

```
1  from flask import Flask, render_template, request
2
3  app = Flask(__name__)
4
5
6  @app.route("/")
7  def index():
8      return render_template("index.html")
9
10
11 @app.route("/register", methods=["POST"])
12 def register():
13     if not request.form.get("name") or not request.form.get("dorm"):
14         return render_template("failure.html")
15     return render_template("success.html")
```

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

```
1 {% extends "layout.html" %}
2
3 {% block body %}
4     <h1>Register for Frosh IMs</h1>
5     <form action="/register" method="post">
6         <input autocomplete="off" autofocus name="name" placeholder="Name" type="text">
7         <select name="dorm">
8             <option disabled selected value="">Dorm</option>
9             <option value="Apley Court">Apley Court</option>
10            <option value="Canaday">Canaday</option>
11            <option value="Grays">Grays</option>
12            <option value="Greenough">Greenough</option>
13            <option value="Hollis">Hollis</option>
14            <option value="Holworthy">Holworthy</option>
15            <option value="Hurlbut">Hurlbut</option>
16            <option value="Lionel">Lionel</option>
17            <option value="Matthews">Matthews</option>
18            <option value="Mower">Mower</option>
19            <option value="Pennypacker">Pennypacker</option>
20            <option value="Stoughton">Stoughton</option>
21            <option value="Straus">Straus</option>
22            <option value="Thayer">Thayer</option>
23            <option value="Weld">Weld</option>
24            <option value="Wigglesworth">Wigglesworth</option>
25        </select>
26        <input type="submit" value="Register">
27    </form>
28 {% endblock %}
```

```
1 <!DOCTYPE html>
2
3 <html lang="en">
4   <head>
5     <meta name="viewport" content="initial-scale=1, width=device-width">
6     <title>froshims0</title>
7   </head>
8   <body>
9     {% block body %}{% endblock %}
10  </body>
11 </html>
```

```
1 {% extends "layout.html" %}
2
3 {% block body %}
4     You are registered! (Well, not really.)
5 {% endblock %}
```

```
1  from flask import Flask, redirect, render_template, request
2
3  # Configure app
4  app = Flask(__name__)
5
6  # Registered students
7  students = []
8
9
10 @app.route("/")
11 def index():
12     return render_template("index.html")
13
14
15 @app.route("/registrants")
16 def registrants():
17     return render_template("registered.html", students=students)
18
19
20 @app.route("/register", methods=["POST"])
21 def register():
22     name = request.form.get("name")
23     dorm = request.form.get("dorm")
24     if not name or not dorm:
25         return render_template("failure.html")
26     students.append(f"{name} from {dorm}")
27     return redirect("/registrants")
```

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

```
1 {% extends "layout.html" %}
2
3 {% block body %}
4     <h1>Register for Frosh IMs</h1>
5     <form action="/register" method="post">
6         <input autocomplete="off" autofocus name="name" placeholder="Name" type="text">
7         <select name="dorm">
8             <option disabled selected value="">Dorm</option>
9             <option value="Apley Court">Apley Court</option>
10            <option value="Canaday">Canaday</option>
11            <option value="Grays">Grays</option>
12            <option value="Greenough">Greenough</option>
13            <option value="Hollis">Hollis</option>
14            <option value="Holworthy">Holworthy</option>
15            <option value="Hurlbut">Hurlbut</option>
16            <option value="Lionel">Lionel</option>
17            <option value="Matthews">Matthews</option>
18            <option value="Mower">Mower</option>
19            <option value="Pennypacker">Pennypacker</option>
20            <option value="Stoughton">Stoughton</option>
21            <option value="Straus">Straus</option>
22            <option value="Thayer">Thayer</option>
23            <option value="Weld">Weld</option>
24            <option value="Wigglesworth">Wigglesworth</option>
25        </select>
26        <input type="submit" value="Register">
27    </form>
28 {% endblock %}
```



```
1 <!DOCTYPE html>
2
3 <html lang="en">
4   <head>
5     <meta content="initial-scale=1, width=device-width" name="viewport">
6     <title>froshims1</title>
7   </head>
8   <body>
9     {% block body %}{% endblock %}
10  </body>
11 </html>
```

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

```
1 import os
2 import smtplib
3 from flask import Flask, render_template, request
4
5 # Configure app
6 app = Flask(__name__)
7
8
9 @app.route("/")
10 def index():
11     return render_template("index.html")
12
13
14 @app.route("/register", methods=["POST"])
15 def register():
16     name = request.form.get("name")
17     email = request.form.get("email")
18     dorm = request.form.get("dorm")
19     if not name or not email or not dorm:
20         return render_template("failure.html")
21     message = "You are registered!"
22     server = smtplib.SMTP("smtp.gmail.com", 587)
23     server.starttls()
24     server.login("jharvard@cs50.net", os.getenv("PASSWORD"))
25     server.sendmail("jharvard@cs50.net", email, message)
26     return render_template("success.html")
```

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

```
1 {% extends "layout.html" %}
2
3 {% block body %}
4     <h1>Register for Frosh IMs</h1>
5     <form action="/register" method="post">
6         <input autocomplete="off" autofocus name="name" placeholder="Name" type="text">
7         <input autocomplete="off" name="email" placeholder="Email" type="email">
8         <select name="dorm">
9             <option disabled selected value="">Dorm</option>
10            <option value="Apley Court">Apley Court</option>
11            <option value="Canaday">Canaday</option>
12            <option value="Grays">Grays</option>
13            <option value="Greenough">Greenough</option>
14            <option value="Hollis">Hollis</option>
15            <option value="Holworthy">Holworthy</option>
16            <option value="Hurlbut">Hurlbut</option>
17            <option value="Lionel">Lionel</option>
18            <option value="Matthews">Matthews</option>
19            <option value="Mower">Mower</option>
20            <option value="Pennypacker">Pennypacker</option>
21            <option value="Stoughton">Stoughton</option>
22            <option value="Straus">Straus</option>
23            <option value="Thayer">Thayer</option>
24            <option value="Weld">Weld</option>
25            <option value="Wigglesworth">Wigglesworth</option>
26        </select>
27        <input type="submit" value="Register">
28    </form>
29 {% endblock %}
```

```
1  <!DOCTYPE html>
2
3  <html>
4    <head>
5      <meta content="initial-scale=1, width=device-width" name="viewport">
6      <title>froshims2</title>
7    </head>
8    <body>
9      {% block body %}{% endblock %}
10   </body>
11 </html>
```

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

```
1  from flask import Flask, render_template, request
2  import csv
3
4  app = Flask(__name__)
5
6
7  @app.route("/")
8  def index():
9      return render_template("index.html")
10
11
12 @app.route("/register", methods=["POST"])
13 def register():
14     if not request.form.get("name") or not request.form.get("dorm"):
15         return render_template("failure.html")
16     file = open("registered.csv", "a")
17     writer = csv.writer(file)
18     writer.writerow((request.form.get("name"), request.form.get("dorm")))
19     file.close()
20     return render_template("success.html")
21
22
23 @app.route("/registered")
24 def registered():
25     file = open("registered.csv", "r")
26     reader = csv.reader(file)
27     students = list(reader)
28     file.close()
29     return render_template("registered.html", students=students)
```



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

```
1 {% extends "layout.html" %}
2
3 {% block body %}
4     <h1>Register for Frosh IMs</h1>
5     <form action="/register" method="post">
6         <input autocomplete="off" autofocus name="name" placeholder="Name" type="text">
7         <select name="dorm">
8             <option disabled selected value="">Dorm</option>
9             <option value="Apley Court">Apley Court</option>
10            <option value="Canaday">Canaday</option>
11            <option value="Grays">Grays</option>
12            <option value="Greenough">Greenough</option>
13            <option value="Hollis">Hollis</option>
14            <option value="Holworthy">Holworthy</option>
15            <option value="Hurlbut">Hurlbut</option>
16            <option value="Lionel">Lionel</option>
17            <option value="Matthews">Matthews</option>
18            <option value="Mower">Mower</option>
19            <option value="Pennypacker">Pennypacker</option>
20            <option value="Stoughton">Stoughton</option>
21            <option value="Straus">Straus</option>
22            <option value="Thayer">Thayer</option>
23            <option value="Weld">Weld</option>
24            <option value="Wigglesworth">Wigglesworth</option>
25        </select>
26        <input type="submit" value="Register"> or see <a href="/registered">see who else is registered</a>
27    </form>
28 {% endblock %}
```

```
1  <!DOCTYPE html>
2
3  <html>
4    <head>
5      <meta name="viewport" content="initial-scale=1, width=device-width">
6      <title>froshims3</title>
7    </head>
8    <body>
9      {% block body %}{% endblock %}
10   </body>
11 </html>
```

```
1 {% extends "layout.html" %}
2
3 {% block body %}
4     <h1>Registered</h1>
5     <ul>
6         {% for student in students %}
7             <li>{{ student[0] }} from {{ student[1] }}</li>
8         {% endfor %}
9     </ul>
10 {% endblock %}
```

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

```
1  from flask import Flask, render_template, request
2  import csv
3
4  app = Flask(__name__)
5
6
7  @app.route("/")
8  def index():
9      return render_template("index.html")
10
11
12 @app.route("/register", methods=["POST"])
13 def register():
14     if not request.form.get("name") or not request.form.get("dorm"):
15         return render_template("failure.html")
16     with open("registered.csv", "a") as file:
17         writer = csv.DictWriter(file, fieldnames=["name", "dorm"])
18         writer.writerow({"name": request.form.get("name"), "dorm": request.form.get("dorm")})
19     return render_template("success.html")
20
21
22 @app.route("/registered")
23 def registered():
24     with open("registered.csv", "r") as file:
25         reader = csv.DictReader(file)
26         students = list(reader)
27     return render_template("registered.html", students=students)
```

1 name,dorm


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

```
1 {% extends "layout.html" %}
2
3 {% block body %}
4     <h1>Register for Frosh IMs</h1>
5     <form action="/register" method="post">
6         <input autocomplete="off" autofocus name="name" placeholder="Name" type="text">
7         <select name="dorm">
8             <option disabled selected value="">Dorm</option>
9             <option value="Apley Court">Apley Court</option>
10            <option value="Canaday">Canaday</option>
11            <option value="Grays">Grays</option>
12            <option value="Greenough">Greenough</option>
13            <option value="Hollis">Hollis</option>
14            <option value="Holworthy">Holworthy</option>
15            <option value="Hurlbut">Hurlbut</option>
16            <option value="Lionel">Lionel</option>
17            <option value="Matthews">Matthews</option>
18            <option value="Mower">Mower</option>
19            <option value="Pennypacker">Pennypacker</option>
20            <option value="Stoughton">Stoughton</option>
21            <option value="Straus">Straus</option>
22            <option value="Thayer">Thayer</option>
23            <option value="Weld">Weld</option>
24            <option value="Wigglesworth">Wigglesworth</option>
25        </select>
26        <input type="submit" value="Register"> or see <a href="/registered">see who else is registered</a>
27    </form>
28 {% endblock %}
```

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

```
1 {% extends "layout.html" %}
2
3 {% block body %}
4     <h1>Registered</h1>
5     <ul>
6         {% for student in students %}
7             <li>{{ student["name"] }} from {{ student["dorm"] }}</li>
8         {% endfor %}
9     </ul>
10 {% endblock %}
```

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

```
1  from flask import Flask, render_template, request
2  import csv
3
4  app = Flask(__name__)
5
6
7  @app.route("/")
8  def index():
9      return render_template("index.html")
10
11
12 @app.route("/register", methods=["POST"])
13 def register():
14     if not request.form.get("name") or not request.form.get("dorm"):
15         return render_template("failure.html")
16     with open("registered.csv", "a") as file:
17         writer = csv.DictWriter(file, fieldnames=["name", "dorm"])
18         writer.writerow({"name": request.form.get("name"), "dorm": request.form.get("dorm")})
19     return render_template("success.html")
20
21
22 @app.route("/registered")
23 def registered():
24     with open("registered.csv", "r") as file:
25         reader = csv.DictReader(file)
26         students = list(reader)
27     return render_template("registered.html", students=students)
```

1 name,dorm

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



```
1 {% extends "layout.html" %}
2
3 {% block body %}
4     <h1>Register for Frosh IMs</h1>
5     <form action="/register" method="post">
6         <input autocomplete="off" autofocus name="name" placeholder="Name" type="text">
7         <select name="dorm">
8             <option disabled selected value="">Dorm</option>
9             <option value="Apley Court">Apley Court</option>
10            <option value="Canaday">Canaday</option>
11            <option value="Grays">Grays</option>
12            <option value="Greenough">Greenough</option>
13            <option value="Hollis">Hollis</option>
14            <option value="Holworthy">Holworthy</option>
15            <option value="Hurlbut">Hurlbut</option>
16            <option value="Lionel">Lionel</option>
17            <option value="Matthews">Matthews</option>
18            <option value="Mower">Mower</option>
19            <option value="Pennypacker">Pennypacker</option>
20            <option value="Stoughton">Stoughton</option>
21            <option value="Straus">Straus</option>
22            <option value="Thayer">Thayer</option>
23            <option value="Weld">Weld</option>
24            <option value="Wigglesworth">Wigglesworth</option>
25        </select>
26        <input type="submit" value="Register">
27    </form>
28 {% endblock %}
```

```
1 <!DOCTYPE html>
2
3 <html>
4   <head>
5     <meta name="viewport" content="initial-scale=1, width=device-width">
6     <title>froshims5</title>
7   </head>
8   <body>
9     {% block body %}{% endblock %}
10  </body>
11 </html>
```

```
1 {% extends "layout.html" %}
2
3 {% block body %}
4     <h1>Registered</h1>
5     <ul>
6         {% for student in students %}
7             <li>{{ student["name"] }} from {{ student["dorm"] }}</li>
8         {% endfor %}
9     </ul>
10 {% endblock %}
```

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

```
1 from flask import Flask, render_template, request
2 import csv
3
4 app = Flask(__name__)
5
6
7 @app.route("/")
8 def index():
9     return render_template("index.html")
10
11
12 @app.route("/register", methods=["POST"])
13 def register():
14     if not request.form.get("name") or not request.form.get("dorm"):
15         return render_template("failure.html")
16     with open("registered.csv", "a") as file:
17         writer = csv.DictWriter(file, fieldnames=["name", "dorm"])
18         writer.writerow({"name": request.form.get("name"), "dorm": request.form.get("dorm")})
19     return render_template("success.html")
20
21
22 @app.route("/registered")
23 def registered():
24     with open("registered.csv", "r") as file:
25         reader = csv.DictReader(file)
26         students = list(reader)
27     return render_template("registered.html", students=students)
```

1 name,dorm

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

```
1 {% extends "layout.html" %}
2
3 {% block body %}
4     <h1>Register for Frosh IMs</h1>
5     <form action="/register" method="post">
6         <input autocomplete="off" autofocus name="name" placeholder="Name" type="text">
7         <select name="dorm">
8             <option disabled selected value="">Dorm</option>
9             <option value="Apley Court">Apley Court</option>
10            <option value="Canaday">Canaday</option>
11            <option value="Grays">Grays</option>
12            <option value="Greenough">Greenough</option>
13            <option value="Hollis">Hollis</option>
14            <option value="Holworthy">Holworthy</option>
15            <option value="Hurlbut">Hurlbut</option>
16            <option value="Lionel">Lionel</option>
17            <option value="Matthews">Matthews</option>
18            <option value="Mower">Mower</option>
19            <option value="Pennypacker">Pennypacker</option>
20            <option value="Stoughton">Stoughton</option>
21            <option value="Straus">Straus</option>
22            <option value="Thayer">Thayer</option>
23            <option value="Weld">Weld</option>
24            <option value="Wigglesworth">Wigglesworth</option>
25        </select>
26        <input type="submit" value="Register">
27    </form>
28
29    <script>
30
31        document.querySelector('form').onsubmit = function() {
32            if (!document.querySelector('input').value) {
33                alert('You must provide your name!');
34                return false;
35            }
36            else if (!document.querySelector('select').value) {
37                alert('You must provide your dorm!');
38                return false;
39            }
40            return true;
41        };
42
43    </script>
44
45 {% endblock %}
```



```
1  <!DOCTYPE html>
2
3  <html>
4    <head>
5      <meta name="viewport" content="initial-scale=1, width=device-width">
6      <title>froshims6</title>
7    </head>
8    <body>
9      {% block body %}{% endblock %}
10   </body>
11 </html>
```

```
1 {% extends "layout.html" %}
2
3 {% block body %}
4     <h1>Registered</h1>
5     <ul>
6         {% for student in students %}
7             <li>{{ student["name"] }} from {{ student["dorm"] }}</li>
8         {% endfor %}
9     </ul>
10 {% endblock %}
```

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

```
1  from flask import Flask, render_template, request
2
3  app = Flask(__name__)
4
5
6  @app.route("/")
7  def index():
8      return render_template("index.html", name=request.args.get("name", "world"))
```

```
1  <!DOCTYPE html>
2
3  <html lang="en">
4    <head>
5      <meta name="viewport" content="initial-scale=1, width=device-width">
6      <title>hello</title>
7    </head>
8    <body>
9      hello, {{ name }}
10   </body>
11 </html>
```

```
1  # Implements a web server
2
3  from http.server import BaseHTTPRequestHandler, HTTPServer
4
5
6  # HTTPRequestHandler class
7  class HTTPServer_RequestHandler(BaseHTTPRequestHandler):
8
9      # GET
10     def do_GET(self):
11
12         # Send response status code
13         self.send_response(200)
14
15         # Send headers
16         self.send_header("Content-type", "text/html")
17         self.end_headers()
18
19         # Send body
20         self.wfile.write(b"<!DOCTYPE html>")
21         self.wfile.write(b"<html lang='en'>")
22         self.wfile.write(b"<head>")
23         self.wfile.write(b"<title>hello, title</title>")
24         self.wfile.write(b"</head>")
25         self.wfile.write(b"<body>")
26         self.wfile.write(b"hello, body")
27         self.wfile.write(b"</body>")
28         self.wfile.write(b"</html>")
29
30
31     # Configure server
32     port = 8080
33     server_address = ("0.0.0.0", port)
34     httpd = HTTPServer(server_address, HTTPServer_RequestHandler)
35
36     # Run server
37     httpd.serve_forever()
```

```
1  from flask import Flask, render_template, request
2
3  app = Flask(__name__)
4
5  WORDS = []
6  with open("large", "r") as file:
7      for line in file.readlines():
8          WORDS.append(line.rstrip())
9
10 @app.route("/")
11 def index():
12     return render_template("index.html")
13
14
15 @app.route("/search")
16 def search():
17     words = [word for word in WORDS if word.startswith(request.args.get("q"))]
18     return render_template("search.html", words=words)
```



```
1 {% extends "layout.html" %}
2
3 {% block body %}
4     <form action="/search" method="get">
5         <input autocomplete="off" autofocus name="q" placeholder="Query" type="text">
6         <input type="submit" value="Search">
7     </form>
8 {% endblock %}
```

```
1 <!DOCTYPE html>
2
3 <html lang="en">
4   <head>
5     <meta name="viewport" content="initial-scale=1, width=device-width">
6     <title>words0</title>
7   </head>
8   <body>
9     {% block body %}{% endblock %}
10  </body>
11 </html>
```

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

```
1  from flask import Flask, render_template, request
2
3  app = Flask(__name__)
4
5  WORDS = []
6  with open("large", "r") as file:
7      for line in file.readlines():
8          WORDS.append(line.rstrip())
9
10 @app.route("/")
11 def index():
12     return render_template("index.html")
13
14
15 @app.route("/search")
16 def search():
17     q = request.args.get("q")
18     words = [word for word in WORDS if q and word.startswith(q)]
19     return render_template("search.html", words=words)
```

```
1 <!DOCTYPE html>
2
3 <html lang="en">
4   <head>
5     <meta name="viewport" content="initial-scale=1, width=device-width">
6     <title>words1</title>
7   </head>
8   <body>
9
10    <input autocomplete="off" autofocus placeholder="Query" type="text">
11
12    <ul></ul>
13
14    <script src="https://code.jquery.com/jquery-3.3.1.min.js"></script>
15    <script>
16
17      let input = document.querySelector('input');
18      input.onkeyup = function() {
19        $.get('/search?q=' + input.value, function(data) {
20          document.querySelector('ul').innerHTML = data;
21        });
22      };
23
24    </script>
25
26  </body>
27 </html>
```

```
1 {% for word in words %}
2   <li>{{ word }}</li>
3 {% endfor %}
```

```
1  from flask import Flask, jsonify, render_template, request
2
3  app = Flask(__name__)
4
5  WORDS = []
6  with open("large", "r") as file:
7      for line in file.readlines():
8          WORDS.append(line.rstrip())
9
10 @app.route("/")
11 def index():
12     return render_template("index.html")
13
14
15 @app.route("/search")
16 def search():
17     q = request.args.get("q")
18     words = [word for word in WORDS if q and word.startswith(q)]
19     return jsonify(words)
```

```
1  <!DOCTYPE html>
2
3  <html lang="en">
4    <head>
5      <meta name="viewport" content="initial-scale=1, width=device-width">
6      <title>words2</title>
7    </head>
8    <body>
9
10     <input autocomplete="off" autofocus placeholder="Query" type="text">
11
12     <ul></ul>
13
14     <script src="https://code.jquery.com/jquery-3.3.1.min.js"></script>
15     <script>
16
17       let input = document.querySelector('input');
18       input.onkeyup = function() {
19         $.get('/search?q=' + input.value, function(data) {
20           let html = '';
21           for (word of data) {
22             html += '<li>' + word + '</li>';
23           }
24           document.querySelector('ul').innerHTML = html;
25         });
26       };
27
28     </script>
29
30   </body>
31 </html>
```



```
1 <!DOCTYPE html>
2
3 <html lang="en">
4   <head>
5     <meta name="viewport" content="initial-scale=1, width=device-width">
6     <title>words3</title>
7   </head>
8   <body>
9
10    <input autocomplete="off" autofocus placeholder="Query" type="text">
11
12    <ul></ul>
13
14    <script src="large.js"></script>
15    <script>
16
17      let input = document.querySelector('input');
18      input.onkeyup = function() {
19        let html = '';
20        if (input.value) {
21          for (word of WORDS) {
22            if (word.startsWith(input.value)) {
23              html += '<li>' + word + '</li>';
24            }
25          }
26        }
27        document.querySelector('ul').innerHTML = html;
28      };
29
30    </script>
31
32  </body>
33 </html>
```