

Exam : 70-486

**Title : Developing ASP.NET MVC 4
Web Applications**

Version : V14.02

1. 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.es 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().ToString("dd/MM/yyyy");
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      <td>
GL21          @Html.DisplayFor(model => log.Distance)
GL22      </td>
GL23      <td>
GL24          @Html.DisplayFor(model => log.Time)
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>
```

DRAG DROP

You need to implement the Views\RunLog_CalculatePace.cshtml partial view from Views\Runlog\GetLog.cshtml to display the runner's average mile pace.

How should you implement the view? (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.)

```

@Html.Partial(
@Html.Action(
"_CalculatePace.cshtml", log)
"_CalculatePace", log)
"_CalculatePace")

```

```

<td>
    @Html.DisplayFor(model => log.Time)
</td>
<td>
    @Html.ActionLink(
        "Delete", "DeleteLog",
        new { id = log.Id })
</td>

```

Answer:

```

@Html.Action(
"_CalculatePace.cshtml", log)

```

```

<td>
    @Html.DisplayFor(model => log.Time)
</td>
<td>
    @Html.Partial(
        "_CalculatePace", log)

```

```

</td>
<td>
    @Html.ActionLink(
        "Delete", "DeleteLog",
        new { id = log.Id })
</td>

```

2.DRAG DROP

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]
[Authorize(Users = "Admin")]
[AllowAnonymous]
[Authorize(Users = "*")]

```
public class RunLogController : Controller  
{  
    public ActionResult GetLog()  
    ...  
  
    public ActionResult InsertLog()  
    ...  
  
    public ActionResult DeleteLog(int id)  
    ...  
}
```

Answer:

[Authorize(Roles = "Admin")]
[Authorize(Users = "Admin")]
[Authorize(Users = "*")]

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

3.You need to make the "Distance" header of the table bold in the Views/RunLog/GetLog.cshtml view.

Which code segment should you use?

- A. `table>tr {font-weight: bold ;}`
- B. `table>th: last-child {font-weight: bold ;}`
- C. `table+first-child {font-weight: bold ;}`
- D. `table>tr>th: nth-child (2) {font-weight: bold ;}`

Answer: D

4.You need to extend the edit functionality of RunLogController.

Which code segment should you use?

- A.

```
[HttpGet]
[ActionName("EditLog")]
[ValidateAntiForgeryToken]
public ActionResult EditLog(LogModel log)
{
    ...
}
```
- B.

```
[HttpPost]
[ActionName("EditLog")]
public ActionResult EditLogValidated(LogModel log)
{
    ...
}
```
- C.

```
[HttpPost]
[ActionName("EditLog")]
[ValidateAntiForgeryToken]
public ActionResult EditLogValidated(LogModel log)
{
    ...
}
```
- D.

```
[HttpPost]
[ActionName("EditLog")]
[RequireHttps]
public ActionResult EditLogValidated(LogModel log)
{
    ...
}
```

A. Option A

B. Option B

C. Option C

D. Option D

Answer: C

5.HOTSPOT

You need to implement the map of the runners' paths.

How should you build the video viewer? (To answer, select the appropriate options in the answer area.)

Work Area

```
<video width="320" height="240">
<[ ]>
<[ ]>
<[ ]>
<[ ] width="320" height="240">
<[ ] name="movie" value="map.swf" />
<[ ] src="map.swf" />
</[ ]>
</video>
```

Work Area

```
<video width="320" height="240">
    <source src="map.mp4" type="video/mp4"
            source src="map.ogv" type="video/ogg"
            source src="map.webm" type="video/webm">
    <source src="map.mp4" type="video/mp4"
            source src="map.ogv" type="video/ogg"
            source src="map.webm" type="video/webm">
    <source src="map.mp4" type="video/mp4"
            source src="map.ogv" type="video/ogg"
            source src="map.webm" type="video/webm">
</video>
```

width="320" height="240">

- embed
- object
- video
- canvas

<object name="movie" value="map.swf" />

- object
- param
- option
- embed

<video src="map.swf" />

- video
- param
- embed
- source

</video>

Answer:

Work Area

```

<video width="320" height="240">
  <source src="map.mp4" type="video/mp4">
  <source src="map.ogv" type="video/ogg">
  <source src="map.webm" type="video/webm">

  <source src="map.mp4" type="video/mp4">
  <source src="map.ogv" type="video/ogg">
  <source src="map.webm" type="video/webm">

  <source src="map.mp4" type="video/mp4">
  <source src="map.ogv" type="video/ogg">
  <source src="map.webm" type="video/webm">

  <!-- width="320" height="240" -->
  embed
  object
  video
  canvas

  <!-- name="movie" value="map.swf" -->
  object
  param
  option
  embed

  <!-- src="map.swf" -->
  video
  param
  embed
  source

</!-- -->
  embed
  object
  video
  canvas

</video>

```

6.HOTSPOT

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

How should you build the route? (To answer, select the appropriate options in the answer area.)

Work Area

```
routes.MapRoute(  
    name: "EditLog",  
    controller = "RunLog",  
    );
```

Work Area

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

Answer:

Work Area

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

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

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

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

}
);
```

7.DRAG DROP

You need to ensure that the application uses RunLogRoleProvider custom role provider.

How should you modify the web.config file? (To answer, drag the appropriate line of code to the correct location or locations. Each line of code 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.)


```
<roleManager enabled="true" >
<providers>
<add name="RLRoleProvider"
      type= Application="RunnerLog"/>
</providers>
</roleManager>
```

Answer:


```
<roleManager defaultProvider="RLRoleProvider"
              enabled="true" >
<providers>
<add name="RLRoleProvider"
      type= "RunnerLog.Providers.RunLogRoleProvider"
      Application="RunnerLog"/>
</providers>
</roleManager>
```

8.DRAG DROP

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

Answer:

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

9.If the canvas element is supported by the client browser, the application must display "London 2012" in the footer as text formatted by JavaScript at the end of the _Layout.cshtml file. You need to modify the layout to ensure that "London 2012" is displayed as either formatted text or as plain text, depending on what the client browser supports.

Which code segment should you add?

- A. <canvas id="myFooter"> @ (Request.Browser.JavaApplets ? new HtmlString("London 2012") : null)</canvas>
- B. <canvas id="myFooter"London 2012</canvas>
- C. <canvas id="myCanvas">London 2012</canvas>
- D. <canvas id="myCanvas"><canvas><p>London 2012</p>

Answer: C

10.You need to add an action to RunLogController to validate the users' passwords.

Which code segment should you use?

C A.

```
public ActionResult Login(string username, string password)
{
    byte[] buffer = Encoding.UTF8.GetBytes(password + username);
    byte[] hash = MD5.Create().ComputeHash(buffer);
    ComparePassword(username, hash);
    return ContextDependentView();
}
```

C B.

```
[RequireHttps]
public ActionResult Login(string username, string password)
{
    byte[] buffer = Encoding.UTF8.GetBytes(password + username);
    byte[] hash = SHA1.Create().ComputeHash(buffer);
    ComparePassword(username, hash);
    return ContextDependentView();
}
```

C C.

```
public ActionResult Login(string username, string password)
{
    byte[] buffer = Encoding.UTF8.GetBytes(password + username);
    byte[] hash = SHA1.Create().ComputeHash(buffer);
    ComparePassword(username, hash);
    return ContextDependentView();
}
```

C D.

```
[RequireHttps]
public ActionResult Login(string username, string password)
{
    byte[] buffer = Encoding.UTF8.GetBytes(password + username);
    byte[] hash = MD5.Create().ComputeHash(buffer);
    ComparePassword(username, hash);
    return ContextDependentView();
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Answer: B

11. You need to make all of the rows in the table bold in the Views/RunLog/GetLog.cshtml view.
Which code segment should you use?

- A. Table > th: last-child {font-weight: bold ;}
- B. Table+first-child {font-weight: bold ;}
- C. Table>tr>th: nth-child (2) {font-weight: bold; }
- D. Table > tr {font-weight: bold ;}

Answer: D

12. You need to display the "miles" unit description after the distance in the GetLog view.
Which line of code should you use to replace line GL21? (Each correct answer presents a complete solution. Choose all that apply.)

- A. @log.Distance miles
- B. @Htrml.DisplayFor (model => log.Distance) miles
- C. @log.Distance.ToString() @Html.TextArea ("miles")
- D. @Htmli.DisplayFor (model => log.Distance.ToString () + "miles")

Answer: A, B

13. DRAG DROP

You need to implement security according to the business requirements.

You have the following code:

```
Target 1
public class RunLogController : Controller
{
    Target 2
    public ActionResult GetLog()
    ...
    public ActionResult InsertLog()
    ...
    Target 3
    public ActionResult DeleteLog(int id)
    Target 4
    public ActionResult EditLog(int id)
    ...
}
```

Which code segments should you include in Target 1, Target 2, Target 3 and Target 4 to modify RunLogController? To answer, drag the appropriate code segment to the correct targets. 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.

Code Segments

- [Authorize(Roles = "Admin")]
- [Authorize]
- [Authorize(Users = "Admin")]
- [AllowAnonymous]
- [Authorize(Users = "")]

Answer area

Target 1: Target 2: Target 3: Target 4:

Code Segment
Code Segment
Code Segment
Code Segment

Answer:

Target 1: [Authorize]

Target 2: [AllowAnonymous]

Target 3: [Authorize(Roles = "Admin")]

Target 4: [Authorize(Roles = "Admin")]

14. The RunLog/Views/InsertLog.cshtml view must display the /Images/stopwatch.png image and the “Insert Run Data” header text below the image. The view should resemble the exhibit. (Click the Exhibit button.)

Insert Run Data

RunDate
4/25/2012 9:06:16 AM

Distance
0

Time
HH:MM:SS
00:00:00

Create

The application must display the image above the field set.

You need to add the HTML code to /Runlog/Views/InsertLog.cshtml to display the image and header text.

Which code segment should you use?

- C A.

```
<h2>
  Insert Run Data
</h2>
<div>
  
</div>
```
- C B.

```
<div style="background: url('../Images/StopWatch.png');">
  <h2>Insert Run Data</h2>
</div>
```
- C C.

```
<div style="width: 130px; height: 100px;">
  <a href="../Images/StopWatch.png"></a>
</div>
<h2>
  Insert Run Data
</h2>
```
- C D.

```
<div style="width: 130px; height: 100px; background: url
('..../Images/StopWatch.png');">
</div>
<h2>
  Insert Run Data
</h2>
```

- A. Option A
B. Option B
C. Option C
D. Option D

Answer: D

Explanation:

```
<div style="background-image: url(..../images/test-background.gif); height: 200px; width: 400px; border: 1px solid black;">Example of a DIV element with a background image:</div>
```

```
<div style="background-image: url(..../images/test-background.gif); height: 200px; width: 400px; border: 1px solid black;"> </div>
```

Example of a DIV element with a background image:



TEST
BACKGROUND
IMAGE

Reference: DIV BACKGROUND-IMAGE in the STYLE element

<http://www.w3.org/WAI/UA/TS/html401/cp0301/0301-CSS-DIV-BACKGROUND-IMAGE.html>

15. Topic 2, Web Application

Background

You are developing an online shopping web application.

Business Requirements

- A user is not required to provide an email address. If a user enters an email address, it must be verified to be a valid email address.
- Information about the first product on the product page must fade out over time to encourage the user to continue browsing the catalog.
- Administrators must be able to edit information about existing customers.
- Administrators also must be able to specify a default product on the product page.

Technical Requirements

General:

- The web store application is in a load-balanced web farm. The load balancer is not configured to use server affinity.
- The web store application is an ASP.NET MVC application written in Visual Studio 2012.

Products:

- The value of the productId property must always be greater than 0.
- The Products page for mobile devices must display to mobile users. The Products page for desktop devices must display to desktop users.

Storage:

- The data must be stored in a serialized XML data format.
- Serialized objects must be schema-independent.

Exception handling:

- Exceptions originating from IIS must display a page with support contact information.
- Some page links expire, and users who access these links encounter 404 errors.
- Exceptions must be logged by using the WriteLog method of the Utility class.

Browser and device support:

- The application must support image format conversions from .bmp to .jpeg for mobile devices.
- The application must support image format conversions from .bmp to .png for desktop devices.

Application Structure

MvcApplication / Global.asax

```
public class MvcApplication : HttpApplication
{
    public static string DefaultProduct { get; set; }

    public static void RegisterRoutes(RouteCollection routes)
    {
        routes.IgnoreRoute("{resource}.axd/{*pathInfo}");

        routes.MapRoute(
            "",
            "{controller}/{action}/{productName}",
            new { action = "Show", productName = DefaultProduct });
    }
}
```

ProductController.cs

```
public class ProductController : Controller
{
    [HttpGet]
    public Product GetDealPrice(int productId)
    {
        ...
    }

    public ActionResult Show(string productName)
    {
        var price = DataLoader.GetProductPrice(productName);
        return View(new { productName, price });
    }
}
```

DataLoader.cs

```
public class DataLoader
{
    public static string GetProductPrice(string productName)
    {
        var currencySymbol = CultureInfo.CurrentCulture.NumberFormat.CurrencySymbol;
        var product = InternalLoad().FirstOrDefault(x => x.Name == productName);
        return currencySymbol + product.Price;
    }

    private static IEnumerable<Product> InternalLoad()
    {
        ...
    }
}
```

Customer.cs

```
public class Customer
{
    const string EmailRegex = @"(^|([A-Za-z0-9_\.-])*@[A-Za-z0-9-]*\.[A-Za-z]*)";
    const string EmailErrorMessage = "Please enter a valid email address";

    public string Email { get; set; }
    public string Name { get; set; }
}
```

Product.cs

```
public class Product
{
    public string ProductId { get; set; }
    public string Name { get; set; }
    public decimal Price { get; set; }
}
```

ImageConverter.cs

```
public class ImageConverter : MvcHandler
{
    private void WriteImage(HttpContext response, string format)
    {
        ...
    }
}
```

web.config

```
<?xml version="1.0" encoding="utf-8"?>
<configuration>
    <appSettings>
        <add key="PreserveLoginUrl" value="true" />
        <add key="ClientValidationEnabled" value="true" />
        <add key="UnobtrusiveJavaScriptEnabled" value="true" />
    </appSettings>
    <system.web>
        <compilation debug="true" targetFramework="4.5" />
        <httpRuntime targetFramework="4.5" />
        <encoderType>System.Web.Security.AntiXss.AntiXssEncoder</encoderType>
        <System.Web, Version=4.0.0.0, Culture=neutral, PublicKeyToken=b03f5f7f11d50a3a> />
        <machineKey compatibilityMode="Framework45" />
        <sessionState mode="..." customProvider="DefaultSessionProvider">
            <providers>
                <add name="DefaultSessionProvider"
                    type="System.Web.Providers.DefaultSessionStateProvider,
                    System.Web.Providers, Version=1.0.0.0, Culture=neutral, PublicKeyToken=31bf3856ad364e35
                    " connectionString="DefaultConnection" applicationName="/" />
            </providers>
        </sessionState>
    </system.web>
    <system.webServer>
        <validation validateIntegratedModeConfiguration="false" />
        <modules runAllManagedModulesForAllRequests="true" />
    </system.webServer>
</configuration>
```

You need to ensure that new customers enter a valid email address.

Which code should you use? (Each correct answer presents part of the solution. Choose all that apply.)

- A. `[RegularExpression (emailPattern, ErrorMessage = EmailErrorMessage)]
[DataType(DataType.EmailAddress)]
public string Email { get; set; }`
- B. `[RegularExpression(EmailRegex, ErrorMessage = EmailErrorMessage,
ErrorMessageResourceType = DataType.EmailAddress)]
[ComplexType]
public string Email { get; set; }`
- C. `<%: Html.Raw(m => m.Email) %>`
- D. `<%: Html.TextBoxFor(m => m.Email) %>`

- A. Option A
B. Option B
C. Option C
D. Option D

Answer: A, D

16. You are designing a Windows Communication Foundation (WCF) service that uses the Product class. You need to update the class to meet the storage requirement.

What should you do? (Each correct answer presents part of the solution. Choose all that apply.)

- A. Mark the Product class with the DataContract attribute.
B. Mark the public members of the Product class with the DataContractFormat attribute.
C. Mark the Product class with the CollectionDataContract attribute.
D. Mark the public members of the Product class with the DataMember attribute.

Answer: A, D

Explanation:

So as of .NET 3.5 SP1, you don't have to add data contract or data member attributes anymore - if you don't then the data contract serializer will serialize all public properties on your class, just like the XML serializer would.

HOWEVER: by not adding those attributes, you lose a lot of useful capabilities:

- without [DataContract], you cannot define an XML namespace for your data to live in
- without [DataMember], you cannot serialize non-public properties or fields
- without [DataMember], you cannot define an order of serialization (Order=) and the DCS will serialize all properties alphabetically
- without [DataMember], you cannot define a different name for your property (Name=)
- without [DataMember], you cannot define things like IsRequired= or other useful attributes
- without [DataMember], you cannot leave out certain public properties - all public properties will be serialized by the DCS

17. You need to implement the requirements for handling IIS errors.

What should you do?

- C A. Update the **customErrors** attribute in the web.config file as follows.

```
<customErrors mode="On" defaultRedirect="CustomErrorView">  
    <error statusCode="404" redirect="Error/Error404"/>  
</customErrors>
```

- C B. Update the **customErrors** attribute in the app.config file as follows.

```
<customErrors mode="Off" defaultRedirect="CustomErrorView">  
    <error statusCode="404" redirect="Error/Error404"/>  
</customErrors>
```

- C C. Update the **customErrors** attribute in the app.config file as follows.

```
<customErrors mode="On" defaultRedirect="CustomErrorView">  
    <error statusCode="401" redirect="Error/Error401"/>  
</customErrors>
```

- C D. Update the **customErrors** attribute in the web.config file as follows.

```
<customErrors mode="On" defaultRedirect="CustomErrorView">  
    <error statusCode="403" redirect="Error/Error403"/>  
</customErrors>
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Answer: A

18.You need to add a method to the ProductController class to meet the exception handling requirements for logging.

Which code segment should you use?

- A.

```
protected override void OnException(ExceptionContext filterContext)
{
    Utility.WriteLine(filterContext.Exception);

    if (filterContext.HttpContext.IsCustomErrorEnabled)
    {
        filterContext.ExceptionHandled = true;
        this.View("Error").ExecuteResult(this.ControllerContext);
    }
}
```
- B.

```
protected override void OnException(ExceptionContext filterContext)
{
    Utility.WriteLine(filterContext.Exception);

    if (System.Diagnostics.Debugger.IsAttached)
    {
        filterContext.ExceptionHandled = true;
        this.View("Error").ExecuteResult(this.ControllerContext);
    }
}
```
- C.

```
protected override void OnException(ExceptionContext filterContext)
{
    if (!System.Diagnostics.Debugger.IsLogging())
    {
        Utility.WriteLine(filterContext.Exception);
        filterContext.ExceptionHandled = true;
        this.View("Error").ExecuteResult(this.ControllerContext);
    }
}
```
- D.

```
protected override void OnException(ExceptionContext filterContext)
{
    Utility.WriteLine(filterContext.Exception);

    if (filterContext.HttpContext.IsDebuggingEnabled)
    {
        filterContext.ExceptionHandled = true;
        this.View("Error").ExecuteResult(this.ControllerContext);
    }
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Answer: A

19.An advertising campaign was recently launched. Some of the ads contain a link to products that no longer exist or have IDs that have changed.

You need to ensure that all product links display a product.

Which code segment should you use to configure the route?

- A.

```
routes.MapRoute(
    "Product",
    "Product/{action}/{productName}",
    new { action = "Show", productName = DefaultProduct }
);
```
- B.

```
routes.MapRoute(
    "Product",
    "{productName}/{action}/{id}",
    new { action = "Show", productName = DefaultProduct }
);
```
- C.

```
routes.MapPageRoute(
    "Product",
    "{ProductName}/{action}/{id}",
    "~/product.aspx",
    false,
    new RouteValueDictionary { { "action", "Show" }, { "productName",
DefaultProduct } });
};
```
- D.

```
routes.MapPageRoute(
    "Product",
    "Product/{action}/{productName}",
    "~/product.aspx",
    false,
    new RouteValueDictionary { { "action", "Show" }, { "productName",
DefaultProduct } });
};
```

A. Option A

B. Option B

C. Option C

D. Option D

Answer: A

20.You need to modify the application to meet the productId requirement.

What should you do?

A. Modify the RegisterGlobalFilters method of the Global.asax.cs file as follows.

Contract.Assume<ArgumentException>(productId != 0);

B. Modify the GetDealPrice method of ProductController as follows.

Contract.Requires<ArgumentException>(productId > 0);

C. Modify the RegisterGlobalFilters method of the Global.asax.cs file as follows.

Contract.Requires<ArgumentException>(productId > 0);

D. Modify the GetDealPrice method of ProductController as follows.

Contract.Assume<ArgumentException>(productId > 0);

Answer: B

Explanation:

The Contract.Requires(Of TException) method specifies a precondition contract for the enclosing method or property, and throws an exception if the condition for the contract fails.

Syntax:

'Declaration

Public Shared Sub Requires(Of TException As Exception) (_ condition As Boolean _)

Type Parameters

TException

The exception to throw if the condition is false.

Parameters

condition

Type: System.Boolean

The conditional expression to test.

Reference: Contract.Requires(Of TException) Method (Boolean)

21. You need to implement the business requirements for managing customer data.

What should you do? (Each correct answer presents part of the solution. Choose all that apply.)

- A. Add a class named Customer-Controller to the Controllers folder. Then add a method named Edit to the class.
- B. Create a new controller named Administration in the Controllers folder. Add an action named EditCustomer to the controller.
- C. Add a folder named Customer to the Views folder. Then create a view inside this folder named Edit.aspx.
- D. Create a new folder named EditCustomer to the Views folder. In the new folder, create a new file named Administration.aspx.

Answer: A, B

22. When users attempt to retrieve a product from the product page, a run-time exception occurs if the product does not exist.

You need to route the exception to the CustomException.aspx page.

Which method should you add to MvcApplication?

C A.

```
public static void RegisterGlobalFilters(GlobalFilterCollection filters)
{
    filters.Add(new HandleErrorAttribute
    {
        ExceptionType = typeof(IndexOutOfRangeException),
        View = "CustomException",
    });
}
```

C B.

```
public static void RegisterGlobalFilters(GlobalFilterCollection filters)
{
    filters.Add(new HandleErrorAttribute
    {
        ExceptionType = typeof(NullReferenceException),
        View = "CustomException",
    });
}
```

C C.

```
public static void RegisterGlobalFilters(GlobalFilterCollection filters)
{
    filters.Add(new HandleErrorAttribute
    {
        ExceptionType = typeof(IndexOutOfRangeException),
        Handler = "CustomException",
    });
}
```

C D.

```
public static void RegisterGlobalFilters(GlobalFilterCollection filters)
{
    filters.Add(new HandleErrorAttribute
    {
        ExceptionType = typeof(NullReferenceException),
        Handler = "CustomException",
    });
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Answer: B

23. You updated the web.config file with the HTTP run-time value required to display an alternative version of the site.

You need to ensure that the correct page displays to the users.

Which code segment should you use to update the controller?

- A. If (Request.IsTabletDevice)
- B. If (Request.Browser.IsBrowser("Mobile"))
- C. If (Request.UserAgent["Tablet"])
- D. If (Request.Browser.IsMobileDevice)

Answer: D

24.You need to implement client-side animations according to the business requirements.

Which line of code should you use? (Each correct answer presents a complete solution. Choose all that apply.)

- A. \$("body h1:nth-child(1)").fadeIn(1000);
- B. \$("body h1:nth-child(1)").fadeOut(1000);
- C. \$("body h2:nth-child(1)").animate({ opacity: 0 });
- D. \$("body h1:nth-child(1)").animate({ opacity: 1 });

Answer: B, C

25.You need to implement client-side animations according to the business requirements.

Which line of code should you use? (Each correct answer presents a complete solution. Choose all that apply.)

- A. \$("h1: first").animate ({ opacity: 0 });
- B. \$("h1:first").fadeIn(1000);
- C. \$("h1:first").animate({ opacity: 1 });
- D. \$("h1:first").fadeOut(1000);

Answer: A, D

26.You need to configure session storage in the web.config file to meet the technical requirements for scalability.

Which SessionState mode should you use? (Each correct answer presents a complete solution. Choose all that apply.)

- A. StateServer
- B. InProc
- C. AutoDetect
- D. SqlServer

Answer: A, D

27.You need to update the routes to ensure that a product is always displayed on the product page.

Which code segment should you use?

- A.

```
routes.MapRoute(
    "Product",
    "{productName}/{action}/{id}",
    new { action = "Show", productName = DefaultProduct }
);
```
- B.

```
routes.MapRoute(
    "Product",
    "Product/{action}/{productName}",
    new { action = "Show", productName = DefaultProduct }
);
```
- C.

```
routes.MapPageRoute(
    "Product",
    "Product/{action}/{productName}",
    "~/product.aspx",
    false,
    new RouteValueDictionary { { "action", "Show" }, { "productName", DefaultProduct } }
);
```
- D.

```
routes.MapPageRoute(
    "Product",
    "{ProductName}/{action}/{id}",
    "~/product.aspx",
    false,
    new RouteValueDictionary { { "action", "Show" }, { "productName", DefaultProduct } }
);
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Answer: B

28.The GetDealPrice method must be called by using Ajax.

You need to get the price of a product by using the GetDealPrice method of the ProductController.

Which code segment should you use? (Each correct answer presents a complete solution. Choose all that apply.)

- A.

```
$ .ajax({  
    type: "POST",  
    dataType: "json",  
    contentType: "application/json",  
    url: "Product/GetDealPrice",  
    data: "{ 'productId': '" + productId + "' }",  
    success: function (data) {  
        $(".price").html(data.d);  
    }  
});
```
- B.

```
$ .load({  
    dataType: "json",  
    contentType: "application/json",  
    url: "Product/GetDealPrice/" + productId,  
    success: function (data) {  
        $(".price").html(data.d);  
    }  
});
```
- C.

```
$ .ajax({  
    type: "GET",  
    dataType: "json",  
    contentType: "application/json",  
    url: "Product/GetDealPrice/" + productId,  
    success: function (data) {  
        $(".price").html(data.d);  
    }  
});
```
- D.

```
$ .getJSON("Product/GetDealPrice/" + productId  
    function (data) {  
        $(".price").html(data.d);  
    }  
);
```

A. Option A

B. Option B

C. Option C

D. Option D

Answer: C, D

29.HOTSPOT

You need to implement the mobile device support requirements.

How should you build the ProcessRequest method? (To answer, select the appropriate options in the answer area.)

Work Area

```
protected override void ProcessRequest(HttpContext httpContext)
{
    var response = httpContext.Response;
    var mobileFormat = [ ] ;
    var normalFormat = [ ] ;
    if (httpContext. [ ] .ContentType == [ ] )
    {
        if (httpContext. [ ] . [ ] )
        {
            WriteImage(response, mobileFormat);
        }
        else
        {
            WriteImage(response, normalFormat);
        }
    }
    else
    {
        base.ProcessRequest(httpContext);
    }
}
```

Work Area

```

protected override void ProcessRequest(HttpContext httpContext)
{
    var response = httpContext.Response;
    var mobileFormat = "image/png";
    var normalFormat = "image/png";

    if (httpContext.Response.ContentType == "image/png")
    {
        if (httpContext.Response.Browser.IsMobileDevice ||
            httpContext.Response.Browser.IsBrowser("MobileDevice") ||
            httpContext.Response.Mobile == "android|iP(hone|od)" ||
            httpContext.Response.Mobile == "+mobile|tablet")
        {
            WriteImage(response, mobileFormat);
        }
        else
        {
            WriteImage(response, normalFormat);
        }
    }
    else
    {
        base.ProcessRequest(httpContext);
    }
}

```

Answer:

Work Area

```

protected override void ProcessRequest(HttpContext httpContext)
{
    var response = httpContext.Response;
    var mobileFormat = ["image/png", "image/gif", "image/jpeg", "image/bmp"];
    var normalFormat = ["image/png", "image/gif", "image/jpeg", "image/bmp"];

    if (httpContext.["Response"].ContentType == "image/png")
    {
        if (httpContext.["Request"].Browser.IsMobileDevice)
        {
            WriteImage(response, mobileFormat);
        }
        else
        {
            WriteImage(response, normalFormat);
        }
    }
    else
    {
        base.ProcessRequest(httpContext);
    }
}

```

30. You need to modify the application to meet the productId requirement.

Which code segment should you use?

- C A. Modify the **RegisterGlobalFilters** method of the Global.asax.cs file as follows.

```
Contract.Assume<ArgumentException>(productId != 0);
```

- C B. Modify the **GetDealPrice** method of **ProductController** as follows.

```
Contract.RequiresAssume<ArgumentException>(productId != 0);
```

- C C. Modify the **GetDealPrice** method of **ProductController** as follows.

```
Contract.Requires<ArgumentException>(productId > 0);
```

- C D. Modify the **RegisterGlobalFilters** method of the Global.asax.cs file as follows.

```
Contract.Requires<ArgumentException>(productId > 0);
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Answer: C

Explanation:

Scenario: The value of the productId property must always be greater than 0.

Note: The Contract.Requires(Of TException) method specifies a precondition contract for the enclosing method or property, and throws an exception if the condition for the contract fails.

Syntax:

'Declaration

```
Public Shared Sub Requires(Of TException As Exception) (_ condition As Boolean _)
```

Type Parameters

TException

The exception to throw if the condition is false.

Parameters

condition

Type: System.Boolean

The conditional expression to test.

Reference: Contract.Requires(Of TException) Method (Boolean)

31. Topic 3, Video Transcoding Service

Background

You are developing a video transcoding service. This service is used by customers to upload video files, convert video to other formats, and view the converted files. This service is used by customers all over the world.

Business Requirements

The user-facing portion of the application is an ASP.NET MVC application. It provides an interface for administrators to upload video and schedule transcoding. It also enables administrators and users to download the transcoded videos.

When videos are uploaded, they are populated with metadata used to identify the video. The video metadata is gathered by only one system when the video upload is complete.

Customers require support for Microsoft Internet Explorer 7 and later.

The application contains a header that is visible on every page.

If the logged-on user is an administrator, then the header will contain links to administrative functions.

This information is read from a cookie that is set on the server. The administrative links must not be present if an error condition is present.

Technical Requirements

User Experience:

- The front-end web application enables a user to view a list of videos.
- The main view of the application is the web page that displays the list of videos.
- HTML elements other than the list of videos are changed with every request requiring the page to reload.

Compatibility:

- Some customers use browsers that do not support the HTTP DELETE verb.
- These browsers send a POST request with an HTTP header of X-Delete when the intended action is to delete.

Transcoding:

- The video transcoding occurs on a set of Windows Azure worker roles.
- The transcoding is performed by a third-party command line tool named transcode.exe. When the tool is installed, an Environment variable named transcode contains the path to the utility.
- A variable named license contains the license key. The license for the transcoding utility requires that it be unregistered when it is not in use.
- The transcoding utility requires a significant amount of resources. A maximum of 10 instances of the utility can be running at any one time. If an instance of the role cannot process an additional video, it must not prevent any other roles from processing that video.
- The utility logs errors to a Logs directory under the utilities path.
- A local Azure directory resource named perf is used to capture performance data.

Development:

- Developers must use Microsoft Remote Desktop Protocol (RDP) to view errors generated by the transcode.exe utility.
- An x509 certificate has been created and distributed to the developers for this purpose.
- Developers must be able to use only RDP and not any other administrative functions.

Application Structure

TranscodeWorkerRole.cs

```
public class TranscodeWorkerRole : RoleEntryPoint
{
    public override void Run()
    {
        while (true)
        {
            var nextWorkItem = GetWorkItem();
            TranscodeService.Start(new [] { nextWorkItem } );
        }
    }

    private string GetWorkItem()
    {
        ...
    }
}
```

ThumbnailGenerator.cs

```
public class ThumbnailGenerator : IHttpHandler
{
    public bool IsReusable
    {
        get { return true; }
    }

    public void ProcessRequest(HttpContext context)
    {
        var videoId = context.Request.QueryString["videoId"];
        var startBytes = File.ReadAllBytes(videoId);
        var bytes = BuildThumbnail(videoId);
        StreamResults(context, bytes);
    }

    private Task<byte[]> BuildThumbnail(string videoId)
    {
        return new Task<byte[]>(() => File.ReadAllBytes(videoId));
    }

    private void StreamResults(HttpContext context, byte[] content)
    {
    }
}
```

VideoController.cs

```
[Authorize]
public class VideoController : Controller
{
    public FileResult DownloadVideo(string videoId)
    {
        var stream = GetVideoStream(videoId);
        return File(stream, "video/mpeg");
    }

    [HttpPost]
    public ActionResult UploadVideo(string videoId)
    {
        return View();
    }

    [HttpDelete]
    public ActionResult DeleteVideo(string videoId)
    {
        return View();
    }

    public ActionResult VideoMetadata(string videoId)
    {
        var metadata = HttpRuntime.Cache[videoId];
        if (metadata == null)
        {
            metadata = LoadMetadata(videoId);
            HttpRuntime.Cache[videoId] = metadata;
        }
        return View(metadata);
    }

    public ActionResult ListVideos()
    {
        return View();
    }
}
```

DeleteHandler.cs

```
public class DeleteHandler : DelegatingHandler
{
    protected override Task<HttpResponseMessage> SendAsync
(HttpRequestMessage request,
 CancellationToken cancellationToken)
{
    ...
}
```

VideoAdminAttributes.cs

```
public class VideoAdminAttribute : Attribute
{
    private IEnumerable<string> Admins()
    {
        ...
    }
}
```

AdminVerifierFactory.cs

```
public class AdminVerifierFactory : DefaultControllerFactory
{
    public override IController CreateController(RequestContext requestContext,
string controllerName)
    {
        return base.CreateController(requestContext, controllerName) as Controller;
    }
}
```

You need to ensure that developers can connect to a Windows Azure role by using RDP.

What should you do?

- A. Export a certificate without a private key. Upload the .cer file to the Management Certificates section on the Azure Management Portal.
- B. Export a certificate with a private key. Upload the .pfx file to the Management Certificates section on the Azure Management Portal.
- C. Export a certificate without a private key. Upload the .cer file to the Certificates section under the TranscodeWorkerRole hosted service on the Azure Management Portal.
- D. Export a certificate with a private key. Upload the .pfx file to the Certificates section under the TranscodeWorkerRole hosted service on the Azure Management Portal.

Answer: D

32. Customers download videos by using HTTP clients that support various content encodings.

You need to configure caching on the DownloadVideo action to maximize performance.

Which attribute should you add?

- C A. `[OutputCache(Location = OutputCacheLocation.Downstream, VaryByParam = "videoId", VaryByCustom = "browser")]`
- C B. `[OutputCache(Location = OutputCacheLocation.Any, VaryByCustom = "compressionMethod", VaryByContentEncoding = "all")]`
- C C. `[OutputCache(Location = OutputCacheLocation.ServerAndClient, VaryByHeader = "Cache-Control")]`
- C D. `[OutputCache(Location = OutputCacheLocation.Downstream, VaryByContentEncoding = "gzip;q=1.0, compress; q=0.5, *;q=0")]`
- C E. `[OutputCache(Location = OutputCacheLocation.Any, VaryByParam = "videoId", VaryByContentEncoding = "gzip;q=1.0, compress; q=0.5, *;q=0")]`

- A. Option A
- B. Option B
- C. Option C
- D. Option D
- E. Option E

Answer: E

33. You need to ensure that all the MVC controllers are secure.

Which code segment should you use as the body for the CreateController method in AdminVerifierFactory.es?

C A. varcontroller = base.CreateController(requestContext, controllerName) asController;
varattributes = controller.GetType().Attributes.ToString();
if(!attributes.Contains("VideoAdminAttribute"))
 thrownewException("Not an Administrator");
returncontroller;

C B. if(requestContext.HttpContext.Items["Administrator"] == null)
 thrownewException("Not an Administrator");
returnbase.CreateController(requestContext, controllerName) asController;

C C. varcontroller = base.CreateController(requestContext, controllerName) asController;
varhasFilter = controller.GetType().CustomAttributes.Any
(x => x.AttributeType.Name == "VideoAdminAttribute");
if(hasFilter == null)
 thrownewException("Not an Administrator");
returncontroller;

C D. if(requestContext.RouteData.Values["Administrator"] == null)
 thrownewException("Not an Administrator");
returnbase.CreateController(requestContext, controllerName) asController;

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Answer: C

34. You are creating a new authentication system that uses an HTTP header value.

The existing authentication system must continue to operate normally.

You need to implement the custom authentication.

What should you do? (Each correct answer presents a complete solution. Choose all that apply.)

- A. Create a class derived from ActionResult and check for a valid HTTP header value in the ExecuteResult method. Change all actions to return this new class.
- B. Create an HttpHandler to check for a valid HTTP header value in the ProcessRequest method.
- C. Create an HttpModule and check for a valid HTTP header value in the AuthenticateRequest event.
- D. Create a class derived from AuthorizeAttribute and check for a valid HTTP header value in the AuthorizeCore method. Change usages of the existing AuthorizeAttribute to use the new class.

Answer: C, D

35. HOTSPOT

The designer for the website gave you the following image as the design for the page.

[Your account](#) [Log off](#)[Home](#) [About](#) [Contact](#)**Let us help you****Home is closer than you think**

The normal color for the tab is #2da4c2, and the color when the mouse is over the tab is #ffd800.

The HTML that implements the navigation tab is as follows.

```
<ul id="nav">
  <li><a href="/">Home</a></li>
  <li><a href="/">About</a></li>
  <li><a href="/">Contact</a></li>
</ul>
```

You need to implement the design.

What should you do? (To answer, select the appropriate options in the answer area.)

Work Area

```
ul#nav {
  font-size: 1.3em;
  font-weight: 600;
}

ul#nav li {
  text-align: center;
}

ul#nav li a {
  color: #FFF;
  border-radius: 12px 12px 0 0;
  padding: 0 12px 0 12px;
  margin: 0 4px 0 4px;
}

ul#nav li a:hover {
  color: #333;
}
```

Work Area

```
ul#nav {  
    font-size: 1.3em;  
    font-weight: 600;  
}  
  
ul#nav li {  
    float: left;  
    background-color: #ffd800;  
    background-color: #2da4c2  
    text-decoration: none;  
}  
  
ul#nav li {  
    text-decoration: none;  
    list-style: none;  
    border-radius: 15px;  
    word-wrap: break-word;  
    text-align: center;  
}  
  
ul#nav li a {  
    background-clip: border-box;  
    background-color: #2da4c2  
    border-radius: 15px;  
    word-wrap: break-word;  
}  
  
ul#nav li a {  
    color: #FFF;  
}  
  
ul#nav li a {  
    background-clip: padding-box;  
    text-decoration: none;  
    background-color: #ffd800;  
    float: left;  
}  
  
ul#nav li a {  
    border-radius: 12px 12px 0 0;  
    padding: 0 12px 0 12px;  
    margin: 0 4px 0 4px;  
}  
  
ul#nav li a:hover {  
    color: #333;  
}  
  
ul#nav li a:hover {  
    float: left;  
    background-color: #ffd800;  
    background-color: #2da4c2  
    list-style: none;  
}  
  
ul#nav li a:hover {  
    cursor: pointer;  
    background-clip: border-box;  
    text-decoration: none;  
    background-origin: border-box;  
}  
}
```

Answer:

Work Area

```
ul#nav {  
    font-size: 1.3em;  
    font-weight: 600;  
}
```

```
ul#nav li {
```

```
    float: left;  
    background-color: #ffd800;  
    background-color: #2da4c2  
    text-decoration: none;
```

```
    text-decoration: none;  
    list-style: none;  
    border-radius: 15px;  
    word-wrap: break-word;
```

```
    text-align: center;
```

```
}
```

```
ul#nav li a {
```

```
    background-clip: border-box;  
    background-color: #2da4c2  
    border-radius: 15px;  
    word-wrap: break-word;
```

```
    color: #FFF;
```

```
    background-clip: padding-box;  
    text-decoration: none;  
    background-color: #ffd800;  
    float: left;
```

```
    border-radius: 12px 12px 0 0;  
    padding: 0 12px 0 12px;  
    margin: 0 4px 0 4px;
```

```
}
```

```
ul#nav li a:hover {  
    color: #333;
```

```
    float: left;  
    background-color: #ffd800;  
    background-color: #2da4c2  
    list-style: none;
```

```
    cursor: pointer;  
    background-clip: border-box;  
    text-decoration: none;  
    background-origin: border-box;
```

```
}
```

36.You need to maximize performance of video delivery.

Which code segment should you use as the body of the GetVideoStream function in the Video-Controller class?

- A.

```
MemoryStream stream = new MemoryStream();
new GZipStream(System.IO.File.OpenRead(videoId), CompressionMode.Compress).CopyTo
(stream);
return stream;
```
- B.

```
if (Request.ContentEncoding.BodyName == "application/x-gzip")
{
    return new GZipStream(System.IO.File.OpenRead(videoId), CompressionMode.Compress);
}
return System.IO.File.OpenRead(videoId);
```
- C.

```
return new GZipStream(System.IO.File.OpenRead(videoId), CompressionMode.Compress);
```
- D.

```
if (Request.Headers["Accept-Encoding"].Contains("gzip"))
{
    return new GZipStream(System.IO.File.OpenRead(videoId), CompressionMode.Compress);
}
return System.IO.File.OpenRead(videoId);
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Answer: D

37.The transcode.exe utility activates its license online when it is installed.

You need to ensure that the registration of the transcode utility is handled as specified in its license.

Which method should you add to the TranscodeWorkerRole class?

C A.

```
public override void OnStop()
{
    RoleEnvironmentStopping += (sender, args) =>
    {
        var task = Process.Start("transcode.exe", "unregister");
        if (task.HasExited)
            base.OnStop();
    };
}
```

C B.

```
public override void OnStop()
{
    RoleEnvironmentStopping += (sender, args) =>
    {
        Process.Start("transcode.exe", "unregister").WaitForExit();
        base.OnStop();
    };
}
```

C C.

```
public override void OnStop()
{
    Process.Start("transcode.exe", "unregister");
    base.OnStop();
}
```

C D.

```
public override void OnStop()
{
    Process.Start("transcode.exe", "unregister").WaitForExit();
    base.OnStop();
}
```

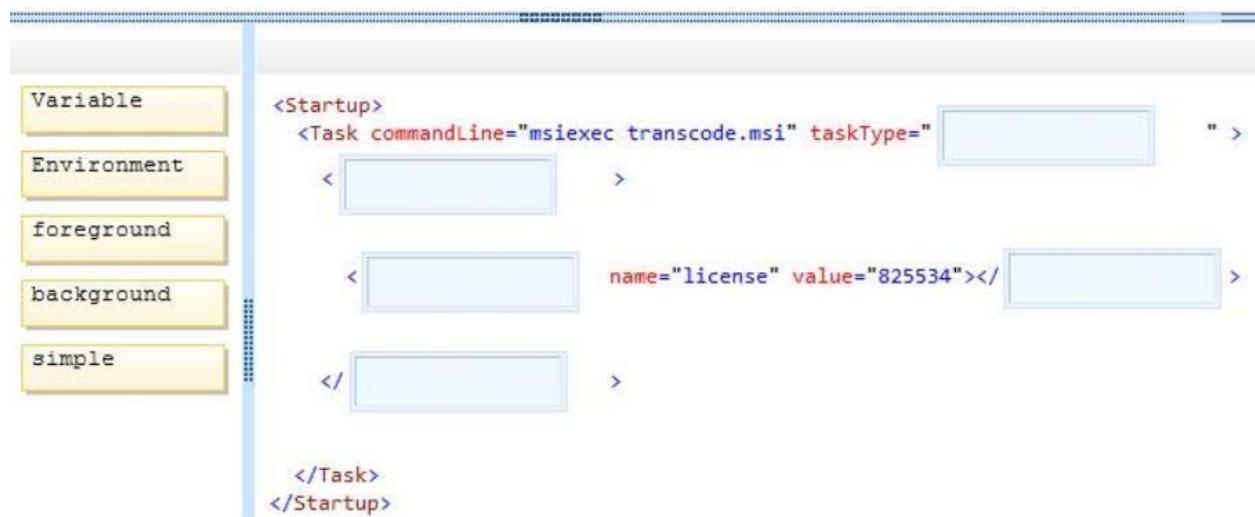
- A. Option A
- B. Option B
- C. Option C
- D. Option D

Answer: D

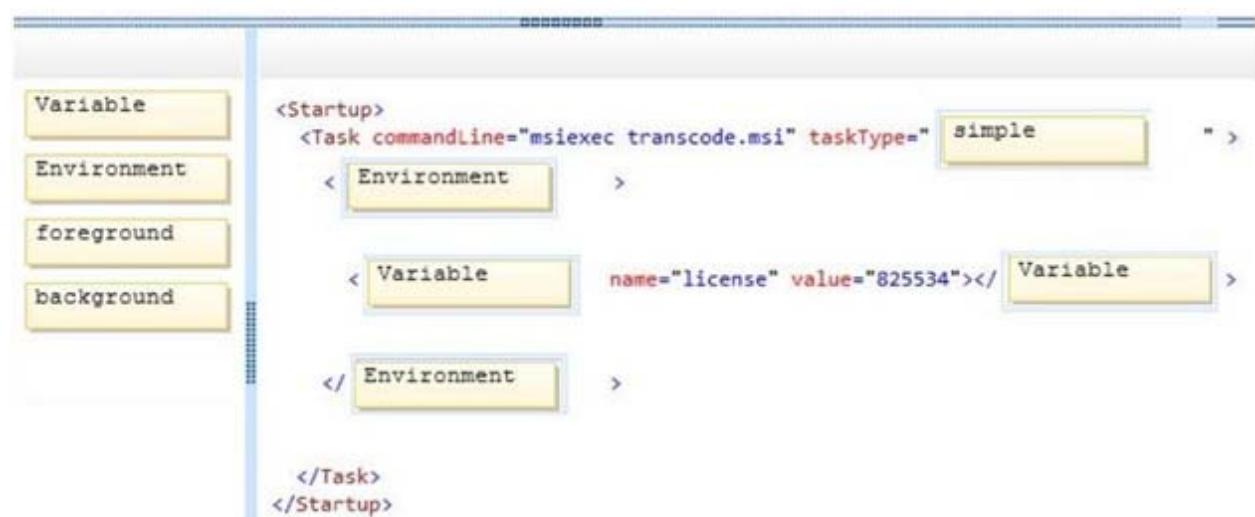
38.DRAG DROP

You need to ensure that the transcode.exe utility is installed before the worker role starts.

How should you implement the startup task? (To answer, drag the appropriate values to the correct element or attribute. Each value 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.)



Answer:



39. You need to ensure that all customers can delete videos regardless of their browser capability.

Which code segment should you use as the body of the SendAsync method in the DeleteHandler class?

C A. var response = base.SendAsync(request, cancellationToken);
if(request.Headers.Contains("X-Delete"))
{
 response.Result.StatusCode = HttpStatusCode.NotImplemented;
}
return response;

C B. if(request.Headers.Contains("X-Delete"))
{
 request.Method = new HttpMethod("DELETE");
}
returnbase.SendAsync(request, cancellationToken);

C C. var response = base.SendAsync(request, cancellationToken);
if(response.Result.Headers.Contains("X-Delete"))
{
 request.Method = new HttpMethod("DELETE");
}
return response;

C D. if(request.Method == HttpMethod.Delete)
{
 request.Headers.Add("X-Delete", "true");
}
returnbase.SendAsync(request, cancellationToken);

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Answer: B

40. Customers download videos by using HTTP clients that support various content encodings.

You need to configure caching on the DownloadVideo action to maximize performance.

Which attribute should you add?

- C A.

```
[OutputCache(VaryByCustom = "gzip",
    VaryByContentEncoding = "all", Location = OutputCacheLocation.Any,)]
```
- C B.

```
[OutputCache(Location = OutputCacheLocation.Any, VaryByParam = "videoId",
    VaryByContentEncoding = "gzip;q=1.0, compress; q=0.5, *;q=0")]
```
- C C.

```
[OutputCache(Location = OutputCacheLocation.Downstream, VaryByParam = "gzip",
    VaryByCustom = "browser")]
```
- C D.

```
[OutputCache(Location = OutputCacheLocation.Downstream, Order=1,
    VaryByContentEncoding = "gzip;q=1.0, compress; q=0.5, *;q=0")]
```
- C E.

```
[OutputCache(VaryByHeader = "Cache-Control", Location =
    OutputCacheLocation.ServerAndClient,
    CacheProfile = "gzip")]
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D
- E. Option E

Answer: B

41. DRAG DROP

You need to ensure that the transcode.exe utility is installed before the worker role starts.

You have the following markup:

```
<Startup>
  <Task commandLine="msiexec transcode.msi" taskType="Target 1">
    <Target 2>
      <Target 3 name="license" value="825534"></Target 4>
    </Target 5>
  </Task>
</Startup>
```

Which markup segments should you include in Target 1, Target 2, Target 3, Target 4 and Target 5 to implement the startup task? To answer, drag the appropriate markup segments to the correct targets.

Each markup segments 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.

Markup Segments	Answer Area
Variable	Target 1: <input type="text"/>
Environment	Target 2: <input type="text"/>
foreground	Target 3: <input type="text"/>
background	Target 4: <input type="text"/>
simple	Target 5: <input type="text"/>

Answer:

Target 1: simple ↵

Target 2: Environment ↵

Target 3: Variable ↵

Target 4: Variable ↵

Target 5: Environment ↵

42. You need to ensure that all the MVC controllers are secure.

Which code segment should you use as the body for the CreateController method in AdminVerifierFactory.cs?

- C A.

```
if (requestContext.RouteData.Values["Administrator"] == null)
    throw new Exception("Not an Administrator");

return base.CreateController(requestContext, controllerName) as Controller;
```
- C B.

```
var controller = base.CreateController(requestContext, controllerName)
as Controller;
var attributes = controller.GetType().Attributes.ToString();
if (!attributes.Contains("VideoAdminAttribute"))
    throw new Exception("Not an Administrator");

return controller;
```
- C C.

```
var controller = base.CreateController(requestContext, controllerName)
as Controller;
var hasFilter = controller.GetType().CustomAttributes.Any
(x => x.AttributeType.Name == "VideoAdminAttribute");
if (hasFilter == null)
    throw new Exception("Not an Administrator");

return controller;
```
- C D.

```
if (requestContext.HttpContext.Items["Administrator"] == null)
    throw new Exception("Not an Administrator");

return base.CreateController(requestContext, controllerName) as Controller;
```

- A. Option A
B. Option B
C. Option C
D. Option D

Answer: C

43. You need to ensure that developers can connect to a Microsoft Azure role by using RDP.

What should you do?

- A. Export a certificate with a private key. Upload the .pfx file to the Certificates section under the TranscodeWorkerRole hosted service on the Azure Management Portal.
- B. Export a certificate with a private key. Upload the .pfx file to the Management Certificates section on the Azure Management Portal.
- C. Export a certificate without a private key. Upload the .cer file to the Management Certificates section on the Azure Management Portal.
- D. Export a certificate without a private key. Upload the .cer file to the Certificates section under the TranscodeWorkerRole hosted service on the Azure Management Portal.

Answer: A

Explanation:

In case you don't want to use the RDP certificate created by Windows Azure Tools and want to use a custom certificate instead, the following steps will guide you. These steps can also be used in case package is not being published from Visual Studio rather it is being built locally, saved in either Local Machine's Drive or Windows Azure Blob Storage and subsequently published from there. Here are the steps which are required to get pass the publishing error which you might be running into. You would need to upload the Certificate with Private Key to the portal (when Visual Studio is used this is done in the background).

Detailed steps.

1. In Visual Studio, go to the solution which is being developed.
2. Right click the Web Project -> Configure Remote Desktop -> click on View to see Certificate details (Since I don't have a custom certificate I will use one create by Windows Azure Tools itself)
3. Go to Details tab on Certificate -> Click Copy to file.. -> Next -> Select 'Yes, export the private key' -> Next -> Continue with default setting and create a password when asked (please refer below screenshots)
4. These steps will generate a .PFX file for this certificate. Now we need to upload this certificate to the portal (for the respective cloud service)
5. Go to the Azure Management Portal -> Go to the Cloud Service in question -> Certificates Tab -> Upload the newly created certificate (.PFX file)

Note:

- * The certificates that you need for a remote desktop connection are different from the certificates that you use for other Azure operations. The remote access certificate must have a private key.
- * Microsoft Azure uses certificates in three ways:

/ Management certificates – Stored at the subscription level, these certificates are used to enable the use of the SDK tools, the Windows Azure Tools for Microsoft Visual Studio, or the Service Management REST API Reference. These certificates are independent of any cloud service or deployment.

/ Service certificates – Stored at the cloud service level, these certificates are used by your deployed services.

/ SSH Keys – Stored on the Linux virtual machine, SSH keys are used to authenticate remote connections to the virtual machine.

Reference: How to use Custom Certificate for RDP to Windows Azure Roles

<http://blogs.msdn.com/b/cie/archive/2014/02/22/how-to-use-custom-certificate-for-rdp-to-windows-azure-roles.aspx>

44.Topic 4 Mixed Questions

You are developing an ASP.NET MVC application that uses forms authentication. The user database contains a user named LibraryAdmin.

You have the following requirements:

- You must allow all users to access the GetBook method.
- You must restrict access to the EditBook method to the user named LibraryAdmin.

You need to implement the controller to meet the requirements.

Which code segment should you use? (Each correct answer presents a complete solution. Choose all that apply.)

A. `[Authorize]
public class LibraryController : Controller
{
 [AllowAnonymous]
 public ActionResult GetBook()
 {
 ...
 return View();
 }
 [Authorize(Users = "LibraryAdmin")]
 public ActionResult EditBook()
 {
 ...
 return View();
 }
}`

B. `[Authorize(Roles = "Anonymous")]
public class LibraryController : Controller
{
 public ActionResult GetBook()
 {
 ...
 return View();
 }

 [Authorize(Users = "LibraryAdmin")]
 public ActionResult EditBook()
 {
 ...
 return View();
 }
}`

C. `[Authorize]
public class LibraryController : Controller
{
 [AllowAnonymous]
 public ActionResult GetBook()
 {
 ...
 return View();
 }

 [Authorize]
 public ActionResult EditBook()
 {
 if (this.HttpContext.User.Identity.Name != "LibraryAdmin")
 {
 return RedirectToAction("Login", "Account", new { ReturnUrl = "/Library/EditBook" });
 }
 else
 {
 ...
 return View();
 }
 }
}`

D. `[Authorize]
public class LibraryController : Controller
{
 [Authorize(Roles="Anonymous")]
 public ActionResult GetBook()
 {
 ...
 return View();
 }

 [Authorize(Users = "LibraryAdmin")]
 public ActionResult EditBook()
 {
 ...
 return View();
 }
}`

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Answer: A, C

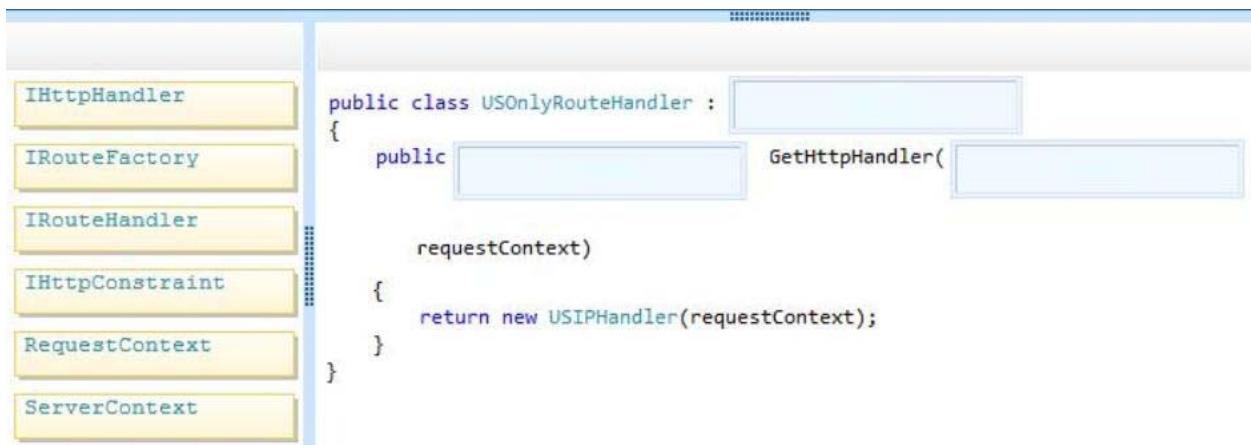
45.DRAG DROP

You are developing an ASP.NET MVC application that takes customer orders.

Orders are restricted to customers with IP addresses based in the United States.

You need to implement a custom route handler.

How should you implement the route handler? (To answer, drag the appropriate line of code to the correct location or locations. Each line of code 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.)

**Answer:****Explanation:**

<http://msdn.microsoft.com/en-us/library/system.web.routing.iroutehandler.gethttphandler.aspx>

46. You are designing an HTML5 website.

You need to design the interface to make the content of the web page viewable in all types of browsers, including voice recognition software, screen readers, and reading pens.

What should you do? (Each correct answer presents a complete solution. Choose all that apply.)

- A. Annotate HTML5 content elements with Accessible Rich Internet Application (ARIA) attributes.
- B. Convert HTML5 forms to XForms.
- C. Ensure that HTML5 content elements have valid and descriptive names.
- D. Use HTML5 semantic markup elements to enhance the pages.
- E. Use Resource Description Framework (RDF) to describe content elements throughout the entire page.

Answer: A, D

47. DRAG DROP

You are developing an ASP.NET MVC web application in Visual Studio 2012.

The application has a model named ReservationLocation that contains properties named City and State.

The view that displays reservations has a single text box named loc for entering the location information.

The location is entered as city, state.

There are action methods that have `ReservationLocation` as a parameter type.

You need to ensure that the City and State properties are correctly populated.

How should you implement model binding for the `ReservationLocation` type? (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.)

```
bindingContext.ModelType = typeof  
(ReservationLocation);  
  
var raw = bindingContext.ValueProvider.GetValue  
("loc");  
  
dynamic data = bindingContext.ValueProvider.GetValue  
("loc");  
  
dynamic data = raw.RawValue  
    .ToString().Split(',');  
  
bindingContext.ModelState.Add("city,state",  
    new ModelState { Value = data });  
  
dynamic data = controllerContext.RouteData  
    .Values["[city.state]"];
```

```
public class ReservationModelBinder : IModelBinder
{
    public object BindModel(ControllerContext controllerContext,
                           ModelBindingContext bindingContext)
    {
        // Implementation code (redacted)

        return new ReservationLocation
        {
            City = data[0],
            State = data[1],
        };
    }
}
```

Answer:

```

bindingContext.ModelType = typeof
(ReservationLocation);

dynamic data = bindingContext.ValueProvider.GetValue
("loc");

bindingContext.ModelState.Add("city,state",
    new ModelState { Value = data });

dynamic data = controllerContext.RouteData
.Values[raw + "[city,state]"];

```

```

public class ReservationModelBinder : IModelBinder
{
    public object BindModel(ControllerContext controllerContext,
        ModelBindingContext bindingContext)
    {
        var raw = bindingContext.ValueProvider.GetValue
        ("loc");

        dynamic data = raw.RawValue
            .ToString().Split(',');

        return new ReservationLocation
        {
            City = data[0],
            State = data[1],
        };
    }
}

```

- 48.You are developing an ASP.NET MVC web application in Visual Studio 2012. The application requires several thousand content files. All content is hosted on the same IIS instance as the application. You detect performance issues when the application starts. You need to resolve the performance issues.

What should you do?

- A. Implement HTTP caching in the ASP.NET MVC controllers.
- B. Combine the content files by using ASP.NET MVC bundling.
- C. Install a second IIS instance.
- D. Move the content to a Windows Azure CDN.

Answer: B

49. You are developing an ASP.NET MVC application in Visual Studio 2012. The application supports multiple cultures.

The application contains three resource files in the Resources directory:

- My Dictionary.resx
- MyDictionary.es.resx
- MyDictionary.fr.resx

Each file contains a public resource named Title with localized translation.

The application is configured to set the culture based on the client browser settings.

The application contains a controller with the action defined in the following code segment. (Line numbers are included for reference only.)

```
01 public ActionResult GetProducts()
02 {
03
04     List<ProductModel> products = DataBase.DBAccess.GetProducts();
05     return View(products);
06 }
```

You need to set ViewBag.Title to the localized title contained in the resource files.

Which code segment should you add to the action at line 03?

- A. ViewBag.Title = HttpContext.GetGlobalResourceObject("MyDictionary", "Title");
- B. ViewBag.Title = HttpContext.GetGlobalResourceObject("MyDictionary", "Title", new System.Globalization.CultureInfo("en"));
- C. ViewBag.Title = Resources.MyDictionary.Title;
- D. ViewBag.Title = HttpContext.GetLocalResourceObject("MyDictionary", "Title");

Answer: C

50. You are testing an ASP.NET application.

The test plan requires that tests run against the application's business layer.

You need to use the test project template that meets this requirement.

Which template should you use?

- A. Web Test Project
- B. Load Test Project
- C. Unit Test Project

D. Coded Test Project

Answer: C

51.You are authoring unit tests.

The unit tests must test code that consumes sealed classes.

You need to create, maintain, and inject dependencies in the unit tests.

Which isolation method should you use?

- A. T4 text templates and code generation
- B. Stub types
- C. Shim types
- D. Hard-coded implementation

Answer: C

Explanation:

<http://msdn.microsoft.com/en-us/library/hh549176.aspx>

Shim types are one of two technologies that the Microsoft Fakes Framework uses to let you easily isolate components under test from the environment. Shims divert calls to specific methods to code that you write as part of your test. Many methods return different results dependent on external conditions, but a shim is under the control of your test and can return consistent results at every call. This makes your tests much easier to write.

52.You are developing an ASP.NET MVC web application that includes the following method.

```
public double AccountBalance(double currentBalance, double transactionAmount)
{
    double finalBalance = 0.00;
    finalBalance = currentBalance + transactionAmount;
    return finalBalance;
}
```

You need to test the AccountBalance method.

Which unit test should you use?

- C A. [TestMethod()]
private void AccountBalanceTest()
{
 double currentBalance = 175.05;
 double transactionAmount = 76.03;
 double finalBalance = 251.08;
 double result = 0.00;

 result = AccountBalance(currentBalance, transactionAmount);
 Assert.AreEqual(finalBalance, result);
}
- C B. [TestMethod()]
public void AccountBalanceTest()
{
 double currentBalance = 175.05;
 double transactionAmount = 76.03;
 double finalBalance = 251.08;
 double result = 0.00;

 result = AccountBalance(currentBalance, transactionAmount);
 Assert.IsTrue(finalBalance, result);
}
- C C. [TestMethod()]
public void AccountBalanceTest()
{
 double currentBalance = 175.05;
 double transactionAmount = 76.03;
 double finalBalance = 251.08;
 double result = 0.00;

 result = AccountBalance(currentBalance, transactionAmount);
 Assert.AreEqual(finalBalance, result);
}
- C D. [UnitTest()]
public void AccountBalanceTest()
{
 double currentBalance = 175.05;
 double transactionAmount = 76.03;
 double finalBalance = 251.08;
 double result = 0.00;

 result = AccountBalance(currentBalance, transactionAmount);
 Assert.AreEqual(finalBalance, result);
}

A. Option A

B. Option B

C. Option C

D. Option D

Answer: C

Explanation:

<http://msdn.microsoft.com/en-us/magazine/cc163665.aspx>

[http://msdn.microsoft.com/en-us/library/microsoft.visualstudio.testtools.unittesting.assert.areequal\(v=vs.10\).aspx](http://msdn.microsoft.com/en-us/library/microsoft.visualstudio.testtools.unittesting.assert.areequal(v=vs.10).aspx)

53. You are developing an ASP.NET MVC application by using Visual Studio 2012.

The application throws and handles exceptions when it runs.

You need to examine the state of the application when exceptions are thrown.

What should you do?

A. From the Debug menu in Visual Studio 2012, select Exceptions. Enable the Thrown check box for Common Language Runtime Exceptions.

B. From the Debug menu in Visual Studio 2012, select Exceptions. Disable the User-unhandled check box for Common Language Runtime Exceptions.

C. Add the following code to the web.config file of the application.

```
<customErrors mode="On" >
<error statusCode="500" redirect="CustomErrors.html" />
</customErrors>
```

D. Add the following code to the web.config file of the application.

```
<customErrors mode="On" >
<error statusCode="404" redirect="CustomErrors.html" />
</customErrors>
```

Answer: A

54. You are developing an ASP.NET MVC news aggregation application that will be deployed to servers on multiple networks.

The application must be compatible with multiple browsers. A user can search the website for news articles. You must track the page number that the user is viewing in search results.

You need to program the location for storing state information about the user's search.

What should you do?

A. Store search results and page index in Session.

B. Use Application state to store search terms and page index.

C. Use QueryString to store search terms and page index.

D. Store search results and page index in TempData

Answer: C

55. You are developing an ASP.NET MVC application. The application is deployed in a web farm and is accessed by many users.

The application must handle web server failures gracefully. The servers in the farm must share the state information.

You need to persist the application state during the session.

What should you implement?

- A. A state server
- B. Cookieless sessions
- C. A web garden on the web servers
- D. An InProc session

Answer: A

56. You are developing an ASP.NET MVC application that displays stock market information.

The stock market information updates frequently and must be displayed in real-time.

You need to eliminate unnecessary header data, minimize latency, and transmit data over a full-duplex connection.

What should you do?

- A. Implement long-running HTTP requests.
- B. Instantiate a MessageChannel object on the client.
- C. Implement WebSockets protocol on the client and the server.
- D. Configure polling from the browser.

Answer: C

57. You are designing a distributed application that runs on the Windows Azure platform.

The application must store a small amount of insecure global information that does not change frequently.

You need to configure the application to meet the requirements.

Which server-side state management option should you use? (Each correct answer presents a complete solution. Choose all that apply.)

- A. Windows Azure application state
- B. SQL Azure
- C. Profile properties of the Windows Azure application
- D. Windows Azure session state

Answer: B, D

Explanation:

SQL Database provides a relational database management system for Windows Azure and is based on SQL Server technology. With a SQL Database instance, you can easily provision and deploy relational database solutions to the cloud, and take advantage of a distributed data center that provides enterprise-class availability, scalability, and security with the benefits of built-in data protection and self-healing.

Session States in Windows Azure.

If you are a Web developer, you are probably very familiar with managing user state - that is you are familiar with tracking user activity and actions across several request-response exchanges that occur in Web applications. Since HTTP is a stateless protocol, developers over the years have developed all sorts of means to manage state. You'll even find an MSDN page providing alternatives and recommendations for state management here. Cookies, hidden fields, and query strings are some client-side options to tracking user state. When it comes to managing that state on the server-side, most Web developers rely on session objects.

58.DRAG DROP

You are developing an ASP.NET MVC application that has pages for users who browse the site with Windows Phone 7.

The pages for Windows Phone 7 include the following files:

- _Layout.WP7.cshtml
- Index.WP7.cshtml

You need to update the application so that it renders the customized files correctly to Windows Phone 7 users.

How should you update the Application_Start method? (To answer, drag the appropriate line of code to the correct location or locations. Each line of code 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.)

```

protected void Application_Start()
{
    DisplayModeProvider.Instance.Modes.Insert(0, new
    {
        ContextCondition = (context =>
            context.GetOverriddenUserAgent().IndexOf
        )) >= 0
    });
    AreaRegistration.RegisterAllAreas();
}

```

Answer:

```

protected void Application_Start()
{
    DisplayModeProvider.Instance.Modes.Insert(0, new
        DefaultDisplayMode("WPF"))
    {
        ContextCondition = (context =>
            context.GetOverriddenUserAgent().IndexOf(
                "Windows Phone OS",
                StringComparison.OrdinalIgnoreCase) >= 0)
    });
    AreaRegistration.RegisterAllAreas();
}

```

<http://techbrij.com/1013/display-mode-mobile-tablet-tv-aspnet-mvc>

59. You are developing an ASP.NET MVC web application for viewing a list of contacts. The application is designed for devices that support changes in orientation, such as tablets and smartphones. The application displays a grid of contact tiles in portrait mode.

When the orientation changes to landscape, each tile in the grid expands to include each contact's details. The HTML that creates the tiled interface resembles the following markup.

```

<ul class="contacts">
    <li>
        
        <div>Details</div>
    </li>
</ul>

```

The CSS used to style the tiles in landscape mode is as follows.

```

ul.contacts > li {
    width: 150px;
}

ul.contacts > li > div {
    display: block;
}

```

If this CSS is omitted, the existing CSS displays the tiles in portrait mode.

You need to update the landscape-mode CSS to apply only to screens with a width greater than or equal to 500 pixels.

Which code segment should you use?

A. @media screen and (width >= 500px) {

...

}

B. @media screen and (min-width: 500px) {

...
}
C. @media screen(min-width: 500px, max-width: 1000px) {
...
}
D. @media resolution(min-width: 500px) {
...
}

Answer: B

Explanation:

<http://www.javascriptkit.com/dhtmltutors/cssmediaqueries.shtml>

60. You are developing an ASP.NET MVC application.

You need to authenticate clients by using NT LAN Manager (NTLM).

Which authentication method should you implement?

- A. Basic
- B. Windows
- C. Forms
- D. Kerberos

Answer: B

Explanation:

[http://msdn.microsoft.com/en-us/library/aa292114\(v=vs.71\).aspx](http://msdn.microsoft.com/en-us/library/aa292114(v=vs.71).aspx)

61. DRAG DROP

You are developing an ASP.NET MVC application in Visual Studio 2012. The application contains sensitive bank account data.

The application contains a helper class named SensitiveData.Helpers.CustomEncryptor.

```
public class CustomEncryptor
{
    public string Encrypt(string plaintext)
    {
        ...
    }
}
```

The application contains a controller named **BankAccountController** with two actions.

```
public class BankAccountController : Controller
{
    public ActionResult GetAccounts()
    {
        ...
    }

    public ActionResult EditAccount(string maskedAccountNum)
    {
        ...
    }
}
```

The application contains a model named **BankAccount**, which is defined in the following code segment.

```
public class BankAccount
{
    public string AccountNumber { get; set; }
    public string AccountName { get; set; }
    public double Balance { get; set; }
}
```

The application must not display AccountNumber in clear text in any URL.

You need to build the view for the GetAccounts action.

How should you build the view? (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.)

custEncrypt
maskedAccountNum
Html
Encrypt(item.AccountNumber)
Encode(item.AccountNumber)

```
@model IEnumerable<SensitiveData.Models.GamerAccount>
@{SensitiveData.Helpers.CustomEncryptor custEncrypt =
    new SensitiveData.Helpers.CustomEncryptor();}
<h2>GetAccounts</h2>


| Account Name | Balance |
|--------------|---------|
|--------------|---------|


```

Answer:

Html
Encode(item.AccountNumber)

```
@model IEnumerable<SensitiveData.Models.GamerAccount>
@{SensitiveData.Helpers.CustomEncryptor custEncrypt =
    new SensitiveData.Helpers.CustomEncryptor();}
<h2>GetAccounts</h2>


| Account Name | Balance |
|--------------|---------|
|--------------|---------|


```

62.You are developing an ASP.NET MVC application.

The application must allow users to enter JavaScript in a feedback text box only.

You need to disable request validation.

What should you do?

- A. Apply and set the CausesClientSideValidation attribute on the text box to FALSE.
- B. Apply and set the ValidateInput attribute on the text box to FALSE.
- C. Use the HttpRequest.Unvalidated property to read the unvalidated form value.
- D. Use the HttpRequest.Form property to read the unvalidated form value.

Answer: C

Explanation:

Provides access to HTTP request values without triggering request validation.

<http://msdn.microsoft.com/en-us/library/system.web.httprequest.unvalidated.aspx>

63. You are developing an ASP.NET MVC application that will be deployed on a web farm.

Passwords must be stored in the web.config file and must not be readable or in a format that is easily decodable

You need to encrypt the passwords that are stored in the web.config file.

Which command-line tool should you use?

- A. Aspnet_regiis.exe
- B. Ngen.exe
- C. Aspnet_merge.exe
- D. EdmGen.exe

Answer: A

Explanation:

[http://msdn.microsoft.com/en-us/library/zhhddkxy\(v=vs.100\).aspx](http://msdn.microsoft.com/en-us/library/zhhddkxy(v=vs.100).aspx)

64. HOTSPOT

You are developing an ASP.NET MVC application that authenticates a user by using claims-based authentication.

The application must:

- Use Windows Identity Foundation 4.5.
- Support the Windows Azure Access Control Service.

You need to implement authentication.

How should you build the class constructor? (To answer, select the appropriate option from the drop-down list in the answer area.)

Work Area

```
using Microsoft.IdentityModel.Claims;

public class IdentityClaim
{
    private string _identityProvider;
    private string _identityValue;
    public const string ACSProviderClaim =
        "http://schemas.microsoft.com/accesscontrolservice/...";

    public IdentityClaim([ ] identity)
    {
        if (identity != null)
        {
            foreach (var claim in identity.Claims)
            {
                if (claim.[ ] == [ ].NameIdentifier)
                {
                    _identityValue = claim.Value;
                }
                if (claim.[ ] == ACSProviderClaim)
                {
                    _identityProvider = claim.Value;
                }
            }
        }
    }
}
```

Work Area

```

using Microsoft.IdentityModel.Claims;

public class IdentityClaim
{
    private string _identityProvider;
    private string _identityValue;
    public const string ACSProviderClaim =
        "http://schemas.microsoft.com/accesscontrolservice/...";

    public IdentityClaim(     identity)
    {
        ClaimNames
        ClaimTypes
        IIdentityClaims
        IClaimsIdentity
        ClaimType
        ClaimName
    }

    if (identity != null)
    {
        foreach (var claim in identity.Cclaims)
        {
            if (claim.     ==     .NameIdentifier)
            {
                ClaimNames
                ClaimTypes
                IIdentityClaims
                IClaimsIdentity
                ClaimType
                ClaimName
            }
            _identityValue = claim.Value;
        }
        if (claim.     == ACSProviderClaim)
        {
            ClaimNames
            ClaimTypes
            IIdentityClaims
            IClaimsIdentity
            ClaimType
            ClaimName
        }
        _identityProvider = claim.Value;
    }
}
}

```

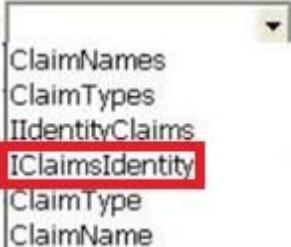
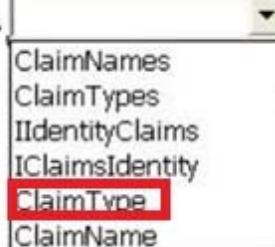
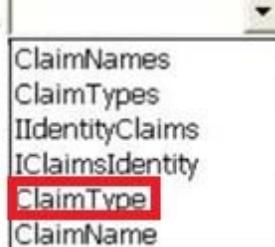
Answer:

Work Area

```

using Microsoft.IdentityModel.Claims;

public class IdentityClaim
{
    private string _identityProvider;
    private string _identityValue;
    public const string ACSProviderClaim =
        "http://schemas.microsoft.com/accesscontrolservice/...";

    public IdentityClaim( identity)
    {
        if (identity != null)
        {
            foreach (var claim in identity.Cclaims)
            {
                if (claim. == .NameIdentifier)
                {
                    _identityValue = claim.Value;
                }
                if (claim. == ACSProviderClaim)
                {
                    _identityProvider = claim.Value;
                }
            }
        }
    }
}

```

Explanation:

<http://garvincasimir.wordpress.com/2012/04/05/tutorial-mvc-application-using-azure-acss-and-forms-authentication-part-1/>

65.HOTSPOT

You are developing an ASP.NET MVC application.

You need to store membership information in a Microsoft SQL Server database.

How should you configure the membership provider? (To answer, select the appropriate options in the answer area.)

Work Area

```
<configuration>
  <connectionStrings>
    <add name="SqlServices"
      connectionString="Data Source=localhost;
      Integrated Security=SSPI;Initial Catalog=aspnetdb;" />
  </connectionStrings>
  <system.web>
    <authentication mode="Forms" >
      <forms loginUrl="login.aspx"
        name=".ASPFXFORMSAUTH" />
    </authentication>
    <authorization>
      <deny users="?" />
    </authorization>
    <membership defaultProvider="SqlProvider">
      <providers>
        <add
          name="SqlProvider"

        <!-- Configuration for SqlProvider -->
        <!-- Configuration for ApplicationName -->
      </providers>
    </membership>
  </system.web>
</configuration>
```

Work Area

```

<configuration>
  <connectionStrings>
    <add name="SqlServices"
      connectionString="Data Source=localhost;
      Integrated Security=SSPI;Initial Catalog=aspnetdb;" />
  </connectionStrings>
  <system.web>
    <authentication mode="Forms" >
      <forms loginUrl="login.aspx"
        name=".ASPXFORMSAUTH" />
    </authentication>
    <authorization>
      <deny users="?" />
    </authorization>
    <membership defaultProvider="SqlProvider">
      <providers>
        <add
          name="SqlProvider"

```

```

type="System.Web.Security.SqlMembershipProvider"
type="System.Web.Security.SqlProvider"
namespace="System.Web.Security.SqlMembershipProvider"
namespace="System.Web.Security.SqlProvider"

```

```

connectionString="SqlServices"
connectionStringName="SqlServices"

      applicationName="MyApplication" />
    </providers>
  </membership>
</system.web>
</configuration>

```

Answer:

Work Area

```

<configuration>
  <connectionStrings>
    <add name="SqlServices"
      connectionString="Data Source=localhost;
        Integrated Security=SSPI;Initial Catalog=aspnetdb;" />
  </connectionStrings>
  <system.web>
    <authentication mode="Forms" >
      <forms loginUrl="login.aspx"
        name=".ASPXFORMSAUTH" />
    </authentication>
    <authorization>
      <deny users="?" />
    </authorization>
    <membership defaultProvider="SqlProvider">
      <providers>
        <add
          name="SqlProvider"
          type="System.Web.Security.SqlMembershipProvider"
          type="System.Web.Security.SqlProvider"
          namespace="System.Web.Security.SqlMembershipProvider"
          namespace="System.Web.Security.SqlProvider"
          connectionString="SqlServices"
          connectionStringName="SqlServices"
          applicationName="MyApplication" />
      </providers>
    </membership>
  </system.web>
</configuration>

```

Explanation:

<http://msdn.microsoft.com/en-us/library/system.web.security.sqlmembershipprovider.aspx>

66. You are designing a distributed application.

The application must store a small amount of insecure global information that does not change frequently. You need to configure the application to meet the requirements.

Which server-side state management option should you use? (Each correct answer presents a complete solution. Choose all that apply.)

A. Application state

- B. Session state
- C. Database support
- D. Profile properties

Answer: A, C

67.You are developing an ASP.NET MVC application. The application is deployed in a web farm and is accessed by many users.

The application must handle web server failures gracefully. The servers in the farm must share the short-term state information.

You need to persist the application state during the session.

What should you implement?

- A. ASP.NET session state
- B. A local database
- C. A state server
- D. Profile properties

Answer: C

68.You are developing an ASP.NET MVC application that will be deployed to servers on multiple networks.

The application must be compatible with multiple browsers. You must track the page number that the user is viewing in search results.

You need to program the location for storing state information.

Where should you persist state information?

- A. Session
- B. QueryString
- C. Application
- D. TempData

Answer: B

69.HOTSPOT

You are developing an ASP.NET MVC web application that enables users to open Microsoft Excel files.

The current implementation of the ExcelResult class is as follows.

```
public class ExcelResult : ActionResult
{
    public string Path { get; set; }

    public override void ExecuteResult(ControllerContext context)
    {
        ...
    }
}
```

You need to enable users to open Excel files.

How should you implement the ExecuteResult method? (To answer, select the appropriate options in the answer area.)

Work Area

```
var response = context.HttpContext.Response;
var request = context.HttpContext.Request;

if (canProcess)
{
    response.Clear();
    response.ContentType = "application/vnd.ms-excel";
    response.AddHeader("Content-Disposition", "attachment; filename=Report.xls");
    response.WriteFile(context.HttpContext.Server.MapPath(Path));
}
```

Work Area

```

var response = context.HttpContext.Response;
var request = context.HttpContext.Request;

var canProcess = request.AcceptTypes.Contains("application/vnd.ms-excel");
var canProcess = request.ContentType.Contains("application/vnd.ms-excel");

if (canProcess)
{
    response.Clear();

    response.AddHeader("content-disposition", "attachment; filename=dl");
    response.Output.Write("content-disposition", "application/vnd.ms-excel");

    response.ContentType = "application/vnd.ms-excel";
    response.ContentEncoding = new UTF8Encoding();

    response.WriteFile(context.HttpContext.Server.MapPath(Path));
}

```

Answer:

Work Area

```

var response = context.HttpContext.Response;
var request = context.HttpContext.Request;

var canProcess = request.AcceptTypes.Contains("application/vnd.ms-excel");
var canProcess = request.ContentType.Contains("application/vnd.ms-excel");

if (canProcess)
{
    response.Clear();

    response.AddHeader("content-disposition", "attachment; filename=dl");
    response.Output.Write("content-disposition", "application/vnd.ms-excel");

    response.ContentType = "application/vnd.ms-excel";
    response.ContentEncoding = new UTF8Encoding();

    response.WriteFile(context.HttpContext.Server.MapPath(Path));
}

```

70. You are developing an ASP.NET MVC web application in Visual Studio 2012. The application requires several thousand content files. All content is hosted on the same IIS instance as the application.

You detect performance issues when the application starts.

You need to resolve the performance issues.

What should you do?

- A. Enable compression in IIS.
- B. Move the content to a second server.
- C. Combine the content files by using ASP.NET MVC bundling.
- D. Implement HTTP caching in IIS.

Answer: C

71. You are designing an HTML5 website.

You need to design the interface such that the content is viewable in all types of browsers, including screen readers.

What should you do? (Each correct answer presents a complete solution. Choose all that apply.)

- A. Ensure that content elements have valid and descriptive names.
- B. Use Resource Description Framework (RDF) to describe content elements.
- C. Convert HTML forms to XForms.
- D. Use HTML5 semantic markup elements.
- E. Annotate content elements with Accessible Rich Internet Application (ARIA) attributes.

Answer: D, E

72. You are developing an ASP.NET MVC application in Visual Studio 2012. The application supports multiple cultures.

The application contains three resource files in the Resources directory:

- ProductDictionary.resx
- ProductDictionary.es.resx
- ProductDictionary.fr.resx

Each file contains a public resource named Currency with the localized currency symbol. The application is configured to set the culture based on the client browser settings.

The application contains a controller with the action defined in the following code segment. (Line numbers are included for reference only.)

```
01 public ActionResult GetProducts()
02 {
03
04     List<ProductModel> products = DataBase.DBAccess.GetProducts();
05     return View(products);
06 }
```

You need to set ViewBag.LocalizedCurrency to the localized currency contained in the resource files.

Which code segment should you add to the action at line 03?

- A. ViewBag.LocalizedCurrency = Resources.ProductDictionary.Currency;
- B. ViewBag.LocalizedCurrency = HttpContext.GetGlobalResourceObject("ProductDictionary", "Currency", new System.Globalization.CultureInfo("en-US"));

- C. ViewBag.LocalizedCurrency = HttpContext.GetLocalResourceObject("ProductDictionary", "Currency");
D. ViewBag.LocalizedCurrency = HttpContext.GetGlobalResourceObject("ProductDictionary", "Currency");

Answer: A

73. You are developing an ASP.NET MVC application.

You need to authenticate clients by using an ASP.NET membership database.

Which authentication method should you implement?

- A. Kerberos
B. Forms
C. Basic
D. Windows

Answer: B

74. DRAG DROP

You are developing an ASP.NET MVC application that authenticates a user by using claims-based authentication.

The application must:

- Use Windows Identity Foundation 4.5.
- Support the Windows Azure Access Control Service.

You need to implement authentication.

How should you build the class constructor? (To answer, drag the appropriate code segment to the correct location or locations in the answer area. 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.)

```

ClaimNames
ClaimTypes
IIdentityCla
IClaimsIdent
ClaimType
ClaimName

using Microsoft.IdentityModel.Claims;

public class IdentityClaim
{
    private string _identityProvider;
    private string _identityValue;
    public const string ACSProviderClaim =
        "http://schemas.microsoft.com/accesscontrolservice/...";

    public IdentityClaim( [ ] identity)
    {
        if (identity != null)
        {
            foreach (var claim in identity.Cclaims)
            {
                if (claim. [ ] == [ ].NameIdentifier)
                {
                    _identityValue = claim.Value;
                }
                if (claim. [ ] == ACSProviderClaim)
                {
                    _identityProvider = claim.Value;
                }
            }
        }
    }
}

```

Answer:

Box 1: IClaimsIdent

Box 2: ClaimType

Box 3: ClaimTypes

Box 4: ClaimType

Explanation:

Similar Explanation:

For Box 1, see line 15.

For Box 2, see line 22.

For Box 3, see line 22.

For Box 4, see line 26.

using System;

02using System.Collections.Generic;

03using System.Linq;

04using System.Web;

05using Microsoft.IdentityModel.Claims;

06

07namespace MVC3MixedAuthenticationSample.Models

08{

```
09  public class IdentityClaim
10  {
11      private string _identityProvider;
12      private string _identityValue;
13      public const string ACSProviderClaim
14          ="http://schemas.microsoft.com/accesscontrolservice/2010/07/claims/identityprovider";
15
16      public IdentityClaim(IClaimsIdentity identity)
17      {
18          if (identity != null)
19          {
20              foreach (var claim in identity.Claims)
21              {
22                  if (claim.ClaimType == ClaimTypes.NameIdentifier)
23                  {
24                      _identityValue = claim.Value;
25                  }
26                  if (claim.ClaimType == ACSProviderClaim)
27                  {
28                      _identityProvider = claim.Value;
29                  }
30
31          }
32      }
33
34 }
```

75. You are developing an ASP.NET MVC application that will be deployed on a web farm.

Passwords must be stored in the web.config file and must not be readable or in a format that is easily decodable.

You need to encrypt the passwords that are stored in the web.config file.

Which command-line tool should you use?

- A. Aspnet_regiis.exe
- B. Aspnet_regbrowsers.exe
- C. Aspnet_setreg.exe
- D. Aspnet_compiler.exe

Answer: A

76.You are developing an ASP.NET MVC web application that includes the following method.

```
public double GoldMined(double currentGold, double newlyMinedGold)
{
    double totalGold = 0.00;
    totalGold = currentGold + newlyMinedGold;
    return totalGold;
}
```

You need to test the GoldMined method.

Which unit test should you use?

C A. [TestMethod()]
public void GoldMinedTest()
{
 double currentGold = 175.05;
 double newlyMinedGold = 76.03;
 double totalGold = 251.08;
 double result = 0.00;

 result = GoldMined(currentGold, newlyMinedGold);
 Assert.IsTrue(totalGold, result);
}

C B. [TestMethod()]
private void GoldMinedTest()
{
 double currentGold = 175.05;
 double newlyMinedGold = 76.03;
 double totalGold = 251.08;
 double result = 0.00;

 result = GoldMined(currentGold, newlyMinedGold);
 Assert.AreEqual(totalGold, result);
}

C C. [UnitTests()]
public void GoldMinedTest()
{
 double currentGold = 175.05;
 double newlyMinedGold = 76.03;
 double totalGold = 251.08;
 double result = 0.00;

 result = GoldMined(currentGold, newlyMinedGold);
 Assert.AreEqual(totalGold, result);
}

C D. [TestMethod()]
public void GoldMinedTest()
{
 double totalGold = 175.05;
 double newlyMinedGold = 76.03;
 double totalGold = 251.08;
 double result = 0.00;

 result = GoldMined(currentGold, newlyMinedGold);
 Assert.AreEqual(totalGold, result);
}

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Answer: D

77. You are developing an ASP.NET MVC application by using Visual Studio 2012.

The application throws and handles exceptions when it runs.

You need to examine the state of the application when exceptions are thrown.

What should you do?

- A. From the Debug menu in Visual Studio 2012, select Exceptions. Enable the Thrown check box for Common Language Runtime Exceptions.
- B. From the DEBUG menu in Visual Studio 2012, select Attach to Process. Select the IIS process.
- C. From the Debug menu in Visual Studio 2012, select Exceptions. Disable the User-unhandled check box for Common Language Runtime Exceptions.
- D. From the TOOLS menu in Visual Studio 2012, click Customize. Click Commands tab and select Debug.

Answer: A

78. HOTSPOT

You are developing an ASP.NET MVC application that has pages for users who browse the site with Windows Phone 7.

The pages for Windows Phone 7 include the following files:

- _Layout.WP7.cshtml
- Index.WP7.cshtml

You need to update the application so that it renders the customized files correctly to Windows Phone 7 users.

How should you update the Application_Start method? (To answer, select the appropriate option from the drop-down list in the answer area.)

Work Area

```
protected void Application_Start()
{
    DisplayModeProvider.Instance.Modes.Insert(0, new
    {
        ContextCondition = (context =>
            context.GetOverriddenUserAgent().IndexOf
            [REDACTED] ) >= 0)
    });
    AreaRegistration.RegisterAllAreas();
}
```

Work Area

```
protected void Application_Start()
{
    DisplayModeProvider.Instance.Modes.Insert(0, new
    {
        DefaultDisplayMode("WP7")
        ("Windows Phone OS",
        StringComparison.OrdinalIgnoreCase)
        DefaultDisplayMode("Mobile")
        ("Mobile",
        AreaRegistration.RegisterAllDevices());
    });

    ContextCondition = (context =>
        context.GetOverriddenUserAgent().IndexOf(
        "Windows Phone OS",
        StringComparison.OrdinalIgnoreCase) >=
        0);
}

AreaRegistration.RegisterAllAreas();
```

Answer:

Work Area

```
protected void Application_Start()
{
    DisplayModeProvider.Instance.Modes.Insert(0, new
    {
        DefaultDisplayMode("WP7")
        ("Windows Phone OS",
        StringComparison.OrdinalIgnoreCase
        DefaultDisplayMode("Mobile")
        ("Mobile",
        AreaRegistration.RegisterAllDevices());
    });

    ContextCondition = (context =>
        context.GetOverriddenUserAgent().IndexOf

        DefaultDisplayMode("WP7")
        ("Windows Phone OS",
        StringComparison.OrdinalIgnoreCase
        DefaultDisplayMode("Mobile")
        ("Mobile",
        AreaRegistration.RegisterAllDevices();

    ) >= 0)

    DefaultDisplayMode("WP7")
    ("Windows Phone OS",
    StringComparison.OrdinalIgnoreCase
    DefaultDisplayMode("Mobile")
    ("Mobile",
    AreaRegistration.RegisterAllDevices();

});

AreaRegistration.RegisterAllAreas();
```

79. You are developing an ASP.NET MVC web application for viewing a photo album. The application is designed for devices that support changes in orientation, such as tablets and smartphones. The application displays a grid of photos in portrait mode.

When the orientation changes to landscape, each tile in the grid expands to include a description. The HTML that creates the gallery interface resembles the following markup.

```
<ul class="gallery">
  <li>
    
    <div>Description</div>
  </li>
</ul>
```

The CSS used to style the tiles in portrait mode is as follows.

```
ul.gallery > li {
  width: 100px;
}

ul.gallery > li > div {
  display: none;
}
```

If this CSS is omitted, the existing CSS displays the tiles in landscape mode.

You need to update the portrait mode CSS to apply only to screens with a width less than 500 pixels.

Which code segment should you use?

A. @media resolution(max-width: 500px) {

...

}

B. @media screen(min-width: 0px, max-width: 500px) {

...

}

C. @media screen and (width <= 500px) {

...

}

D. @media screen and (max-width: 500px) {

...

}

Answer: D

80. You are designing a distributed banking application that handles multiple customers. A user may log on to the site to perform activities such as checking balances, performing transactions, and other activities that must be done securely.

The application must store secure information that is specific to an individual user. The data must be automatically and securely purged when the user logs off.

You need to save transient information in a secure data store.

Which data store should you use?

- A. .NET session state
- B. .NET profile properties
- C. .NET application state
- D. Shared database

Answer: A

81. You are developing an ASP.NET MVC application.

The application must allow users to enter HTML in a feedback text box only.

You need to disable request validation.

What should you do?

- A. Use the HttpRequest.Form property to read the unvalidated form value.
- B. Apply and set the ValidateInput attribute on the controller action to FALSE.
- C. Use the HttpRequest.Unvalidated property to read the unvalidated form value.
- D. Apply and set the CausesValidation attribute on the controller action to FALSE.

Answer: C

Explanation:

The HttpRequest.Unvalidated Property provides access to HTTP request values without triggering request validation.

82. You are developing an ASP.NET MVC application that supports multiple cultures and multiple languages. The application will be sold to international customers.

The ASP.NET MVC application must store localized content in satellite assemblies for multiple languages.

You need to generate the satellite assemblies during an automated build.

Which tool should you use?

- A. Gacutil.exe
- B. Al.exe
- C. Ildasm.exe
- D. nasm.exe

Answer: B

Explanation:

Use the Assembly Linker (Al.exe) to compile .resources files into satellite assemblies. Al.exe creates an assembly from the .resources files that you specify. By definition, satellite assemblies can only contain resources. They cannot contain any executable code.

The following Al.exe command creates a satellite assembly for the application MyApp from the file strings.de.resources.

```
al /t:lib /embed:strings.de.resources /culture:de /out:MyApp.resources.dll
```

83.You are preparing for the deployment of an ASP.NET MVC application. You need to generate a deployment manifest.

Which command-line tool should you use?

- A. Mage.exe
- B. Ngen.exe
- C. ALexe
- D. Resgen.exe

Answer: C

Explanation:

AL.exe generates a file with an assembly manifest from one or more files that are either resource files or Microsoft intermediate language (MSIL) files.

84.DRAG DROP

You are developing an ASP.NET MVC application. The application has a view that displays a list of orders in a multi-select list box.

You need to enable users to select multiple orders and submit them for processing.

What should you do? (To answer, drag the appropriate words to the correct targets. Each word 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.)

Words	Answer area
model binder	Create a custom Word
model	and retrieve selected values from the Word .
http context	
binding context	
http handler	

Answer:

Create a custom model binder
and retrieve selected values from the binding context

85.DRAG DROP

You are developing an ASP.NET MVC application.

Before an action is executed, information about the action must be written to a log. After results are returned, information about the results also must be written to the log.

You need to log the actions and results.

You have the following code:

```
Target 1
{
    public override void
Target 2
{
    Logger.Log("ActionLog", filterContext.RouteData);
}
public override void
Target 3
{
    Logger.Log("ResultLog", filterContext.RouteData);
}
}
```

Which code segments should you include in Target 1, Target 2 and Target 3 to implement the LogActionFilter class? (To answer, drag the appropriate code segments to the correct targets. 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.)

Code Segments	Answer area
OnActionExecuting(ActionExecutingContext filterContext)	Target 1: Code Segment
OnActionExecuted(ActionExecutedContext filterContext)	Target 2: Code Segment
OnResultExecuting(ResultExecutingContext filterContext)	Target 3: Code Segment
OnResultExecuted(ResultExecutedContext filterContext)	
public class LogActionFilter : ActionFilterAttribute	
public class LogActionFilter : IActionFilter	

Answer:

Target 1:

Target 2:

Target 3:

86. You are developing an ASP.NET MVC application.

The application provides a RESTful API for third-party applications. This API updates the information for a contact by embedding the information in the URL of an HTTP POST.

You need to save the Contact type when third-party applications use the EditContact method.

Which code segment should you use? {Each correct answer presents a complete solution. Choose all that apply.)

A.

```
public ActionResult EditContact(FormCollection values)
{
    var c = new Contact()
    {
        FirstName = values["FirstName"],
        LastName = values["LastName"]
    };
    SaveContact(c);
    return View(c);
}
```

B.

```
public ActionResult EditContact(Contact c)
{
    SaveContact(c);
    return View(c);
}
```

C.

```
public ActionResult EditContact()
{
    var c = new Contact()
    {
        FirstName = Request.QueryString["FirstName"],
        LastName = Request.QueryString["LastName"]
    };
    SaveContact(c);
    return View(c);
}
```

D.

```
public ActionResult EditContact(QueryStringValueProvider values)
{
    var c = new Contact()
    {
        FirstName = values.GetValue["FirstName"],
        LastName = values.GetValue["LastName"]
    };
    SaveContact(c);
    return View(c);
}
```

A. Option A

B. Option B

C. Option C

D. Option D

Answer: B, D

Explanation:

Basics of RESTful services:

REST stands for Representational State Transfer, it is a simple stateless architecture that runs over HTTP where each unique URL is representation of some resource. There are four basic design principles which should be followed when creating RESTful service:

- * Use HTTP methods (verbs) explicitly and in consistent way to interact with resources (Uniform Interface), i.e. to retrieve a resource use GET, to create a resource use POST, to update a resource use PUT/PATCH, and to remove a resource use DELETE.
- Etc.

87.HOTSPOT

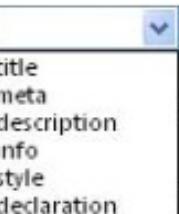
You are optimizing an Internet-facing website for search engine optimization.

You are reading a Site Analysis Report from the SEO Toolkit. The report returns warnings that indicate the website HTML lacks key information necessary for search engine indexing.

You need to improve the optimization of the site.

What should you do? (To answer, select the appropriate option from the drop-down list in the answer area.)

Answer Area

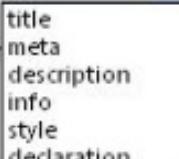
Add the <  > tag inside of the <head> section of the page.

 title
meta
description
info
style
declaration

The text in the tag should be unique, descriptive and accurate.

Add <  name="  "content="..."> to the <head>

 title
meta
description
info
style
declaration

 title
meta
description
info
style
declaration

section of the page. The content must be human readable, actionable, and rich in keywords.

Answer:

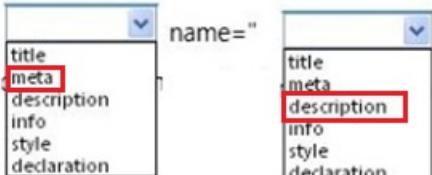
Answer Area

Add the <  > tag inside of the <head> section of the page.



The text in the tag should be unique, descriptive and accurate.

Add <  name="  "content="..."> to the <head>



section of the page. The content must be human readable, actionable, and rich in keywords.

88. You are designing a data-oriented application that features a variety of storage schemas.

The application object model must be mapped to the various storage schemas.

You need to enable developers to manipulate the data.

Which ADO.NET data access strategy should you use? (Each correct answer presents a complete solution. Choose all that apply.)

- A. LINQ to SQL
- B. Entity Framework
- C. DataAdapter
- D. DataReader

Answer: A, B, C

89. You are developing an ASP.NET MVC application that provides instant messaging capabilities to customers.

You have the following requirements:

- Messages must be able to be sent and received simultaneously.
- Latency and unnecessary header data must be eliminated.
- The application must comply with HTML5 standards.

You need to design the application to meet the requirements.

What should you do?

- A. Configure polling from the browser.
- B. Implement long-running HTTP requests.
- C. Implement WebSockets protocol on the client and the server.
- D. Instantiate a MessageChannel object on the client.

Answer: D

90.You are developing an ASP.NET MVC application that uses forms authentication to verify that the user is logged in.

Authentication credentials must be encrypted and secure so no user identity is exposed.

You need to ensure that user credentials are persisted after users log on.

Where should you store the credentials? (Each correct answer presents a complete solution. Choose all that apply.)

- A. In Session on the server
- B. In a cookie stored in the browser
- C. In ViewData in the application
- D. In TempData on the server

Answer: A, B

91.You are developing an ASP.NET MVC application that uses forms authentication. The application uses SQL queries that display customer order data.

Logs show there have been several malicious attacks against the servers.

You need to prevent all SQL injection attacks from malicious users against the application.

How should you secure the queries?

- A. Check the input against patterns seen in the logs and other records.
- B. Escape single quotes and apostrophes on all string-based input parameters.
- C. Implement parameterization of all input strings.
- D. Filter out prohibited words in the input submitted by the users.

Answer: C

Explanation:

SQL Injection Prevention, Defense Option 1: Prepared Statements (Parameterized Queries)

The use of prepared statements (aka parameterized queries) is how all developers should first be taught how to write database queries. They are simple to write, and easier to understand than dynamic queries.

Parameterized queries force the developer to first define all the SQL code, and then pass in each parameter to the query later. This coding style allows the database to distinguish between code and data, regardless of what user input is supplied.

Prepared statements ensure that an attacker is not able to change the intent of a query, even if SQL commands are inserted by an attacker.

Reference: SQL Injection Prevention Cheat Sheet

92.You are developing an ASP.NET MVC application that uses forms authentication against a third-party database.

You need to authenticate the users.

Which code segment should you use?

- A. `public class SAMembershipProvider : SqlMembershipProvider`
 {
 ...
 }
- B. `public class SAMembershipProvider : ClientFormsMembershipProvider`
 {
 ...
 }
- C. `public class SAMembershipProvider : ProviderBase`
 {
 ...
 }
- D. `public class SAMembershipProvider : MembershipProvider`
 {
 ...
 }

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Answer: C

Explanation:

Class ProviderBase

The provider model is intended to encapsulate all or part of the functionality of multiple ASP.NET features, such as membership, profiles, and protected configuration.

93. You are designing an enterprise-level Windows Communication Foundation (WCF) application. User accounts will migrate from the existing system. The new system must be able to scale to accommodate the increasing load.

You need to ensure that the application can handle large-scale role changes.

What should you use for authorization? (Each correct answer presents a complete solution. Choose all that apply.)

- A. Resource-based trusted subsystem model
- B. Identity-based approach
- C. Role-based approach
- D. Resource-based impersonation/delegation model

Answer: B, C

Explanation:

Advanced Maturity: Authorization as a Service

In the advanced level of maturity for authorization, role storage and management is consolidated and authorization itself is a service available to any solution that is service-enabled.

Basic	Standard	Advanced	Federated
<ul style="list-style-type: none"> Legacy client/server architecture Impersonation Authentication as authorization Access control at resource level 	<ul style="list-style-type: none"> N-tiered application architecture Impersonation Some role-based access control (RBAC) authorization Each application implements authorization Access control at application level Roles and permissions abstracted from resources 	<ul style="list-style-type: none"> Some service-oriented architecture Trusted subsystem model Role-based Authorization gateway Primary authorization interface on ESB Cross-platform authorization available Global roles available 	<ul style="list-style-type: none"> Wide adoption of SOA Authorization gateway based on Federated identities. Supports claim-based tokens Authorization token-based Support for WS-Authorization tokens Authorization based on Federated identities.

* The Trusted Subsystems Model

Once authorization is available as an autonomous service, the need for impersonation is eliminated.

Instead of assuming the identity of the user, the application uses its own credentials to access services and resources, but it captures the user's identity and passes it as a parameter (or token) to be used for authorization when a request is made. This model is referred to as the trusted subsystem model, because the application acts as a trusted subsystem within the security domain.

94.DRAG DROP

You are building an ASP.NET MVC web application.

The application will be viewed by users on their mobile phones.

You need to ensure that the page fits within the horizontal width of the device screens.

You have the following markup:

```
<!DOCTYPE html>
<html>
<head>
    <title>@ViewBag.Title</title>
    <Target 1 Target 2 Target 3>
    <link href="@Url.Content("~/Content/Site.css")"
        rel="stylesheet" type="text/css" />
    <script src="@Url.Content("~/Scripts/jquery-1.6.2.min.js")"
        type="text/javascript"></script>
</head>
<body>
```

Which markup segments should you include in Target 1, Target 2 and Target 3 to complete the markup? (To answer, drag the appropriate markup segments to the correct targets. Each line of code 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.)

Markup Segments

meta

area

Markup Segments

name="viewport"

name="scheme"

Markup Segments

content="width=device-width"

content="user-scalable"

Answer area

Target 1: **Markup segment**

Target 2: **Markup segment**

Target 3: **Markup segment**

Answer:

Target 1: **meta**

Target 2: **name="viewport"**

Target 3: **content="width=device-width"**

95.DRAG DROP

You are developing an ASP.NET MVC web application that requires HTML elements to take on new behaviors. These should be implemented with a behavior script in a page that is only for Microsoft Internet Explorer users.

The colorchange.js script uses the Microsoft CSS vendor-specific Behavior extension. You need to apply the script with CSS.

You need to use the script to change the color of text.

You have the following markup:

<h1 Target 1 Target 2>What a colorful header!</h1>

Which styles should you include in Target 1 and Target 2 to complete the markup? (To answer, drag the appropriate styles to the correct targets. Each style 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.)

Styles

style="behavior:

style="url:

style="behaviorurl:

Answer area

Target 1:

Target 2:

Styles

url(colorchange.js);"

behavior(colorchange.js);"

colorchange.js;"

⋮

Answer:

Target 1:

Target 2:

96.DRAG DROP

You are developing an ASP.NET MVC application in Visual Studio 2012. The application will be viewed with browsers on desktop devices and mobile devices. The application uses the Razor View Engine to display data.

The application contains two layouts located in the /Views/Shared directory.

These layouts are named:

- _Layout.cshmtl
- _MobileLayoutcshtml

The application must detect if the user is browsing from a mobile device. If the user is browsing from a mobile device, the application must use the _MobileLayout.cshtml file. If the user is browsing from a desktop device, the application must use .Layout, cs html.

You need to ensure that the application renders the layout that is appropriate for the browser.

You have the following code:

```
@{
    if (Target 1)
    { Target 2;
    }
    else
    {
        Target 3;
    }
}
```

Which code segments should you include in Target 1, Target 2 and Target 3 to complete the code of the ViewStart.cshtml file? (To answer, drag the appropriate code segments to the correct targets. 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.)

Segments

Layout = "~/Views/Shared/_Layout.cshtml";
Layout = "~/Views/Shared/_MobileLayout.cshtml";
Request.Browser.IsBrowser("MobileDevice")
Request.Browser.IsMobileDevice
Layout = new MasterPage("_Layout.cshtml")
Layout = new MasterPage("_MobileLayout.cshtml")

Answer area

Target 1:	Segment
Target 2:	Segment
Target 3:	Segment

.....

Answer:

Target 1:	Request.Browser.IsMobileDevice
Target 2:	Layout = "~/Views/Shared/_MobileLayout.cshtml";
Target 3:	Layout = "~/Views/Shared/_Layout.cshtml";

97. You are developing an ASP.NET MVC application to be used on the Internet. The environment uses Active Directory with delegation to access secure resources.

Users must be able to log on to the application to maintain their personal preferences.

You need to use the least amount of development effort to enable users to log on.

What should you do?

- A. Enable Forms authentication
- B. Enable Windows authentication
- C. Generate server SSL certificates and install them in IIS
- D. Enable Digest authentication

Answer: B

Explanation:

Requirements for Delegation

Delegation relies on Integrated Windows authentication to access resources. There is no limit on the number of computers that you can delegate your account -- you must correctly configure each of them. The Integrated Windows authentication method works only if the following two conditions exist:

- / You set up your network to use the Kerberos authentication protocol that requires Active Directory.
- / You set up the computers and accounts on your network as trusted for delegation.

98. You are developing a controller for an ASP.NET MVC application that manages message board postings.

The security protection built in to ASP.NET is preventing users from saving their HTML.

You need to enable users to edit and save their HTML while maintaining existing security protection measures.

Which code segment should you use?

- A.

```
[ValidateInput(false)]
public class MessageBoardController : Controller
{
    public ActionResult SavePosting(MessageBoardPosting mbp)
    {
        SaveMessageBoardPosting(mbp);
        return View("ManagePosting");
    }
}
```
- B.

```
public class MessageBoardController : Controller
{
    [ValidateInput(true)]
    public ActionResult SavePosting(MessageBoardPosting mbp)
    {
        SaveMessageBoardPosting(mbp);
        return View("ManagePosting");
    }
}
```
- C.

```
[ValidateInput(true)]
public class MessageBoardController : Controller
{
    public ActionResult SavePosting(MessageBoardPosting mbp)
    {
        SaveMessageBoardPosting(mbp);
        return View("ManagePosting");
    }
}
```
- D.

```
public class MessageBoardController : Controller
{
    [ValidateInput(false)]
    public ActionResult SavePosting(MessageBoardPosting mbp)
    {
        SaveMessageBoardPosting(mbp);
        return View("ManagePosting");
    }
}
```

A. Option A

- B. Option B
- C. Option C
- D. Option D

Answer: B

99.DRAG DROP

You are developing an ASP.NET MVC application that allows users to log on by using a third-party authenticator.

You need to configure Microsoft Azure Access Control Services and the application.

Which five actions should you perform in sequence? (To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.)

Actions	Answer Area
Generate provider rules for claims.	
Register the application as the relying party.	
Add a Security Token Service (STS) reference in Visual Studio 2012.	
Create a service namespace.	
Add the third-party as the identity provider.	
Add a symmetric key service identity.	

Answer:

Box 1: Create a service namespace

Box 2: Register the application as a relaying partner

Box 3: Add a Security Token Service (STS) reference in Visual Studio 2012

Box 4: Add the third-party as the identity provider

Box 5: Generate provider rules for claims

100.You are designing an MVC web application.

The view must be as simple as possible for designers who do not have a technical background.

You need to combine two existing models to meet the requirement.

Which component of the MVC framework should you use?

- A. View
- B. View Model
- C. Controller
- D. Model

Answer: B

101.HOTSPOT

You are using the features of the IIS SEO Toolkit to configure the website.

You need to exclude search engines from indexing parts of website.

What should you do? (To answer, select the appropriate option from the drop-down list in the answer area.)

Answer Area

Use the  feature in the IIS

- exclude
- disallow
- User-Agent.Exclusion
- Robots Exclusion
- robots.txt
- exclusions.txt

Search Engine Optimization Toolkit to create a 

- exclude
- disallow
- User-Agent.Exclusion
- Robots Exclusion
- robots.txt
- exclusions.txt

file and add 

- exclude
- disallow
- User-Agent.Exclusion
- Robots Exclusion
- robots.txt
- exclusions.txt

Answer:

Answer Area

Use the  feature in the IIS

- exclude
- disallow
- User-Agent.Exclusion
- Robots Exclusion**
- robots.txt
- exclusions.txt

Search Engine Optimization Toolkit to create a 

- exclude
- disallow
- User-Agent.Exclusion
- Robots Exclusion
- robots.txt**
- exclusions.txt

file and add 

- exclude**
- disallow**
- User-Agent.Exclusion
- Robots Exclusion
- robots.txt
- exclusions.txt

102.You are developing an application that uses many small images for various aspects of the interface.

The application responds slowly when additional resources are being accessed.

You need to improve the performance of the application.

What should you do?

- A. Preload all the images when the client connects to ensure that the images are cached.
- B. Combine all the images into a single image and use CSS to create sprites.
- C. Host all images on an alternate server and provide a CDN.
- D. Convert the images to .png file format and stream all images on a single connection.

Answer: C

103.HOTSPOT

You are developing an ASP.NET MVC application in Visual Studio 2012. The application supports multiple cultures.

To set the culture, the application must use the AcceptLanguage header field value sent by the client browser.

You need to ensure that the application can set the culture.

You have the following markup in the web.config file:

```
<system.web>
    <Target 1
        Target 2 = "true"
        Target 3 = "auto"
        culture = "auto"
    />
    ...

```

Which markup segments should you include in Target 1, Target 2 and Target 3 to complete the markup?
(To answer, select the appropriate options in the answer area.)

Answer Area

Target 1:

configSource
uiCulture
enableClientBasedCulture
siteMap
globalization

Target 2:

configSource
uiCulture
enableClientBasedCulture
siteMap
globalization

Target 3:

configSource
uiCulture
enableClientBasedCulture
siteMap
globalization

Answer:

Answer Area

Target 1:

configSource
uiCulture
enableClientBasedCulture
siteMap
globalization

Target 2:

configSource
uiCulture
enableClientBasedCulture
siteMap
globalization

Target 3:

configSource
uiCulture
enableClientBasedCulture
siteMap
globalization

104. You are developing an ASP.NET MVC application that enables you to edit and save a student object. The application must not retrieve student objects on an HTTP POST request.

You need to implement the controller.

Which code segment should you use? (Each correct answer presents a complete solution. Choose all that apply.)

- A.

```
public ActionResult EditStudent(int id, Student s)
{
    if (this.HttpContext.Request["ActionName"] == "GET")
    {
        c = RetrieveStudent(id);
    }

    if (this.HttpContext.Request["ActionName"] == "POST")
    {
        SaveStudent(s);
    }
    return View(s);
}
```
- B.

```
[ActionName("GET")]
public ActionResult EditStudent(int id)
{
    var c = RetrieveStudent(id);
    return View(s);
}

[ActionName("POST")]
public ActionResult EditStudent(int id, Student s)
{
    SaveStudent(s);
    return View(s);
}
```
- C.

```
[HttpGet]
public ActionResult EditStudent(int id)
{
    var c = RetrieveStudent(id);
    return View(s);
}

[HttpPost]
public ActionResult EditStudent(int id, Student s)
{
    SaveStudent(s);
    return View(s);
}
```
- D.

```
public ActionResult EditStudent(int id, Student s)
{
    if (this.HttpContext.Request.RequestType == "GET")
    {
        c = RetrieveStudent(id);
    }

    if (this.HttpContext.Request.RequestType == "POST")
    {
        SaveStudent(s);
    }
    return View(c);
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Answer: C, D

105. DRAG DROP

You are developing an ASP.NET MVC application in Visual Studio 2012. The application processes data for a bakery and contains a controller named BagelController.cs that has several actions. The GetBagel action is defined in the following code segment.

```
public ActionResult GetBagel(string bagelName)
{
    ...
}
```

The GetBagel action is the only action that should be accessed via a URL pattern. Routes to the other actions in the controller must be suppressed.

The default route must map to HomeController and the Index action.

You need to build the routes.

Which three code segments should you use in sequence? (To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.)

Actions	Answer Area
<pre>routes.MapRoute(name: "Bagels", url: "Bagel/GetBagel/{bagelName}", defaults: new { controller = "Bagel", action = "GetBagel" }); routes.IgnoreRoute("Bagel/{*}"); routes.IgnoreRoute("Bagel/{*pathInfo}");</pre>	
<pre>routes.MapRoute(name: "Default", url: "{controller}/{action}/ {id}", defaults: new { controller = "Home", action = "I dex", id = UrlParameter.Optional });</pre>	
<pre>routes.MapHttpRoute(name: "Bagels", routeTemplate: "Bagel/GetBagel/{bagelName}", defaults: new { controller = "Bagel", action = "GetBagel" });</pre>	

Answer:

Box 1:

```
routes.MapRoute(  
    name: "Bagels",  
    url: "Bagel/GetBagel/{bagelName}",  
  
    defaults: new { controller = "Bagel", action = "  
GetBagel" });
```

Box 2:

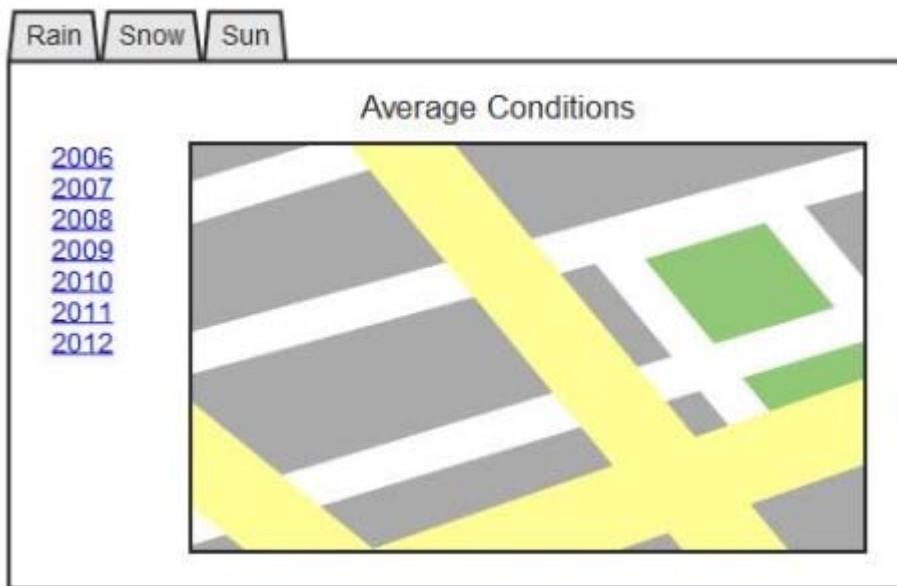
```
routes.MapRoute(  
    name: "Default", url: "{controller}/{action}/  
{id}",  
  
    defaults: new { controller = "Home", action = "I  
ndex", id = UrlParameter.Optional });
```

Box 3:

```
routes.IgnoreRoute("Bagel/{*pathInfo}");
```

106. You are implementing a website redesign of an existing website that provides historical weather condition maps.

The current layout resembles the graphic in the exhibit. (Click the Exhibit button.)



Year selection is implemented as a set of links, which causes the page to reload when the user changes the year. The year selection HTML is contained in a div with an id of "year-selector".

You need to modify the page so that the user can change the year without the page reloading.

You also need to ensure that there is minimal change to the design of the page.

Which code segment should you use?

- A.

```
$("#year-selector").slider({  
    orientation: "vertical",  
    range: { 2006: 2012 },  
    step: 1,  
  
});
```
- B.

```
$("#year-selector").datepicker({  
    yearRange: { 2000:2010 },  
    constrainInput: false,  
    stepMonths: 12  
  
});
```
- C.

```
$("#year-selector").datepicker({  
    numberOfMonths: 6 * 12,  
    showButtonPanel: true,  
    constrainInput: true,  
    stepMonths: 3  
  
});
```
- D.

```
$("#year-selector").slider({  
    orientation: "vertical",  
    min: 2006,  
    max: 2012,  
    step: 1,  
  
});
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Answer: A

107. You are designing a localized ASP.NET MVC online shopping application that will be deployed to customers in the United States, China, France, and Brazil. The application must support multiple cultures so that content in the appropriate language is available in each area.

You need to ensure that the content can be viewed in several languages.

How should you implement this feature?

- A. Use a resource (.resx) file to provide translations.
- B. Use Systems.Collections.Generics.Dictionary to store alternative translations.
- C. Ensure that all strings are marked internal to avoid conflict with internal literals.

D. Include language-specific content in the assembly manifest and use .NET culture libraries.

Answer: A

Explanation:

A resource file is an XML file that contains the strings that you want to translate into different languages or paths to images. The resource file contains key/value pairs. Each pair is an individual resource. Key names are not case sensitive. For example, a resource file might contain a resource with the key Button1 and the value Submit.

You create a separate resource file for each language (for example, English and French) or for a language and culture (for example English [U.K.], English [U.S.]). Each localized resource file has the same key/value pairs; the only difference is that a localized resource file can contain fewer resources than the default resource file. The built-in language fallback process then handles loading the neutral or default resource.

Reference: SP.NET Web Page Resources Overview

108. You are designing an enterprise-level Windows Communication Foundation (WCF) application. User accounts will migrate from the existing system. The new system must be able to scale to accommodate the increasing load.

The new servers are experiencing significant stress under load of large-scale role changes.

You need to ensure that the application can handle the stress.

Which authorizations should you redesign? (Each correct answer presents a complete solution. Choose all that apply.)

- A. Role-based approach
- B. Identity-based approach
- C. Resource-based trusted subsystem model
- D. Resource-based impersonation/delegation model

Answer: A, C

109. You are designing a distributed application.

The application must store secure information that is specific to an individual user. The data must be automatically purged when the user logs off.

You need to save transient information in a secure data store.

Which data store should you use?

- A. Session state
- B. Database storage
- C. Profile properties
- D. Application state

Answer: B

110. DRAG DROP

You are developing an ASP.NET MVC application in a web farm. The application has a page that uploads a customer's photo, resizes it, and then redirects the browser to a page where the new image is displayed along with the final dimensions.

The final dimensions should be available only to the page where the new image is displayed.

You need to store state and configure the application.

What should you do? (To answer, drag the appropriate item to the correct location. Each item 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.)

Items	Answer area
TempData	Store state in Item and set the mode attribute of
 ViewData	the sessionState element in the web.config file to Item
InProc	
SqlServer	

Answer:

Answer area

Store state in TempData and set the mode attribute of
the sessionState element in the web.config file to SqlServer

111. You are designing a localized ASP.NET application to support multiple cultures.

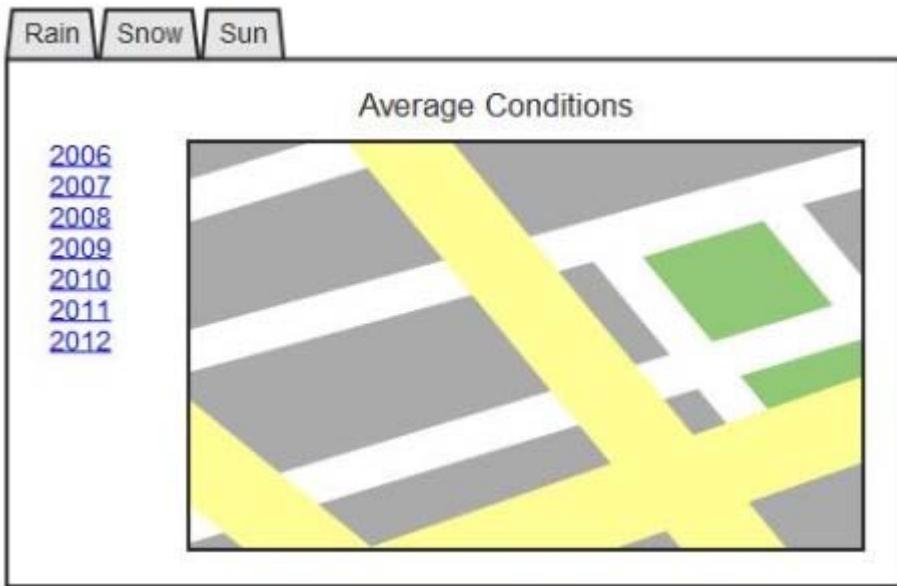
You need to ensure that the application can be displayed in several languages.

How should you implement this feature?

- A. Use a resource (.resx) file.
- B. Include language-specific content in the assembly manifest.
- C. Use Systems.Collections.Generics.Dictionary to store alternative translations.
- D. Ensure that all strings are marked internal.

Answer: A

112. You are implementing a website redesign of an existing website that provides historical weather condition maps. The current layout resembles the following graphic.



Year selection is implemented as a set of links, which causes the page to reload when the user changes the year. The year selection HTML is contained in a div with an id of "year-changer".

You need to modify the page so that the user can change the year without the page reloading. You also need to ensure that there is minimal change to the design of the page.

Which code segment should you use?

- A.

```
$("#year-changer").datepicker({
    numberOfMonths: 6 * 12,
    showButtonPanel: false,
    constrainInput: true,
    stepMonths: 12
});
```
- B.

```
$("#year-changer").slider({
    orientation: "vertical",
    min: 2006,
    max: 2012,
    step: 1
});
```
- C.

```
$("#year-changer").slider({
    orientation: "vertical",
    range: { 2006: 2012 },
    step: 1
});
```
- D.

```
$("#year-changer").datepicker({
    yearRange: { 2006:2012 },
    constrainInput: true,
    stepMonths: 12
});
```

A. Option A

B. Option B

C. Option C

D. Option D

Answer: B

Explanation:

jQuery code will bind the slider control to the div.

```
$(document).ready(function(){  
    $("#slider").slider();  
});
```

Now, when you run this page then you will see a long slider on page with no range. As we have not specified any range. slider control comes with various options/properties which can be set. Here are few of them.

1. min : Minimum value allowed for the slider.
2. max : Maximum allowed value for the slider.
3. step : How much you want to increment when you slide. Default is 1.
4. value : set default value of the slider.

Incorrect:

We are not handling dates. We are interested in integers.

Reference: Implement jQuery UI slider with ASP.NET

<http://www.jquerybyexample.net/2010/09/implement-jquery-ui-slider-with-aspnet.html>

113.HOTSPOT

You are developing an ASP.NET MVC application. The layout page of the application references the jQuery library. You develop a view that uses the layout page. The view includes the following markup:

```
<div id="newBooks"></div>  
<div>  
    <input type="button" id="addBookButton" name="addBook" value="Add Book" />  
</div>
```

The application includes the following class:

```
public class BookController : Controller  
{  
    public ActionResult CreateNewBook()  
    {  
        var bookViewModel = new BookViewModel();  
        return PartialView("~/Views/Shared/EditorTemplates/BookViewModel.cshtml", bookViewModel);  
    }  
}
```

When a user clicks the button, an AJAX call must retrieve the partial view and append it to the newBooks div element.

You need to implement the AJAX request.

How should you complete the relevant code? To answer, select the appropriate code segment from each list in the answer area.

Answer Area

```
<script language="javascript" type="text/javascript">
  $("#addBookButton").on('click', function () {
    $.ajax({
      dataType: 'html'
      data: 'newBooks'
      context: document.body
      url: '/Book/CreateNewBook'
    }).success(function (partialView) {
      $('#newBooks').html(partialView);
      $('#newBooks').text(partialView);
      $('#newBooks').html = partialView;
      $('#newBooks').append(partialView);
    });
  });
</script>
```

Answer:

```
<script language="javascript" type="text/javascript">
  $("#addBookButton").on('click', function () {
    $.ajax({
      dataType: 'html'
      data: 'newBooks'
      context: document.body
      url: '/Book/CreateNewBook'
    }).success(function (partialView) {
      $('#newBooks').html(partialView);
      $('#newBooks').text(partialView);
      $('#newBooks').html = partialView;
      $('#newBooks').append(partialView);
    });
  });
</script>
```

Explanation:

`$.ajax({`

`url: this.href,`

```
cache: false,  
  
success: function (html) { $("#fixedRows").append(html); }  
  
});
```

Reference: ASP MVC3 - Using partial view to append new HTML elements to page

114.You need to enable client-side validation for an ASP.NET MVC application.

Which three actions should you perform? Each correct answer presents part of the solution.

- A. Attach a custom validation attribute to the model properties that the view uses.
- B. Reference the jquery, jquery.validate and jquery.validate.unobtrusive script files in the view.
- C. Open the web.config file at the project root, and set the values of the ClientValidationEnabled and UnobtrusiveJavaScriptEnabled keys to True.
- D. For each form element, use the Validator.element() method to validate each item.
- E. Add data annotations to the model properties that the view uses.

Answer: BCE

Explanation:

B: . The validation can be implemented using jQuery and jQuery validation plug-in (jquery.validate.min.js and jquery.validate.unobtrusive.min.js).

C: When you are developing an MVC application in Visual Studio 2012 then the client-side becomes enabled by default, but you can easily enable or disable the writing of the following app setting code snippet in the web.config file.

```
<configuration>  
  
  <appSettings>  
  
    <add key="ClientValidationEnabled" value="true" />  
  
    <add key="UnobtrusiveJavaScriptEnabled" value="true" />  
  
  </appSettings>  
  
</configuration>
```

E: The jQuery validation plug-in takes advantage of the Data Annotation attributes defined in the model, which means that you need to do very little to start using it.

Reference: ASP.NET MVC Client Side Validation

<http://www.codeproject.com/Articles/718004/ASP-NET-MVC-Client-Side-Validation>

115.You develop an ASP.NET MVC application. The application has a controller named PeopleController.cs. The controller has an action method that returns a parent view. The parent view includes the following code. Line numbers are included for the reference only.

```
01 @model PartialView.Models.PersonViewModel
02 @{
03     ViewBag.Title = "People";
04 }
05 <div>
06     <h1>People</h1>
07 </div>
08 <div>
09
10 </div>
```

The application also contains a partial view named People. The parent view must display the partial view. You need to add code at line 09 to display the partial view within the parent view.

Which two code segments will achieve the goal? Each correct answer presents a complete solution.

- A. @Html.RenderPartial("People", Model);
- B. @Html.Partial("People", Model)
- C. @Html.Display("People", Model)
- D. @Html.Raw("People")

Answer: B

Explanation:

By default, any partial view rendered by calling `@Html.Partial("PartialViewName")` will get the view model passed to the parent view.

Reference: How to populate mvc razor partial view

<http://stackoverflow.com/questions/13769707/how-to-populate-mvc-razor-partial-view>

116. You are developing an ASP.NET MVC application that will run on Azure.

The application uses Event Tracing for Windows (ETW) for logging operations.

You need to retrieve the ETW data for the application from a deployed Azure instance by using the Azure Diagnostics API.

Which data source should you use?

- A. Azure Diagnostic infrastructure logs
- B. Windows event logs
- C. performance counters
- D. .NET EventSource

Answer: D

Explanation:

Azure Diagnostics 1.2 and 1.3 are Azure extensions that enable you to collect diagnostic telemetry data from a worker role, web role, or virtual machine running in Azure.

Diagnostics 1.2 and 1.3 enable the collection of ETW and .NET EventSource events.

Explanation:

EtwProviders>

```
<EtwEventSourceProviderConfiguration provider="SampleEventSourceWriter"
scheduledTransferPeriod="PT5M">

    <Event id="1" eventDestination="EnumsTable"/>

    <Event id="2" eventDestination="MessageTable"/>

    <Event id="3" eventDestination="SetOtherTable"/>

    <Event id="4" eventDestination="HighFreqTable"/>

    <DefaultEvents eventDestination="DefaultTable" />

</EtwEventSourceProviderConfiguration>

</EtwProviders>
```

Reference: Enabling Diagnostics in Azure Cloud Services and Virtual Machines

<https://azure.microsoft.com/sv-se/documentation/articles/cloud-services-dotnet-diagnostics/>

117. You are developing an Azure worker role. You enable crash dump collection for the role.

When the role starts, an external application stops responding.

You need to download the crash dump to determine why the application stops responding.

From which two locations can you download the crash dump? Each correct answer presents a complete solution.

- A. Azure Blob storage
- B. the temp folder on the virtual machine that is running the role instance
- C. Azure file storage
- D. the DiagnosticStore local resource folder on the virtual machine that is running the role instance

Answer: AD

Explanation:

When you enable collection of crash dumps, the resulting data is written to the CrashDumps directory in the DiagnosticStore local resource that is automatically configured for your role.

When crash dump data is transferred to persistent storage, it is stored to the wad-crash-dumps Blob container.

Reference: CrashDumps.EnableCollection Method

<https://msdn.microsoft.com/library/microsoft.windowsazure.diagnostics.crashdumps.enablecollection.aspx>

118.DRAG DROP

You are developing an ASP.NET web application that uses health monitoring to log events to the Windows Event Log. The application contains a custom event that is defined in the following code segment. Line numbers are included for reference only.

```

01 public class PaymentProcessorOutage : WebRequestEvent
02 {
03     public PaymentProcessorOutage(object eventSource, int eventCode) :
04         base("Payment Processor not responsive", eventSource, eventCode) {}
05
06     public override void FormatCustomEventDetails(WebEventFormatter formatter)
07     {
08         var message = string.Format("Payment processor became non-responsive on {0}", EventTime);
09         formatter.AppendLine(message);
10     }
11 }
```

You need to ensure that the event is correctly added to the Windows event log.

How should you complete the relevant code? 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.

Code segments	Answer Area
.WebExtendedBase + 30	
.ApplicationCodeBase + 30;	
.ApplicationDetailCodeBase + 30;	
.FormatCustomEventDetails(null);	
.Raise();	
.Concat()	

Answer:

```

public ActionResult myResult()
{
    var code = WebEventCodes .ApplicationDetailCodeBase + 30;
    var outage = new PaymentProcessorOutage(this, code);
    outage .Raise();
    return Content("done");
}
```

Explanation:

ApplicationDetailCodeBase: Identifies the offset for the application detail event codes. This field is constant.

WebRequestEvent.Raise()

Raises an event by notifying any configured provider that the event has occurred. (Inherited from WebBaseEvent.)

Incorrect:

* ActionResult WebEventCodes

- * WebExtendedBase: Identifies the offset for the custom event codes. This field is constant.
- * ApplicationCodeBase: Identifies the offset for the ASP.NET health-monitoring application event codes. This field is constant.

* There is no WebRequestEvent.Concat() event.

Reference: WebEventCodes Class

[https://msdn.microsoft.com/en-us/library/system.web.management.webeventcodes\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/system.web.management.webeventcodes(v=vs.110).aspx)

Reference: WebRequestEvent Class

[https://msdn.microsoft.com/en-us/library/system.web.management.webrequestevent\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/system.web.management.webrequestevent(v=vs.110).aspx)

119. You are developing an ASP.NET MVC application by using Visual Studio.

The application throws and handles exceptions when it runs.

You need to examine the state of the application when exceptions are thrown.

What should you do?

A. Add the following code to the web.config file of the application.

```
<customErrors mode="On" >
    <error statusCode="404" redirect="CustomErrors.html" />
</customErrors>
```

B. From the Debug menu in Visual Studio, select Exceptions. Disable the User-unhandled check box for Common Language Runtime Exceptions.

C. Add the following code to the web.config file of the application.

```
<customErrors mode="On" >
    <error statusCode="500" redirect="CustomErrors.html" />
</customErrors>
```

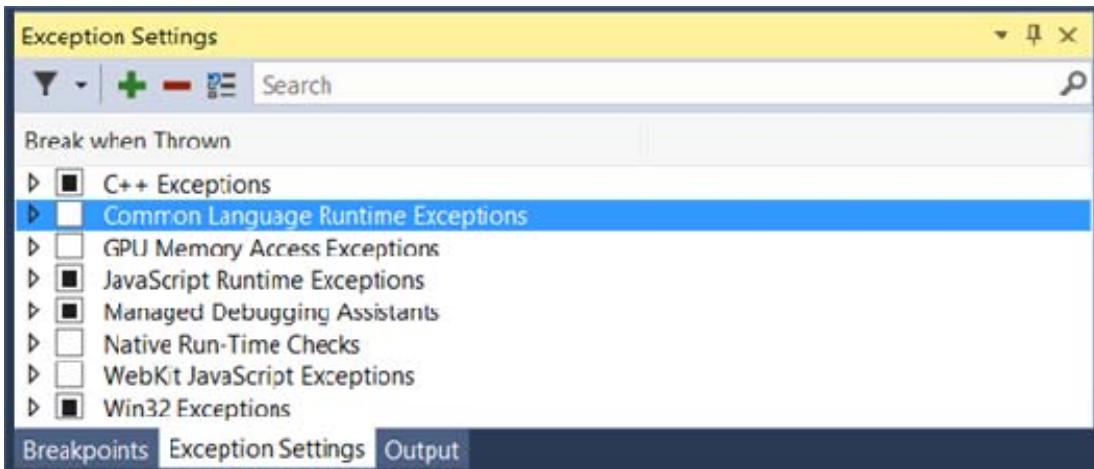
D. From the Debug menu in Visual Studio, select Exceptions. Enable the Thrown check box for Common Language Runtime Exceptions.

Answer: D

Explanation:

Configuring the debugger to break for first chance exceptions

To change when the debugger breaks, go to Debug->Exceptions...



When you first open this window you will see that there is a tree grid with one column and checkboxes.

- * Break when Thrown. This includes a default list of exceptions known by the debugger, grouped by category.

Note: The possible exceptions that could break from this list is determined by the runtime you are debugging. For example, if you are using managed-only debugging then the debugger will never break for C++, Win32 Exceptions, etc. even if they are configured to break when thrown.

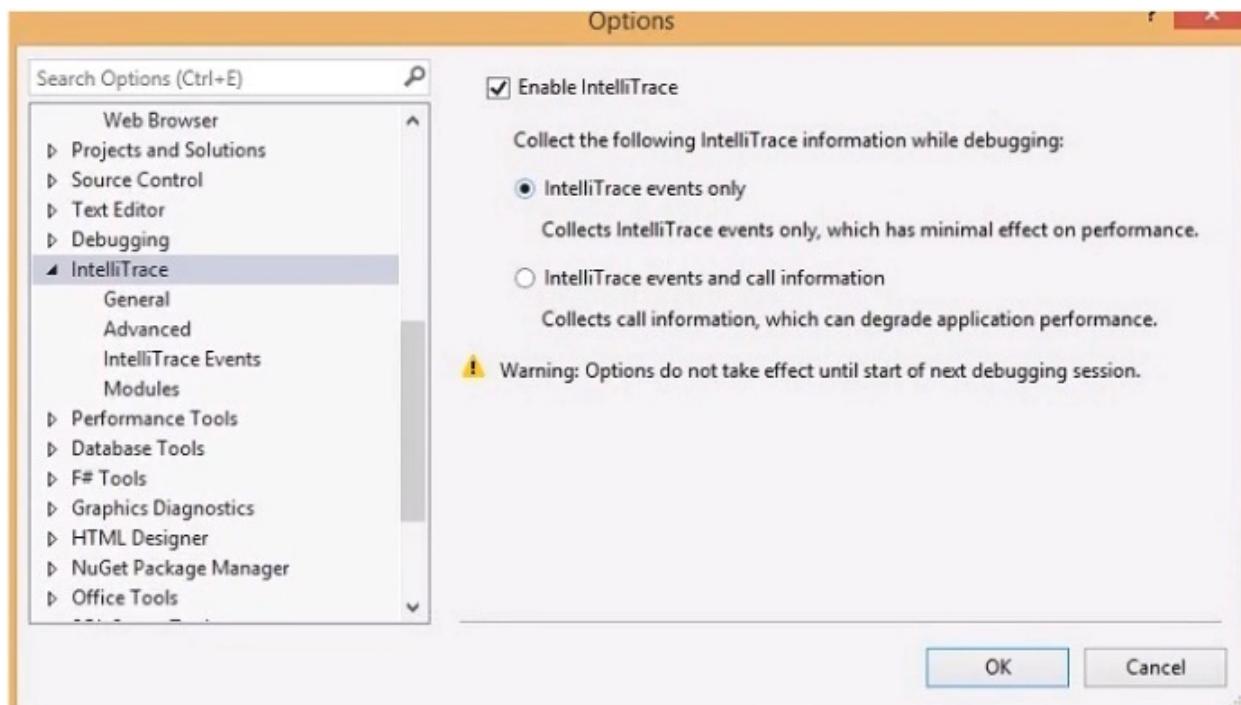
- * Checkboxes. If you check the box for a category, then the debugger will break for all First Chance Exceptions while debugging. If you don't want to enable all First Chance Exceptions, you can find the specific exception types that you wish to configure by using the search box.

Reference: Understanding Exceptions while debugging with Visual Studio

<http://blogs.msdn.com/b/visualstudioalm/archive/2015/01/08/understanding-exceptions-while-debugging-with-visual-studio.aspx>

120.HOTSPOT

You are developing an ASP.NET MVC 4 application. You are using IntelliTrace to debug the application. You configure IntelliTrace as shown in the screenshot below.



To answer, make the appropriate selections in the answer area.

Answer Area

Which data will be available during debugging?

state for application variables only
 state for application variables and ADO.NET and ASP.NET events
 state for application variables and every method entry and exit

Which debugging features will be disabled?

Edit and Continue
 Tracepoints and breakpoints
 Tracing for every method entry and exit

Answer:

Which data will be available during debugging?

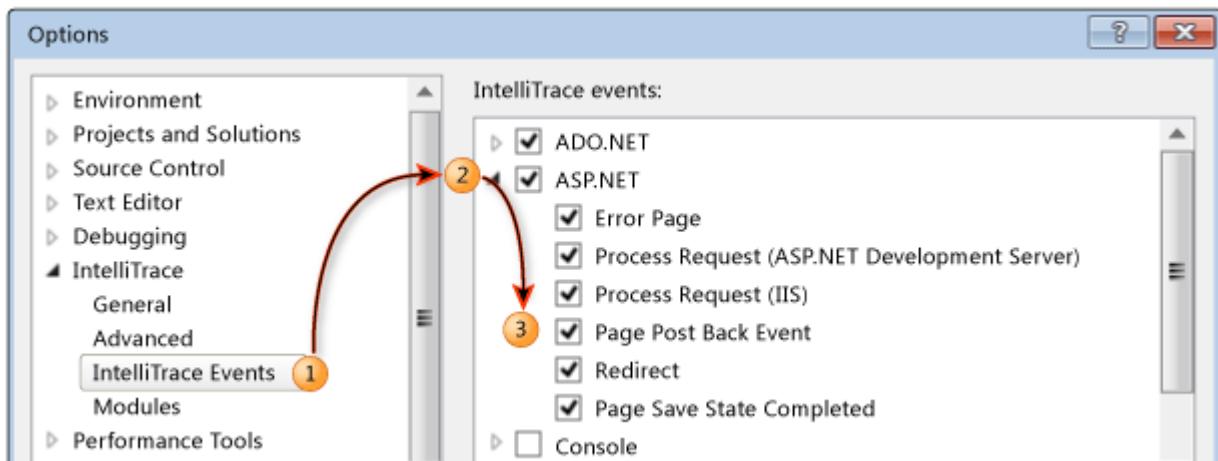
state for application variables only
 state for application variables and ADO.NET and ASP.NET events
 state for application variables and every method entry and exit

Which debugging features will be disabled?

Edit and Continue
 Tracepoints and breakpoints
 Tracing for every method entry and exit

Explanation:

Box 1:



Box 2:

Which data will be available during debugging?

- state for application variables only
- state for application variables and ADO.NET and ASP.NET events
- state for application variables and every method entry and exit

Which debugging features will be disabled?

- Edit and Continue
- Tracepoints and breakpoints
- Tracing for every method entry and exit

Reference: Configure IntelliTrace to collect debugging information

<https://msdn.microsoft.com/en-us/library/dd264944.aspx>

121.HOTSPOT

You are developing an ASP.NET MVC application. The application includes the following code. Line numbers are included for reference only.

```

01 [HandleError]
02 public class HomeController : Controller
03 {
04     public ActionResult Index()
05     {
06         return View();
07     }
08     public ActionResult About()
09     {
10         return View();
11     }
12     public ActionResult Contact()
13     {
14         return View();
15     }
16 }
```

You add the following markup to the system.web section of the web.config file:

```
<customErrors mode="On" defaultRedirect="Error.htm">
  <error statusCode="500" redirect="/CustomError.htm" />
</customErrors>
```

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

Answer Area

	Yes	No
When a 400-level error occurs, the ASP.NET default error page displays.	<input type="radio"/>	<input type="radio"/>
When a 500-level error occurs in an ActionResult method, the Error view in the ~/Views/Shared folder handles the error.	<input type="radio"/>	<input type="radio"/>
When an exception occurs while displaying the Error view, AppErrors.htm handles the error.	<input type="radio"/>	<input type="radio"/>

Answer:

	Yes	No
When a 400-level error occurs, the ASP.NET default error page displays.	<input checked="" type="radio"/>	<input type="radio"/>
When a 500-level error occurs in an ActionResult method, the Error view in the ~/Views/Shared folder handles the error.	<input checked="" type="radio"/>	<input type="radio"/>
When an exception occurs while displaying the Error view, AppErrors.htm handles the error.	<input type="radio"/>	<input checked="" type="radio"/>

122.HOTSPOT

You are developing an ASP.NET MVC web application that enables users to open Microsoft Excel files. The current implementation of the ExcelResult class is as follows.

```
public class ExcelResult : ActionResult
{
    public string Path { get; set; }

    public override void ExecuteResult(ControllerContext context)
    {
        ...
    }
}
```

You need to enable users to open Excel files.

You have the following code:

```

var response = context.HttpContext.Response;
var request = context.HttpContext.Request;
Target 1
if (canProcess)
{
    response.Clear();
Target 2
Target 3
    response.WriteFile(context.HttpContext.Server.MapPath(Path));
}

```

Which code segments should you include in Target 1, Target 2 and Target 3 to implement the ExecuteResult method? To answer, select the appropriate option or options in the answer area.

Answer Area

Target 1:

```

var canProcess = request.AcceptTypes.Contains("application/vnd.ms-excel");
var canProcess = request.ContentType.Contains("application/vnd.ms-excel");

```

Target 2:

```

response.AddHeader("content-disposition", "attachment; filename=dl");
response.Output.Write("content-disposition", "application/vnd.ms-excel");

```

Target 3:

```

response.ContentType = "application/vnd.ms-excel";
response.ContentEncoding = new UTF8Encoding

```

Answer:

Target 1:

```

var canProcess = request.AcceptTypes.Contains("application/vnd.ms-excel");
var canProcess = request.ContentType.Contains("application/vnd.ms-excel");

```

Target 2:

```

response.AddHeader("content-disposition", "attachment; filename=dl")
response.Output.Write("content-disposition", "application/vnd.ms-excel");

```

Target 3:

```

response.ContentType = "application/vnd.ms-excel";
response.ContentEncoding = new UTF8Encoding

```

Explanation:

Target 1:

Name: AcceptTypes

Synopsis: `stringArray = Request.AcceptTypes`

Return `s` a String array containing the Multipurpose Internet Mail Extension (MIME) types accepted by the client. You can use this property to determine whether a client can accept certain response types, including application types such as Word or Excel, which are supported only by Internet Explorer.

Target 2, Target 3:

Explanation: `Response.AddHeader("content-disposition", "attachment; filename=MyExcelFile.xls");`
`Response.ContentType = "application/ms-excel";`

Reference: Export data to Excel file with ASP.NET MVC 4 C# is rendering into view

[http://stackoverflow.com/questions/16346227/export-data-to-excel-file-with-asp-net-mvc-4-c-sharp-is-ren
dering-into-view](http://stackoverflow.com/questions/16346227/export-data-to-excel-file-with-asp-net-mvc-4-c-sharp-is-rendering-into-view)

123.HOTSPOT

You are developing an ASP.NET MVC application.

Before an action is executed, information about the action must be written to a log. After results are returned, information about the results also must be written to the log.

You need to log the actions and results.

You have the following code:

```
Target 1
{
    public override void
    Target 2
    {
        Logger.Log("ActionLog", filterContext.RouteData);
    }
    public override void
    Target 3
    {
        Logger.Log("ResultLog", filterContext.RouteData);
    }
}
```

Which code segments should you include in Target 1, Target 2 and Target 3 to implement the `LogActionFilter` class? (To answer, select the appropriate option from the drop-down list in the answer area.)

Answer Area

Target 1:

```
OnActionExecuting(ActionExecutingContext filterContext)
OnActionExecuted(ActionExecutedContext filterContext)
OnResultExecuting(ResultExecutingContext filterContext)
OnResultExecuted(ResultExecutedContext filterContext)
public class LogActionFilter : ActionFilterAttribute
public class LogActionFilter : IActionFilter
```

Target 2:

```
OnActionExecuting(ActionExecutingContext filterContext)
OnActionExecuted(ActionExecutedContext filterContext)
OnResultExecuting(ResultExecutingContext filterContext)
OnResultExecuted(ResultExecutedContext filterContext)
public class LogActionFilter : ActionFilterAttribute
public class LogActionFilter : IActionFilter
```

Target 3:

```
OnActionExecuting(ActionExecutingContext filterContext)
OnActionExecuted(ActionExecutedContext filterContext)
OnResultExecuting(ResultExecutingContext filterContext)
OnResultExecuted(ResultExecutedContext filterContext)
public class LogActionFilter : ActionFilterAttribute
public class LogActionFilter : IActionFilter
```

Answer:

Target 1:

```
OnActionExecuting(ActionExecutingContext filterContext)
OnActionExecuted(ActionExecutedContext filterContext)
OnResultExecuting(ResultExecutingContext filterContext)
OnResultExecuted(ResultExecutedContext filterContext)
public class LogActionFilter : ActionFilterAttribute
public class LogActionFilter : IActionFilter
```

Target 2:

```
OnActionExecuting(ActionExecutingContext filterContext)
OnActionExecuted(ActionExecutedContext filterContext)
OnResultExecuting(ResultExecutingContext filterContext)
OnResultExecuted(ResultExecutedContext filterContext)
public class LogActionFilter : ActionFilterAttribute
public class LogActionFilter : IActionFilter
```

Target 3:

```
OnActionExecuting(ActionExecutingContext filterContext)
OnActionExecuted(ActionExecutedContext filterContext)
OnResultExecuting(ResultExecutingContext filterContext)
OnResultExecuted(ResultExecutedContext filterContext)
public class LogActionFilter : ActionFilterAttribute
public class LogActionFilter : IActionFilter
```

Explanation:

Target 1: IActionFilter

MVC3 introduced a completely new pattern to configure filters for controllers and its actions. While injection of filter attributes is still supported it is recommended using this new pattern for filter configuration because it has the advantage to support constructor injection and does not require the `InjectAttribute` anymore.

First of all you have to create your filter class by implementing one of the filter interfaces e.g. `IActionFilter`.

Target 2: `public void OnActionExecuting(ActionExecutingContext filterContext)`

Target 3: `public void OnActionExecuted(ActionExecutedContext filterContext)`

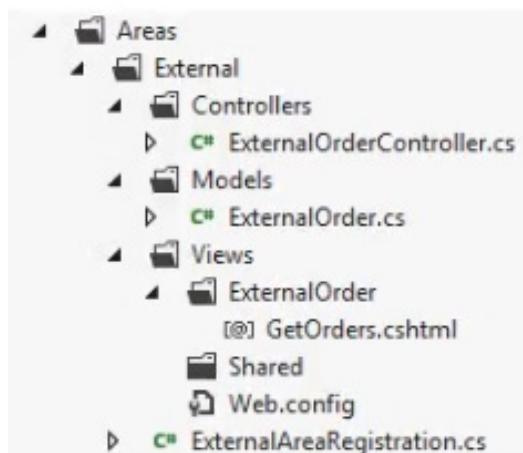
Reference: Dependency injection for filters

<https://github.com/ninject/Ninject.Web.Mvc/wiki/Dependency-injection-for-filters>

124.DRAG DROP

You are developing an ASP.NET MVC application in Visual Studio.

The application contains an area that is defined as shown in the following graphic.



The `ActionLink` method must invoke the `GetOrders()` action in `ExternalOrderController`.

You need to configure the parameters of the `ActionLink` method.

You have the following markup.

```
<li>
    @Html.ActionLink(
        "ViewExternalOrders",
        Target 1
        Target 2
        new { area = Target 3 }
        ,null
    )
</li>
```

Which markup segments should you include in Target 1, Target 2 and Target 3 to complete the markup?

To answer, drag the appropriate markup segment to the correct targets. Each markup 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.

Markup Segments

```
"GetOrders",  
"External",  
"ExternalOrder",  
"ExternalOrderController",
```

Answer area

Target 1:	Markup Segment
Target 2:	Markup Segment
Target 3:	Markup Segment

Answer:

Target 1: "GetOrders",
Target 2: "ExternalOrderController",
Target 3: External,

Explanation:

Target 1: the action is getOrders

Target 2: the controller is ExternalOrderController

Target 3: The area is External

LinkExtensions.ActionLink Method (HtmlHelper, String, String, String, RouteValueDictionary, IDictionary<String, Object>)

Use:

Html.ActionLink("Text", "ActionName", "ControllerName", new { Area = "AreaName" }, null)

Reference: How to specify an area name in an action link?

<http://stackoverflow.com/questions/2036305/how-to-specify-an-area-name-in-an-action-link>

125. You are developing an ASP.NET MVC application that enables you to edit and save a student object.

The application must not retrieve student objects on an HTTP POST request.

You need to implement the controller.

Which code segment should you use? (Each correct answer presents a complete solution. Choose all that apply.)

- A.

```
public ActionResult EditStudent(int id, Student s)
{
    if (this.HttpContext.Request.HttpMethod == "GET")
    {
        var s = RetrieveStudent(id);
    }

    if (this.HttpContext.Request.HttpMethod == "POST")
    {
        SaveStudent(s);
    }
    return View(s);
}
```
- B.

```
public ActionResult EditStudent(int id, Student s)
{
    if (this.HttpContext.Request["ActionName"] == "GET")
    {
        var s = RetrieveStudent(id);
    }

    if (this.HttpContext.Request["ActionName"] == "POST")
    {
        SaveStudent(s);
    }
    return View(s);
}
```
- C.

```
[HttpGet]
public ActionResult EditStudent(int id)
{
    var s = RetrieveStudent(id);
    return View(s);
}

[HttpPost]
public ActionResult EditStudent(int id, Student s)
{
    SaveStudent(s);
    return View(s);
}
```
- D.

```
[ActionName("GET")]
public ActionResult EditStudent(int id)
{
    var s = RetrieveStudent(id);
    return View(s);
}

[ActionName("POST")]
public ActionResult EditStudent(int id, Student s)
{
    SaveStudent(s);
    return View(s);
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Answer: AC

Explanation: Examining the Details and Delete Methods

<http://www.asp.net/mvc/overview/getting-started/introduction/examining-the-details-and-delete-methods>

126. You are developing an application that uses many small images.

When the images load, the application runs slowly.

You need to improve the performance of the application.

What should you do?

- A. Preload all the images when the application starts to ensure that the images are cached.
- B. Convert the images to ICO file format and stream all images on a single connection.
- C. Host all images on a Microsoft Azure web role with multiple instances.
- D. Combine all the images into a single image and use CSS to create sprites.

Answer: D

Explanation:

Because browsers limit how many concurrent HTTP requests they make to a website, a web page with many small icon images can result in a longer load time. You can combine many small images into a single larger image - a CSS sprite - using the free ASP.NET Sprite and Image Optimization Library available from Microsoft.

Reference: CSS Sprites and the ASP.NET Sprite and Image Optimization Library

<http://dotnetslackers.com/articles/aspnet/CSS-Sprites-and-the-ASP-NET-Sprite-and-Image-Optimization-Library.aspx>

127. DRAG DROP

You are developing an ASP.NET MVC application in Visual Studio. The application supports multiple cultures.

To set the culture, the application must use the AcceptLanguage header field value sent by the client browser.

You need to ensure that the application can set the culture.

You have the following markup in the web.config file:

```
<system.web>
  <Target 1>
    Target 2 = "true"
    Target 3 = "auto"
    culture = "auto"
  />
  ...

```

Which markup segments should you include in Target 1, Target 2 and Target 3 to complete markup? To answer, drag the appropriate markup segments to the correct targets. Each markup 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.

Markup Segments

- configSource
- uiCulture
- enableClientBasedCulture
- siteMap
- globalization

Answer Area

- | | |
|-----------|----------------|
| Target 1: | Markup Segment |
| Target 2: | Markup Segment |
| Target 3: | Markup Segment |

Answer:

Target1: globalization

Target2: enableClientBasedCulture

Target3: uiCulture

Explanation: When the EnableClientBasedCulture property is enabled, the Culture and UICulture properties are based on the AcceptLanguage header field value that is sent by the client browser. If the AcceptLanguage header value cannot be mapped to a specific culture, the Culture and UICulture values are used. The default value is false.

The following combination of attributes is used in the globalization section: culture="auto", uiCulture="auto", enableClientBasedCulture="true", e.g.:

```
<globalization uiCulture="auto" culture="auto" enableClientBasedCulture="true">
```

Reference:

<http://stackoverflow.com/questions/8878856/does-the-enableclientbasedculture-attribute-in-web-config-work-at-all>

128.HOTSPOT

You develop an ASP.NET MVC application. The application includes a feature that allows users to reset their passwords. The feature is enabled by a ForgotPassword controller method and a corresponding Razor view.

You need to prevent Cross-Site Request Forgery (CSRF) attacks.

How should you complete the relevant code? To answer, select the appropriate code segment from each list in the answer area.

Answer Area**AccountController.cs**

[HttpPost]

[AllowAnonymous]

```
[Authorize]
[ValidateInput(true)]
[ValidateAntiForgeryToken]
[Authorize(Users="ValidOnly")]
```

```
public async Task<ActionResult> ForgotPassword(ForgotPasswordViewModel model)
{
    if (!ModelState.IsValid) return View(model);
    var user = await UserManager.FindByNameAsync(model.Email);
    if (user == null || !(await UserManager.IsEmailConfirmedAsync(user.Id)))
    {
        return View("ForgotPasswordConfirmation");
    }
    return View(model);
}
```

ForgotPassword.cshtml

```
@model AntiForgery.Models.ForgotPasswordViewModel
@using (Html.BeginForm("ForgotPassword", "Account", FormMethod.Post, new { role = "form" }))
{
```

```
@Html.Encode(this)
@Html.AntiForgeryToken()
@Html.AttributeEncode(this)
@Html.Hidden("AntiForgeryToken")
```

```
@Html.ValidationSummary()


@Html.LabelFor(m => m.Email)
    <div>@Html.TextBoxFor(m => m.Email)</div>


<div><input type="submit" value="Email Link" /></div>
}
@section Scripts {
    @Scripts.Render("~/bundles/jqueryval")
}
```

Answer:

Target1: [ValidateAntiForgeryToken]+

Target2: @Html.AntiForgeryToken()

Explanation:

* At the top of the action that we created to handle the posted form, the one with the [HttpPost] attribute added, we'll add another attribute named [ValidateAntiForgeryToken]. This makes the start of our action now look like the following:

[HttpPost]

[ValidateAntiForgeryToken]

public ActionResult ChangeEmail(ChangeEmailModel model)

{

```
string username = WebSecurity.CurrentUserName;
```

rest of function omitted

* we must add the unique token to the form to change the user's email when we display it. Update the form in the ChangeEmail.aspx view under /Account/ChangeForm:

```
<% using(Html.BeginForm()) { %>

<%: Html.AntiForgeryToken() %>

<%: Html.TextBoxFor(t=>t.NewEmail) %>

<input type="submit" value="Change Email" />

<% } %>
```

129. You are developing an ASP.NET MVC application that uses forms authentication against an Oracle database.

You need to authenticate the users.

Which code segment should you use?

- A.

```
public class OracleMembershipProvider : ProviderBase
{
    ...
}
```
- B.

```
public class OracleMembershipProvider : ClientFormsMembershipProvider
{
    ...
}
```
- C.

```
public class OracleMembershipProvider : SqlMembershipProvider
{
    ...
}
```
- D.

```
public class OracleMembershipProvider : MembershipProvider
{
    ...
}
```

A. Option A

B. Option B

C. Option C

D. Option D

Answer: D

Explanation:

When implementing a custom membership provider, you are required to inherit the MembershipProvider abstract class.

There are two primary reasons for creating a custom membership provider.

You need to store membership information in a data source that is not supported by the membership providers included with the .NET Framework, such as a FoxPro database, an Oracle database, or other data source.

You need to manage membership information using a database schema that is different from the database schema used by the providers that ship with the .NET Framework. A common example of this would be membership data that already exists in a SQL Server database for a company or Web site.

Reference: MembershipProvider Class

[https://msdn.microsoft.com/en-us/library/system.web.security.membershipprovider\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/system.web.security.membershipprovider(v=vs.110).aspx)

130. You are developing an ASP.NET MVC application that uses forms authentication. The application uses SQL queries that display customer order data.

You need to prevent all SQL injection attacks against the application.

How should you secure the queries?

- A. Implement parameterization.
- B. Pattern check the input.
- C. Filter out prohibited words in the input.
- D. Escape single quotes on string-based input parameters.

Answer: A

Explanation:

With most development platforms, parameterized statements that work with parameters can be used (sometimes called placeholders or bind variables) instead of embedding user input in the statement. A placeholder can only store a value of the given type and not an arbitrary SQL fragment. Hence the SQL injection would simply be treated as a strange (and probably invalid) parameter value.

Reference: https://en.wikipedia.org/wiki/SQL_injection#Parameterized_statements

131. DRAG DROP

You are developing an ASP.NET MVC application in Visual Studio. The application contains sensitive bank account data.

The application contains a helper class named SensitiveData.Helpers.CustomEncryptor.

```
public class CustomEncryptor
{
    public string Encrypt(string plaintext)
    {
        ...
    }
}
```

The application contains a controller named BankAccountController with two actions.

```
public class BankAccountController : Controller
{
    public ActionResult GetAccounts()
    {
        ...
    }

    public ActionResult EditAccount(string maskedAccountNum)
    {
        ...
    }
}
```

The application contains a model named BankAccount, which is defined in the following code segment.

```
public class BankAccount
{
    public string AccountNumber { get; set; }
    public string AccountName { get; set; }
    public double Balance { get; set; }
}
```

The application must not display AccountNumber in clear text in any URL.

You need to build the view for the GetAccounts action.

You have the following code:

```
@model IEnumerable<SensitiveData.Models.GamerAccount>
@{SensitiveData.Helpers.CustomEncryptor custEncrypt =
    new SensitiveData.Helpers.CustomEncryptor();}
<h2>GetAccounts</h2>
<table>
    <tr>
        <th>Account Name</th>
        <th>Balance</th>
    </tr>
    @foreach (var item in Model)
    {
        <tr>
            <td>@Html.DisplayFor(modelItem => item.AccountName)</td>
            <td>@Html.DisplayFor(modelItem => item.Highscore)</td>
            <td>
                @Html.ActionLink("Edit", "EditAccount",
                    new {
                        Target 1 =
                        Target 2
                            . Target 3
                    })
            </td>
        </tr>
    }
</table>
```

Which code segments should you include in Target 1, Target 2 and Target 3 to build the view? To answer, drag the appropriate code segment to the correct targets. 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.

Code Segments

```
custEncrypt  
maskedAccountNum  
Html  
Encrypt(item.AccountNumber)  
Encode(item.AccountNumber)
```

Answer Area

Target 1:	Code Segment
Target 2:	Code Segment
Target 3:	Code Segment

Answer:

Target1: maskedAccountNum

Target2: custEncrypt

Target3: Encrypt(item.AccountNumber)

SensitiveData.Helpers

132.DRAG DROP

You are developing an ASP.NET MVC application that authenticates a user by using claims-based authentication.

The application must:

- Use Windows Identity Foundation 4.5.
- Support the Windows Azure Access Control Service.

You need to implement authentication.

You have the following code:

```

using Microsoft.IdentityModel.Claims;
public class IdentityClaim
{
    private string _identityProvider;
    private string _identityValue;
    public const string ACSProviderClaim =
        "http://schemas.microsoft.com/accesscontrolservice/...";
    public IdentityClaim(Target 1 identity)
    {
        if (identity != null)
        {
            foreach (var claim in identity.Claims)
            {
                if (claim.Target 2 == Target 3 .NameIdentifier)
                {
                    _identityValue = claim.Value;
                }
                if (claim.Target 4 == ACSProviderClaim)
                {
                    _identityProvider = claim.Value;
                }
            }
        }
    }
}

```

Which code segments should you include in Target 1, Target 2, Target 3 and Target 4 to build the class constructor? To answer, drag the appropriate code segment to the correct targets in the answer area. 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.

Code Segments

ClaimNames
ClaimTypes
IIdentityClaims
IClaimsIdentity
ClaimType
ClaimName

Answer area

Target 1:	Code Segment
Target 2:	Code Segment
Target 3:	Code Segment
Target 4:	Code Segment

Answer:

Target 1: IClaimsIdentity

Target 2: ClaimType

Target 3: ClaimTypes

Target 4: ClaimType

Explanation:

Explanation: public class MyIdentityClaim

{

```
private string _identityProvider;
```

```
private string _identityValue ;
```

```
public const string ACSProviderClaim =
```

```
"http://schemas.microsoft.com/accesscontrolservice/2010/07/claims/identityprovider";
```

```
public MyIdentityClaim(IClaimsIdentity identity)
```

```
{
```

```
    if (identity != null)
```

```
{
```

```
        foreach (var claim in identity.Claims)
```

```
{
```

```
            if (claim.ClaimType == ClaimTypes.NameIdentifier)
```

```
{
```

```
                _identityValue = claim.Value;
```

```
}
```

```
            if (claim.ClaimType == ACSProviderClaim)
```

```
{
```

```
                _identityProvider = claim.Value;
```

```
}
```

```
}
```

```
}
```

}

Reference: Azure Acs plus asp.net MVC memberships

<https://garvincasimir.wordpress.com/2011/08/06/azure-acs-plus-asp-net-mvc-memberships/>

133.DRAG DROP

You are developing an ASP.NET MVC application in a web farm. The application has a page that accepts a customer's order, processes it, and then redirects the browser to a page where the order is displayed along with the shipping information.

The order information should be available only to the page where the order is displayed.

You need to store state and configure the application.

What should you do? To answer, drag the appropriate item to the correct location. Each item 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.

Items	Answer area
TempData	Store state in <input type="text"/> Item and set the mode attribute of
ViewData	the sessionState element in the web.config file to <input type="text"/> Item
InProc	
SqlServer	

Answer:

Target 1: InProc*

Target 2: ViewData*

Explanation:

InProc mode, which stores session state in memory on the Web server. This is the default.

* Incorrect:

SQLServer mode stores session state in a SQL Server database. This ensures that session state is preserved if the Web application is restarted and also makes session state available to multiple Web servers in a Web farm.

* ViewData

The primary purpose of ViewData is to carry data from the controller to the view. ViewData is a dictionary object and is of type ViewDataDictionary. Just like any other dictionary object in .NET, ViewData allows

you to store key-value pairs. Data stored in ViewData object exists only during the current request. In other words, as soon as the view is rendered in the browser the ViewData object is emptied.

* Incorrect: TempData

TempData offers a dictionary storage like ViewData. However, values stored in TempData exists unless they are read in some view. Most commonly TempData is used to pass a value between the current request and the subsequent request

Reference: Understanding ViewData, ViewBag And TempData

<http://www.binaryintellect.net/articles/36941654-8bd4-4535-9226-ddf47841892f.aspx>

134. You are developing a new ASP.NET MVC application that will be hosted on Microsoft Azure. You need to implement caching.

The caching solution must support the following:

- The cache must be able to store out-of-process ASP.NET session state.
- The cache must be able to store a variety of data types.
- The cache must offer a large amount of space for cached content.
- You must be able to share output cache content across web server instances.

You need to select a cache solution.

Which caching solution should you choose?

- A. ASP.NET Caching
- B. Azure In-Role Cache
- C. Azure Redis Cache
- D. Azure Managed Cache Service

Answer: C

Explanation:

Azure Redis Cache features include support various data types.

* Microsoft Azure Redis Cache is available in two tiers:

Basic – Single node. Multiple sizes up to 53 GB.

Standard – Two-node Primary/Replica. Multiple sizes up to 53 GB. 99.9% SLA.

* The connection to the Azure Redis Cache is managed by the ConnectionMultiplexer class. This class is designed to be shared and reused throughout your client application, and does not need to be created on a per operation basis.

Reference: How to Use Azure Redis Cache

<https://azure.microsoft.com/sv-se/documentation/articles/cache-dotnet-how-to-use-azure-redis-cache/>

135.HOTSPOT

You develop a new ASP.NET MVC web application. The application is hosted in an Azure Web Role. It includes the following code. Line numbers are included for reference only.

```

01 public override void OnStop()
02 {
03     Trace.TraceInformation("OnStop called within Web Role");
04     var performanceCounterCurrentRequests = new PerformanceCounter("ASP.NET", "Requests Current", "");
05     while (true)
06     {
07         var currentRequestsCount = performanceCounterCurrentRequests.NextValue();
08         Trace.TraceInformation("ASP.NET Requests Current = " + currentRequestsCount);
09         if (currentRequestsCount <= 0)
10         {
11             break;
12         }
13         System.Threading.Thread.Sleep(1000);
14     }
15 }

```

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

Answer Area

Yes No

When the web server is so busy that the pending requests cannot be completed in five minutes, the Web role is shut down.	<input type="radio"/> <input checked="" type="radio"/>
When an unhandled exception occurs within the Web role, the Stopping event is raised, and the OnStop method code runs.	<input type="radio"/> <input checked="" type="radio"/>
The Web role initiates a shutdown immediately following the return of the OnStop method code.	<input type="radio"/> <input checked="" type="radio"/>

Answer:

When the web server is so busy that the pending requests cannot be completed in five minutes, the Web role is shut down.	<input checked="" type="radio"/> <input type="radio"/>
When an unhandled exception occurs within the Web role, the Stopping event is raised, and the OnStop method code runs.	<input type="radio"/> <input checked="" type="radio"/>
The Web role initiates a shutdown immediately following the return of the OnStop method code.	<input checked="" type="radio"/> <input type="radio"/>

Explanation:

Line 1, line 3: You can delay the restarting or your web role by up to 5 minutes by overriding the OnStop method and calling Sleep, but that's far from optimal. The optimal approach is to wait in the OnStop method until there are no more requests, and then initiate the shutdown. The sooner you shutdown, the sooner the VM can restart and begin processing requests. To implement the optimal shutdown strategy, add the following code to your WebRole class.

```
public override void OnStop()
{
    Trace.TraceInformation("OnStop called WebRole");
    var pcrc = new PerformanceCounter("ASP.NET", "Requests Current", "");

    while (true)
    {
        var rc = pcrc.NextValue();
        Trace.TraceInformation("ASP.NET Requests Current = " + rc.ToString());
        if (rc <= 0)
            break;
        System.Threading.Thread.Sleep(1000);
    }
}
```

The code above checks the ASP.NET request's current counter. As long as there are requests, the OnStop method calls Sleep to delay the shutdown. Once the current request's counter drops to zero, OnStop returns, which initiates shutdown. Should the web server be so busy that the pending requests cannot be completed in 5 minutes, the application is shut down anyway.

Line 2: When an unhandled exception occurs in an ASP.NET application, it bubbles up to the ASP.NET runtime, which raises the Error event and displays the appropriate error page.

Reference: The Right Way to Handle Azure OnStop Events

<http://azure.microsoft.com/blog/2013/01/14/the-right-way-to-handle-azure-onstop-events/>

136. You are designing a distributed application that runs on the Microsoft Azure platform.

The application must store a small amount of insecure global information for all users that does not change frequently.

You need to configure the application to meet the requirements.

Which server-side state management option should you use? Each correct answer presents a complete solution. Choose all that apply.

- A. profile properties of the Microsoft Azure application
- B. Microsoft Azure session state
- C. SQL Database
- D. Microsoft Azure application state

Answer: A

Explanation:

In many applications, you want to store and use information that is unique to a user. When a user visits your site, you can use the information you have stored to present the user with a personalized version of your Web application. Personalizing an application requires a number of elements: you must store the information using a unique user identifier, be able to recognize users when they visit again, and then fetch the user information as needed. To simplify your applications, you can use the ASP.NET profile feature, which can perform all of these tasks for you.

Incorrect:

Not B: Session state would be lost when the session is finished.

Not C: It would require more effort to store the data in a SQL database.

Not D: There is no global Microsoft Azure application state.

Reference: ASP.NET Profile Properties Overview

[https://msdn.microsoft.com/en-us/library/2y3fs9xs\(v=vs.140\).aspx](https://msdn.microsoft.com/en-us/library/2y3fs9xs(v=vs.140).aspx)