

Microsoft

Exam 70-486

Developing ASP.NET MVC 4 Web Applications

Version: 9.0

[Total Questions: 136]

Topic break down

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Topic 1, Olympic Marathon

Background

You are developing an ASP.NET MVC application in Visual Studio 2012 that will be used by Olympic marathon runners to log data about training runs.

Business Requirements

The application stores date, distance, and duration information about a user's training runs. The user can view, insert, edit, and delete records.

The application must be optimized for accessibility.

All times must be displayed in the user's local time.

Technical Requirements

Data Access:

Database access is handled by a public class named `RunnerLog.DataAccess.RunnerLogDb`.

All data retrieval must be done by HTTP GET and all data updates must be done by HTTP POST.

Layout:

All pages in the application use a master layout file named `\Views\Shared_Layout.cshtml`.





Models:

The application uses the `\Models\LogModel.cs` model.

Views:

All views in the application use the Razor view engine.

Four views located in `\Views\RunLog` are named:

-  `_CalculatePace.cshtml`
-  `EditLog.cshtml`
-  `GetLog.cshtml`
-  `InsertLog.cshtml`

The application also contains a `\Views\Home\Index.cshtml` view.

Controllers:

The application contains a `\Controllers\RunLogController.cs` controller.

Images:

A `stopwatch.png` image is located in the `\Images` folder.

Videos:

A map of a runner's path is available when a user views a run log. The map is implemented

as an Adobe Flash application and video. The browser should display the video natively if possible, using H264, Ogg, or WebM formats, in that order. If the video cannot be displayed, then the Flash application should be used.

Security:

You have the following security requirements:

- ✍ The application is configured to use forms authentication.
- ✍ Users must be logged on to insert runner data.
- ✍ Users must be members of the Admin role to edit or delete runner data.
- ✍ There are no security requirements for viewing runner data.
- ✍ You need to protect the application against cross-site request forgery.
- ✍ Passwords are hashed by using the SHA1 algorithm.

RunnerLog.Providers.RunLogRoleProvider.cs contains a custom role provider.

Relevant portions of the application files follow. (Line numbers are included for reference only.)

Application Structure

Controllers\RunLogController.cs

```
RC01 public class RunLogController : Controller
RC02 {
RC03     public ActionResult GetLog()
RC04     {
RC05         List<LogModel> log = RunnerLogDb.GetLogsFromDatabase();
RC06         return View(log);
RC07     }
RC08
RC09     public ActionResult InsertLog()
RC10     {
RC11         LogModel log = new LogModel();
RC12         log.RunDate = DateTime.Now;
RC13         return View(log);
RC14     }
RC15
RC16     [HttpPost]
RC17     public ActionResult InsertLog(LogModel log)
RC18     {
RC19         RunnerLogDb.InsertLog(log);
RC20         return RedirectToAction("GetLog");
RC21     }
RC22
RC23     public ActionResult DeleteLog(int id)
RC24     {
RC25         RunnerLogDb.DeleteLog(id);
RC26         return RedirectToAction("GetLog");
RC27     }
RC28
RC29     public ActionResult EditLog(int id)
RC30     {
RC31         LogModel log = RunnerLogDb.GetRunnerLog(id);
RC32         return View(log);
RC33     }
RC34 }
```

Models\LogModel.cs

```
LM01 public class LogModel
LM02 {
LM03     [Required]
LM04     public int Id { get; set; }
LM05
LM06     [Required]
LM07     public DateTime RunDate { get; set; }
LM08
LM09     [Required]
LM10     [Range (0.01, 1000.00)]
LM11     public double Distance { get; set; }
LM12
LM13     [Required]
LM14     public TimeSpan Time { get; set; }
LM15
LM16     public string ShortDate
LM17     {
LM18         get
LM19         {
LM20             return RunDate.ToLocalTime().ToShortDateString();
LM21         }
LM22     }
LM23 }
```

Views\RunLog_CalculatePace.cshtml

```
CP01 @model RunnerLog.Models.LogModel
CP02 @(Convert.ToInt32(Model.Time.TotalMinutes / Model.Distance)) Min
CP03 @(Convert.ToInt32(Model.Time.TotalSeconds % 60 / Model.Distance)) Seconds
```

Views\RunLog\EditLog.cshtml

```

EL01 @model RunnerLog.Models.LogModel
EL02 <h2>Edit Log Item</h2>
EL03 <script src="@Url.Content("~/Scripts/jquery.validate.min.js")"></script>
EL04 <script src="@Url.Content("~/Scripts/jquery.validate.unobtrusive.min.js")"></
script>
EL05 @using (Html.BeginForm()) {
EL06     @Html.AntiForgeryToken()
EL07     @Html.ValidationSummary(true)
EL08     <fieldset>
EL09         <legend>LogModel</legend>
EL10         <h3>
EL11             Log Id: @Model.Id
EL12         </h3>
EL13         <div>
EL14             @Html.LabelFor(model => model.Distance)
EL15         </div>
EL16         <div>
EL17             @Html.EditorFor(model => model.Distance)
EL18             @Html.ValidationMessageFor(model => model.Distance)
EL19         </div>
EL20         <div>
EL21             @Html.LabelFor(model => model.Time)
EL22         </div>
EL23         <div>
EL24             @Html.EditorFor(model => model.Time)
EL25             @Html.ValidationMessageFor(model => model.Time)
EL26         </div>
EL27         <p>
EL28             <input type="submit" value="Save" />
EL29         </p>
EL30     </fieldset>
EL31 }

```

Views\RunLog\GetLog.cshtml

```

GL01 @model List<RunnerLog.Models.LogModel>
GL02 <h2>View Runs </h2>
GL03 <table>
GL04     <tr>
GL05         <th>Id </th>
GL06         <th>Date </th>
GL07         <th>Distance </th>
GL08         <th>Duration </th>
GL09         <th>Avg Mile Pace </th>
GL10     </tr>
GL11     @foreach (RunnerLog.Models.LogModel log in Model)
GL12     {
GL13         <tr>
GL14             <td>
GL15                 @Html.DisplayFor(model => log.Id)
GL16             </td>
GL17             <td>
GL18             </td>
GL19             <td>
GL20             @Html.DisplayFor(model => log.Distance)
GL21             </td>
GL22             <td>
GL23             @Html.DisplayFor(model => log.Time)
GL24             </td>
GL25             <td>
GL26             </td>
GL27             <td>
GL28             </td>
GL29             <td>
GL30                 @Html.ActionLink("Edit", "EditLog", new { id = log.Id })
GL31             </td>
GL32             <td>
GL33                 @Html.ActionLink("Delete", "DeleteLog", new { id = log.Id })
GL34             </td>
GL35         </tr>
GL36     }
GL37 </table>

```


Views\RunLog\InsertLog.cshtml

```

IL01 @model RunnerLog.Models.LogModel
IL02 <script src="@Url.Content("~/Scripts/jquery.validate.min.js")"></script>
IL03 <script src="@Url.Content("~/Scripts/jquery.validate.unobtrusive.min.js")"></
script>
IL04 @using (Html.BeginForm())
IL05 {
IL06     @Html.ValidationSummary(true)
IL07     <fieldset>
IL08         <legend>LogModel</legend>
IL09
IL10         <div>
IL11             @Html.LabelFor(model => model.RunDate)
IL12         </div>
IL13         <div>
IL14             @Html.EditorFor(model => model.RunDate)
IL15             @Html.ValidationMessageFor(model => model.RunDate)
IL16         </div>
IL17         <div>
IL18             @Html.LabelFor(model => model.Distance)
IL19         </div>
IL20         <div>
IL21             @Html.EditorFor(model => model.Distance)
IL22             @Html.ValidationMessageFor(model => model.Distance)
IL23         </div>
IL24         <div>
IL25             @Html.LabelFor(model => model.Time) HH:MM:SS
IL26         </div>
IL27         <div>
IL28             @Html.EditorFor(model => model.Time)
IL29             @Html.ValidationMessageFor(model => model.Time)
IL30         </div>
IL31         <p>
IL32             <input type="submit" value="Create" />
IL33         </p>
IL34     </fieldset>
IL35 }

```

Views\Shared_Layout.cshtml

```

L001 <!DOCTYPE html>
L002 <html lang="en">
L003 <head>
L004     ...
L005 </head>
L006 <body>
L007     ...
L008     <footer>
L009
L010         <script type="text/javascript">
L011             var c = document.getElementById('myCanvas');
L012             var ctx = c.getContext('2d');
L013             ctx.font = '30pt Calibri';
L014             ctx.strokeStyle = 'gray';
L015             ctx.lineWidth = 3;
L016             ctx.strokeText('London 2012', 80, 30);
L017         </script>
L018     </footer>
L019 </body>
L020 </html>

```

Question No : 1 DRAG DROP - (Topic 1)

You need to ensure that only valid parameters are passed to the EditLog action.

How should you build the route? (To answer, drag the appropriate code segments to the correct location or locations. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

```
id = @"\d+"
url: "RunLog/EditLog/{id}",
action = "EditLog",
defaults: new
constraints: new

routes.MapRoute(
    name: "EditLog",
    [ ]
    [ ]
    {
        controller = "RunLog",
        [ ]
    },
    [ ]
    {
        [ ]
    }
);
```

Answer:


```
id = @"\d+"
url: "RunLog/EditLog/{id}",
action = "EditLog",
defaults: new
constraints: new

routes.MapRoute(
    name: "EditLog",
    url: "RunLog/EditLog/{id}",
    defaults: new
    {
        controller = "RunLog",
        action = "EditLog",
    },
    constraints: new
    {
        id = @"\d+"
    }
);
```

Question No : 2 DRAG DROP - (Topic 1)

You need to implement security according to the business requirements.

How should you modify RunLogController? (To answer, drag the appropriate code segment to the correct location or locations. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

[Authorize(Roles = "Admin")]	[]
[Authorize]	public class RunLogController : Controller
[Authorize(Users = "Admin")]	{
[AllowAnonymous]	[]
[Authorize(Users = "*")]	public ActionResult GetLog()
	...
	public ActionResult InsertLog()
	...
	[]
	public ActionResult DeleteLog(int id)
	[]
	public ActionResult EditLog(int id)
	...
	}

Answer:

[Authorize(Roles = "Admin")]	[Authorize]
[Authorize]	public class RunLogController : Controller
[Authorize(Users = "Admin")]	{
[AllowAnonymous]	[AllowAnonymous]
[Authorize(Users = "*")]	public ActionResult GetLog()
	...
	public ActionResult InsertLog()
	...
	[Authorize(Roles = "Admin")]
	public ActionResult DeleteLog(int id)
	[Authorize(Users = "Admin")]
	public ActionResult EditLog(int id)
	...
	}

Question No : 3 - (Topic 1)

You need to make the "Distance" header of the table bold in the