

```
1. <?php
2.
3.  /*****
4.   * counter.php
5.   *
6.   * David J. Malan
7.   * malan@harvard.edu
8.   *
9.   * Implements a counter. Demonstrates sessions.
10.  *****/
11.
12.  // enable sessions
13.  session_start();
14.
15.  // check counter
16.  if (isset($_SESSION["counter"]))
17.  {
18.      $counter = $_SESSION["counter"];
19.  }
20.  else
21.  {
22.      $counter = 0;
23.  }
24.
25.  // increment counter
26.  $_SESSION["counter"] = $counter + 1;
27.
28. ?>
29.
30. <!DOCTYPE html>
31.
32. <html>
33.   <head>
34.     <title>Counter</title>
35.   </head>
36.   <body>
37.     You have visited this site <?= $counter ?> time(s).
38.   </body>
39. </html>
```

```

1. <?php
2.
3. /*****
4.  * froshims3.php
5.  *
6.  * David J. Malan
7.  * malan@harvard.edu
8.  *
9.  * Implements a registration form for Frosh IMS.
10. * Submits to register3.php.
11. *****/
12.
13. ?>
14.
15. <!DOCTYPE html>
16.
17. <html>
18.     <head>
19.         <title>Frosh IMS</title>
20.     </head>
21.     <body style="text-align: center;">
22.         <h1>Register for Frosh IMS</h1>
23.         <form action="register3.php" method="post">
24.             Name: <input name="name" type="text" />
25.             <br/>
26.             <input name="captain" type="checkbox" /> Captain?
27.             <br/>
28.             <input name="gender" type="radio" value="F" /> Female
29.             <input name="gender" type="radio" value="M" /> Male
30.             <br/>
31.             Dorm:
32.             <select name="dorm">
33.                 <option value=""></option>
34.                 <option value="Apley Court">Apley Court</option>
35.                 <option value="Canaday">Canaday</option>
36.                 <option value="Grays">Grays</option>
37.                 <option value="Greenough">Greenough</option>
38.                 <option value="Hollis">Hollis</option>
39.                 <option value="Holworthy">Holworthy</option>
40.                 <option value="Hurlbut">Hurlbut</option>
41.                 <option value="Lionel">Lionel</option>
42.                 <option value="Matthews">Matthews</option>
43.                 <option value="Mower">Mower</option>
44.                 <option value="Pennypacker">Pennypacker</option>
45.                 <option value="Stoughton">Stoughton</option>
46.                 <option value="Straus">Straus</option>
47.                 <option value="Thayer">Thayer</option>
48.                 <option value="Weld">Weld</option>

```

```
49.         <option value="Wigglesworth">Wigglesworth</option>
50.     </select>
51.     <br/>
52.     <input type="submit" value="Register"/>
53. </form>
54. </body>
55. </html>
```

```

1. <?php
2.
3. /*****
4.  * register3.php
5.  *
6.  * Computer Science 50
7.  * David J. Malan
8.  *
9.  * Implements a registration form for Frosh IMS. Reports registration
10. * via email. Redirects user to froshims3.php upon error.
11. *****/
12.
13. // require PHPMailer
14. require("PHPMailer/class.phpmailer.php");
15.
16. // validate submission
17. if (!empty($_POST["name"]) && !empty($_POST["gender"]) && !empty($_POST["dorm"]))
18. {
19.     // instantiate mailer
20.     $mail = new PHPMailer();
21.
22.     // use SMTP
23.     $mail->IsSMTP();
24.     $mail->Host = "smtp.fas.harvard.edu";
25.
26.     // set From:
27.     $mail->SetFrom("jharvard@cs50.net");
28.
29.     // set To:
30.     $mail->AddAddress("jharvard@cs50.net");
31.
32.     // set Subject:
33.     $mail->Subject = "registration";
34.
35.     // set body
36.     $mail->Body = "This person just registered:\n\n" .
37.         "Name: " . $_POST["name"] . "\n" .
38.         "Captain: " . $_POST["captain"] . "\n" .
39.         "Gender: " . $_POST["gender"] . "\n" .
40.         "Dorm: " . $_POST["dorm"];
41.
42.     // send mail
43.     if ($mail->Send() == false)
44.     {
45.         die($mail->ErrInfo);
46.     }
47. }
48. else

```

```
49.     {
50.         header("Location: http://localhost/~jharvard/froshims/froshims3.php");
51.         exit;
52.     }
53. ?>
54.
55. <!DOCTYPE html>
56.
57. <html>
58.     <head>
59.         <title>Frosh IMs</title>
60.     </head>
61.     <body>
62.         You are registered!   (Really.)
63.     </body>
64. </html>
```

```
1. <?php /*
2.
3.  index.php
4.
5.  David J. Malan
6.  malan@harvard.edu
7.
8.  A homepage for the course.
9.
10. */ ?>
11.
12. <!DOCTYPE html>
13.
14. <html>
15.     <head>
16.         <title>CS50</title>
17.     </head>
18.     <body>
19.         <h1>CS50</h1>
20.         <ul>
21.             <li><a href="lectures.php">Lectures</a></li>
22.             <li><a href="http://cdn.cs50.net/2012/fall/lectures/0/syllabus.pdf">Syllabus</a></li>
23.         </ul>
24.     </body>
25. </html>
```

```
1. <?php /*
2.
3.  lectures.php
4.
5.  David J. Malan
6.  malan@harvard.edu
7.
8.  Links to lectures.
9.
10. */ ?>
11.
12. <!DOCTYPE html>
13.
14. <html>
15.     <head>
16.         <title>Lectures</title>
17.     </head>
18.     <body>
19.         <h1>Lectures</h1>
20.         <ul>
21.             <li><a href="week1.php">Week 1</a></li>
22.             <li><a href="week2.php">Week 2</a></li>
23.         </ul>
24.     </body>
25. </html>
```

```
1. <?php /*
2.
3. week1.php
4.
5. David J. Malan
6. malan@harvard.edu
7.
8. Represents Week 1.
9.
10. */ ?>
11.
12. <!DOCTYPE html>
13.
14. <html>
15.     <head>
16.         <title>Week 1</title>
17.     </head>
18.     <body>
19.         <h1>Week 1</h1>
20.         <ul>
21.             <li><a href="http://cdn.cs50.net/2012/fall/lectures/1/week1m.pdf">Monday</a></li>
22.             <li><a href="http://cdn.cs50.net/2012/fall/lectures/1/week1w.pdf">Wednesday</a></li>
23.         </ul>
24.     </body>
25. </html>
```



```
1. <?php /*
2.
3. week2.php
4.
5. David J. Malan
6. malan@harvard.edu
7.
8. Represents Week 2.
9.
10. */ ?>
11.
12. <!DOCTYPE html>
13.
14. <html>
15.     <head>
16.         <title>Week 2</title>
17.     </head>
18.     <body>
19.         <h1>Week 2</h1>
20.         <ul>
21.             <li><a href="http://cdn.cs50.net/2012/fall/lectures/2/week2m.pdf">Monday</a></li>
22.             <li><a href="http://cdn.cs50.net/2012/fall/lectures/2/week2w.pdf">Wednesday</a></li>
23.         </ul>
24.     </body>
25. </html>
```

```
1. <?php /*
2.
3. footer.php
4.
5. David J. Malan
6. malan@harvard.edu
7.
8. A footer for pages.
9.
10. */ ?>
11.
12. </body>
13. </html>
```

```
1. <?php /*
2.
3. header.php
4.
5. David J. Malan
6. malan@harvard.edu
7.
8. A header for pages.
9.
10. */ ?>
11.
12. <!DOCTYPE html>
13.
14. <html>
15.     <head>
16.         <title>CS50</title>
17.     </head>
18.     <body>
19.         <h1>CS50</h1>
```

```
1. <?php require('header.php'); ?>
2.
3. <ul>
4.     <li><a href="lectures.php">Lectures</a></li>
5.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/0/syllabus.pdf">Syllabus</a></li>
6. </ul>
7.
8. <?php require('footer.php'); ?>
```

```
1. <?php /*
2.
3.  lectures.php
4.
5.  David J. Malan
6.  malan@harvard.edu
7.
8.  Links to weeks.
9.
10. */ ?>
11.
12. <?php require('header.php'); ?>
13.
14. <ul>
15.     <li><a href="week1.php">Week 1</a></li>
16.     <li><a href="week2.php">Week 2</a></li>
17. </ul>
18.
19. <?php require('footer.php'); ?>
```

1. mvc/1/README
- 2.
3. David J. Malan
4. malan@harvard.edu
- 5.
6. Improves upon mvc/0 by factoring out pages' header and footer.
- 7.
8. footer.php - pages' footer
9. header.php - pages' header
10. index.php - homepage for the course
11. lectures.php - a list of weeks
12. week1.php - a week
13. week2.php - a week

```
1. <?php /*
2.
3. week1.php
4.
5. David J. Malan
6. malan@harvard.edu
7.
8. Represents Week 1.
9.
10. */ ?>
11.
12. <?php require('header.php'); ?>
13.
14. <ul>
15.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/1/week1m.pdf">Monday</a></li>
16.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/1/week1w.pdf">Wednesday</a></li>
17. </ul>
18.
19. <?php require('footer.php'); ?>
```

```
1. <?php /*
2.
3. week1.php
4.
5. David J. Malan
6. malan@harvard.edu
7.
8. Represents Week 2.
9.
10. */ ?>
11.
12. <?php require('header.php'); ?>
13.
14. <ul>
15.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/2/week2m.pdf">Monday</a></li>
16.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/2/week2w.pdf">Wednesday</a></li>
17. </ul>
18.
19. <?php require('footer.php'); ?>
```


1. `</body>`
2. `</html>`

```
1. <!DOCTYPE html>
2.
3. <html>
4.   <head>
5.     <title><?php echo htmlspecialchars($title) ?></title>
6.   </head>
7.   <body>
8.     <h1><?php echo htmlspecialchars($title) ?></h1>
```

```
1. <?php
2.
3. /**
4.  * Renders footer.
5.  */
6. function renderFooter($data = [])
7. {
8.     extract($data);
9.     require('footer.php');
10. }
11.
12. /**
13.  * Renders header.
14.  */
15. function renderHeader($data = [])
16. {
17.     extract($data);
18.     require('header.php');
19. }
20.
21. ?>
```

```
1. <?php require('helpers.php'); ?>
2.
3. <?php renderHeader(['title' => 'CS50']); ?>
4.
5. <ul>
6.     <li><a href="lectures.php">Lectures</a></li>
7.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/0/syllabus.pdf">Syllabus</a></li>
8. </ul>
9.
10. <?php renderFooter(); ?>
```

```
1. <?php require('helpers.php'); ?>
2.
3. <?php renderHeader(['title' => 'Lectures']); ?>
4.
5. <ul>
6.     <li><a href="week1.php">Week 1</a></li>
7.     <li><a href="week2.php">Week 2</a></li>
8. </ul>
9.
10. <?php renderFooter(); ?>
```

1. mvc/2/README
- 2.
3. David J. Malan
4. malan@harvard.edu
- 5.
6. Improves upon mvc/1 by wrapping header and footer with a parameterized function.
- 7.
8. footer.php - pages' footer
9. header.php - pages' header
10. helpers.php - helper functions
11. index.php - homepage for the course
12. lectures.php - a list of weeks
13. week1.php - a week
14. week2.php - a week

```
1. <?php require('helpers.php'); ?>
2.
3. <?php renderHeader(['title' => 'Week 1']); ?>
4.
5. <ul>
6.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/1/week1m.pdf">Monday</a></li>
7.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/1/week1w.pdf">Wednesday</a></li>
8. </ul>
9.
10. <?php renderFooter(); ?>
```

```
1. <?php require('helpers.php'); ?>
2.
3. <?php renderHeader('title' => 'Week 2']; ?>
4.
5. <ul>
6.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/2/week2m.pdf">Monday</a></li>
7.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/2/week2w.pdf">Wednesday</a></li>
8. </ul>
9.
10. <?php renderFooter(); ?>
```


1. `</body>`
2. `</html>`

```
1. <!DOCTYPE html>
2.
3. <html>
4.   <head>
5.     <title><?php echo htmlspecialchars($title) ?></title>
6.   </head>
7.   <body>
8.     <h1><?php echo htmlspecialchars($title) ?></h1>
```

```
1. <?php
2.
3. /**
4.  * Renders template.
5.  */
6. function render($template, $data = [])
7. {
8.     $path = $template . '.php';
9.     if (file_exists($path))
10.    {
11.        extract($data);
12.        require($path);
13.    }
14. }
15.
16. ?>
```

```
1. <?php require('helpers.php'); ?>
2.
3. <?php render('header', ['title' => 'CS50']); ?>
4.
5. <ul>
6.     <li><a href="lectures.php">Lectures</a></li>
7.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/0/syllabus.pdf">Syllabus</a></li>
8. </ul>
9.
10. <?php render('footer'); ?>
```

```
1. <?php require('helpers.php'); ?>
2.
3. <?php render('header', ['title' => 'Lectures']); ?>
4.
5. <ul>
6.     <li><a href="week1.php">Week 1</a></li>
7.     <li><a href="week2.php">Week 2</a></li>
8. </ul>
9.
10. <?php render('footer'); ?>
```

1. mvc/3/README
- 2.
3. David J. Malan
4. malan@harvard.edu
- 5.
6. Improves upon mvc/2 by generalizing header and footer as templates.
- 7.
8. footer.php - pages' footer
9. header.php - pages' header
10. helpers.php - helper functions
11. index.php - homepage for the course
12. lectures.php - a list of weeks
13. week1.php - a week
14. week2.php - a week

```
1. <?php require('helpers.php'); ?>
2.
3. <?php render('header', ['title' => 'Week 1']); ?>
4.
5. <ul>
6.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/1/week1m.pdf">Monday</a></li>
7.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/1/week1w.pdf">Wednesday</a></li>
8. </ul>
9.
10. <?php render('footer'); ?>
```

```
1. <?php require('helpers.php'); ?>
2.
3. <?php render('header', ['title' => 'Week 2']); ?>
4.
5. <ul>
6.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/2/week2m.pdf">Monday</a></li>
7.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/2/week2w.pdf">Wednesday</a></li>
8. </ul>
9.
10. <?php render('footer'); ?>
```



```
1. <?php
2.
3. /**
4.  * Renders template.
5.  */
6. function render($template, $data = [])
7. {
8.     $path = __DIR__ . '/../templates/' . $template . '.php';
9.     if (file_exists($path))
10.    {
11.        extract($data);
12.        require($path);
13.    }
14. }
15.
16. ?>
```

```
1. <?php require('includes/helpers.php'); ?>
2.
3. <?php render('header', ['title' => 'CS50']); ?>
4.
5. <ul>
6.     <li><a href="lectures.php">Lectures</a></li>
7.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/0/syllabus.pdf">Syllabus</a></li>
8. </ul>
9.
10. <?php render('footer'); ?>
```

```
1. <?php require('includes/helpers.php'); ?>
2.
3. <?php render('header', ['title' => 'Lectures']); ?>
4.
5. <ul>
6.     <li><a href="week1.php">Week 1</a></li>
7.     <li><a href="week2.php">Week 2</a></li>
8. </ul>
9.
10. <?php render('footer'); ?>
```

1. mvc/4/README
- 2.
3. David J. Malan
4. malan@harvard.edu
- 5.
6. Improves upon mvc/3 by organizing files into subdirectories.
- 7.
8. includes/
 - 9. helpers.php - helper functions
10. index.php - homepage for the course
11. lectures.php - a list of lectures
12. templates/
 - 13. footer.php - pages' footer
 - 14. header.php - pages' header
15. week1.php - a week
16. week2.php - a week

1. `</body>`
2. `</html>`

```
1. <!DOCTYPE html>
2.
3. <html>
4.   <head>
5.     <title><?php echo htmlspecialchars($title) ?></title>
6.   </head>
7.   <body>
8.     <h1><?php echo htmlspecialchars($title) ?></h1>
```

```
1. <?php require('includes/helpers.php'); ?>
2.
3. <?php render('header', ['title' => 'Week 1']); ?>
4.
5. <ul>
6.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/1/week1m.pdf">Monday</a></li>
7.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/1/week1w.pdf">Wednesday</a></li>
8. </ul>
9.
10. <?php render('footer'); ?>
```

```
1. <?php require('includes/helpers.php'); ?>
2.
3. <?php render('header', ['title' => 'Week 2']); ?>
4.
5. <ul>
6.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/2/week2m.pdf">Monday</a></li>
7.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/2/week2w.pdf">Wednesday</a></li>
8. </ul>
9.
10. <?php render('footer'); ?>
```



```
1. <?php require('../includes/helpers.php'); ?>
2.
3. <?php render('header', ['title' => 'CS50']); ?>
4.
5. <ul>
6.     <li><a href="lectures.php">Lectures</a></li>
7.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/0/syllabus.pdf">Syllabus</a></li>
8. </ul>
9.
10. <?php render('footer'); ?>
```

```
1. <?php require('../includes/helpers.php'); ?>
2.
3. <?php render('header', ['title' => 'Lectures']); ?>
4.
5. <ul>
6.     <li><a href="week1.php">Week 1</a></li>
7.     <li><a href="week2.php">Week 2</a></li>
8. </ul>
9.
10. <?php render('footer'); ?>
```

```
1. <?php require('../includes/helpers.php'); ?>
2.
3. <?php render('header', ['title' => 'Week 1']); ?>
4.
5. <ul>
6.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/1/week1m.pdf">Monday</a></li>
7.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/1/week1w.pdf">Wednesday</a></li>
8. </ul>
9.
10. <?php render('footer'); ?>
```

```
1. <?php require('../includes/helpers.php'); ?>
2.
3. <?php render('header', ['title' => 'Week 2']); ?>
4.
5. <ul>
6.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/2/week2m.pdf">Monday</a></li>
7.     <li><a href="http://cdn.cs50.net/2012/fall/lectures/2/week2w.pdf">Wednesday</a></li>
8. </ul>
9.
10. <?php render('footer'); ?>
```

```
1. <?php
2.
3. /**
4.  * Renders template.
5.  */
6. function render($template, $data = [])
7. {
8.     $path = __DIR__ . '/../templates/' . $template . '.php';
9.     if (file_exists($path))
10.     {
11.         extract($data);
12.         require($path);
13.     }
14. }
15.
16. ?>
```

1. mvc/5/README
- 2.
3. David J. Malan
4. malan@harvard.edu
- 5.
6. Improves upon mvc/4 by isolating web-accessible content in its own subdirectory.
- 7.
8. html/
 9. index.php - homepage for the course
 10. lectures.php - a list of lectures
 11. week1.php - a week
 12. week2.php - a week
13. includes/
 14. helpers.php - helper functions
15. templates/
 16. footer.php - pages' footer
 17. header.php - pages' header

1. `</body>`
2. `</html>`

```
1. <!DOCTYPE html>
2.
3. <html>
4.   <head>
5.     <title><?php echo htmlspecialchars($title) ?></title>
6.   </head>
7.   <body>
8.     <h1><?php echo htmlspecialchars($title) ?></h1>
```