"))
        db.session.add(registrant)
        db.session.commit()
        return render_template("success.html")


@app.route("/registrants")
def registrants():
    rows = Registrant.query.all()
    return render_template("registrants.html", registrants=rows)
```

```
46
47
48   @app.route("/unregister", methods=["GET", "POST"])
49   def unregister():
50       if request.method == "GET":
51           rows = Registrant.query.all()
52           return render_template("unregister.html", registrants=rows)
53       elif request.method == "POST":
54           if request.form.get("id"):
55               Registrant.query.filter(Registrant.id == request.form.get("id")).delete()
56               db.session.commit()
57           return redirect("/")
```

```
1   {% extends "layout.html" %}
2
3   {% block body %}
4       <ul>
5           <li><a href="/registrants">registrants</a></li>
6           <li><a href="/register">register</a></li>
7           <li><a href="/unregister">unregister</a></li>
8       </ul>
9   {% endblock %}
```

```
1   {% extends "layout.html" %}
2
3   {% block body %}
4       You must provide your name and dorm!
5   {% endblock %}
```

```
 1    <!DOCTYPE html>
 2
 3    <html>
 4        <head>
 5            <meta content="initial-scale=1, width=device-width" name="viewport"/>
 6            <title>froshims4</title>
 7        </head>
 8        <body>
 9            <h1>Frosh IMs</h1>
10            {% block body %}{% endblock %}
11        </body>
12    </html>
```

```
1    {% extends "layout.html" %}
2
3    {% block body %}
4        <form action="/register" method="post">
5            <input autocomplete="off" autofocus name="name" placeholder="Name" type="text"/>
6            <select name="dorm">
7                <option disabled selected value="">Dorm</option>
8                <option value="Apley Court">Apley Court</option>
9                <option value="Canaday">Canaday</option>
10               <option value="Grays">Grays</option>
11               <option value="Greenough">Greenough</option>
12               <option value="Hollis">Hollis</option>
13               <option value="Holworthy">Holworthy</option>
14               <option value="Hurlbut">Hurlbut</option>
15               <option value="Lionel">Lionel</option>
16               <option value="Matthews">Matthews</option>
17               <option value="Mower">Mower</option>
18               <option value="Pennypacker">Pennypacker</option>
19               <option value="Stoughton">Stoughton</option>
20               <option value="Straus">Straus</option>
21               <option value="Thayer">Thayer</option>
22               <option value="Weld">Weld</option>
23               <option value="Wigglesworth">Wigglesworth</option>
24           </select>
25           <input type="submit" value="Register"/>
26       </form>
27   {% endblock %}
```

```
1   {% extends "layout.html" %}
2
3   {% block body %}
4       <ul>
5           {% for registrant in registrants %}
6               <li>{{ registrant.name }} from {{ registrant.dorm }}</li>
7           {% endfor %}
8       </ul>
9   {% endblock %}
```

```
1    {% extends "layout.html" %}
2
3    {% block body %}
4        <form action="{{ url_for('unregister') }}" method="post">
5            <select name="id">
6                <option disabled selected value="">Registrant</option>
7                {% for registrant in registrants %}
8                    <option value="{{ registrant.id }}"/>{{ registrant.name }} from {{ registrant.dorm }}</option>
9                {% endfor %}
10           </select>
11           <input type="submit" value="Unregister"/>
12       </form>
13   {% endblock %}
```

```
1   {% extends "layout.html" %}
2
3   {% block body %}
4       You are registered! (Really.)
5   {% endblock %}
```

```html
1   <!DOCTYPE html>
2
3   <html>
4       <head>
5           <title>geolocation</title>
6       </head>
7       <body>
8           <script>
9
10              navigator.geolocation.getCurrentPosition(function(position) {
11                  document.write(position.coords.latitude + ", " + position.coords.longitude);
12              });
13
14          </script>
15      </body>
16  </html>
```

```html
1   <!DOCTYPE html>
2
3   <html>
4       <head>
5           <style>
6
7               html, body, #map
8               {
9                   height: 100%;
10                  margin: 0;
11              }
12
13          </style>
14          <title>map</title>
15      </head>
16      <body>
17          <div id="map"></div>
18          <script>
19
20              function initMap() {
21                  let map = new google.maps.Map(document.getElementById("map"), {
22                      center: {lat: 39.833, lng: -98.583},
23                      zoom: 4
24                  });
25                  new google.maps.Marker({
26                      map: map,
27                      position: {lat: 42.3762, lng: -71.1158}
28                  });
29                  new google.maps.Marker({
30                      map: map,
31                      position: {lat: 41.3104, lng: -72.9289}
32                  });
33              }
34
35          </script>
36          <script src="https://maps.googleapis.com/maps/api/js?
key=AIzaSyD060HFRs8E27SDasFfhGqMiD5cKrzau74&callback=initMap"></script>
37      </body>
38  </html>
```

```
1    <!DOCTYPE html>
2
3    <html>
4        <head>
5            <title>storage</title>
6        </head>
7        <body>
8            <script>
9
10               if (!localStorage.getItem("counter")) {
11                   localStorage.setItem("counter", 0);
12               }
13               document.write(localStorage.getItem("counter"));
14               localStorage.setItem("counter", parseInt(localStorage.getItem("counter")) + 1);
15
16           </script>
17        </body>
18    </html>
```