



Front-End Essentials

Lab Guides


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RECORD OF CHANGES

No	Effective Date	Change Description	Reason	Reviewer	Approver
1	25/Jun/2018	Create a new Lab	Create new	DieuNT1	VinhNV
2	01/May/2019	Update Fsoft Template	Update	DieuNT1	VinhNV

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	CODE:	FEE.M.L401 (jQuery and AJAX)
	TYPE:	Medium
	LOC:	200
	DURATION:	90 MINUTES

Unit 4 – jQuery and AJAX

Objectives

- ✓ Understand the core concepts of Bootstrap (layout, rows, grid, flex, components: buttons, alerts, utilities)
- ✓ Able to create complex, beautiful, responsive webpage with Bootstrap

Technical Requirements:

- ✓ Must use HTML, CSS, and Bootstrap 4

Specifications:

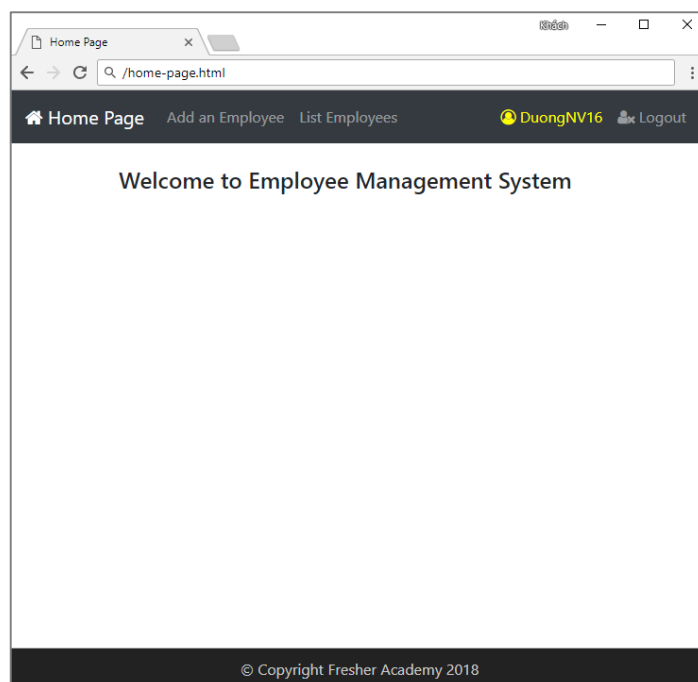
You have to build a Employee Management Webpage using HTML, CSS and Bootstrap 4.

The app is composed of 6 sections:

1. A Header: on the left is the Brand Name, and on the right side is 4 links: Home Page, Add an Employee, List Employees, Account information. If user click on any of 4 links, the corresponding section must be shown (i.e click on Contact will show Contact section)
2. Home section: a brief overview about the web site
3. Body section: Add an Employee or List Employees
4. Footer section

See figure below to understand better the app:

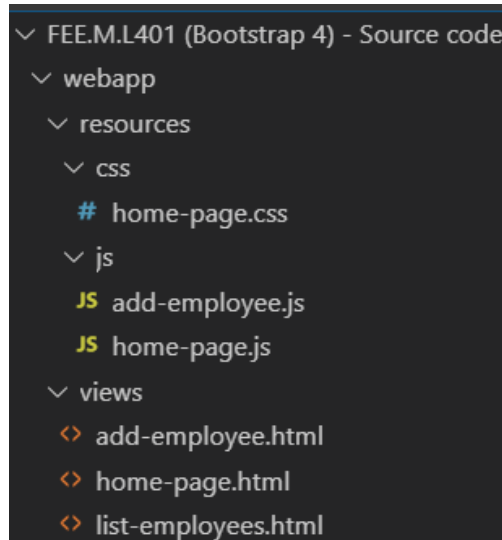
- ✓ **home-page.html** Screen:



Guidelines:

Step 1: Create project structure

Create the project structure like figure below:



```
✓ FEE.M.L401 (Bootstrap 4) - Source code
  ✓ webapp
    ✓ resources
      ✓ css
        # home-page.css
      ✓ js
        JS add-employee.js
        JS home-page.js
    ✓ views
      <> add-employee.html
      <> home-page.html
      <> list-employees.html
```

Step 2: Create basic HTML5 documents

Open file **index.html** in VSC (Visual Studio Code), and type in **html** VSC will show a list of suggestions.

Link Bootstrap 4:

```
<link rel="stylesheet"
      href="https://maxcdn.bootstrapcdn.com/bootstrap/4.1.0/css/bootstrap.min.css">
```

Link Font Awesome:

```
<link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/4.7.0/css/font-awesome.min.css">
```

```
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>
```

```
<script src="https://cdnjs.cloudflare.com/ajax/libs/jquery-
validate/1.19.1/jquery.validate.min.js"></script>
```

Notice that we will use **jquery.validate.min.js** to validate **Add Employee** screen.

✓ **home-page.html** source code:

```
1. <!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
   "http://www.w3.org/TR/html4/loose.dtd">
2. <html>
3. <head>
4.   <meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1"
5.         name="viewport" content="width=device-width, initial-scale=1">
6.   <link rel="stylesheet"
7.         href="https://maxcdn.bootstrapcdn.com/bootstrap/4.1.0/css/bootstrap.min.css">
8.   <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/
9.         font-awesome/4.7.0/css/font-awesome.min.css">
10.  <link rel="stylesheet" href="../resources/css/home-page.css">
11.  <script
12.    src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>
13.  <script src="https://cdnjs.cloudflare.com/ajax/libs/jquery-
14.        validate/1.19.1/jquery.validate.min.js"></script>
15.  <title>Home Page</title>
```

```

16. </head>
17.
18. <body>
19.     <nav class="navbar navbar-expand-sm navbar-dark bg-dark">
20.         <a class="navbar-brand" href="#">
21.             <i class="fa fa-home"></i> Home Page
22.         </a>
23.
24.         <div id="navbarNavDropdown" class="navbar-collapse collapse">
25.             <ul class="navbar-nav mr-auto">
26.                 <li class="nav-item">
27.                     <a class="nav-link" href="#" id="addEmpLink">
28.                         Add new employee
29.                     </a>
30.                 </li>
31.                 <li class="nav-item">
32.                     <a class="nav-link" id="listEmpsLink" href="#">List employees
33.                     </a>
34.                 </li>
35.             </ul>
36.
37.             <ul class="navbar-nav ml-auto">
38.                 <li class="nav-item">
39.                     <a class="nav-link" style="color: yellow" href="#">
40.                         <i class="fa fa-user-circle-o"> DuongNV16 </i>
41.                     </a>
42.                 </li>
43.                 <li class="nav-item">
44.                     <a class="nav-link" href="#">
45.                         <i class="fa fa-user-times"></i> Logout</a>
46.                 </li>
47.             </ul>
48.         </div>
49.     </nav>
50.
51.     <div class="container">
52.         <h4>Welcome to Employee Management System</h4>
53.     </div>
54.
55.     <div class="row fixed-bottom" style="border-top: 1px solid #ccc;
56.                                     background-color: #222">
57.         <div class="col-md-12">
58.             <p style="margin: 10px auto; text-align: center; color: #ccc">
59.                 &copy; Copyright Fresher Academy 2018</p>
60.         </div>
61.     </div>
62.     <script src="../resources/js/home-page.js"></script>
63. </body>
64. </html>

```

Add jQuery link: `<script src="../resources/js/home-page.js"></script>`.

✓ home-page.js source code

```

1. $(document).ready(function() {
2.     $("#addEmpLink").click(function() {
3.         $.get({
4.             url: "/views/add-employee.html",
5.             success: function(response) {
6.                 $(".container").html(response);
7.                 $("#employeeName").focus();
8.             }
9.         });
10.    });
11.
12.    $("#listEmpsLink").click(function() {
13.        $.get({
14.            url: "/views/list-employees.html",

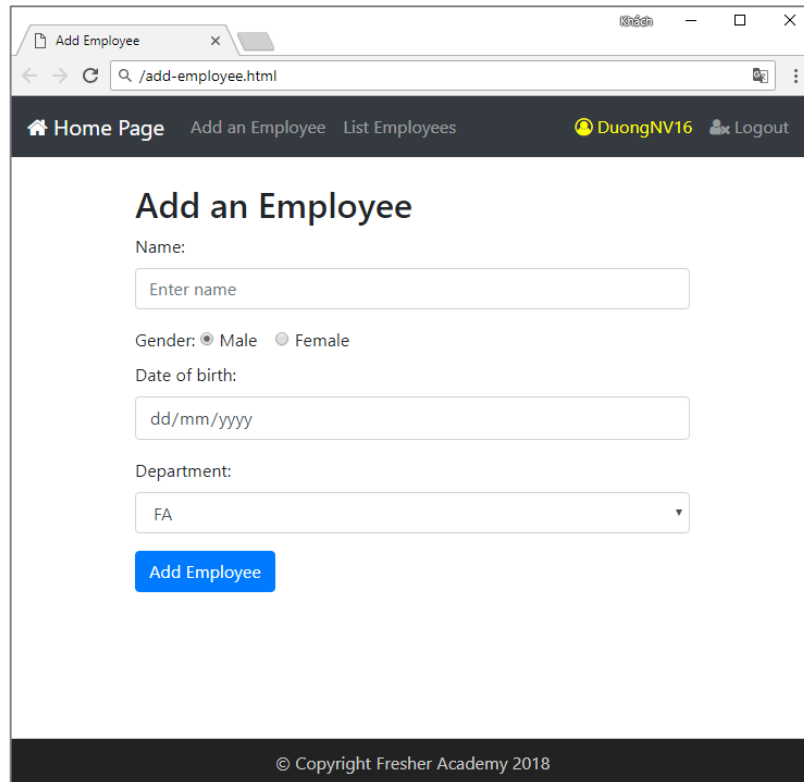
```

```
15.         success: function(response) {
16.             $(".container").html(response);
17.         }
18.     });
19. });
20.
21. });
```

According to this design, when the user clicks "Add an Employee" or "List Employees" the web page will appropriate display.

We are using the **\$.get ()** method in the jQuery library.

✓ **add-employee.html** Screen:

A screenshot of a web browser displaying the 'Add an Employee' form. The browser's address bar shows '/add-employee.html'. The page has a dark header with navigation links: 'Home Page', 'Add an Employee', and 'List Employees'. On the right of the header, it shows a user profile 'DuongNV16' and a 'Logout' link. The main content area is titled 'Add an Employee' and contains a form with the following fields: 'Name:' with a text input placeholder 'Enter name'; 'Gender:' with radio buttons for 'Male' (selected) and 'Female'; 'Date of birth:' with a text input placeholder 'dd/mm/yyyy'; and 'Department:' with a dropdown menu showing 'FA'. A blue 'Add Employee' button is at the bottom of the form. The footer of the page reads '© Copyright Fresher Academy 2018'.

✓ **add-employee.html** Source code:

```
1. <form action="#" method="post" name="frm-addEmp">
2.   <div class="row">
3.     <div class="col-md-6 offset-md-3">
4.       <h2>Add a Employee</h2>
5.
6.       <div class="form-group">
7.         <label for="employeeName">Name:</label>
8.         <input type="text" class="form-control" id="employeeName"
9.           placeholder="Enter name" name="employeeName">
10.      </div>
11.
12.      <label for="gender">Gender:</label>
13.      <div class="form-check-inline">
14.        <label class="form-check-label">
15.          <input type="radio" class="form-check-input"
16.            name="gender" value="1" checked>Male
17.        </label>
18.      </div>
19.      <div class="form-check-inline">
20.        <label class="form-check-label">
21.          <input type="radio" class="form-check-input"
22.            name="gender" value="0">Female
```

```

23.         </label>
24.     </div>
25.
26.     <div class="form-group">
27.         <label for="dateOfBirth">Date of birth:</label>
28.         <input type="date" class="form-control" id="dateOfBirth"
29.             placeholder="Enter date of birth" name="dateOfBirth">
30.     </div>
31.     <div class="form-group">
32.         <label for="dept">Department:</label>
33.         <select class="form-control" id="dept"></select>
34.     </div>
35. </div>
36. </div>
37.
38. <div class="row">
39.     <div class="col-md-6 offset-md-3">
40.         <button type="button" id="btn-addEmp" class="btn btn-primary">
41.             Add Employee
42.         </button>
43.     </div>
44. </div>
45. </form>
46. <script src="../../resources/js/add-employee.js"></script>

```

Add jQuery file:

```
<script src="../../resources/js/add-employee.js"></script>
```

✓ add-employee.js source code:

```

1. $(document).ready(function() {
2.     // Create attribute maxDate to check if input date higher than current date
3.     $.validator.addMethod("maxDate", function(value, element) {
4.         var curDate = new Date();
5.         var inputDate = new Date(value);
6.         if (inputDate < curDate)
7.             return true;
8.         return false;
9.     }, "Invalid date of birth");
10.
11.     $("#addEmpForm").validate({
12.         rules: {
13.             employeeName: {
14.                 required: true,
15.                 minlength: 5
16.             },
17.             dateOfBirth: {
18.                 required: true,
19.                 maxDate: true
20.             },
21.             dept: {
22.                 required: true
23.             }
24.         },
25.         messages: {
26.             employeeName: {
27.                 required: "Please enter employee name",
28.                 minlength: "Employee name must contain at least 5 characters"
29.             },
30.             dateOfBirth: {
31.                 required: "Please choose a date"
32.             },
33.             dept: {
34.                 required: "Please choose a department"
35.             }
36.         },
37.         submitHandler: function(form) {
38.             $.get({
39.                 url: "/views/list-employees.html",
40.                 success: function(response) {

```



```
41.         $(".container").html(response);
42.     }
43. });
44. }
45. });
46.
47. });
```

The web page when the user click **Add Employee** button.

The screenshot shows a web browser window with the URL `/add-employee.html`. The page has a dark header with navigation links: Home Page, Add new employee, and List employees. The user is logged in as 'DuongNV16' and can click 'Logout'. The main content area is titled 'Add a Employee' and contains a form with the following fields:

- Name:** A text input field with the placeholder 'Enter name'. Below it is a red error message: 'Please enter employee name'.
- Gender:** Radio buttons for 'Male' (selected) and 'Female'.
- Date of birth:** A date input field with the placeholder 'mm/dd/yyyy'. Below it is a red error message: 'Please choose a date'.
- Department:** A dropdown menu with the placeholder 'Choose a department'. Below it is a red error message: 'Please choose a department'.

At the bottom of the form is a blue 'Add Employee' button. The footer of the page reads '© Copyright Fresher Academy 2018'.

- **list-employees.html Screen:**

The screenshot shows a web browser window with the URL `/list-employees.html`. The page has a dark header with navigation links: Home Page, Add an Employee, and List Employees. The user is logged in as 'DuongNV16' and can click 'Logout'. The main content area is titled 'List Employees' and contains a table with the following data:

ID	Employee Name	Gender	Date of birth	Department Name
1	Nguyen Van Duy	Male	1995-01-02	FA
2	Nguyen Van Hai	Male	1995-01-03	FSU1
3	Nguyen Thi Trang	Female	1995-01-03	FSU2

The footer of the page reads '© Copyright Fresher Academy 2018'.

- ✓ **list-employees.html Source code:**

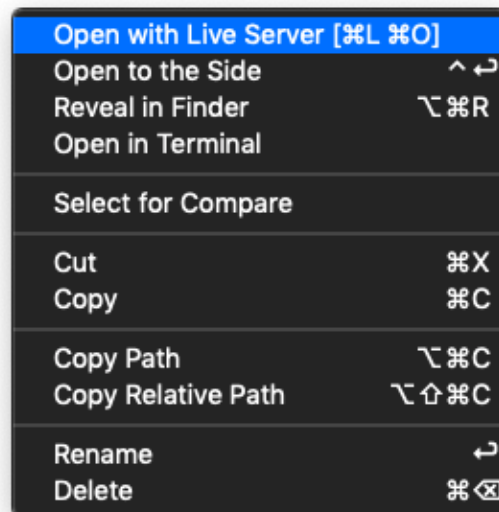
```
48. <h2>List of Employees</h2>
49.   <br />
50.   <table class="table table-bordered">
51.     <thead>
```

```
52.         <tr>
53.             <th>ID</th>
54.             <th>Employee Name</th>
55.             <th>Gender</th>
56.             <th>Date of birth</th>
57.             <th>Department Name</th>
58.         </tr>
59.     </thead>
60.     <tbody>
61.         <tr>
62.             <td>E101</td>
63.             <td>Nguyen Van Khoa</td>
64.             <td>Male</td>
65.             <td>01/01/1990</td>
66.             <td>Fresher Academy</td>
67.         </tr>
68.
69.     </tbody>
70. </table>
```

Step 3: Open Web site

Right-click on **index.html** file and click **Open with Live Server**

Note: You must install **Live Server** extension of VSC



Step 14: Verify and tweak

Open the app using Live Server, you should have the same layout like figure below:

Home Page Add an Employee List Employees DuongNV16 Logout

Add an Employee

Name:

Gender: ☒ Male ☐ Female

Date of birth:

Department:

[Add Employee](#)

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And

Home Page Add new employee List employees DuongNV16 Logout

Add a Employee

Name:

Please enter employee name

Gender: ☒ Male ☐ Female

Date of birth:

Please choose a date

Department:

Please choose a department

[Add Employee](#)

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The app looks pretty much like the design!

-- THE END --