



A Composite Solution With Just One Click

Microsoft

70-486 PRACTICE EXAM

Prepare for Microsoft Developing ASP.NET MVC 4 Web Applications

Product Questions: 182

Version: 13.0

Case Study: 1

Olympic Marathon

Background

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

Business Requirements

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

The application must be optimized for accessibility.

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

Technical Requirements

Data Access:

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

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

Layout:

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

Models:

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

Views:

All views in the application use the Razor view engine.

Four views located in \Views\RunLog are named:

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

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

Controllers:

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

Images:

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

Videos:

A map of a runner's path is available when a user views a run log. The map is implemented as an Adobe Flash application and video. The browser should display the video natively if possible, using H264, Ogg, or WebM formats, in that order. If the video cannot be displayed, then the Flash application should be used.

Security:

You have the following security requirements:

- The application is configured to use forms authentication.

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

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

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

Application Structure

Controllers\RunLogController.cs

```

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

Models\LogModel.cs

```

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

```

LO01  <!DOCTYPE html>
LO02  <html lang="en">
LO03  <head>
LO04  ...
LO05  </head>
LO06  <body>
LO07  ...
LO08  <footer>
LO09
LO10     <script type="text/javascript">
LO11         var c = document.getElementById('myCanvas');
LO12         var ctx = c.getContext('2d');
LO13         ctx.font = '30pt Calibri';
LO14         ctx.strokeStyle = 'gray';
LO15         ctx.lineWidth = 3;
LO16         ctx.strokeText('London 2012', 80, 30);
LO17     </script>
LO18 </footer>
LO19 </body>
LO20 </html>

```


Question: 1

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)

"_CalculatePace")

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

Question: 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)
    ...
    public ActionResult EditLog(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)
    ...
}
```

Question: 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**Question: 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

Question: 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">
  <!-- width="320" height="240" -->
  <!-- name="movie" value="map.swf" -->
    <object src="map.swf" />
    <!-- src="map.swf" -->
  </!-- -->
</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">

</video>
```

Question: 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
}
);
}
```

Question: 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.)

"RunnerLog.Providers.RunLogRoleProvider"
 "System.Web.Providers.RunLogRoleProvider"
 "System.Web.Providers.DefaultRoleProvider"
 defaultProvider="DefaultProvider"
 defaultProvider="RLRoleProvider"

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

Answer:

"System.Web.Providers.RunLogRoleProvider"
 "System.Web.Providers.DefaultRoleProvider"
 defaultProvider="DefaultProvider"

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

Question: 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",
    [REDACTED]
    [REDACTED]
{
    controller = "RunLog",
    [REDACTED]
},
[REDACTED]
{
    [REDACTED]
}
);

```

Answer:

```

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

```

Question: 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

Question: 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

Question: 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

Question: 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. @Html.DisplayFor(model => log.Distance) miles
- C. @log.Distance.ToString() @Html.TextArea("miles")
- D. @Html.DisplayFor(model => log.Distance.ToString() + " miles")

Answer: A, B

Question: 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")]

Question: 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?

- A.

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

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

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

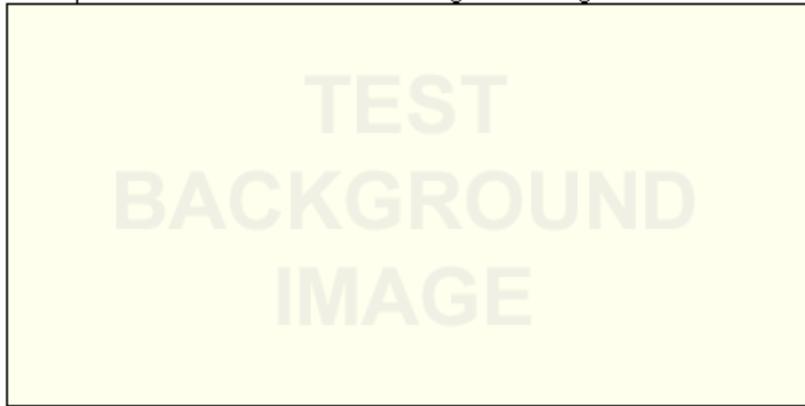
Answer: D

Example:

```
<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:



Reference: DIV BACKGROUND-IMAGE in the STYLE element

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

Question: 15

The date of the run must be displayed in Views\Runlog\GetLog.cshtml. The timestamp must not be displayed. You need to display the date of the run according to the business requirements.
Which code segment should you use?

- A. @Html.DisplayFor(model => log.ShortDate)
- B. @log.RunDate.ToString()
- C. @log.RunDate.ToShortDateString()
- D. @Html.DisplayFor(model => log.RunDate)

Answer: A

Explanation:

The log file has the ShortDate function which is defined as:

Return RunDateToLocalTime().ToShortDateString();

This meets the requirement.

Note:

Scenario:

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

* The Html.DisplayFor method is typically used to display values from the object that is exposed by the Model property.

The DisplayExtensions.DisplayFor<TModel, TValue> method (HtmlHelper<TModel>, Expression<Func<TModel, TValue>>)

Returns HTML markup for each property in the object that is represented by the Expression expression.

Incorrect:

Not D: The RunDate attribute is defined as DateTime, but the timestamp (the time of day), should not be displayed.

References:

[https://msdn.microsoft.com/en-us/library/system.web.mvc.html.displayextensions.displayfor\(v=vs.118\).aspx](https://msdn.microsoft.com/en-us/library/system.web.mvc.html.displayextensions.displayfor(v=vs.118).aspx)

Case Study: 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; }
}
```

```

Customer.cs
public class Customer
{
    const string EmailRegex = @"^(S^) | ([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(HttpResponse response, string format)
    {
        ...
    }
}

web.config
<?xml version="1.0" encoding="utf-8"?>
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
                " connectionStringName="DefaultConnection" applicationName="/" />
            </providers>
        </sessionState>
    </system.web>
    <system.webServer>
        <validation validateIntegratedModeConfiguration="false" />
        <modules runAllManagedModulesForAllRequests="true" />
    </system.webServer>
</configuration>

```

Question: 16

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

Question: 17

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

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

Question: 18

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.

```
<customErrorsmode="On" defaultRedirect="CustomErrorView">  
<errorstatusCode="404" redirect="Error/Error404"/>  
</customErrors>
```

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

```
<customErrorsmode="Off" defaultRedirect="CustomErrorView">  
<errorstatusCode="404" redirect="Error/Error404"/>  
</customErrors>
```

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

```
<customErrorsmode="On" defaultRedirect="CustomErrorView">  
<errorstatusCode="401" redirect="Error/Error401"/>  
</customErrors>
```

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

```
<customErrorsmode="On" defaultRedirect="CustomErrorView">  
<errorstatusCode="403" redirect="Error/Error403"/>  
</customErrors>
```

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

Answer: A

Question: 19

You need to add a method to the ProductController class to meet the exception handling requirements for logging. Which code segment should you use?

- C A.

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

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

Question: 20

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

Question: 21

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

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)

Question: 22

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

Question: 23

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

Question: 24

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

Question: 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. \$("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

Question: 26

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

Question: 27

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

Question: 28

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

Which code segment should you use?

- C A. routes.MapRoute(
 "Product",
 "{productName}/{action}/{id}",
 new { action = "Show", productName = DefaultProduct }
) ;
- C B. routes.MapRoute(
 "Product",
 "Product/{action}/{productName}",
 new { action = "Show", productName = DefaultProduct }
) ;
- C C. routes.MapPageRoute(
 "Product",
 "Product/{action}/{productName}",
 "~/product.aspx",
 false,
 new RouteValueDictionary { { "action", "Show" }, { "productName", DefaultProduct }
});
- C 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

Question: 29

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

Question: 30

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 = [REDACTED];
    var normalFormat = [REDACTED];
    if (httpContext.[REDACTED].ContentType == [REDACTED])
    {
        if (httpContext.[REDACTED].[REDACTED])
        {
            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. .ContentType == 
        "image/gif"
        "image/jpeg"
        "image/bmp")
    {
        if (httpContext. . )
            "Browser.IsMobileDevice"
            "Browser.IsBrowser('MobileDevice')"
            "Mobile == \"android|iPhone|iPod\""
            "Mobile == \"+mobile|tablet\""
        {
            WriteImage(response, mobileFormat);
        }
        else
        {
            WriteImage(response, normalFormat);
        }
    }
    else
    {
        base.ProcessRequest(httpContext);
    }
}

```

Question: 31

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

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)

Question: 32

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 folder named Customer to the Views folder. Then create a view inside this folder named Edit.aspx.
- B. Add a folder named EditCustomer to the Views folder. Then create a view inside this folder named Catalog.aspx.
- C. Add a class named CustomerController to the Controllers folder. Then add a method named Edit to the class.
- D. Add a class named Catalog to the Controllers folder. Then add a method named EditCustomer to the class.

Answer: A,C

Explanation:

From scenario: One of the business requirements, is that administrators must be able to edit information about existing customers.

Question: 33

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?

- A.

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

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

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

Question: 34

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

Question: 35

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 h1:nth-child(1)").animate({ opacity: 0 });
- D. \$("body h1:nth-child(1)").animate({ opacity: 1 });

Answer: B,C

Explanation:

From scenario: Information about the first product on the product page must fade out over time to encourage the user to continue browsing the catalog.

Question: 36

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

Explanation:

From scenario: Information about the first product on the product page must fade out over time to encourage the user to continue browsing the catalog.

Question: 37

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

Explanation:

ASP.NET session state supports several different storage options for session data. Each option is identified by a value in the SessionStateMode enumeration. The following list describes the available session state modes:

- * StateServer mode, which stores session state in a separate process called the ASP.NET state service. 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.
- * 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.
- * InProc mode, which stores session state in memory on the Web server. This is the default.
- * Custom mode, which enables you to specify a custom storage provider.
- * Off mode, which disables session state.

References: <https://msdn.microsoft.com/en-us/library/ms178586.aspx>

Question: 38

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

Question: 39

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

Question: 40

HOTSPOT

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 = [dropdown];
    var normalFormat = [dropdown];
    if (httpContext.[dropdown].ContentType == [dropdown])
    {
        if (httpContext.[dropdown].[dropdown])
        {
            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"
    "image/gif"
    "image/jpeg"
    "image/bmp"

    var normalFormat =  ;
    "image/png"
    "image/gif"
    "image/jpeg"
    "image/bmp"

    if (httpContext. .ContentType ==  )
        Response
        Request
        Application
        Handler
        "image/png"
        "image/gif"
        "image/jpeg"
        "image/bmp"

    {
        if (httpContext. . )
            Response
            Request
            Application
            Handler
            Browser.IsMobileDevice
            Browser.IsBrowser("MobileDevice")
            Mobile == "android|ip(hone|od)"
            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/gif"  
    "image/jpeg"  
    "image/bmp"  
  
    var normalFormat = ;  
    "image/gif"  
    "image/jpeg"  
    "image/bmp"  
  
    if (httpContext..ContentType ==   
        "image/gif"  
        "image/jpeg"  
        "image/bmp")  
    {  
        if (httpContext...  
            "Browser.IsMobileDevice"  
            "Browser.IsBrowser("MobileDevice")"  
            "Mobile == \"android|ip(hone|od)\""  
            "Mobile == \"+mobile|tablet\"")  
        {  
            WriteImage(response, mobileFormat);  
        }  
        else  
        {  
            WriteImage(response, normalFormat);  
        }  
    }  
    else  
    {  
        base.ProcessRequest(httpContext);  
    }  
}
```

Case Study: 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;
    }
}
```

Question: 41

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

Question: 42

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?

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

Question: 43

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

Question: 44

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

Question: 45

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;
}

    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;
}

}

```

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;
}

```

Question: 46

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?

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

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

C 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

Question: 47

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

Question: 48

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.)

Variable Environment foreground
 background simple

```

<Startup>
  <Task commandLine="msiexec transcode.msi" taskType=" " >
    < />
    < /> name="license" value="825534" </ >
  </ >
</Task>
</Startup>
```

Answer:

Variable Environment foreground
 background simple

```

<Startup>
  <Task commandLine="msiexec transcode.msi" taskType=" simple " >
    < Environment >
      < Variable > name="license" value="825534" </ Variable >
    < / Environment >
</Task>
</Startup>
```

Question: 49

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");
}
return base.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");
}
return base.SendAsync(request, cancellationToken);

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

Answer: B

Question: 50

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?

- A. `[OutputCache(VaryByCustom = "gzip", VaryByContentEncoding = "all", Location = OutputCacheLocation.Any,)]`
- B. `[OutputCache(Location = OutputCacheLocation.Any, VaryByParam = "videoId", VaryByContentEncoding = "gzip;q=1.0, compress; q=0.5, *;q=0")]`
- C. `[OutputCache(Location = OutputCacheLocation.Downstream, VaryByParam = "gzip", VaryByCustom = "browser")]`
- D. `[OutputCache(Location = OutputCacheLocation.Downstream, Order=1, VaryByContentEncoding = "gzip;q=1.0, compress; q=0.5, *;q=0")]`
- 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

Question: 51

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: Markup Segment
Environment	Target 2: Markup Segment
foreground	Target 3: Markup Segment
background	Target 4: Markup Segment
simple	Target 5: Markup Segment

Answer:

- Target 1: simple
 Target 2: Environment
 Target 3: Variable
 Target 4: Variable
 Target 5: Environment

Question: 52

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

Question: 53

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

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>

Question: 54

You need to secure the administrative functions for all MVC controllers.

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

A

```
if (requestContext.RouteData.Values["VideoAdmin"] == null)
    throw new Exception("VideoAdmin not found");

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

B

```
var controller = base.CreateController
(requestContext, controllerName) as Controller;
var attributes = controller.GetType().CustomAttributes.ToString();
if (!attributes.Contains("VideoAdminAttribute"))
    throw new Exception("VideoAdminAttribute not found");

return controller;
```

C

```
if (requestContext.HttpContext.Items["VideoAdmin"] == null)
    throw new Exception("VideoAdmin not found");

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

D

```
var controller = base.CreatorController
(requestContext, controllerName) as Controller;
var hasFilter = controller.GetType().CustomAttributes.Any
(x => x.AttributeType.Name == "VideoAdminAttribute");
if (!hasFilter == null)
    throw new Exception("VideoAdminAttribute not found");

return controller;
```

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

Answer: D

Explanation:

The MemberInfo.CustomAttributes property gets a collection that contains this member's custom attributes. The Any() statement will either return null or a collection of matched custom attributes. If it matches one or more, the controller is secure, otherwise an exception is thrown.

From scenario: 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.

Incorrect:

Not B: controller.GetType().Attributes will not return custom attributes.

References:

[https://msdn.microsoft.com/en-us/library/system.reflection.memberinfo.customattributes\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/system.reflection.memberinfo.customattributes(v=vs.110).aspx)

Case Study: 4

Mixed Questions

Question: 55

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

Question: 56

DRAG DROP

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.)

IHttpHandler
IRouteFactory
IRouteHandler
IHttpConstraint
RequestContext
ServerContext

```
public class USOnlyRouteHandler : IRouteHandler
{
    public IHttpHandler GetHttpHandler(RequestContext requestContext)
    {
        return new USIPHandler(requestContext);
    }
}
```

Answer:

IRouteFactory
IHttpConstraint
ServerContext

```
public class USOnlyRouteHandler : IRouteHandler
{
    public IHttpHandler GetHttpHandler(RequestContext requestContext)
    {
        return new USIPHandler(requestContext);
    }
}
```

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

Question: 57

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,C,D

Explanation:

A: The aria-describedby property may be used to attach descriptive information to one or more elements through the use of an id reference list. The id reference list contains one or more unique element ids.

References: <https://www.w3.org/TR/WCAG20-TECHS/ARIA1.html>

Question: 58

DRAG DROP

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[raw + "[city,state]"];

```

```

public class ReservationModelBinder : IModelBinder
{
    public object BindModel(ControllerContext controllerContext,
        ModelBindingContext bindingContext)
    {
        // code block 1
        // code block 2

        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],  
        };  
    }  
}
```

Question: 59

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

Explanation:

Bundling is a new feature in ASP.NET 4.5 that makes it easy to combine or bundle multiple files into a single file. You can create CSS, JavaScript and other bundles. Fewer files means fewer HTTP requests and that can improve first page load performance.

References: <https://www.asp.net/mvc/overview/performance/bundling-and-minification>

Question: 60

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

Explanation:

Only the Resources class is used.

Question: 61

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

Question: 62

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:

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.

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

Question: 63

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. [UnitTests()]
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:

All unit tests require the [TestMethod] attribute.

The Assert.AreEqual method verifies that specified values are equal.

Incorrect:

Not D: All unit tests require the [TestMethod] attribute.

References:

[http://msdn.microsoft.com/en-us/library/microsoft.visualstudio.testtools.unittesting.assert.areequal\(v=vs.110\).aspx](http://msdn.microsoft.com/en-us/library/microsoft.visualstudio.testtools.unittesting.assert.areequal(v=vs.110).aspx)

Question: 64

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?

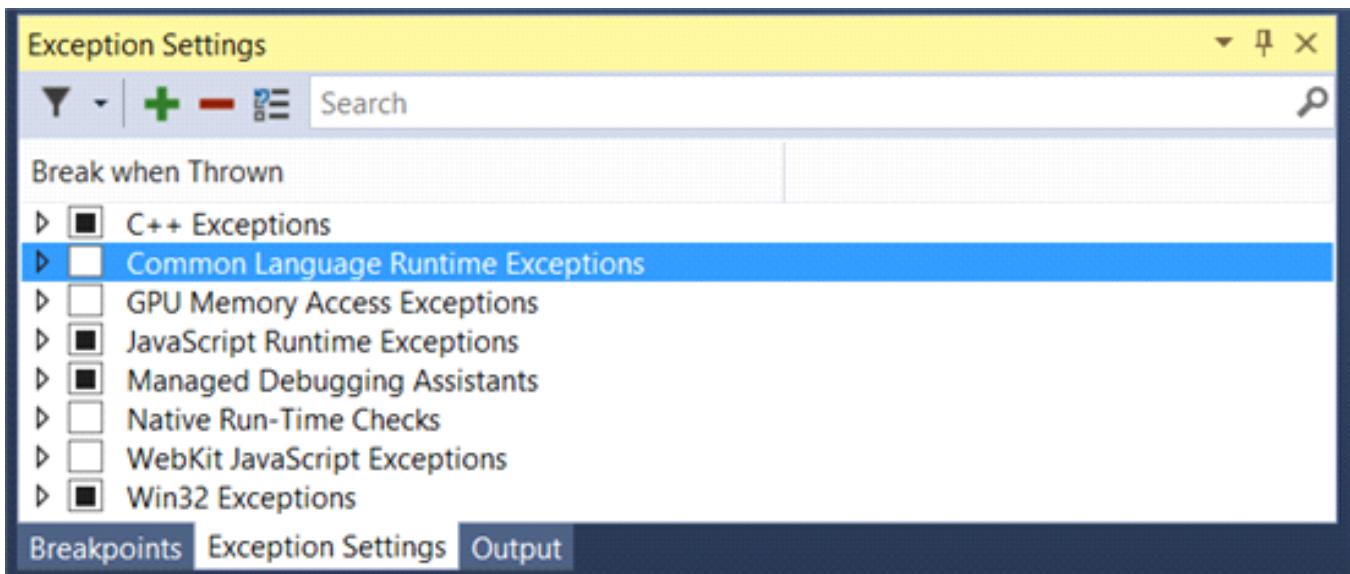
- A. From the Debug menu in Visual Studio 2012, select Exceptions. Enable the Thrown check box for Common Language Runtime Exceptions.
- B. From the Debug menu in Visual Studio 2012, select Exceptions. Disable the User-unhandled check box for Common Language Runtime Exceptions.
- C. Add the following 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

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.

References:

Question: 65

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

Question: 66

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

Explanation:

ASP.NET session state service provides a somewhat slower service than the in-process variant as we need to make calls to a remote server. All session data is stored in memory so shutting down the state machine will wipe out all session data as well.

Incorrect:

Not D: The InProc option is particularly dangerous in a web farm environment. For example imagine one farm machine which stores the session state but not the other. Subsequent web requests from the same user may not read the correct session state.

References: <https://dotnetcodr.com/2013/07/01/web-farms-in-net-and-iis-part-5-session-state-management/>

Question: 67

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

Question: 68

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

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.

Incorrect:

Not A: Application State does not exist in Azure.

Not C: Profile properties stores personal, not global, information.

Not D: Session state is not global. Session states handles user information such as cookies, hidden fields, and query strings are some client-side options to tracking user state

Question: 69

DRAG DROP

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.)

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

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

AreaRegistration.RegisterAllAreas();
```

Answer:

```

protected void Application_Start()
{
    DisplayModeProvider.Instance.Modes.Insert(0, new
    DefaultDisplayMode("WP7"))

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

AreaRegistration.RegisterAllAreas();

```

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

Question: 70

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>

Question: 71

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:

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

Question: 72

DRAG DROP

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>
<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 {
                        maskedAccountNum = custEncrypt.Encrypt(item.AccountNumber)
                    })
            </td>
        </tr>
    }
</table>
```

Answer:

Html
Encode(item.AccountNumber)

```
@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 {
                        maskedAccountNum = custEncrypt.Encrypt(item.AccountNumber)
                    })
            </td>
        </tr>
    }
</table>
```

Question: 73

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:

The HttpRequest.Unvalidated property gets the HTTP request values without triggering request validation.

Request validation checks for HTML markup and script that might indicate a potential cross-site scripting attack. By default, all values are checked using request validation and if any values contain markup or script, ASP.NET throws an HttpRequestValidationException exception. Use this method if you anticipate that the request will contain markup (for example, you are allowing users to post content that contains markup) and you want to get the raw value of a request.
References: <https://msdn.microsoft.com/en-us/library/system.web.httprequest.unvalidated.aspx>

Question: 74

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:

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

Question: 75

HOTSPOT

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

```

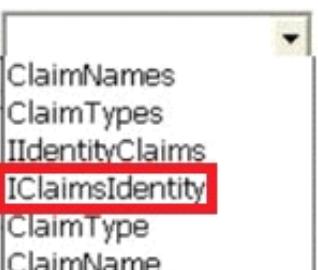
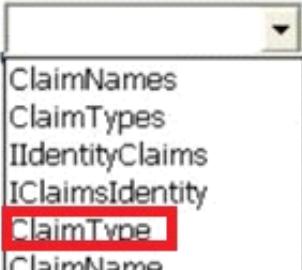
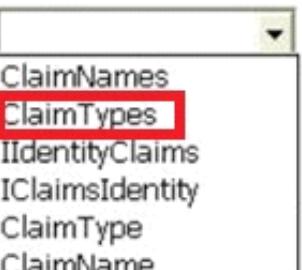
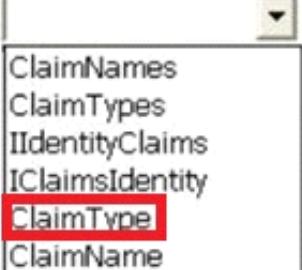
The code shows a class named IdentityClaim. It has private fields for _identityProvider and _identityValue. A constant ACSProviderClaim is defined. The constructor takes an identity parameter. Inside the constructor, it iterates through the claims of the identity object. For each claim, it checks if its type matches the ACSProviderClaim. If it does, it sets the _identityProvider field to the claim's value. The code uses dropdown menus for the properties being assigned.

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;
                }
            }
        }
    }
}
```

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

Question: 76

HOTSPOT

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=".ASPXFORMSAUTH" />
    </authentication>
    <authorization>
      <deny users="?" />
    </authorization>
    <membership defaultProvider="SqlProvider">
      <providers>
        <add
          name="SqlProvider"
          <!-- Configuration for SqlProvider -->
          <!-- Configuration for ApplicationName -->
        </add>
      </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=".ASPFXFORMSAUTH" />
    </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>

```

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

Question: 77

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

Question: 78

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

Explanation:

ASP.NET session state service provides a somewhat slower service than the in-process variant as we need to make calls to a remote server. All session data is stored in memory so shutting down the state machine will wipe out all session data as well.

References: <https://dotnetcodr.com/2013/07/01/web-farms-in-net-and-iis-part-5-session-state-management/>

Question: 79

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

Question: 80

HOTSPOT

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();
    [REDACTED]
    [REDACTED]
    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));
}

```

Question: 81

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

Question: 82

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

Explanation:

Only the Resources class is used.

Question: 83

DRAG DROP

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.)

a. 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.)

```

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;
                }
            }
        }
    }
}

```

Answer:

Box 1: IClaimsIdent

Box 2: ClaimType

Box 3: ClaimTypes

Box 4: ClaimType

Similar example:

For Box 1, see line 15.

For Box 2, see line 22.

For Box 3, see line 22.

For Box 4, see line 26.

01 using System;

```
02 using System.Collections.Generic;
03 using System.Linq;
04 using System.Web;
05 using Microsoft.IdentityModel.Claims;
06
07 namespace 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    }
```

References:

Question: 84

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

Explanation:

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

Question: 85

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. [UnitTest()]

```
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);
```

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

Answer: D

Question: 86

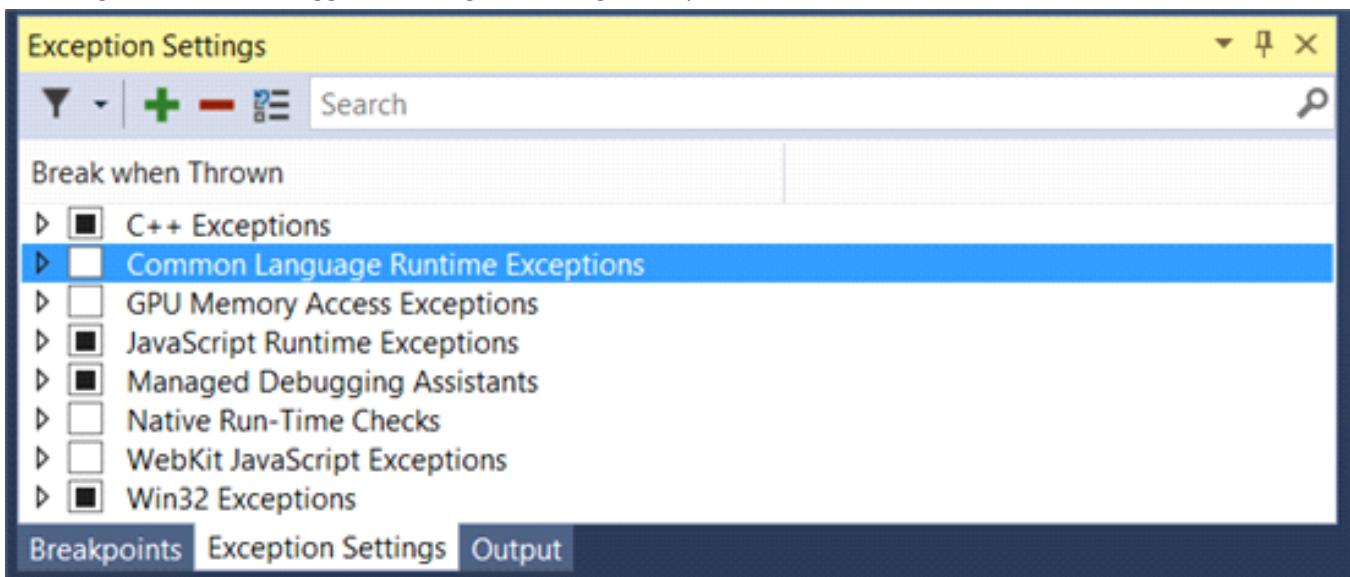
You are developing an ASP.NET MVC application by using Visual Studio 2012.
 The application throws and handles exceptions when it runs.
 You need to examine the state of the application when exceptions are thrown.
 What should you do?

- 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 the Command tab and select Debug.

Answer: A

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.

References:

Question: 87

HOTSPOT

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.

You have the following code:

```
protected void Application_Start()
{
    DisplayModeProvider.Instance.Modes.Insert(0, new
        {
            Target 1
        });

    {
        ContextCondition = (context =>
            context.GetOverriddenUserAgent().IndexOf
                {
                    Target 2
                }
                Target 3
                ) >= 0
    });

    AreaRegistration.RegisterAllAreas();
}
```

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

AreaRegistration.RegisterAllAreas();

```

Question: 88

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

Explanation:

Screen is used for computer screens, tablets, smart-phones etc.

max-width is the maximum width of the display area, such as a browser window.

References: http://www.w3schools.com/cssref/css3_pr_mediaquery.asp

Question: 89

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

Question: 90

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.

Question: 91

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  
References: https://technet.microsoft.com/en-us/library/21a15yht(v=vs.85)
```

Question: 92

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: A

Explanation:

The Manifest Generation and Editing Tool (Mage.exe) is a command-line tool that supports the creation and editing of application and deployment manifests.

Incorrect:

Not B: The Native Image Generator (Ngen.exe) is a tool that improves the performance of managed applications. Ngen.exe creates native images

Not C: Al.exe generates a file with an assembly manifest, not an deployment manifest, from one or more files that are either resource files or Microsoft intermediate language (MSIL) files.

Not D: Resgen.exe, the Resource File Generator, converts text (.txt or .restext) files and XML-based resource format (.resx) files to common language runtime binary (.resources) files that can be embedded in a runtime binary executable or compiled into satellite assemblies.

References: <http://www.devcurry.com/2011/02/important-net-framework-40-command-line.html>

Question: 93

DRAG DROP

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

model binder

model

http context

binding context

http handler

Answer area

Create a custom
and retrieve selected values from the

Word

Word

Answer:

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

Question: 94

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,C

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.

Question: 95

HOTSPOT

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.



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

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



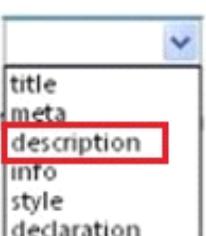
section of the page. The content must be human readable, actionable, and rich in keywords.

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.

Question: 96

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

Question: 97

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

Question: 98

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

Explanation:

Server sessions and cookies can both be configured to secure and they both persist after the users log on.

Incorrect:

Not C: ViewData's life only lasts during current http request.

Not D: TempData is a bucket where you can dump data that is only needed for the following request. That is, anything you put into TempData is discarded after the next request completes.

Question: 99

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.

References:

Question: 100

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: D

Explanation:

ASP.NET membership is designed to enable you to easily use a number of different membership providers for your ASP.NET applications.

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 sources.

* 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.

To implement a membership provider, you create a class that inherits the `MembershipProvider` abstract class from the `System.Web.Security` namespace.

Incorrect:

Not C: 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.

References: <https://msdn.microsoft.com/en-us/library/f1kyba5e.aspx>

Question: 101

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.

Question: 102

DRAG DROP

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:

Target 2:

Target 3:

Question: 103

DRAG DROP

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

Answer area

Target 1:

Target 2:

Styles

Answer:

Target 1: `style="behavior:`

Target 2: `url(colorchange.js);"`

Question: 104

DRAG DROP

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.cshtml`
- `_MobileLayout.cshtml`

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.cshtml`.

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

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

Answer area

Target 1:	<input type="text"/> Segment
Target 2:	<input type="text"/> Segment
Target 3:	<input type="text"/> Segment

...

Answer:

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

Question: 105

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.

References: <https://support.microsoft.com/en-us/kb/810572>

Question: 106

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

Question: 107

DRAG DROP

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:

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

Box 1: Create a service namespace

The first step is to create an ACS Namespace. This is your Security Token Services (STS) that will generate Signed Identity tokens to be consumed by WAP. This will also be the only STS that WAP will trust.

Box 2: Register the application as a relaying partner.

Now that the Namespace is created, you will have to tell it about the WAP Portals that is expecting tokens from it. We add the WAP Tenant Portal as a Relying Party to ACS (Access Control Services).

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

Now that the Namespace is created, you will have to tell it about the WAP Portals that is expecting tokens from it.

1. Click on Relying Party Applications and click on Add to add the Windows Azure Pack tenant Portal as a Relying Party to this namespace. This essentially tells the ACS namespace that the Tenant Portal is expecting it to provide user identities.

2. You will now go to the Add Relying Party Application page where you can enter details about the WAP tenant Portal.

3. The easier option is to provide the federation Metadata from the tenant portal. Save the XML file locally on your computer

4. Now back in the ACS management portal, Upload the federation metadata file and provide a Display Name for the Relying Party.

5. Scroll Down to the Token Format section and choose the token format to be 'JWT'. By Default, the Windows Live Identity Provider will be selected. Deselect it if you do not want to allow users to sign in using their Live id. Under the Token Signing Settings section, select X.509 Certificate as the Type. Click on Save.

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

We have our ACS and WAP portals setup. We now have to find a source of Identities that can be flown in to the WAP Portals through ACS. We configure external services to act as Identity Providers

Box 5: Generate provider rules for claims

We now have our Relying Party and our Identity Providers set up. We should now tell ACS how to transform the incoming Claims from these Identity providers so that the Relying Party can understand it. We do that using Rule Groups which are a set of rules that govern Claim Transformation. Since, we have two identity Providers, we will have to create a rule for each of these.

References: <https://blogs.technet.microsoft.com/privatecloud/2014/01/17/setting-up-windows-azure-active-directory-acss-to-provide-identities-to-windows-azure-pack/>

Question: 108

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

Question: 109

HOTSPOT

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

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

feature in the IIS

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

rules.

Answer:**Answer Area**

Use the

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

feature in the IIS

Search Engine Optimization Toolkit to create a

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

file and add

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

rules.

Question: 110

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

Question: 111

HOTSPOT

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

Question: 112

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")
    {
```

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

Answer: C,D

Explanation:

References:

Question: 113

DRAG DROP

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

Answer:

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

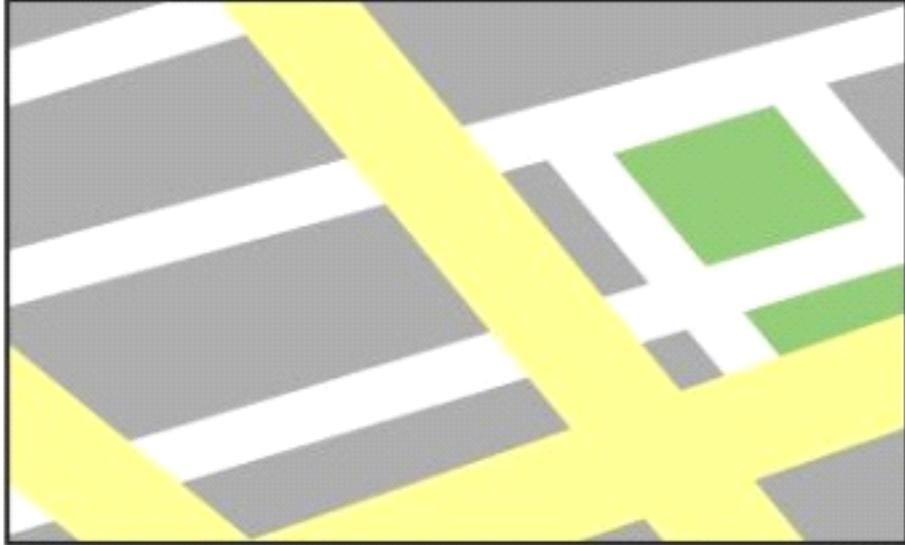
Question: 114

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.)

Rain Snow Sun

Average Conditions

[2006](#)
[2007](#)
[2008](#)
[2009](#)
[2010](#)
[2011](#)
[2012](#)



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: D

Explanation:

HTML5 slider contains min and max properties:

- * min Minimum value of the range. Default minimum value is 0.
- * max Maximum value of the range. Default maximum value is 100.

Incorrect:

Not A: HTML5 slider contains "range" property, but it used for enabling and configuring range selection in slider, not for setting min and max possible values.

References: <http://www.html5tutorial.info/html5-range.php>

Question: 115

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 `System.Collections.Generic.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.

References:

Question: 116

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

Question: 117

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: A

Explanation:

ASP.NET session state enables you to store and retrieve values for a user as the user navigates ASP.NET pages in a Web application. HTTP is a stateless protocol. This means that a Web server treats each HTTP request for a page as an independent request. The server retains no knowledge of variable values that were used during previous requests. ASP.NET session state identifies requests from the same browser during a limited time window as a session, and provides a way to persist variable values for the duration of that session.

References: <https://msdn.microsoft.com/en-us/library/ms178581.aspx>

Question: 118

DRAG DROP

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 <div style="margin-top: 10px; border: 1px solid #ccc; padding: 5px; display: inline-block;"> TempData </div> <div style="margin-top: 10px; border: 1px solid #ccc; padding: 5px; display: inline-block;"> ViewData </div> <div style="margin-top: 10px; border: 1px solid #ccc; padding: 5px; display: inline-block;"> InProc </div> <div style="margin-top: 10px; border: 1px solid #ccc; padding: 5px; display: inline-block;"> SqlServer </div>	Answer area <div style="margin-top: 10px; border: 1px solid #ccc; padding: 5px; display: inline-block;"> Store state in Item and set the mode attribute of the sessionState element in the web.config file to Item </div>
--	---

Answer:

Answer area

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

Question: 119

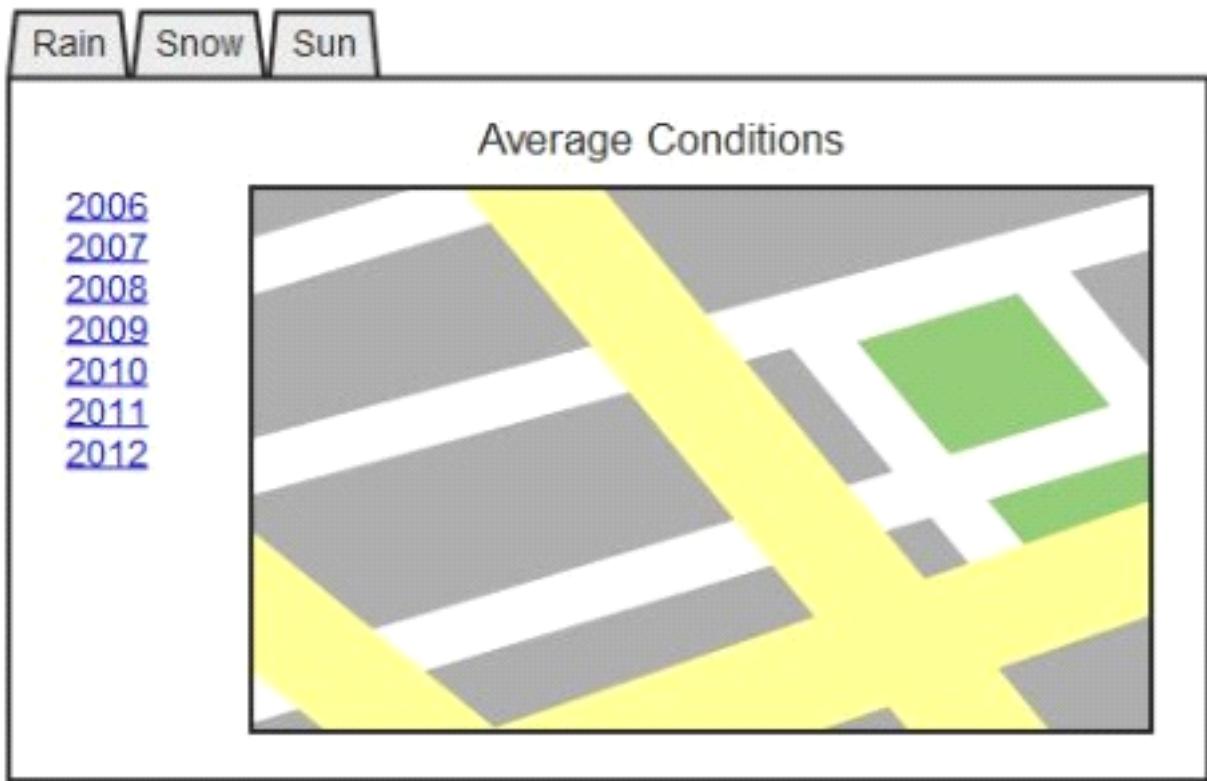
You are designing a localized ASP.NET application to support multiple cultures. You need to ensure that the application can be displayed in several languages. How should you implement this feature?

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

Answer: A

Question: 120

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?

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.

References:

Question: 121

HOTSPOT

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>

```

Example:

```

$.ajax({
  url: this.href,
  cache: false,
  success: function (html) { $("#fixedRows").append(html); }
});

```

References:

Question: 122

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: B,C,E

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.

References:

Question: 123

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.

References:

Question: 124

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.

Example:

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>
```

References:

Question: 125

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: A,D

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.

References:

Question: 126

DRAG DROP

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

- .WebExtendedBase + 30
- .ApplicationCodeBase + 30;
- .ApplicationDetailCodeBase + 30;
- .FormatCustomEventDetails(null);
- .Raise();
- .Concat()

Answer Area

```

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

Code segment

Code segment

Answer:

```

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

.ApplicationDetailCodeBase + 30;

var outage = new PaymentProcessorOutage(this, code);

outage

return Content("done");

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.)

[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)

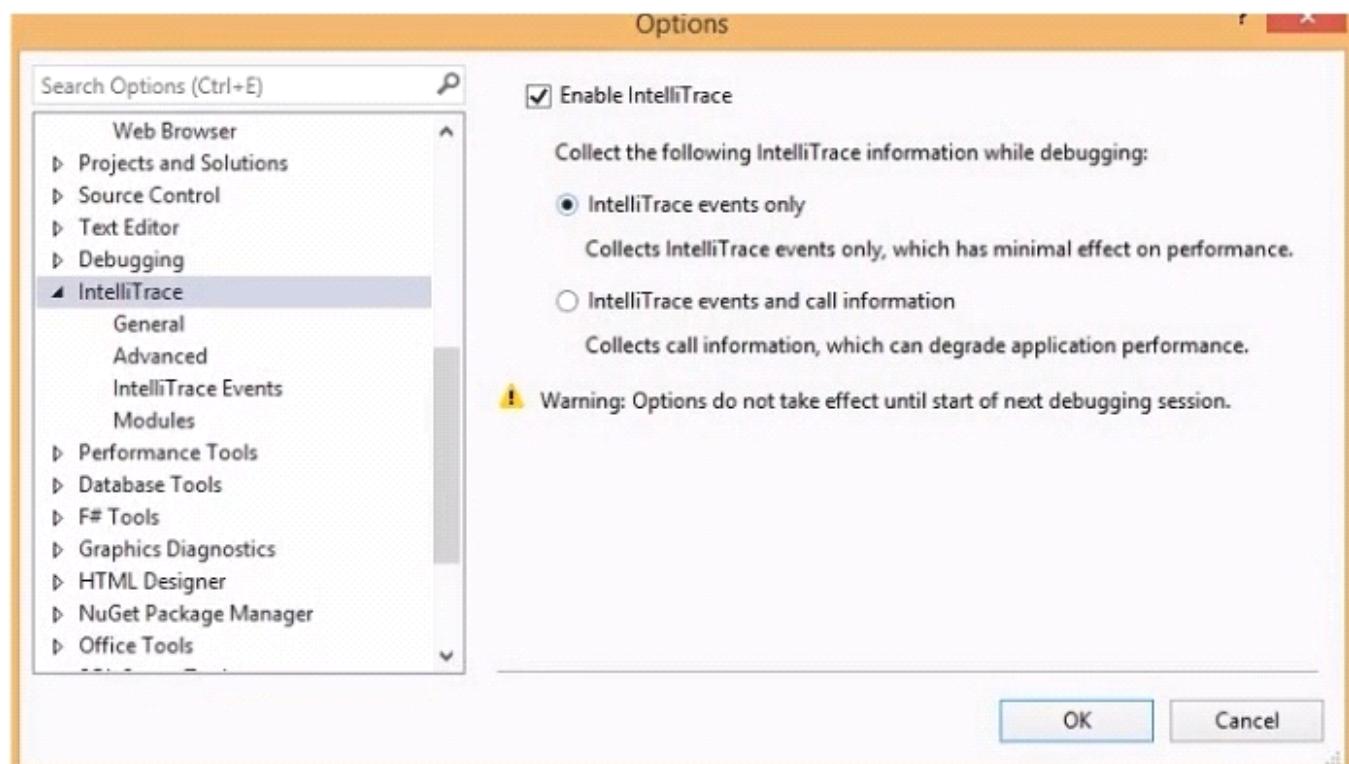
Question: 127

HOTSPOT

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:

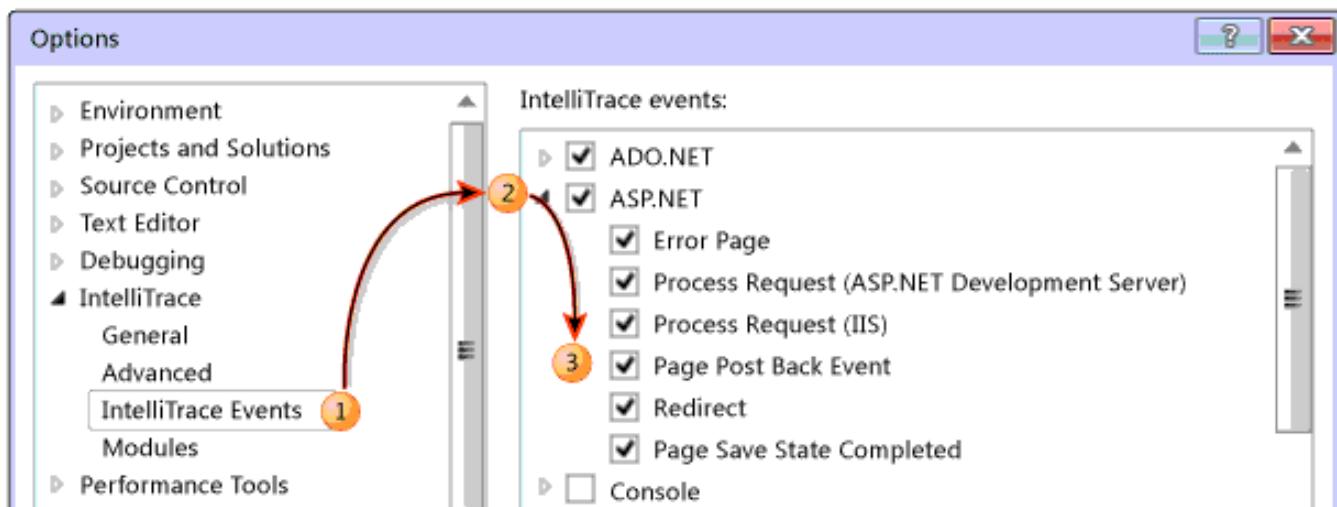
Which data will be available during debugging?

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

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

References:

Question: 128

HOTSPOT

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 checked="" 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"/>

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"/>

Question: 129

HOTSPOT

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
```

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:

Example: Response.AddHeader("content-disposition", "attachment; filename=MyExcelFile.xls");
Response.ContentType = "application/ms-excel";

References:

Question: 130

HOTSPOT

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

```

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)

References:

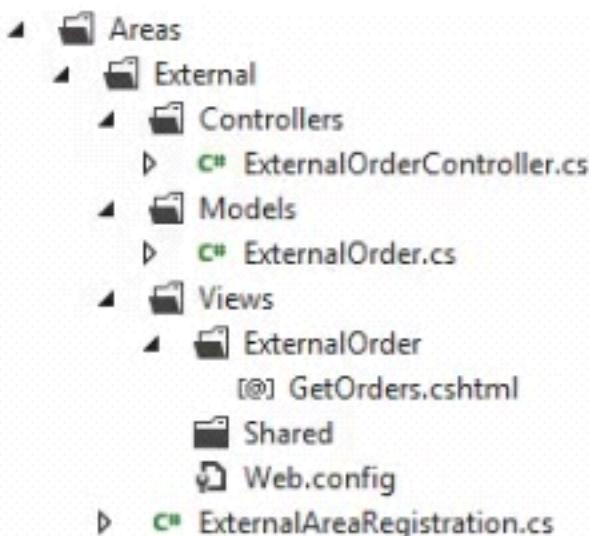
Question: 131

DRAG DROP

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

Target 1: "GetOrders",
Target 2: "ExternalOrderController",

Target 3: External,

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>)

Answer:

Use:

```
Html.ActionLink("Text", "ActionName", "ControllerName", new { Area = "AreaName" }, null)
```

References:

Question: 132

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);
}
```

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

Answer: A,C

Explanation:

References:

Question: 133

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.

References:

Question: 134

DRAG DROP

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	Answer Area
configSource	Target 1: Markup Segment
uiCulture	Target 2: Markup Segment
enableClientBasedCulture	Target 3: Markup Segment
siteMap	
globalization	

Answer:

Target1: globalization

Target2: enableClientBasedCulture

Target3: uiCulture

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">
```

References:

Question: 135

HOTSPOT

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()

Example:

* 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" />  
<% } %>
```

Question: 136

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?

- C A. `public class OracleMembershipProvider : ProviderBase
{
 ...
}`
- C B. `public class OracleMembershipProvider : ClientFormsMembershipProvider
{
 ...
}`
- C C. `public class OracleMembershipProvider : SqlMembershipProvider
{
 ...
}`
- C 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.

References:

Question: 137

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.

References:

Question: 138

DRAG DROP

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

Question: 139

DRAG DROP

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.

a. 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: ClaimsIdentity

Target 2: ClaimType

Target 3: ClaimTypes

Target 4: ClaimType

Example: 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;
}
}
}
}
```

References:

Question: 140

DRAG DROP

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

TempData

ViewData

InProc

SqlServer

Answer area

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

Answer:

Target 1: InProc

Target 2: ViewData

* InProc mode, which stores session state in memory on the Web server. This is the default.

References:

Question: 141

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:

References:

Question: 142

HOTSPOT

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
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>

When the web server is so busy that the pending requests cannot be completed in five minutes, the Web role is shut down.

When an unhandled exception occurs within the Web role, the Stopping event is raised, and the **OnStop** method code runs.

The Web role initiates a shutdown immediately following the return of the **OnStop** method code.

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"/>
--	----------------------------------	-----------------------

References:

Question: 143

You are developing an ASP.NET application that allows users to download Microsoft Azure log files. You need to improve the performance of the application.

What should you do?

- Minify the content files.

- B. Enable compression in IIS.
- C. Bundle the content files into a single .tar file.
- D. Host the image, JavaScript, and CSS files on a different server.

Answer: C

Explanation:

Bundling is a new feature in ASP.NET 4.5 that makes it easy to combine or bundle multiple files into a single file. You can create CSS, JavaScript and other bundles. Fewer files means fewer HTTP requests and that can improve first page load performance.

References: <https://www.asp.net/mvc/overview/performance/bundling-and-minification>

Question: 144

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

You have the following requirements:

- You must allow all users to access the GetOrders method.
- You must restrict access to the EditOrder method to the user named OrderAdmin.

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(Roles = "Anonymous")]

```
public class OrderController : Controller
{
    public ActionResult GetOrders()
    {
        ...
        return View();
    }
}
```

[Authorize(Users = "OrderAdmin")]

```
public ActionResult EditOrder()
{
    ...
    return View();
}
}
```

B. [Authorize]

```
public class OrderController : Controller
{
    [AllowAnonymous]
    public ActionResult GetOrders()
    {
        ...
        return View();
    }
}
```

[Authorize(Users = "OrderAdmin")]

```
public ActionResult EditOrder()
{
    ...
    return View();
}
}
```

C. [Authorize]

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

[Authorize(Users = "OrderAdmin")]

```
public ActionResult EditOrder()
{
    ...
    return View();
}
}
```

D. [Authorize]

```
public class OrderController : Controller
{
    [AllowAnonymous]
    public ActionResult GetOrders()
    {
        ...
        return View();
    }
}
```

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

Answer: B

Explanation:

With MVC4 a new attribute has been introduced, namely the [AllowAnonymous] attribute. Together with the [Authorize] attribute, you can now take a white-list approach instead. The white-list approach is accomplished by dressing the entire controller with the [Authorize] attribute, to force authorization for all actions within that controller. You can then dress specific actions, that shouldn't require authorization, with the [AllowAnonymous] attribute, and thereby white-listing only those actions. With this approach, you can be confident that you don't, by accident, forget to dress an action with the [Authorize], leaving it available to anyone, even though it shouldn't.

References: <http://stackoverflow.com/questions/9727509/how-to-allow-an-anonymous-user-access-to-some-given-page-in-mvc>

Question: 145

HOTSPOT

HOTSPOT

You are developing an ASP.NET MVC 4 application that includes the following class. Line numbers are included for reference only.

```

01 protected string _name;
02 protected float _rating;
03 protected float _balance;
04
05 public void AddCustomer(string name, float expenses, float income, float payment, float balance)
06 {
07     Contract.Requires(name != null);
08     _name = name;
09     _rating = DebtRatio(expenses, income, payment);
10     _balance = CheckBalance(balance);
11 }
12
13 public float DebtRatio(float expenses, float income, float payment)
14 {
15     float net = income - payment;
16     Contract.Assert(net != 0);
17     return expenses / net;
18 }
19
20 public float CheckBalance(float balance)
21 {
22     Contract.Ensures(balance >= 0.0f);
23     if (balance < 0.0f) balance = 0.0f;
24     return balance;
25 }
```

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

Answer Area

	Yes	No
The code at line 07 throws an exception, when you test the class by running the following code segment: AddCustomer("Contoso", 100, 1000, 100, 1);	<input type="radio"/>	<input type="radio"/>
The code at line 16 throws an exception, when you test the class by running the following code segment: AddCustomer("Contoso", 1000, 500, 500, 0);	<input type="radio"/>	<input type="radio"/>
The code at line 22 throws an exception, when you test the class by running the following code segment: AddCustomer("Contoso", 100, 100, 1000, -1);	<input type="radio"/>	<input type="radio"/>

Answer:**Answer Area**

	Yes	No
The code at line 07 throws an exception, when you test the class by running the following code segment: AddCustomer("Contoso", 100, 1000, 100, 1);	<input type="radio"/>	<input checked="" type="radio"/>
The code at line 16 throws an exception, when you test the class by running the following code segment: AddCustomer("Contoso", 1000, 500, 500, 0);	<input checked="" type="radio"/>	<input type="radio"/>
The code at line 22 throws an exception, when you test the class by running the following code segment: AddCustomer("Contoso", 100, 100, 1000, -1);	<input type="radio"/>	<input checked="" type="radio"/>

Box 1: No

Line 7 executes fine as Name is the string Contoso.

Box 2: Yes

The assertion of Line 16 fails as the Boolean expression net!=0 evaluates to false (500-500 equals 0).

Note: An assertion verifies an assumption of truth for compared conditions. The assertion is central to the unit test. The Assert class provides many static methods for verifying suppositions of truth. If the condition being verified is not true, the assertion fails. The Assert class throws an AssertFailedException to signal a failure.

Box 3: No

The Boolean expression on line 22, balance >= 0.0f, evaluates to 0 >= 0.0f (true), as balance is set to 0.0f at line 21, and because Contract.ensures is a postcondition.

Note: The Contract.Ensures method specifies a postcondition contract for the enclosing method or property.

References: <https://msdn.microsoft.com/en-us/library/microsoft.visualstudio.testtools.unittesting.assert.aspx>
<http://stackoverflow.com/questions/7052640/how-does-contract-ensures-work>

Question: 146

HOTSPOT

HOTSPOT

You are preparing to test an ASP.NET application. The application includes the following class. Line numbers are included for reference only.

```
01 public class HomeController : Controller
02 {
03     public ActionResult Index()
04     {
05         return View();
06     }
07     public ActionResult GetResults(int index)
08     {
09         return View();
10    }
11    public ActionResult GetUserInfo(string email)
12    {
13        return View();
14    }
15 }
```

Data will be imported from another system into the current application. Before importing data, you must run unit tests to validate the data.

a. To be considered valid, the data must meet the following requirements:

You need to create unit tests that fail if the requirements are not met.

- The value passed into the GetResults method must be greater than or equal to zero.
- The value passed into the GetUserInfo method must not be null.

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

Answer Area

```
[TestClass]  
[TestMethod]  
[HandleError]  
[HandleException]
```

```
public class UnitTest1  
{  
    protected int? index;  
    protected string email;  
    public void Index()  
    {  
        index = null;  
        email = null;  
        GetResults();  
        GetUserInfo();  
    }
```

```
[TestClass]  
[TestMethod]  
[HandleError]  
[HandleException]
```

```
public void GetResults()  
{  
    Assert.IsTrue(index >= 0, "Test failed");  
    Assert.IsFalse(index < 0);  
    Assert.AreEqual(index, 10);  
    Assert.IsNotNull(index);  
}
```

```
[TestClass]  
[TestMethod]  
[HandleError]  
[HandleException]
```

```
public void GetUserInfo()  
{
```

Answer:

Box 1: TestClass

Box 2: TestMethod

Box 3: Assert.IsTrue

Box 4: TestMethod

Box 5: Assert.IsNotNull

Box 1: TestClass

The [TestClass] attribute is required in the Microsoft unit testing framework for managed code for any class that contains unit test methods that you want to run in Test Explorer.

Box 2: TestMethod

Set the following attributes for the unit test:

[TestMethod]

All unit tests require the [TestMethod] attribute.

Box 3: Assert.IsTrue

The value passed into the GetResults method must be greater than or equal to zero.

Box 4: TestMethod

Box 5: Assert.IsNotNull

The value passed into the GetUserInfo method must not be null.

References: <https://msdn.microsoft.com/en-us/library/ms182532.aspx>

Question: 147

You are building an ASP.NET web application.

You must test the web application in multiple browsers at the same time.

You need to ensure that the application can use the Browser Link feature.

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

A. In the web.config file, set the value of the debug attribute to False.

B. In the web.config file, set the value of the debug attribute to True.

C. Enable Browser link.

D. Use an external editor for webpages.

E. Enable source control server support.

Answer: B,C

Explanation:

Debugging must be enabled in the web.config file.

To enable Browser Link, set debug=true in the <compilation> element in the project's Web.config file.

References: <https://www.asp.net/visual-studio/overview/2013/using-browser-link>

Question: 148

You are developing an ASP.NET MVC application that delivers real-time game results to sports fans. The application includes the following code. Line numbers are included for reference only.

```

01 public class HomeController : Controller
02 {
03     public ActionResult Index()
04     {
05         return View();
06     }
07     [OutputCache(Duration = 3600, VaryByParam = "none", Location = OutputCacheLocation.Server, NoStore = true)]
08     public ActionResult GetUserInfo()
09     {
10         return View();
11     }
12     [OutputCache(Duration = 3600, VaryByParam = "none", Location = OutputCacheLocation.Server, NoStore = true)]
13     public ActionResult GetResults()
14     {
15         return View();
16     }
17 }

```

The source data for the game results is updated every 30 seconds.

Testers report the following issues with the application:

- They report seeing other user's name when they sign in to the application.
- They report delays in seeing the latest game results.

You need to correct the performance issues.

Which two changes should you make to the code? Each correct answer presents part of the solution.

- A. Replace the code at line 07 with the following code segment:[OutputCache(Duration = 30, VaryByParam = "none", Location = OutputCacheLocation.Client, NoStore = true)]
- B. Replace the code at line 12 with the following code segment:[OutputCache(Duration = 30, VaryByParam = "none", Location = OutputCacheLocation.Server, NoStore = true)]
- C. Replace the code at line 07 with the following code segment:[OutputCache(Duration = 3600, VaryByParam = "none", Location = OutputCacheLocation.Server, NoStore = false)]
- D. Replace the code at line 12 with the following code segment:[OutputCache(Duration = 3600, VaryByParam = "none", Location = OutputCacheLocation.Client, NoStore = true)]

Answer: A,B

Explanation:

B: They report delays in seeing the latest game results. This is the output of the GetResults() function. We decrease the Duration in the cache for this function from 3600 to 30. This is one line 12.

A: They report seeing other user's name when they sign in to the application. This is the output of the GetUserInfo() function. We should change the OutputCacheLocation of the caching of this function from Server to Client. This is on line 7.

Note: The OutputCacheLocation.Client option indicates that the content should be cached at the requesting client. Any requests for the same resource made from the same client within the expiry period, will be served out the client's cache, without a network request being made to the server.

The OutputCacheLocation.Server option indicates that the content will be cached at the origin server. This content will be served for subsequent requests made by the initial client and any other client requesting the same resource within the expiry period.

References: <https://growlycode.wordpress.com/2014/01/10/mvc4-outputcache-location-basics/>

Question: 149

You deploy an ASP.NET MVC Web application to Internet Information Services (IIS). The application has a secure area that provides access to custom reports.

You must develop custom business logic to support the reports. The custom business logic has the following

requirements:

- It must run each time that a report is requested.
- It must not run for other IIS requests.
- It must be mapped to the request extension of the report.
- It must be written by using a managed language that is supported by the .NET framework.

You must be able to quickly modify and deploy updates to the business logic.

You need to develop the custom business logic.

What should you do?

- A. Update the report logic to include the custom business logic. Use WebDAV to publish the reports to the server.
- B. Develop a new HTTP module that includes the custom business logic. Deploy the HTTP module to IIS.
- C. Develop a new HTTP handler that includes the custom business logic. Deploy the HTTP handler to IIS.
- D. Develop a new ISAPI filter that includes the custom business logic. Deploy the ISAPI filter to IIS.

Answer: C

Explanation:

An ASP.NET HTTP handler is the process that runs in response to a request that is made to an ASP.NET Web application.

ASP.NET maps HTTP requests to HTTP handlers based on a file name extension.

Incorrect:

Not B: HTTP modules differ from HTTP handlers. An HTTP handler returns a response to a request that is identified by a file name extension or family of file name extensions. In contrast, an HTTP module is invoked for all requests and responses. It subscribes to event notifications in the request pipeline and lets you run code in registered event handlers.

References: <https://msdn.microsoft.com/en-us/library/bb398986.aspx>

Question: 150

DRAG DROP

DRAG DROP

You plan a new ASP. NET MVC application.

The application uses the Model-View Controller (MVC) pattern to separate the modeling of the domain, the presentation, and the actions. This separation is based on user input into three separate classes.

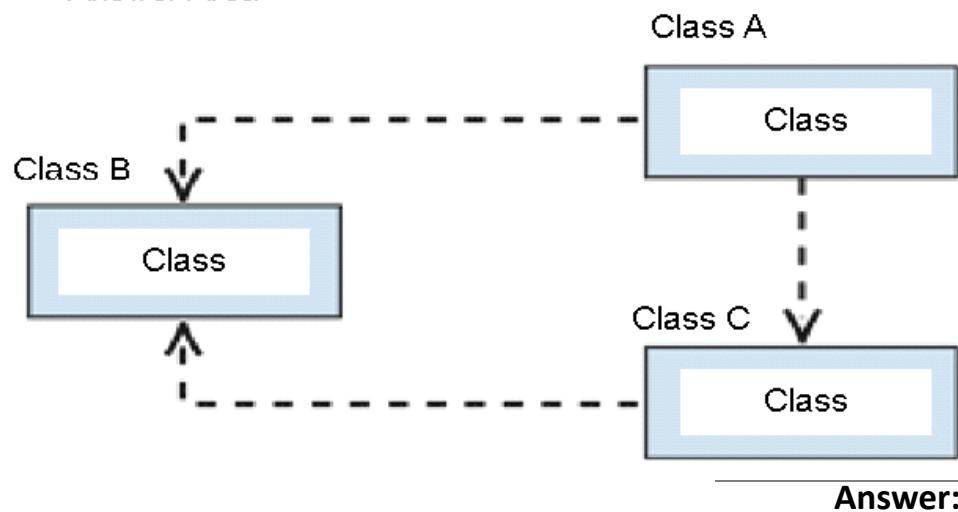
You need to diagram the structural relationship between the three classes.

What should you do? To answer, drag the appropriate class to the correct location or locations. Each class name 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.

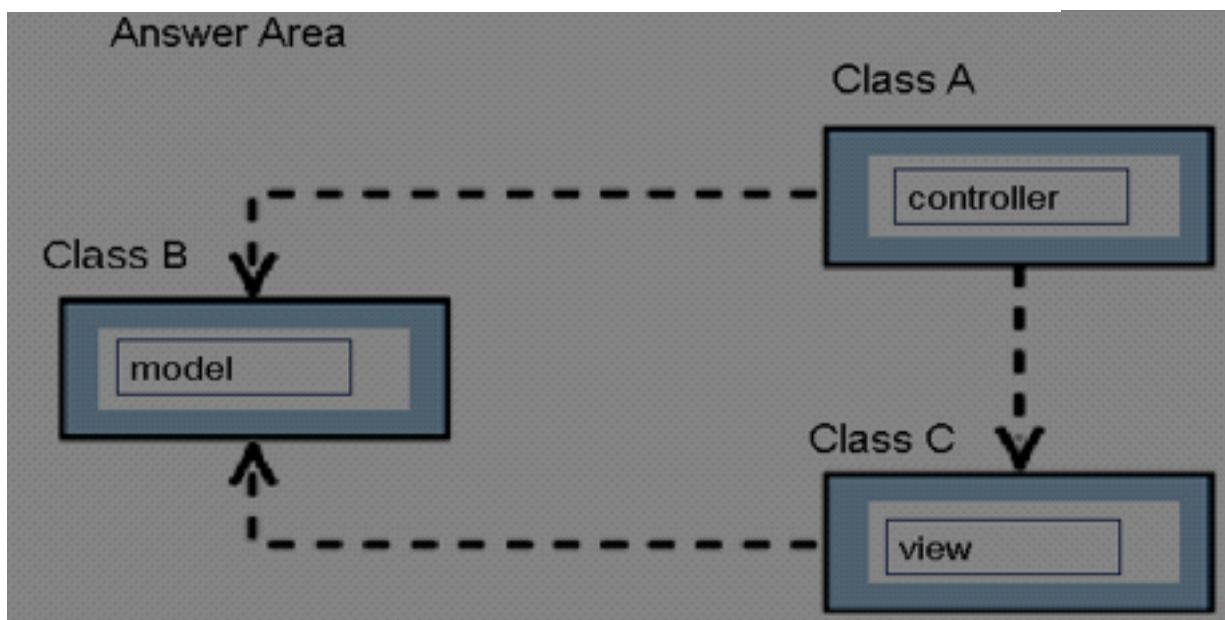
Classes

```
model
view
controller
viewmodel
client
server
```

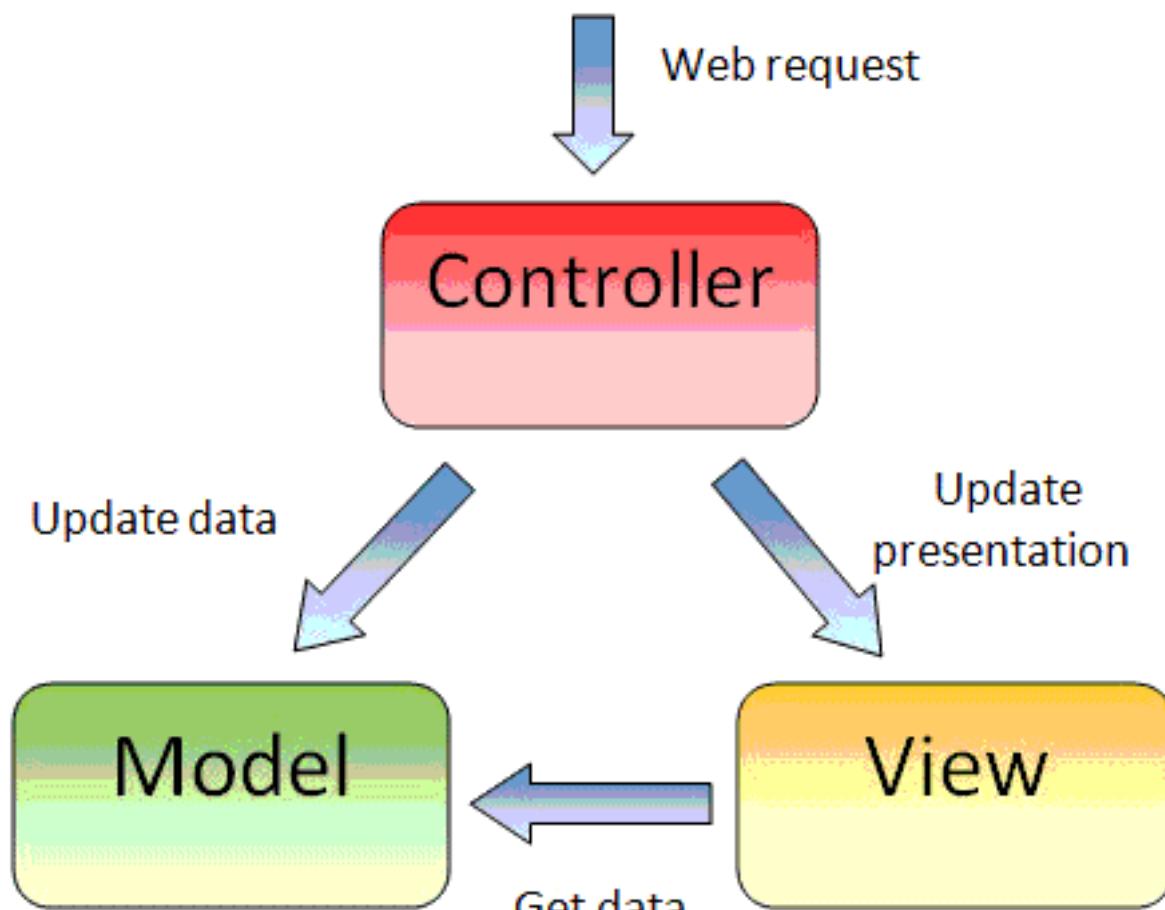
Answer Area



Answer:



Graphically, MVC can be shown like on image bellow:



References: <http://www.beansoftware.com/ASP.NET-Tutorials/Intro-ASP.NET-MVC.aspx>

Question: 151

HOTSPOT

HOTSPOT

You are developing an ASP.NET MVC application that will be hosted on Microsoft Azure. The application includes the StackExchange.Redis client package. A variable named CacheConnectionConfiguration stores the cache endpoint URL and the password to connect to the cache.

The application must store a user's color selection by using the Azure Redis cache. The cached value must expire after 90 minutes. You need to cache the user's color selection.

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

Answer Area

```

private static void CacheColorSelection(string colorSelection)
{
    var connection = ConnectionMultiplexer.Connect(CacheConnectionConfiguration);

    var cache = connection.Configure();
    var cache = connection.GetStatus();
    var cache = connection.GetDatabase();
    var cache = connection.GetServer(CacheConnectionConfiguration);

    cache.StringSet(colorSelection, "color");
    cache.StringSet("color", colorSelection);
    cache.StringSet("color", colorSelection, TimeSpan.FromMinutes(90));
    cache.StringSet("color", colorSelection, TimeSpan.FromSeconds(90));
}

```

Answer:**Answer Area**

```

private static void CacheColorSelection(string colorSelection)
{
    var connection = ConnectionMultiplexer.Connect(CacheConnectionConfiguration);

    var cache = connection.Configure();
    var cache = connection.GetStatus();
    var cache = connection.GetDatabase(); // Line highlighted
    var cache = connection.GetServer(CacheConnectionConfiguration);

    cache.StringSet(colorSelection, "color");
    cache.StringSet("color", colorSelection);
    cache.StringSet("color", colorSelection, TimeSpan.FromMinutes(90)); // Line highlighted
    cache.StringSet("color", colorSelection, TimeSpan.FromSeconds(90));
}

```

Box 1: var cache = connection.GetDatabase();

Once the connection is established, return a reference to the redis cache database by calling the ConnectionMultiplexer.GetDatabase method.

Box 2: cache.StringSet("color", colorSelection, TimeSpan.FromMinutes(90));

The TimeSpanFromMinutes method returns a TimeSpan that represents a specified number of minutes, where the specification is accurate to the nearest millisecond.

Example: The following code snippet shows how to set an expiration time of 90 minutes on a key.

// Add a key with an expiration time of 90 minutes

await cache.StringSetAsync("data:key1", 99, TimeSpan.FromMinutes(90));

References: <https://docs.microsoft.com/en-us/azure/redis-cache/cache-dotnet-how-to-use-azure-redis-cache>

[https://msdn.microsoft.com/en-us/library/system.timespan.fromminutes\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/system.timespan.fromminutes(v=vs.110).aspx)

Question: 152

You are developing an ASP.NET MVC application to be used on the Internet. The environment does not use Active Directory.

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

Answer: C

Explanation:

Many Web applications require a way to restrict access to some resources (such as specific pages) so that those resources are accessible only to authenticated users. The default Web application project template for ASP.NET MVC provides a controller, data models, and views that you can use to add ASP.NET forms authentication to your application. The built-in functionality lets users register, log on and off, and change their password. For many applications, this functionality provides a sufficient level of user authentication.

Incorrect:

Not B: Windows authentication would require an Active Directory.

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.

References: [https://msdn.microsoft.com/en-us/library/ff398049\(VS.98\).aspx](https://msdn.microsoft.com/en-us/library/ff398049(VS.98).aspx)

Question: 153

You are developing an ASP.NET MVC application that will run in a shared environment.

The application requests the user's password, and then uses the password to sign data.

You need to minimize the potential for the password to be discovered by other processes that run in the shared environment. What should you do?

- A. Add the SecuritySafeCriticalAttribute attribute to the methods which process the password.
- B. Store the password in a SecureString instance.
- C. Encrypt the password on the web page, and decrypt the password in the MVC application.
- D. Run the code that processes the password in its own AppDomain.

Answer: D

Explanation:

Application domains provide a unit of isolation for the common language runtime. They are created and run inside a process. Application domains are usually created by a runtime host, which is an application responsible for loading the runtime into a process and executing user code within an application domain. The runtime host creates a process and a default application domain, and runs managed code inside it. Runtime hosts include ASP.NET, Microsoft Internet Explorer, and the Windows shell.

For most applications, you do not need to create your own application domain; the runtime host creates any necessary application domains for you. However, you can create and configure additional application domains if your application needs to isolate code or to use and unload DLLs.

References: [https://msdn.microsoft.com/en-us/library/yb506139\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/yb506139(v=vs.110).aspx)

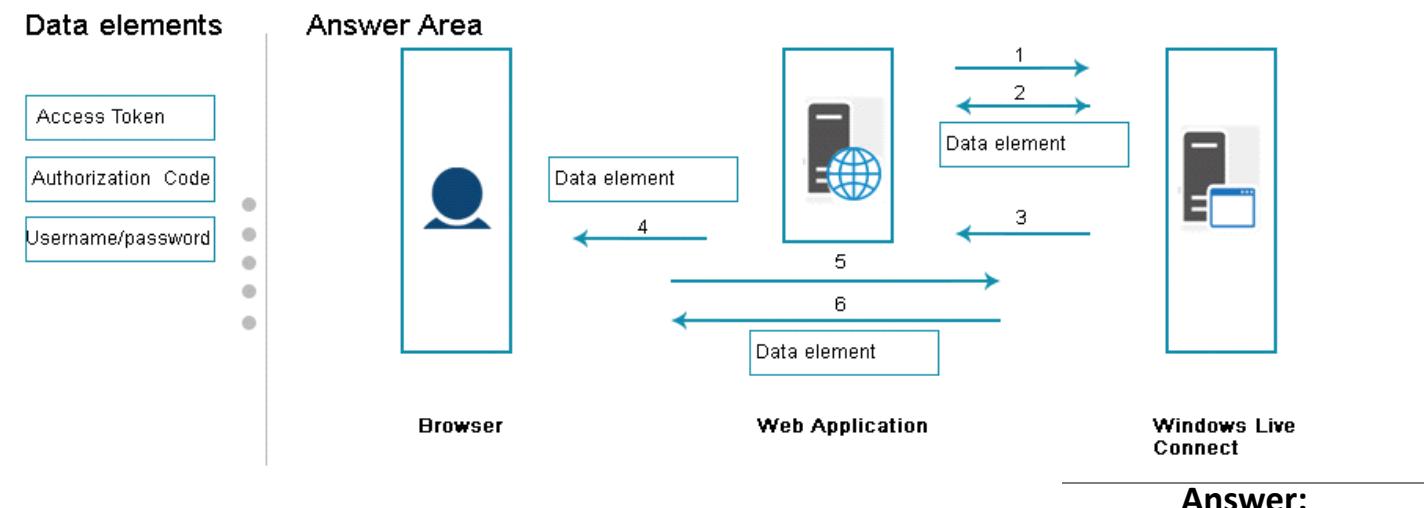
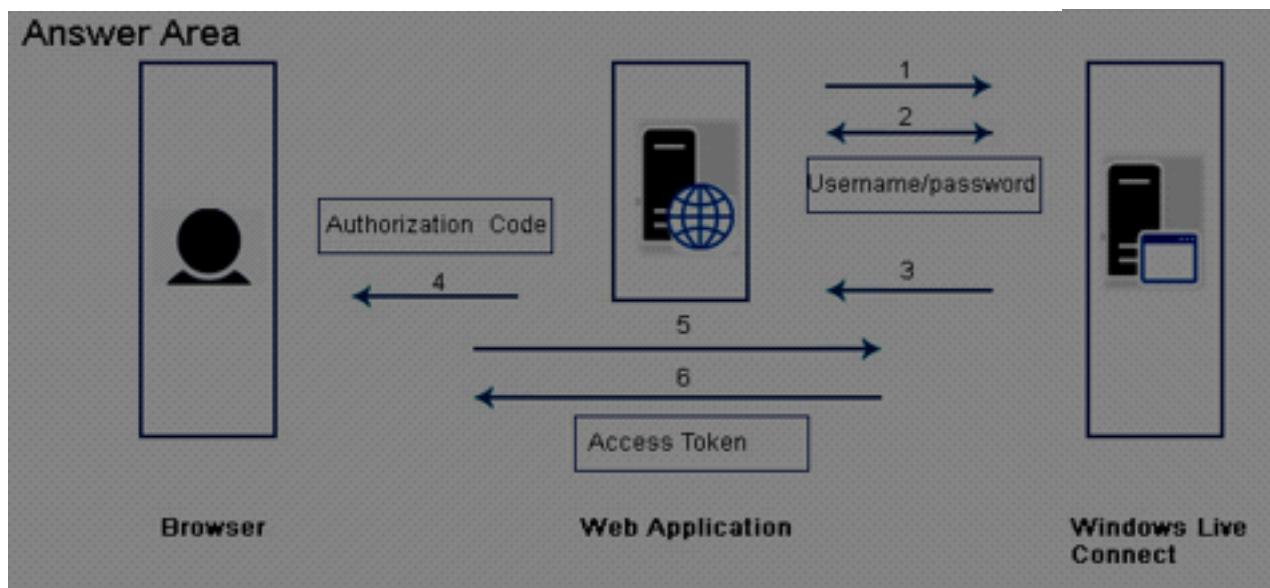
Question: 154

DRAG DROP

DRAG DROP

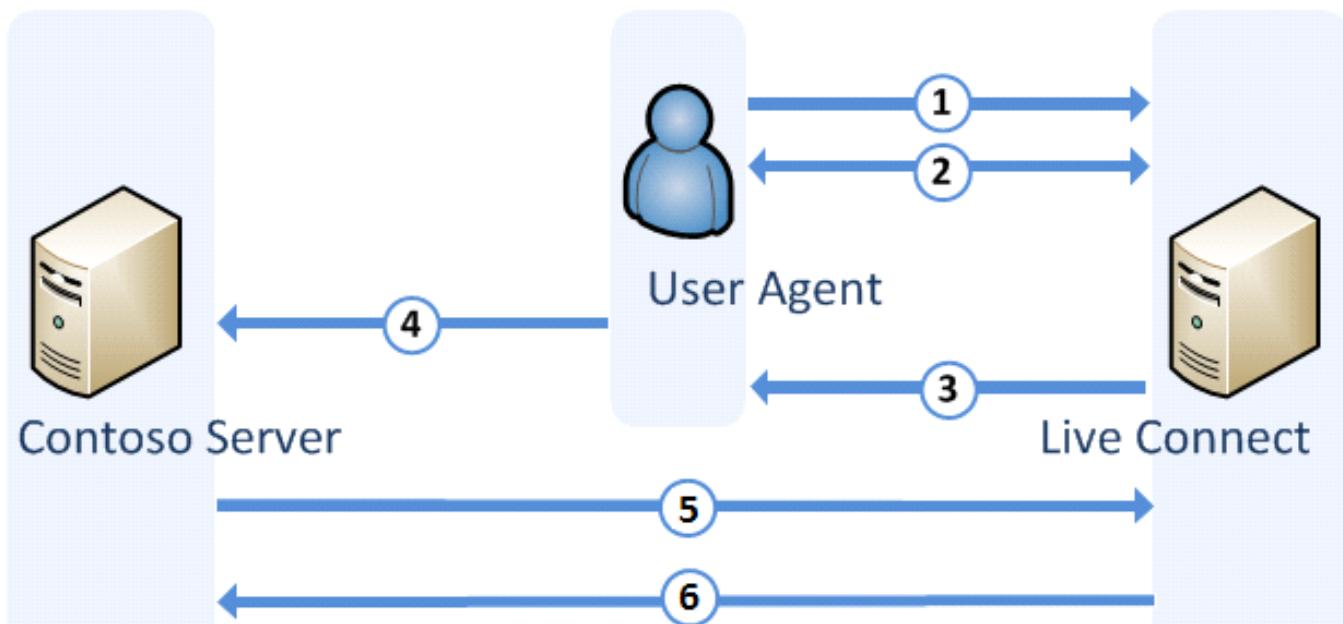
You are developing an ASP.NET MVC application. You plan to use OAuth to authenticate users to the application. You need to use the correct authentication data in the application.

What should you do? To answer, drag the appropriate data element to the correct location or locations. Each data element 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:**

Live Connect implements the OAuth 2.0 protocol to authenticate users.

In the authorization code grant flow, the client makes authorization requests by using `request_type=code`. The following diagram illustrates how the authorization code grant flow works.



1. The client starts the flow by directing the resource owner's user agent to the Live Connect authorization endpoint, by using a URL in the following format.
`https://login.live.com/oauth20_authorize.srf?client_id=CLIENT_ID&scope=SCOPES&response_type=code&redirect_uri=REDIRECT_URI`
2. The authorization server authenticates the resource owner via the user agent, and establishes whether the resource owner grants or denies the client's access request.
3. Assuming that the resource owner has granted access, the Live Connect authorization server redirects the user agent to the client by using the redirection URI that was provided in the initial request.
4. The user agent calls the client with the redirection URI, which includes an authorization code and any local state that was provided by the client. For example: `http://contoso.com/Callback.htm?code=AUTHORIZATION_CODE`.
5. The client requests an access token from the authorization server's token endpoint by using its client credentials for authentication, and includes the authorization code that was received in the previous step.
6. If the credentials are valid, the authorization server responds by returning an access token.

References: <https://msdn.microsoft.com/en-us/library/hh243647.aspx>

Question: 155

You are developing a controller for an ASP.NET MVC application that manages blog 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(true)]
public class BlogController : Controller
{
 public ActionResult SavePosting(BlogPosting bp)
 {
 SaveBlogPosting(bp);
 return View("ManagePosting");
 }
}`
- B. `public class BlogController : Controller
{
 [ValidateInput(true)]
 public ActionResult SavePosting(BlogPosting bp)
 {
 SaveBlogPosting(bp);
 return View("ManagePosting");
 }
}`
- C. `public class BlogController : Controller
{
 [ValidateInput(false)]
 public ActionResult SavePosting(BlogPosting bp)
 {
 SaveBlogPosting(bp);
 return View("ManagePosting");
 }
}`
- D. `[ValidateInput(false)]
public class BlogController : Controller
{
 public ActionResult SavePosting(BlogPosting bp)
 {
 SaveBlogPosting(bp);
 return View("ManagePosting");
 }
}`

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

Answer: C

Explanation:

Example: ValidateInput at Action Method Level

The user can submit Html for this action method successfully with the following code.

```
public class HomeController : Controller
{
    public ActionResult AddArticle()
    {
        return View();
    }
    [ValidateInput(false)]
    [HttpPost]
    public ActionResult AddArticle(BlogModel blog)
    {
        if (ModelState.IsValid)
        {
        }
        return View();
    }
}
```

References: <http://www.dotnettricks.com/learn/mvc/html-submission-by-validateinput-and-allowhtml-attribute-in-mvc4>

Question: 156

The application includes the following method. (Line numbers are included for reference only.)

```
01 public static void
RegisterGlobalFilters(GlobalFilterCollection filters)
02 {
03     filters.Add(new HandleErrorAttribute
04     {
05
06     });
07 }
```

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 line of code should you insert at line 05?

- A. `ExceptionType = typeof(IndexOutOfRangeException), View = "CustomException"`
- B. `ExceptionType = typeof(NullReferenceException), View = "CustomException"`
- C. `ExceptionType = typeof(IndexOutOfRangeException), Handler = "CustomException"`
- D. `ExceptionType = typeof(NullReferenceException), Handler = "CustomException"`

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

Answer: B

Question: 157

You develop an ASP.NET MVC application. The application is configured for claims-based authentication by using Windows Identity Foundation (WIF).

You need to access the claims in the WIF token.

Which code segment should you use?

- A. `Thread.CurrentPrincipal.Identity;`
- B. `((IClaimsPrincipal)Thread.CurrentPrincipal).Identities[0].Claims;`
- C. `Thread.CurrentPrincipal;`
- D. `((IClaimsPrincipal)Thread.CurrentPrincipal).Identities[0].IsAuthenticated;`

Answer: B

Explanation:

To Access the Claims

In order to access identity related information, you can run FedUtil. Once you have run FedUtil, your application can access `IClaimsPrincipal` and `IClaimsIdentity` using the standard ASP.NET constructs as shown in the following code example:

```
void Page_Load(object sender, EventArgs e)
{
    // Cast the Thread.CurrentPrincipal
    IClaimsPrincipal icp = Thread.CurrentPrincipal as IClaimsPrincipal;
    // Access IClaimsIdentity which contains claims
    IClaimsIdentity claimsIdentity = (IClaimsIdentity)icp.Identity;
    // Access claims
    foreach(Claim claim in claimsIdentity.Claims)
    {
    }
}
```

References: <https://msdn.microsoft.com/en-us/library/ee517271.aspx>

Question: 158

You are developing an ASP.NET MVC application.

The application has a contact view includes a form for editing the displayed contact.

You need to save the Contact object model when the form is posted back to the `EditContact` method using a POST

method request.

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

- A. public ActionResult EditContact(){var c = newContact(){FirstName = Request.QueryString["FirstName"],LastName = Request.QueryString["LastName"]},SaveContact(c);return View(c);}
- B. public ActionResult EditContact(Contact c){SaveContact(c);return View(c);}
- C. public ActionResult EditContact(FormCollection values){var c = newContact(){FirstName = values["FirstName"],LastName = values["LastName"]},SaveContact(c);return View(c);}
- D. public ActionResult EditContact(QueryStringProvider values){var c = newContact(){FirstName = values.GetValue["FirstName"],LastName = values.GetValue ["LastName"]},SaveContact(c);return View(c);}

Answer: A,B

Question: 159

You are developing an ASP.NET MVC application that enables you to edit and save a contact.

The application must not save on an HTTP GET request.

You need to implement the controller.

Which two possible code segments should you use? Each correct answer presents a complete solution.

| A

```
public ActionResult EditContact(int id, Contact c)
{
    if (this.HttpContext.Request.HttpMethod == "GET")
    {
        c = RetrieveContact(id);
    }
    if (this.HttpContext.Request.HttpMethod == "POST")
    {
        SaveContact(c);
    }
    return View(c);
}
```

B

```
[HttpGet]
public ActionResult EditContact(int id)
{
    var c = RetrieveContact(id);
    return View(c);
}

[HttpPost]
public ActionResult EditContact(int id, Contact c)
{
    SaveContact(c);
    return View(c);
}
```

C

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

D

```
public ActionResult EditContact(int id, Contact c)
{
    if (this.HttpContext.Request["ActionName"] == "GET")
    {
        c = RetrieveContact(id);
    }
    if (this.HttpContext.Request["ActionName"] == "POST")
    {
        SaveContact(c);
    }
    return View(c);
}
```

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

Answer: A,B

Explanation:

A: We retrieve the GET and POST methods through `this.HttpContext.Request.RequestType`.

B: This is the default MVC implementation of having separate methods for GET and POST via function overloading.

Incorrect:

Not D: We retrieve the GET and POST methods through `this.HttpContext.Request.RequestType`, not through `this.HttpContext.Request["ActionName"]`.

Question: 160

DRAG DROP

You are building an ASP.NET application for a purchasing system.

The application has a method named `CalculateBalance` in the `Purchasing` class.

You need to create a unit test for the `CalculateBalance` method.

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
Debug the solution	
Run all tests	
Add the <code>TestClass</code> attribute to the test class and the <code>TestMethod</code> attribute to the <code>CalculateBalance</code> method. Add an <code>Assert</code> statement for each value that you are testing.	
Create a reference to the <code>Purchasing</code> project in the unit test project. Then, create a test class that has a copy of the <code>CalculateBalance</code> method.	
Select the <code>Purchasing</code> project and add a new Unit Test project.	
Build the solution.	

Answer:

Answer Area

Select the Purchasing project and add a new Unit Test project.

Add the `TestClass` attribute to the test class and the `TestMethod` attribute to the `CalculateBalance` method.
Add an `Assert` statement for each value that you are testing.

Build the solution.

Run all tests

Debug the solution

Step 1: Select the Purchasing Project and add a new Unit Test Project.

First we create a Unit Test Project within the current project.

Step 2:

Add the `TestClass` attribute to the test class and the `TestMethod` attribute to the `CalculateBalance` method.
Add an `Assert` statement for each value that you are testing.

You can turn an existing unit test into an ASP.NET unit test by configuring it, that is, by assigning values to certain of the test's custom attributes. You set these values in the code file that contains the unit test.

All unit tests require the `[TestMethod]` attribute.

Step 3: Build the solution

Step 4: Run all tests

Step 5: Debug the solution

After you run a unit test, if you chose to edit the test run configuration when you ran the test, you can open the Code Coverage window to see what percentage of the methods in the code that you are testing were covered by your unit tests.

Incorrect:

Not:

Create a reference to the Purchasing project in the unit test project. Then, create a test class that has a copy of the `CalculateBalance` method.

You do not set up testing by creating copies of methods.

References: [https://msdn.microsoft.com/en-us/library/ms182526\(v=vs.90\).aspx](https://msdn.microsoft.com/en-us/library/ms182526(v=vs.90).aspx)

Question: 161

You are developing an ASP.NET MVC application. The application uses a set of custom exceptions to log errors that occur during the execution of an action.

You need to develop a class that implements logging.

Which interface should you implement?

- A. IExceptionFilter
- B. IActionFilter
- C. IClientValidatable
- D. IResultFilter

Answer: A

Explanation:

Exception filters are used to apply global policies to unhandled exceptions in the MVC app.

Exception Filters implement either the IExceptionFilter or IAsyncExceptionFilter interface.

Exception filters handle unhandled exceptions, including those that occur during controller creation and model binding. They are only called when an exception occurs in the pipeline.

Question: 162

DRAG DROP

You are developing an ASP.NET MVC application.

You need to choose the appropriate Visual Studio templates to use for each test goal.

Which Visual Studio Unit Test project templates should you use? To answer, drag the appropriate Unit Test project template to the correct test goal or test goals. Each project template 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.

Project templates	Test goal	Unit Test project template
Coded UI Test Project	Validate the input controls an a web application.	Project template
Unit Test Project	Test the internal validity of calculations in class methods.	Project template
Web Performance and Load Test Project	Test the web application speed while retrieving data from SQL Server.	Project template
	Validate the number of simultaneous users for a social portal.	Project template

Answer:

Test goal	Unit Test project template
Validate the input controls an a web application.	Coded UI Test Project
Test the internal validity of calculations in class methods.	Unit Test Project
Test the web application speed while retrieving data from SQL Server.	Web Performance and Load Test Project
Validate the number of simultaneous users for a social portal.	Web Performance and Load Test Project

Box 1: Coded UI Test Project

Automated tests that drive your application through its user interface (UI) are known as coded UI tests (CUITs). These tests include functional testing of the UI controls. They let you verify that the whole application, including its user interface, is functioning correctly. Coded UI Tests are particularly useful where there is validation or other logic in the

user interface, for example in a web page. They are also frequently used to automate an existing manual test.

Box 2: Unit Test Project

Unit testing is a software testing method by which individual units of source code, sets of one or more computer program modules together with associated control data, usage procedures, and operating procedures, are tested to determine whether they are fit for use.[1] Intuitively, one can view a unit as the smallest testable part of an application.

Box 3: Web Performance and Load Test Project

Box 4: Web Performance and Load Test Project

A load test is a container of Web performance tests and unit tests.

A load test exposes many run-time properties that can be modified to generate the desired load simulation.

References: <https://msdn.microsoft.com/en-us/library/dd286726.aspx>

References: [https://msdn.microsoft.com/en-us/library/ms182594\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/ms182594(v=vs.110).aspx)

Question: 163

HOTSPOT

You are building an ASP.NET application. You develop the following unit test code. Line numbers are included for reference only.

```
01 [TestClass]
02 public class UnitTest1
03 {
04     protected string _name;
05     protected float _expenses;
06     protected float _income;
07     protected float _payment;
08     protected float _balance;
09     public void AddCustomer(string name, float income, float payment, float balance)
10    {
11        _name = name;
12        _expenses = expenses;
13        _income = income;
14        _payment = payment;
15        _balance = balance;
16        CheckName();
17        DebRatio();
18        CheckBalance();
19    }
20    [TestMethod]
21    public void CheckName()
22    {
23        Assert.IsNotNull(_name, "CheckName failed unit test");
24    }
25    [TestMethod]
26    public void DebRatio()
27    {
28        Assert.AreEqual(_income, _payment, "DebRatio failed unit test");
29    }
30    [TestMethod]
31    public void CheckBalance()
32    {
33        Assert.IsTrue(_balance >= 0.0f, "Check balance failed unit test.");
34    }
```

35}

You run the following line of code:

```
AddCustomer("Contoso", 0, 100, 100, -1);
```

You need to evaluate the unit test results. For each of the following statements, select Yes if the statement is true. Otherwise, select No.

Answer Area	Yes	No
The assertion at Line 23 will pass.	<input type="radio"/>	<input type="radio"/>
The assertion at Line 28 will pass.	<input type="radio"/>	<input type="radio"/>
The assertion at Line 33 will pass.	<input type="radio"/>	<input type="radio"/>

Answer:

Answer Area	Yes	No
The assertion at Line 23 will pass.	<input checked="" type="radio"/>	<input type="radio"/>
The assertion at Line 28 will pass.	<input type="radio"/>	<input checked="" type="radio"/>
The assertion at Line 33 will pass.	<input type="radio"/>	<input checked="" type="radio"/>

Box 1: Yes

Line 23 is Assert.IsNotNull(_name, "CheckName failed unit test");
`_name` is "Contoso" so the assertion will succeed.

Box 2: No

Line 289 is Assert.AreSame(_income, _payment, "DebRatio failed unit test");
`_income` is 0 and `payment` is 100. The assertion will fail.

Box 3: No

Line 33 is Assert.IsTrue(_balance >= 0.0f, "Check balance failed unit test.");
`_balance` is -1. The assertion will fail.

Question: 164

HOTSPOT

HOTSPOT

You are developing an ASP.NET MVC application to display product information. The application has two views. The first view displays a list of product names. When you select a product name, the second view shows detailed information for the product that is selected. The product detail view receives a query string value that contains an identifier for the product that is selected.

The product controller for the application has the following requirements:

- The product list and product details must use output caching.
- The list of products must be cached daily.
- The product details view must cache data for one hour, based on the product that is selected.

You need to implement the product controller.

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

```
Public class ProductsController : Controller
{
    private readonly ProductDataContext _dataContext;
    public ProductsController()
    {
        _dataContext = new ProductDataContext();
    }

    [OutputCache(Duration = 1)]
    [OutputCache(Duration = 24, VaryByParam = "*")]
    [OutputCache(Duration = 86400, VaryByParam = "none")]
    [OutputCache(Duration = int.MaxValue, NoStore = false)]

    public ActionResult GetProductList()
    {
        ViewData.Model = (from p in _dataContext.Products select
p).ToList();
        return View();
    }

    [OutputCache(Duration = 1, VaryByParam = "id")]
    [OutputCache(Duration = 60, VaryByParam = "*")]
    [OutputCache(Duration = 3600, VaryByParam = "id")]
    [OutputCache(NoStore = false, VaryByParam = "id")]

    Public ActionResult GetProductDetails(int id)
    {
        ViewData.Model = _dataContext.Products.SingleOrDefault(p =>
p.Id == id);
        return View();
    }
}
```

Answer:

```
[OutputCache(Duration = 1)]
[OutputCache(Duration = 24, VaryByParam = "*")]
[OutputCache(Duration = 86400, VaryByParam = "none")]
[OutputCache(Duration = int.MaxValue, NoStore = false)]
```

```
public ActionResult GetProductList()
{
    ViewData.Model = (from p in _dataContext.Products select
p).ToList();
    return View();
}
```

```
[OutputCache(Duration = 1, VaryByParam = "id")]
[OutputCache(Duration = 60, VaryByParam = "*")]
[OutputCache(Duration = 3600, VaryByParam = "id")]
[OutputCache(NoStore = false, VaryByParam = "id")]
```

Box 1: [OutputCache(Duration = 86400, VaryByParam = "none")]

The list of products must be cached daily. One day is 86400 seconds (60*60*24).

Note: The Duration parameter is the time, in seconds, that the page or user control is cached. Setting this attribute on a page or user control establishes an expiration policy for HTTP responses from the object and will automatically cache the page or user control output.

Box 2: [OutputCache(Duration = 3600, VaryByParam = "id")]

The product details view must cache data for one hour, based on the product that is selected. One hour is 3600 seconds (60* 60).

References: [https://msdn.microsoft.com/en-us/library/hdxfb6cy\(v=vs.100\).aspx](https://msdn.microsoft.com/en-us/library/hdxfb6cy(v=vs.100).aspx)

Question: 165

You create an ASP.NET MVC application. You host the application by using the Open Web Interface for .NET (OWIN).

You run the following command by using the NuGet Package Manager console:

install-package Microsoft.AspNet.SignalR

You plan to implement real-time push notifications from the server using ASP.NET SignalR.

You need to complete the ASP.NET SignalR implementation.

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

- A. Create a hub class to push content to clients.
- B. Create a class that derives from the PersistentConnection class. Use the derived class to push content to clients.
- C. Use the SignalR jQuery library in a web page to send messages to the hub and display updates from the hub.
- D. Map a SignalR hub to the app builder pipeline by using an OWIN startup class.
- E. Start the SignalR hub asynchronously and respond to the appropriate callback methods.

Answer: A,C,D

Explanation:

- A: In Solution Explorer, right-click the project, select Add | New Folder, and add a new folder named Hubs.
 Right-click the Hubs folder, click Add | New Item, select the Visual C# | Web | SignalR node in the Installed pane, select SignalR Hub Class (v2) from the center pane, and create a new hub named ChatHub.cs. You will use this class as a SignalR server hub that sends messages to all clients.
- C: Use the SignalR jQuery library in a web page to send messages and display updates from the hub.
- D: Create an OWIN startup class to configure the application.
- References: <https://www.asp.net/signalr/overview/getting-started/tutorial-getting-started-with-signalr-and-mvc>

Question: 166

DRAG DROP

You develop an ASP.NET MVC application. You plan to implement ASP.NET SignalR for real-time push notifications. The application includes the following class:

```
public class MyHub : Hub
{
    public void Hello(string message)
    {
        Clients.All.hello(message);
    }
}
```

You need to display the message.

How should you complete the relevant code segment? 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
<pre>\$connection.hub('local'); \$hubConnection(); \$hubConnection().connection.start(); hub.on('hello', function (message) { hub.start('function', function (hello) { con.createHubProxy('MyHub'); con.start();</pre>	<pre><div> <script src="~/Script/jquery.js"></script> <script src="~/Script/jquery.signalR.js"></script> <div id="message"></div> <script type="text/javascript"> \$(function() { var con = [REDACTED] Code segment var hub = [REDACTED] Code segment [REDACTED] Code segment \$('#message').text(message); }); </script> </div></pre>

Answer:

Answer Area

```

<div>
    <script src="~/Script/jquery.js"></script>
    <script src="~/Script/jquery.signalR.js"></script>
    <div id="message"></div>
    <script type="text/javascript">
        $(function() {
            var con = $.hubConnection();
            var hub = con.createHubProxy('MyHub');

            hub.start('function', function (hello) {
                $('#message').text(message);
            });
        });
    </script>
</div>

```

Box 1: `$hubConnection();`

Create a connection.

Box 2: `con.createHubProxy('MyHub');`

Declare a proxy to reference the hub.

Box 3: `hub.start()('function', function(hello) {`

Start the connection

References: <https://www.asp.net/signalr/overview/getting-started/tutorial-getting-started-with-signalr>

Question: 167**DRAG DROP**

You are designed a hybrid application that runs across a Microsoft Azure data center and your company's on-premise enterprise environment.

You have the following requirements:

- Windows Communication Foundation (WCF) services that reside within the corporate enterprise network must be securely exposed to the public cloud.
- A firewall connection and intrusive changes to the corporate network infrastructure are not allowed.

You need to design the application to meet the requirements.

How should you design the application? To answer, drag the appropriate item to the correct location or locations.

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.

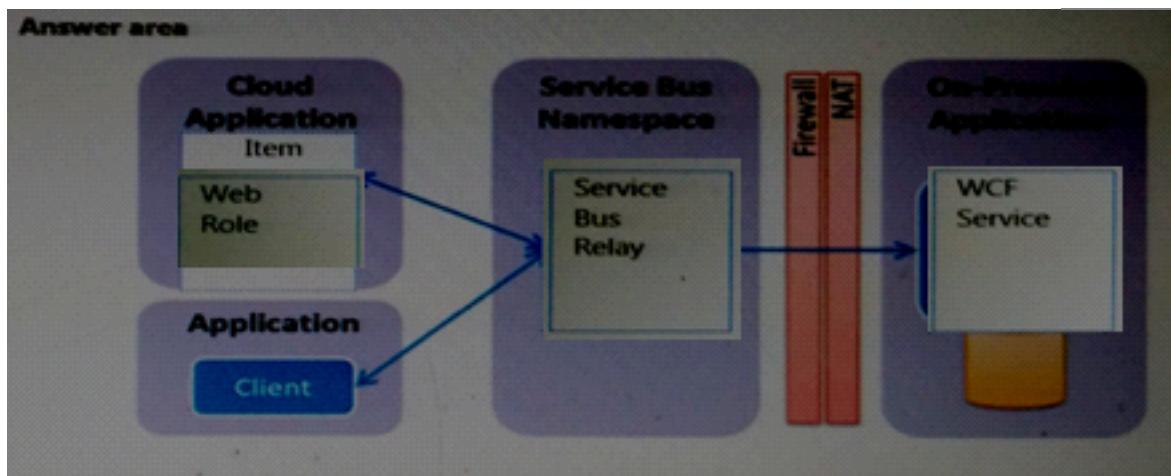
Items

Microsoft Azure CDN	Service Bus Relay
Traffic Manager	WCF Service
Web Role	

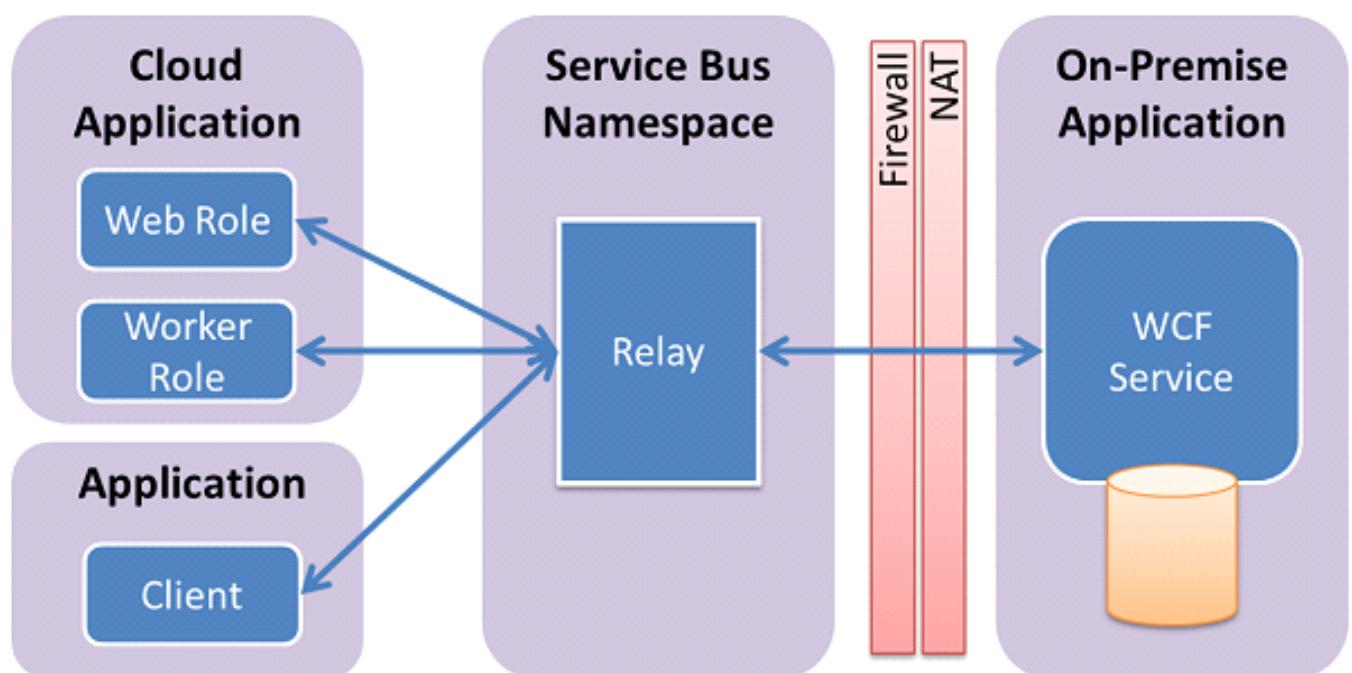
Answer area

```

graph LR
    CA[Cloud Application Item] --> SBN[Service Bus Namespace Item]
    SBN --> OA[On-Premise Application Item]
    OA --- FW[Firewall]
    OA --- NAT[NAT]
  
```

Answer:

The Service Bus relay service enables you to build hybrid applications that run in both an Azure datacenter and your own on-premises enterprise environment. The Service Bus relay facilitates this by enabling you to securely expose Windows Communication Foundation (WCF) services that reside within a corporate enterprise network to the public cloud, without having to open a firewall connection, or requiring intrusive changes to a corporate network infrastructure.



The Service Bus relay enables you to host WCF services within your existing enterprise environment. You can then delegate listening for incoming sessions and requests to these WCF services to the Service Bus service running within Azure. This enables you to expose these services to application code running in Azure, or to mobile workers or extranet partner environments.

References: <https://docs.microsoft.com/en-us/azure/service-bus-relay/service-bus-dotnet-how-to-use-relay>

Question: 168

You are developing an ASP.NET MVC application. Devices that use many different browsers will use the application. You have the following requirements:

- Content must display correctly when a device is in landscape or portrait orientation.
- Content must not scale when the device orientation changes.
- Content must be displayed by using the maximum available screen space.
- The application must render properly in Internet Explorer 8 or later versions.

You need to configure the application.

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

- A. Use JavaScript to evaluate the window.innerWidth and window.innerHeight properties.
- B. Set the value of the width property for the viewport meta tag to device-width.
- C. Use CSS to target the HTML element on each page. Set the values of the width and height properties to 100%.
- D. Use CSS media queries to target screen size, device orientation, and other browser capabilities.

Answer: B,D

Explanation:

B: If you want the viewport width to match the device's physical pixels, you can specify the following:

```
<meta name="viewport" content="width=device-width">
```

For this to work correctly, you must not explicitly force elements to exceed that width (e.g., using a width attribute or CSS property), otherwise the browser will be forced to use a larger viewport regardless.

D: Media queries in CSS3 extend the CSS2 media types idea: Instead of looking for a type of device, they look at the capability of the device.

Media queries can be used to check many things, such as:

width and height of the viewport

width and height of the device

orientation (is the tablet/phone in landscape or portrait mode?)

resolution

Using media queries are a popular technique for delivering a tailored style sheet to tablets, iPhone, and Androids.

References:

<https://www.asp.net/whitepapers/add-mobile-pages-to-your-aspnet-web-forms-mvc-application>

http://www.w3schools.com/css/css3_mediaqueries.asp

Question: 169

DRAG DROP

You are developing an ASP.NET MVC web application.

You need to create a form that can be used to add new products to the web application.

You have the following markup:

```

<h2>Add Product</h2>
    Target 1
    <table>
        <tr>
            <td>Product Name:</td>
        Target 2
        </tr>
        <tr>
            <td>Price:</td>
        Target 3
        </tr>
        <tr>
            <td></td>
            <td>
                Target 4
            </td>
        </tr>
    </table>
</form>

```

Which markup segments should you include in Target 1, Target 2, Target 3 and Target 4 to complete the 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

```

<form action="/Products/Create" method="post">
<form action="/Products/Create" method="submit">
<td>@Html.TextBox(@Model.ProductName)</td>
<td>@new TextBox(@Model.ProductName)</td>
<td>@Html.TextBox(@Model.UnitPrice)</td>
<td>@new TextBox(@Model.UnitPrice)</td>
<input type="submit" value="Save"/>
<input type="post" value="Save"/>

```

Answer area

Target 1	<input type="text" value="Markup segment"/>
Target 2	<input type="text" value="Markup segment"/>
Target 3	<input type="text" value="Markup segment"/>
Target 4	<input type="text" value="Markup segment"/>

Answer:

Answer area**Target 1**

```
<form action="/Products/Create" method="post">
```

Target 2

```
<td>@Html.TextBox(@Model.ProductName)</td>
```

Target 3

```
<td>@Html.TextBox(@Model.UnitPrice)</td>
```

Target 4

```
<input type="submit" value="Save"/>
```

Target 1: <form action="/Products/Create" method="post">

The form methods are post and get (not submit).

Target 2: <td>@Html.TextBox(@Model.ProductName)</td>

The InputExtensions.TextBox method returns a text input element. The TextBox method is designed to make it easy to bind to view data or model data.

Target3: <td>@Html.TextBox(@Model.UnitPrice)</td>

The InputExtensions.TextBox method returns a text input element. The TextBox method is designed to make it easy to bind to view data or model data.

Target 4: <input type="submit" value="Save"/>

The submitattribute, of input type, declares a submit button.

The input type attribute does not have a post attribute.

References:

<https://weblogs.asp.net/scottgu/asp-net-mvc-preview-5-and-form-posting-scenarios>

[https://msdn.microsoft.com/en-us/library/system.web.mvc.html.inputextensions.textbox\(v=vs.118\).aspx](https://msdn.microsoft.com/en-us/library/system.web.mvc.html.inputextensions.textbox(v=vs.118).aspx)

Question: 170

HOTSPOT

You develop an ASP.NET MVC application. You are creating a new layout page by using the Razor view engine.

The layout page has the following requirements:

- Render the content of a section named scripts at the bottom of the layout page.
- Render the content of a section named featured just above the body of the page.
- Render a StyleBundle named ~/Content/css.

You need to implement the layout page.

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

```

<!DOCTYPE html>
<html>
  <head>
    <meta name="viewport" content="width=device-width" />
    <title>@ViewBag.Title</title>

    @Html.Value ("~/Content/css")
    @Styles.Render ("~/Content/css")
    @Script.Render ("~/Content/css")

  </head>
  <body>
    <header><div>Welcome</div></header>
    <div>

      @Styles.Render ("featured")
      @Script.Render ("featured")
      @RenderPage ("featured", true)
      @RenderSection ("featured", true)

      @RenderBody()
      <hr />
      <footer><p>&copy; @DateTime.Now.Year</p></footer>
    </div>
    @Scripts.Render ("~/bundles/jquery")
    @Scripts.Render ("~/bundles/bootstrap")

    @Html.Value ("~/scripts")
    @Scripts.Render ("scripts")
    @RenderPage ("scripts"), false
    @RenderSection ("scripts"), false

  </body>
</html>

```

Answer:

```

@Html.Value("~/Content/css")
@Styles.Render("~/Content/css")
@Script.Render("~/Content/css")

```

```

</head>
<body>
    <header><div>Welcome</div></header>
    <div>

```

```

@Styles.Render("featured")
@Script.Render("featured")
@RenderPage("featured", true)
@RenderSection("featured", true)

```

```

    @RenderBody()
    <hr />
    <footer><p>&copy; @DateTime.Now.Year</p></footer>
</div>
@Scripts.Render("~/bundles/jquery")
@Scripts.Render("~/bundles/bootstrap")

```

```

@Html.Value("~/scripts")
@Scripts.Render("scripts")
@RenderPage("scripts", false)
@RenderSection("scripts", false)

```

Box 1: @Styles.Render("~/Content/css")

- Render a StyleBundle named ~/Content/css.

@Styles.Render("~/Content/css") is calling the files included in that particular bundle which is declared inside the BundleConfig class in the App_Start folder.

Box 2: @RenderSection("featured", true)

- Render the content of a section named featured just above the body of the page.

RenderSection renders only a part child view that is wrapped under named section.

RenderSection() method includes boolean parameter "required" which makes the section optional or mandatory. If required parameter is true then the child view must contain the section.

Box 3: @RenderSection("scripts", false)

- Render the content of a section named scripts at the bottom of the layout page.

References:

<http://stackoverflow.com/questions/12028401/styles-render-in-mvc4>

<http://www.tutorialsteacher.com/articles/difference-between-renderbody-and-rendersection-mvc>

Question: 171

DRAG DROP

You need to ensure that URLs for log manipulation are mapped to the controller.

You have the following code:

```
Target 1
    name: "GetLog",
Target 2
defaults: new
{
    controller = "RunLog",
    action = "GetLog"
}
};
```

Which code segments should you include in Target 1 and Target 2 to map the URLs? 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 need to drag the split bar between panes or scroll to view content.

Code Segments	Answer Area	
routers.MapHttpRoute(Target 1:	Code Segment
routes.MapRoute(Target 2:	Code Segment
url: "RunLog/{action}",		
url: "GetLog/{action}",		
url: "GetLog/{action}/{id}",		

Answer:

Answer Area

Target 1: routes.MapRoute(

Target 2: url: "GetLog/{action}/{id}",

Target 1: routes.MapRoute()

The MapRoute method takes three parameters: routes, name, and URL.

Target 2: url: "GetLog/{action}/{id}",

Example code:

```
routes.MapRoute(
    "Default", // Route name
    "{controller}/{action}/{id}", // URL with parameters
    new { controller = "Home", action = "Index", id = "" } // Parameter defaults
);
```

Incorrect:

Not routes.MapHttpRoute():

The MapHttpRoute method takes three parameters: routes, name, and routetemplate, but we need an URL parameter, not a routeTemplate parameter.

References:

[https://msdn.microsoft.com/en-us/library/system.web.mvc.routecollectionextensions.maproute\(v=vs.118\).aspx](https://msdn.microsoft.com/en-us/library/system.web.mvc.routecollectionextensions.maproute(v=vs.118).aspx)
<https://msdn.microsoft.com/en-us/library/cc668201.aspx>

Question: 172

HOTSPOT

You are developing an asynchronous HTTP module to write log messages. The logText variable stores the message that you must log.

You need to implement the asynchronous HTTP module.

```
public class AsyncHttpModule : IHttpModule
{
    public void Init(HttpApplication context)
    {
        var taskAsyncHelper = new EventArgs();
        var taskAsyncHelper = new AsyncHttpModule();
        var taskAsyncHelper = AsyncHttpModule.LogMessage(null, null);
        var taskAsyncHelper = new EventHandlerTaskAsyncHelper(LogMessage);
    }

    private static async Task LogMessage(object sender, EventArgs e)
    {
        using (var streamWriter = new StreamWriter(@"/Logs/RequestLogs.txt", true))
        {
            var logText = String.Format("The page requested is: {@}\nRequested at: {1}",
                ((HttpApplication)sender).Context.Request.RawUrl, DateTime.Now);

            streamWriter.Flush();
            streamWriter.WriteLine(logText);
            await streamWriter.FlushAsync();
            await streamWriter.WriteLineAsync(logText);
        }
    }
}
```

Answer:

```

public class AsyncHttpModule : IHttpModule
{
    public void Init(IHttpApplication context)
    {
        var taskAsyncHelper = new EventArgs();
        var taskAsyncHelper = new AsyncHttpModule();
        var taskAsyncHelper = AsyncHttpModule.LogMessage(null, null);
    } var taskAsyncHelper = new EventHandlerTaskAsyncHelper(LogMessage);
    private static async Task LogMessage(object sender, EventArgs e)
    {
        using (var streamWriter = new StreamWriter(@"/Logs/RequestLogs.txt", true))
        {
            var logText = String.Format("The page requested is: {0}\nRequested at: {1}",
                ((HttpApplication)sender).Context.Request.RawUrl, DateTime.Now);

            streamWriter.Flush();
            streamWriter.WriteLine(logText);
            await streamWriter.FlushAsync();
            await streamWriter.WriteLineAsync(logText);
        }
    }
}

```

Question: 173

You are developing an ASP.NET MVC application. The application includes the following method- Une numbers are included for reference only.

```

01 private string GenerateMessage(string userAgent)
02 {
03
04     if (userAgent.ToLower().Contains("bot"))
05     {
06         return "Web crawlers prohibited";
07     }
08     return "Unknown browser";
09 }

```

The application calls the Generate Message method before displaying each page. The Generate Message method throws NullReferenceException exceptions. You need to use Code Contracts to prevent the exceptions. Which code segment should you insert at line 03?

A. `Contract.Invariant(userAgent != null);`

B. `Contract.Requires(userAgent != null);`

C. `Contract.Assume(userAgent != null);`

D. `Contract.Ensures(userAgent != null);`

A. Option A

B. Option B

C. Option C

D. Option D

Answer: B

Question: 174**HOTSPOT**

You maintain an ASP.NET MVC application. Errors are logged to the Trace object. The application contains the following code. Line numbers are included for reference only.

Global.asax.cs

```

01 public class MvcApplication : System.Web.HttpApplication
02 {
03     private int exceptionCount = 0;
04     protected void Application_Start()
05     {
06         AppDomain.CurrentDomain.FirstChanceException += (sender, args) =>
07         {
08             Trace.TraceWarning("Exceptions " + ++exceptionCount);
09         };
10     ...
11 }
12 }
```

HomeController.cs

```

13 public ActionResult Contact()
14 {
15     object data = null;
16     try
17     {
18         data = Load();
19     }
20     catch (Exception ex)
21     {
22         Trace.TraceError("Exception caught " + ex.ToString());
23     }
24     finally
25     {
26         Trace.TraceInformation("View rendering");
27     }
28     return View(data);
29 }
```

The Load method throws an exception.

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

	Yes	No
The number of exceptions is incremented before the view is rendered.	<input type="radio"/>	<input type="radio"/>
The exception is logged before the view is rendered.	<input type="radio"/>	<input type="radio"/>
The exception is logged before the number of exceptions is incremented.	<input type="radio"/>	<input type="radio"/>

Answer:

	Yes	No
The number of exceptions is incremented before the view is rendered.	<input checked="" type="checkbox"/>	<input type="radio"/>
The exception is logged before the view is rendered.	<input type="radio"/>	<input checked="" type="checkbox"/>
The exception is logged before the number of exceptions is incremented.	<input checked="" type="checkbox"/>	<input type="radio"/>

Question: 175

You are developing an ASP.NET application that runs on Windows Server 2012.

An exception is preventing a page from rendering.

You need to view the trace information for the page.

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

- A. Add the following markup segment to the web.config file: <trace enabled="true" />
- B. Load the trace.axd page from the root of the website.
- C. Add the traceEnable element to the Internet Information Services (IIS) MetaBase section for the application.
- D. Add the following markup segment to the web.config file:
<trace mostRecent="true"/>

Answer: AB

Question: 176

DRAG DROP

You are developing an ASP.NET MVC application that processes payments for an online retailer. The retailer provides a .NET assembly that contains a class named RetailEventSource that derives from the EventSource class.

The RetailEventSource class has a method named SuspiciousTransaction that returns True when the order originates from a system that differs significantly from the system that usually performs orders. The RetailEventSource class also has a field named PaymentProcessed that stores the event identifier for a payment-processed event.

Events must be written only when the event source is in a state where writing events is valid.

You need to create a derived type that contains the method to raise a PaymentProcessed event.

Code segments	Answer Area
Equals(this)	public class PaymentEvents : RetailEventSource
SuspiciousTransaction()	{
.IsEnabled()	public void LogPayment(string data)
Guid	{
Name	if ([] & [] != null)

Answer:

```
public class PaymentEvents : RetailEventSource
{
    public void LogPayment(string data)
    {
        if ( [ ] & [ ] != null)
        {
            Name != null)
            WriteEvent(PaymentProcessed, FormattedData(data));
        }
    }
}
```

Question: 177

HOTSPOT

You develop an ASP.NET MVC application that displays information about products that a company sells. The application contains two classes named ProductController and RouteConfig.

You have the following requirements:

- If a value is provided for the Id property, you must display information about an individual product.
- If no value is provided for the Id property, you must display information about all products.

You need to configure routing.

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

```

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

        routes.MapMvcAttributeRoutes();
        routes.MapRoute("product", "products");
        routes.Add(new Route("{Products}", new PageRouteHandler("Products")));
        routes.MapPageRoute("products", "products", "ProductController.cs", true);
    }
}

[RoutePrefix("products")]
public class ProductController : Controller
{
    [Route]
    public ActionResult Index()
    {
        return View();
    }

    [Route("{Id}")]
    [Route("{Id?}")]
    [Route("{products}")]
    public ActionResult Product(int Id)
    {
        return View("Products", ProductModel.GetProduct(Id));
    }
}

```

Answer:

Answer Area

```

        routes.MapPageRoute("products", "/products", "ProductController.cs", true);
    }
}

[RoutePrefix("products")]
public class ProductController : Controller
{
    [Route]
    public ActionResult Index()
    {
        return View();
    }

    [Route("{Id}")]
    public ActionResult View(int Id)

```

Question: 178

You develop an ASP.NET MVC application. The application has several Razor views. The application must support desktop and mobile devices by using server side code. You need to choose an approach to support mobile devices. Which two approaches can you use?

- use different controllers and views for both desktop and mobile browsers but render the views with the same Razor layout depending on the device type.
- Use the same controllers for both desktop and mobile browsers, but render different views depending on the device type.
- Use different controllers and views for both desktop and mobile browsers, but render the views using the Bootstrap framework.
- Create separate areas for desktop and mobile browsers implementing independent controllers and views for each.

Answer: BD

Question: 179

You are designing an MVC web application.

You need to combine two existing models to create a view.
Which MVC component should you use?

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

Answer: D

Question: 180

You are developing an ASP.NET MVC application. The application includes the following HomeController class. Line numbers are included references 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 }
```

During testing, all errors display an ASP.NET error page instead of the expected error view.

- A. Replace line 01 with the following code segment:
[HandleError(View="Error")]
- B. in the web.config file, set the value of the customErrors property to On.
- C. Replace line 01 with the following code:
[HandleError(ExceptionType=typeof(SystemException))]
- D. Create a custom error page named Error.aspx. Save the file in the Views\Shared folder for the project.

Answer: D

Question: 181

DRAG DROP

You are developing an ASP.NET MVC application.

You must handle any first chance exceptions that the application throws. The exception handler has the following requirement.

- Catch any first chance exceptions thrown by the default app domain.
- Display the name of the app domain that caused the exception.
- Display the message for the exception.

You need to implement the exception handler.

How should you complete the relevant code?

Code segments

FirstChanceExceptionEventArgs
 FriendlyName
 FirstChanceException
 SystemException
 AppDomain
 System
 SystemExceptionEventArgs

• • • •

Answer Area

```
class FirstChanceExceptionTest
{
    static void Handler(object src, Code segment ) 
    {
        Console.WriteLine("FirstChanceException raised in {0}: {1}",
            Code segment .CurrentDomain. Code segment ,
            e.Exception.Message);
    }
    static void Main()
    {
        Code segment .CurrentDomain. Code segment
        = Handler;
    }
}
```

Answer:

```
class FirstChanceExceptionTest
{
    static void Handler(object src, FirstChanceEventArgs Code segment )
    {
        Console.WriteLine("FirstChanceException raised in {0}: {1}",
            AppDomain. Code segment .CurrentDomain. Code segment ,
            e.Exception.Message);
    }
    static void Main()
    {
        AppDomain. Code segment .CurrentDomain. Code segment
        = Handler;
    }
}
```

Question: 182

HOTSPOT

You develop an ASP.NET MVC application that includes the following class. Line numbers are included for reference only.

```

01  using System.Collections.Generic;
02  namespace RazorTemplate.Models
03  {
04      public class Person
05      {
06          public string Name { get; set; }
07          public List<Person> Friends { get; set; }
08      }
09  }

```

You must use the Razor view engine to display all property values for the class.

You need to implement the view.

How should you complete the relevant code?

```

@model RazorTemplate.Models.Person
@if (Model != null)
{
    <div>Person's Name:  ▼</div>
    @Model
    Model.Name
    @Model.Name
    Model.ToString()

    <div>Friends' Names</div>
     ▼
    @Model.Friends.ToList()
    @Model.Friends.GetEnumerator()
    @foreach (var item in Model.Friends)
    @for (var index = 0; index > Model.Friends.Count; index++)
    {

        <div>  ▼</div>
        @item
        @item.Name
        @item.Friends
        @item.Friends.IndexOf(item)
    }
}

```

Answer:

```
@model RazorTemplate.Models.Person
@if (Model != null)
{
    <div>Person's Name: @Model.Name
    Model.ToString()

    <div>Friends' Names</div>
    
    @Model.Friends.ToList()
    @Model.Friends.GetEnumerator()
    @foreach (var item in Model.Friends)
    @for (var index = 0; index > Model.Friends.Count; index++)
    {
        <div> 
```