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# Microsoft

**70-494 PRACTICE EXAM**

**Recertification for MCSD: Web Applications**

# **Product Questions: 249/8 Case Study**

## **Version: 9.0**

### **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)  
    @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?

- C A. [HttpGet]  
[ActionName("EditLog")]  
[ValidateAntiForgeryToken]  
public ActionResult EditLog(LogModel log)  
{  
 ...  
}
- C B. [HttpPost]  
[ActionName("EditLog")]  
public ActionResult EditLogValidated(LogModel log)  
{  
 ...  
}
- C C. [HttpPost]  
[ActionName("EditLog")]  
[ValidateAntiForgeryToken]  
public ActionResult EditLogValidated(LogModel log)  
{  
 ...  
}
- C 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 -->
    <!-- param -->
    <!-- option -->
    <!-- embed -->
    <!-- src="map.swf" -->
      <!-- video -->
      <!-- param -->
      <!-- embed -->
      <!-- source -->
  </!-- -->
</video>

```

---

Answer:

---

## Work Area

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

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

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

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

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

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

</object>
  embed
  object
  video
  canvas

</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  
  
    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  
}  
}  
);
```

**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= "RunnerLog.Providers.RunLogRoleProvider"  
        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",
    . . .
    . . .
    . . .
{
    controller = "RunLog",
    . . .
    . . .
},
    . . .
    . . .
{
    . . .
    . . .
}
);
```

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:      Code Segment
- Target 2:      Code Segment
- Target 3:      Code Segment
- Target 4:      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?

- C A. 

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

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

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

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

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

**Answer: D**

Explanation:

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:



Explanation:

Reference:

DIV BACKGROUND-IMAGE in the STYLE element

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

## **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,
        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: 1

---

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: 2**

---

You are designing a Windows Communication Foundation (WCF) service that uses the Product class.  
You need to update the class to meet the storage requirement.  
What should you do? (Each correct answer presents part of the solution. Choose all that apply.)

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

---

**Answer: A, D**

### **Explanation:**

So as of .NET 3.5 SP1, you don't have to add data contract or data member attributes anymore - if you don't then the data contract serializer will serialize all public properties on your class, just like the XML serializer would.  
HOWEVER: by not adding those attributes, you lose a lot of useful capabilities:  
.without [DataContract], you cannot define an XML namespace for your data to live in  
.without [DataMember], you cannot serialize non-public properties or fields  
.without [DataMember], you cannot define an order of serialization (Order=) and the DCS will serialize all properties alphabetically  
.without [DataMember], you cannot define a different name for your property (Name=)  
.without [DataMember], you cannot define things like IsRequired= or other useful attributes  
.without [DataMember], you cannot leave out certain public properties - all public properties will be serialized by the DCS

## **Question: 3**

---

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: 4**

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

- A. 

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

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

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

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

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

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

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

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

---

**Answer: A**

---

---

### Question: 5

---

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: 6

---

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

What should you do?

- A. Modify the RegisterGlobalFilters method of the Global.asax.cs file as follows.  
Contract.Assume<ArgumentException>(productId != 0);
- B. Modify the GetDealPrice method of ProductController as follows.  
Contract.Requires<ArgumentException>(productId > 0);

- C. Modify the RegisterGlobalFilters method of the Global.asax.cs file as follows.  
Contract.Requires<ArgumentException>(productId > 0);  
D. Modify the GetDealPrice method of ProductController as follows.  
Contract.Assume<ArgumentException>(productId > 0);

---

**Answer: B**

---

**Explanation:**

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

**Syntax:**

'Declaration

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

Type Parameters

TException

The exception to throw if the condition is false.

Parameters

condition

Type: System.Boolean

The conditional expression to test.

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

---

### **Question: 7**

---

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: 8**

---

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: 9

---

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: 10**

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: 11**

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: 12**

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: 13**

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: 14**

---

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: 15**

---

**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: 16**

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

Which code segment should you use?

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

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

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

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

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

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

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

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

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

---

**Answer: C**

---

Explanation:

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

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

Syntax:

'Declaration

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

Type Parameters

TException

The exception to throw if the condition is false.

Parameters

condition

Type: System.Boolean

The conditional expression to test.

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

### 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: 1**

---

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: 2**

---

Customers download videos by using HTTP clients that support various content encodings.  
You need to configure caching on the DownloadVideo action to maximize performance.  
Which attribute should you add?

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

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

---

**Answer: E**

---

### **Question: 3**

---

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: 4

---

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: 5

---

**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 {
  [color: #2da4c2;]
  [background-color: #ffd800;]
  text-align: center;
}

ul#nav li a {
  [color: #FFF;]
  [background-color: #2da4c2;]
  border-radius: 12px 12px 0 0;
  padding: 0 12px 0 12px;
  margin: 0 4px 0 4px;
}

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

## Work Area

```
ul#nav {  
    font-size: 1.3em;  
    font-weight: 600;  
}  
  
ul#nav li {  
    float: left;  
    background-color: #ffd800;  
    background-color: #2da4c2  
    text-decoration: none;  
}  
  
ul#nav li {  
    text-decoration: none;  
    list-style: none;  
    border-radius: 15px;  
    word-wrap: break-word;  
    text-align: center;  
}  
  
ul#nav li a {  
    background-clip: border-box;  
    background-color: #2da4c2  
    border-radius: 15px;  
    word-wrap: break-word;  
}  
  
ul#nav li a {  
    color: #FFF;  
}  
  
ul#nav li a {  
    background-clip: padding-box;  
    text-decoration: none;  
    background-color: #ffd800;  
    float: left;  
}  
  
ul#nav li a {  
    border-radius: 12px 12px 0 0;  
    padding: 0 12px 0 12px;  
    margin: 0 4px 0 4px;  
}  
  
ul#nav li a:hover {  
    color: #333;  
}  
  
ul#nav li a {  
    float: left;  
    background-color: #ffd800;  
    background-color: #2da4c2  
    list-style: none;  
}  
  
ul#nav li a {  
    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: 6**

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: 7**

---

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: 8

---

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

```

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

```

**Question: 9**

You need to ensure that all customers can delete videos regardless of their browser capability.  
 Which code segment should you use as the body of the SendAsync method in the DeleteHandler class?

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

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

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

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

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

---

Answer: B

---

---

**Question: 10**

---

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: 11

---

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

**Answer:**

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

### Question: 12

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: 13

---

You need to ensure that developers can connect to a Microsoft Azure role by using RDP.  
What should you do?

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

---

**Answer: A**

---

Explanation:

In case you don't want to use the RDP certificate created by Windows Azure Tools and want to use a custom certificate

instead, the following steps will guide you. These steps can also be used in case package is not being published from Visual Studio rather it is being built locally, saved in either Local Machine's Drive or Windows Azure Blob Storage and subsequently published from there.

Here are the steps which are required to get pass the publishing error which you might be running into. You would need to upload the Certificate with Private Key to the portal (when Visual Studio is used this is done in the background).

Detailed steps.

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

Note:

\* The certificates that you need for a remote desktop connection are different from the certificates that you use for other Azure operations. The remote access certificate must have a private key.

\* Microsoft Azure uses certificates in three ways:

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

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

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

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

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

## **Case Study: 4**

### **Mixed Questions Set 1**

---

#### **Question: 1**

---

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: 2

---

### 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);
    }
}
```

**Explanation:**

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

**Question: 3**

You are designing an HTML5 website.

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

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

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

**Answer: A, D****Question: 4****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)
    {
        // Step 1: Extract the raw value from the RouteData
        dynamic raw = controllerContext.RouteData.Values[raw + "[city,state]"];
        string[] data = raw.ToString().Split(',');

        // Step 2: Create a new ReservationLocation object
        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: 5

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**

---

### **Question: 6**

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**

---

### **Question: 7**

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: 8**

---

You are authoring unit tests.  
The unit tests must test code that consumes sealed classes.  
You need to create, maintain, and inject dependencies in the unit tests.  
Which isolation method should you use?

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

---

**Answer: C**

---

Explanation:

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

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

---

### **Question: 9**

---

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:

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

[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: 10**

---

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**

---

---

### **Question: 11**

---

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: 12**

---

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**

---

### **Question: 13**

---

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: 14**

---

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

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

You need to configure the application to meet the requirements.

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

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

---

**Answer: B, D**

---

Explanation:

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

Session States in Windows Azure.

If you are a Web developer, you are probably very familiar with managing user state - that is you are familiar with tracking user activity and actions across several request-response exchanges that occur in Web applications. Since

HTTP is a stateless protocol, developers over the years have developed all sorts of means to manage state. You'll even find an MSDN page providing alternatives and recommendations for state management here. Cookies, hidden fields, and query strings are some client-side options to tracking user state. When it comes to managing that state on the server-side, most Web developers rely on session objects.

### Question: 15

#### DRAG DROP

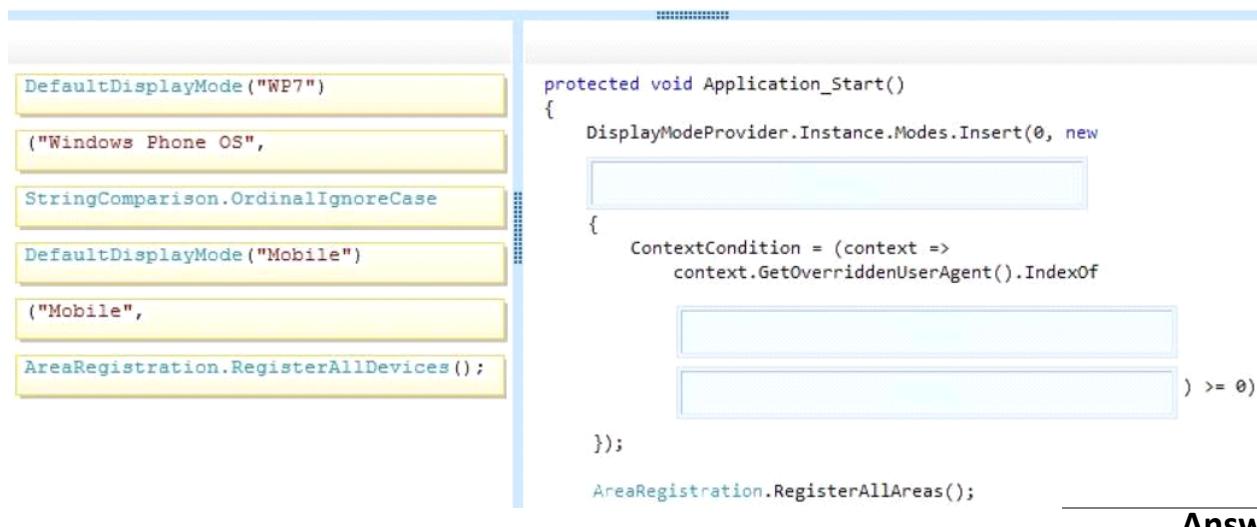
You are developing an ASP.NET MVC application that has pages for users who browse the site with Windows Phone 7. The pages for Windows Phone 7 include the following files:

\_Layout.WP7.cshtml

Index.WP7.cshtml

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

How should you update the Application\_Start method? (To answer, drag the appropriate line of code to the correct location or locations. Each line of code may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

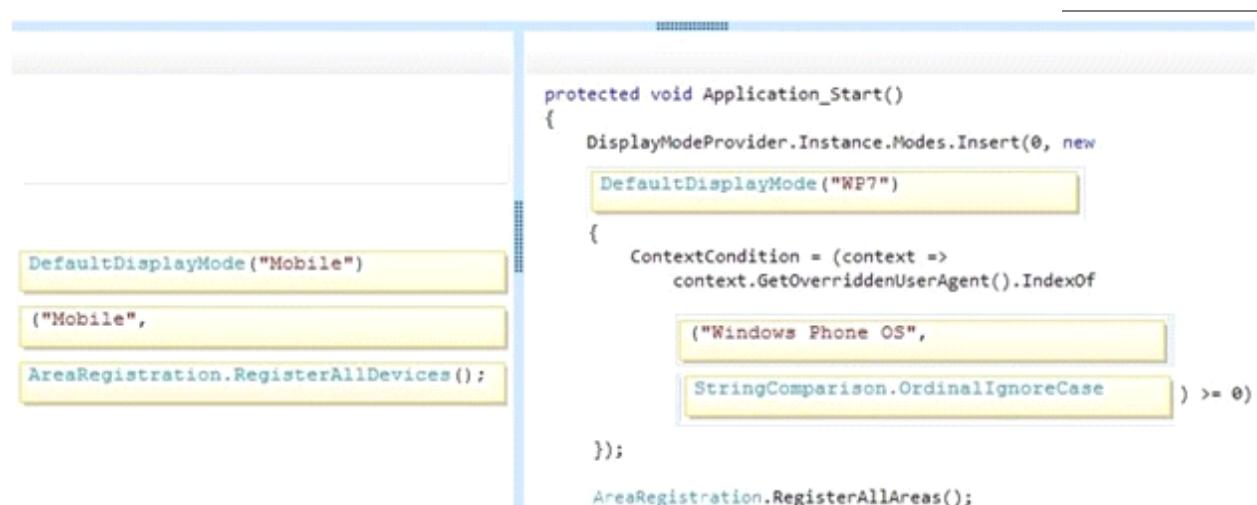


```

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

```

#### Explanation:

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

### Question: 16

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: 17**

---

You are developing an ASP.NET MVC application.

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

Which authentication method should you implement?

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

---

**Answer: B**

---

Explanation:

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

---

### **Question: 18**

---

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

**Question: 19**

You are developing an ASP.NET MVC application.  
The application must allow users to enter JavaScript in a feedback text box only.

You need to disable request validation.  
What should you do?

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

---

**Answer: C**

---

Explanation:  
Provides access to HTTP request values without triggering request validation.  
<http://msdn.microsoft.com/en-us/library/system.web.httprequest.unvalidated.aspx>

---

### **Question: 20**

---

You are developing an ASP.NET MVC application that will be deployed on a web farm.  
Passwords must be stored in the web.config file and must not be readable or in a format that is easily decodable  
You need to encrypt the passwords that are stored in the web.config file.  
Which command-line tool should you use?

- A. Aspnet\_regiis.exe
- B. Ngen.exe
- C. Aspnet\_merge.exe
- D. EdmGen.exe

---

**Answer: A**

---

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

---

### **Question: 21**

---

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([dropdown] identity)
    {
        ClaimNames
        ClaimTypes
        IIdentityClaims
        IClaimsIdentity
        ClaimType
        ClaimName
    }

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

```

---

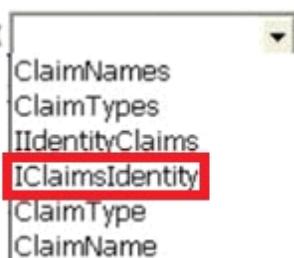
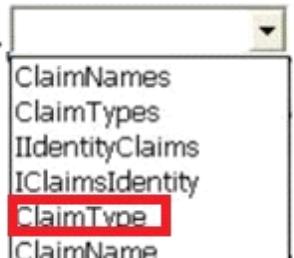
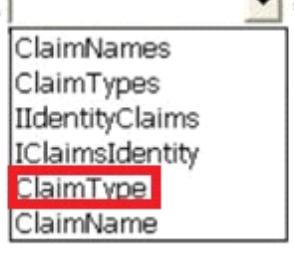
Answer:

## Work Area

```

using Microsoft.IdentityModel.Claims;

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

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

```

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

**Question: 22****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"
          [REDACTED]
          [REDACTED]
          applicationName="MyApplication" />
      </providers>
    </membership>
  </system.web>
</configuration>
```

## Work Area

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

---

**Answer:**

---

## Work Area

```

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

```

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

**Question: 23**

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: 24**

---

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**

---

#### **Question: 25**

---

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: 26**

---

##### **HOTSPOT**

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

The current implementation of the ExcelResult class is as follows.

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

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

You need to enable users to open Excel files.

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

#### Work Area

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

if (canProcess)
{
    response.Clear();

    response.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: 27**

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

You detect performance issues when the application starts.

You need to resolve the performance issues.

What should you do?

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

---

**Answer: C**

---

**Question: 28**

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: 29**

---

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**

---

### **Question: 30**

---

You are developing an ASP.NET MVC application.

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

Which authentication method should you implement?

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

---

**Answer: B**

---

### **Question: 31**

---

DRAG DROP

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

The application must:

Use Windows Identity Foundation 4.5.

Support the Windows Azure Access Control Service.

You need to implement authentication.

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

ClaimNames ClaimTypes IIdentityClaim IClaimsIdent ClaimType ClaimName	<pre> 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;                 }             }         }     } } </pre>
--	---

---

### 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.

using System;

02using System.Collections.Generic;

03using System.Linq;

04using System.Web;

05using Microsoft.IdentityModel.Claims;

06

07namespace MVC3MixedAuthenticationSample.Models

```
08{  
09 public class IdentityClaim  
10 {  
11     private string _identityProvider;  
12     private string _identityValue;  
13             public const string ACSProviderClaim  
="http://schemas.microsoft.com/accesscontrolservice/2010/07/claims/identityprovider";  
14  
15     public IdentityClaim(IClaimsIdentity identity)  
16     {  
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 }
```

---

### **Question: 32**

---

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**

---

---

### **Question: 33**

---

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

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

You need to test the GoldMined method.

Which unit test should you use?

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

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

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

C D. [TestMethod()]  
 public void GoldMinedTest()  
 {  
 double totalGold = 175.05;  
 double newlyMinedGold = 76.03;  
 double totalGold = 251.08;  
 double result = 0.00;  
  
 result = GoldMined(currentGold, newlyMinedGold);  
 Assert.AreEqual(totalGold, result);  
 }

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

---

Answer: D

---

**Question: 34**

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?

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

**Answer: A****Question: 35****HOTSPOT**

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

\_Layout.WP7.cshtml

Index.WP7.cshtml

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

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

**Work Area**

```
protected void Application_Start()
{
    DisplayModeProvider.Instance.Modes.Insert(0, new
    {
        ContextCondition = (context =>
            context.GetOverriddenUserAgent().IndexOf
            "Windows Phone" >= 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)

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

    AreaRegistration.RegisterAllAreas();
}
```

---

**Answer:**

---

**Work Area**

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

**Question: 36**

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**

---

### Question: 37

---

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: 38**

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: 39**

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
```

---

**Question: 40**

You are preparing for the deployment of an ASP.NET MVC application. You need to generate a deployment manifest.  
Which command-line tool should you use?

- A. Mage.exe
- B. Ngen.exe

- C. ALexe
- D. Resgen.exe

**Answer: C**

Explanation:

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

### Question: 41

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

Word

and retrieve selected values from the

Word

**Answer:**

Create a custom

model binder

and retrieve selected values from the

binding context

### Question: 42

DRAG DROP

You are developing an ASP.NET MVC application.

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

You need to log the actions and results.

You have the following code:

```

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

```

Which code segments should you include in Target 1, Target 2 and Target 3 to implement the LogActionFilter class? (To answer, drag the appropriate code segments to the correct targets. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

#### Code Segments

OnActionExecuting(ActionExecutingContext filterContext)
OnActionExecuted(ActionExecutedContext filterContext)
OnResultExecuting(ResultExecutingContext filterContext)
OnResultExecuted(ResultExecutedContext filterContext)
public class LogActionFilter : ActionFilterAttribute
public class LogActionFilter : IActionFilter

#### Answer area

Target 1:

Code Segment

Target 2:

Code Segment

Target 3:

Code Segment

**Answer:**

Target 1:

public class LogActionFilter : ActionFilterAttribute

Target 2:

OnActionExecuting(ActionExecutingContext filterContext)

Target 3:

OnResultExecuting(ResultExecutingContext filterContext)

#### Question: 43

You are developing an ASP.NET MVC application.

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

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

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

- A. 

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

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

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

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

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

---

**Answer: B, D**

---

Explanation:

Basics of RESTful services:

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

\* Use HTTP methods (verbs) explicitly and in consistent way to interact with resources (Uniform Interface), i.e. to

retrieve a resource use GET, to create a resource use POST, to update a resource use PUT/PATCH, and to remove a resource use DELETE.

Etc.

---

#### Question: 44

---

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: 45

---

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: 46**

---

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: 47**

---

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**

---

### **Question: 48**

---

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

Logs show there have been several malicious attacks against the servers.  
You need to prevent all SQL injection attacks from malicious users against the application.  
How should you secure the queries?

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

---

**Answer: C**

---

Explanation:

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

The use of prepared statements (aka parameterized queries) is how all developers should first be taught how to write database queries. They are simple to write, and easier to understand than dynamic queries. Parameterized queries force the developer to first define all the SQL code, and then pass in each parameter to the query later. This coding style allows the database to distinguish between code and data, regardless of what user input is supplied.

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

Reference: SQL Injection Prevention Cheat Sheet

---

### Question: 49

---

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

You need to authenticate the users.

Which code segment should you use?

- A. 

```
public class SAMembershipProvider : SqlMembershipProvider
{
    ...
}
```
- B. 

```
public class SAMembershipProvider : ClientFormsMembershipProvider
{
    ...
}
```
- C. 

```
public class SAMembershipProvider : ProviderBase
{
    ...
}
```
- D. 

```
public class SAMembershipProvider : MembershipProvider
{
    ...
}
```

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

---

**Answer: C**

---

**Explanation:****Class ProviderBase**

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

**Question: 50**

---

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

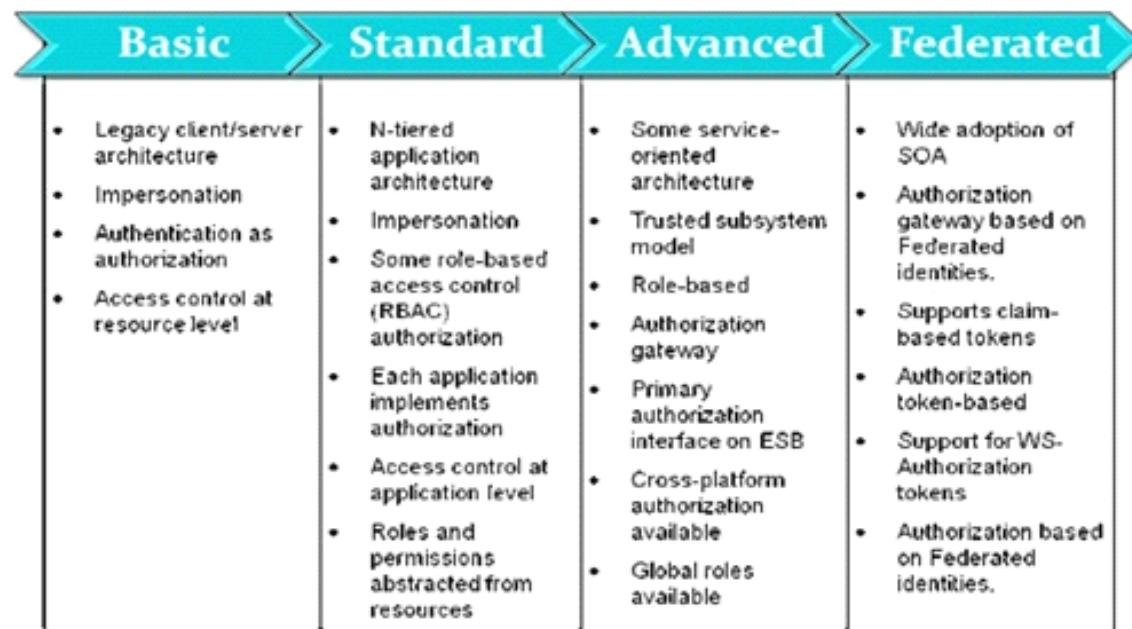
---

**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.



\* 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: 51****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:	<code>meta</code>
Target 2:	<code>name="viewport"</code>
Target 3:	<code>content="width=device-width"</code>

**Question: 52****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
<code>style="behavior:</code>	Target 1: <input type="text" value="Style"/>
<code>style="url:</code>	Target 2: <input type="text" value="Style"/>
<code>style="behavior:url:</code>	
<b>Styles</b>	...
<code>url(colorchange.js);"</code>	
<code>behavior(colorchange.js);"</code>	
<code>colorchange.js;"</code>	

**Answer:**

Target 1:	<code>style="behavior:</code>
Target 2:	<code>url(colorchange.js);"</code>

**Question: 53****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**

`Layout = "~/Views/Shared/_Layout.cshtml";`

`Layout = "~/Views/Shared/_MobileLayout.cshtml";`

`Request.Browser.IsBrowser("MobileDevice")`

`Request.Browser.IsMobileDevice`

`Layout = new MasterPage("_Layout.cshtml")`

`Layout = new MasterPage("_MobileLayout.cshtml")`

**Answer area**

Target 1:  Segment

Target 2:  Segment

Target 3:  Segment

---

**Answer:**

---

Target 1: `Request.Browser.IsMobileDevice`

Target 2: `Layout = "~/Views/Shared/_MobileLayout.cshtml";`

Target 3: `Layout = "~/Views/Shared/_Layout.cshtml";`

---

### **Question: 54**

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.

---

### **Question: 55**

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: 56

---

#### 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.)

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

---

**Answer:**

Box 1: Create a service namespace

Box 2: Register the application as a relaying partner.

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

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

Box 5: Generate provider rules for claims

---

**Question: 57**

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: 58**

**HOTSPOT**

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

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

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

### Answer Area

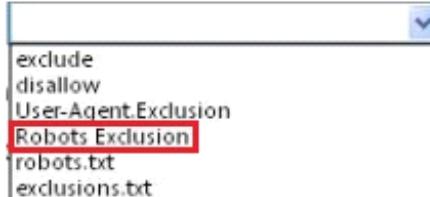
Use the  feature in the IIS

Search Engine Optimization Toolkit to create a 

file and add  rules.

**Answer:**

### Answer Area

Use the  feature in the IIS

Search Engine Optimization Toolkit to create a 

file and add  rules.

### Question: 59

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: 60**

---

**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: 61

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

The application must not retrieve student objects on an HTTP POST request.

You need to implement the controller.

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

- A. 

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

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

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

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

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

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

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

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

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

D. Option D

**Answer: C, D**

### Question: 62

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>	
<pre>routes.MapHttpRoute(     name: "Bagels",     routeTemplate: "Bagel/GetBagel/{bagelName}",      defaults: new { controller = "Bagel", action = "GetBagel" });</pre>	

**Answer:**

## Box 1:

```
routes.MapRoute(
    name: "Bagels",
    url: "Bagel/GetBagel/{bagelName}",

    defaults: new { controller = "Bagel", action = "GetBagel" });
```

## Box 2:

```
routes.MapRoute(
    name: "Default", url: "{controller}/{action}/
{id}",

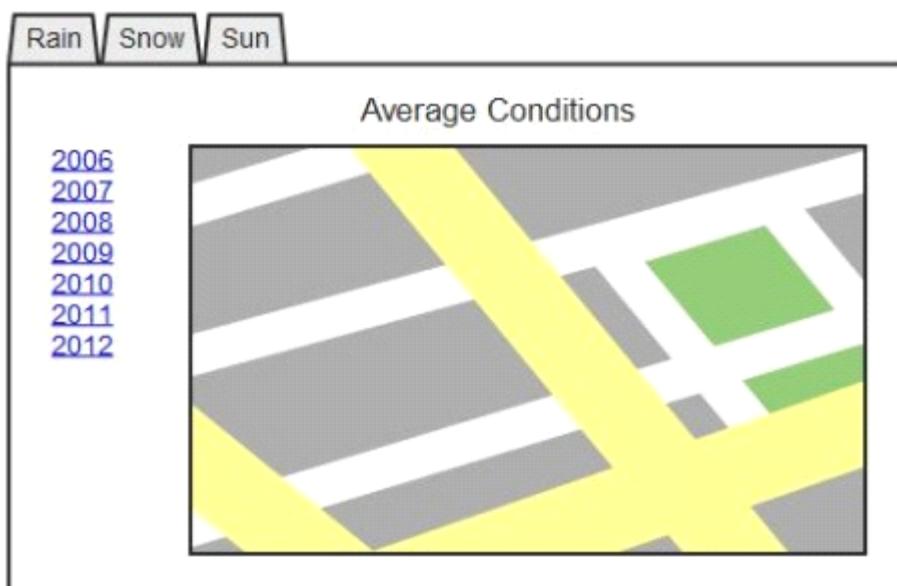
    defaults: new { controller = "Home", action = "I
ndex", id = UrlParameter.Optional } );
```

## Box 3:

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

**Question: 63**

You are implementing a website redesign of an existing website that provides historical weather condition maps. The current layout resembles the graphic in the exhibit. (Click the Exhibit button.)



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

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

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

Which code segment should you use?

- A. `$("#year-selector").slider({  
 orientation: "vertical",  
 range: { 2006: 2012 },  
 step: 1,  
});`
- B. `$("#year-selector").datepicker({  
 yearRange: { 2000:2010 },  
 constrainInput: false,  
 stepMonths: 12  
});`
- C. `$("#year-selector").datepicker({  
 numberOfMonths: 6 * 12,  
 showButtonPanel: true,  
 constrainInput: true,  
 stepMonths: 3  
});`
- D. `$("#year-selector").slider({  
 orientation: "vertical",  
 min: 2006,  
 max: 2012,  
 step: 1,  
});`

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

---

**Answer: A**

---

#### **Question: 64**

---

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.

Reference: SP.NET Web Page Resources Overview

---

### **Question: 65**

---

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: 66**

---

You are designing a distributed application.

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

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

Which data store should you use?

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

---

**Answer: B**

---

---

### **Question: 67**

---

DRAG DROP

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

dimensions.

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

You need to store state and configure the application.

What should you do? (To answer, drag the appropriate item to the correct location. Each item may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Items	Answer area
<b>TempData</b>	Store state in <input type="text"/> Item and set the mode attribute of
<b> ViewData</b>	the sessionState element in the web.config file to <input type="text"/> Item
<b>InProc</b>	...
<b>SqlServer</b>	

**Answer:**

## **Answer area**

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

## **Question: 68**

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

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

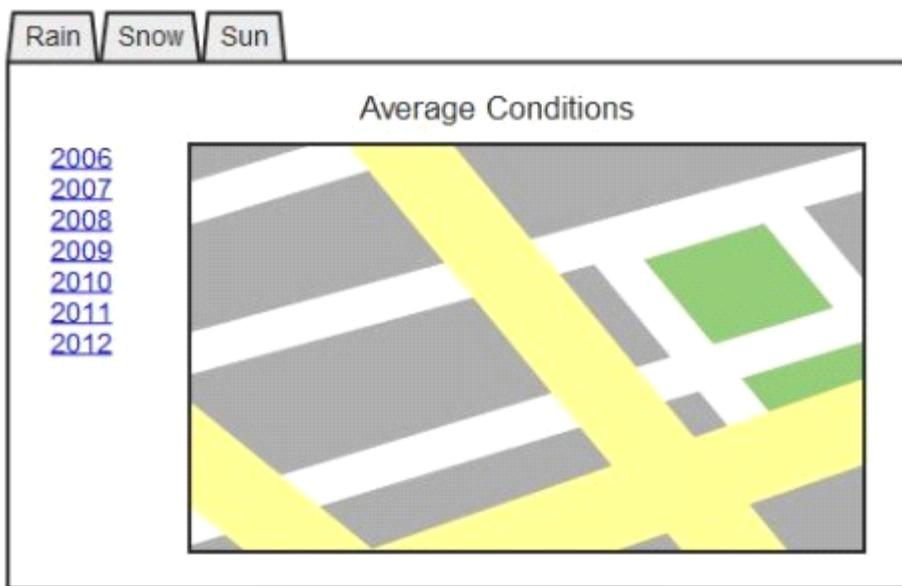
How should you implement this feature?

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

**Answer: A**

## **Question: 69**

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.

Reference: Implement jQuery UI slider with ASP.NET

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

## Question: 70

---

### 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); }
});

```

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

### Question: 71

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

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

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

---

**Answer: BCE**

---

Explanation:

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

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

file.

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

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

Reference: ASP.NET MVC Client Side Validation

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

---

## Question: 72

---

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

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

The application also contains a partial view named People. The parent view must display the partial view.

You need to add code at line 09 to display the partial view within the parent view.

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

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

---

## Answer: B

---

Explanation:

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

Reference: How to populate mvc razor partial view

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

---

## Question: 73

---

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>
```

Reference: Enabling Diagnostics in Azure Cloud Services and Virtual Machines

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

---

### **Question: 74**

---

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

When the role starts, an external application stops responding.

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

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

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

---

**Answer: AD**

---

Explanation:

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

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

Reference: CrashDumps.EnableCollection Method

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

---

### **Question: 75**

---

**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");
}
```

```

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

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

ApplicationDetailCodeBase: Identifies the offset for the application detail event codes. This field is constant.

WebRequestEvent.Raise()

Raises an event by notifying any configured provider that the event has occurred. (Inherited from WebBaseEvent.)

[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: 76**

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

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

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

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

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

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

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

---

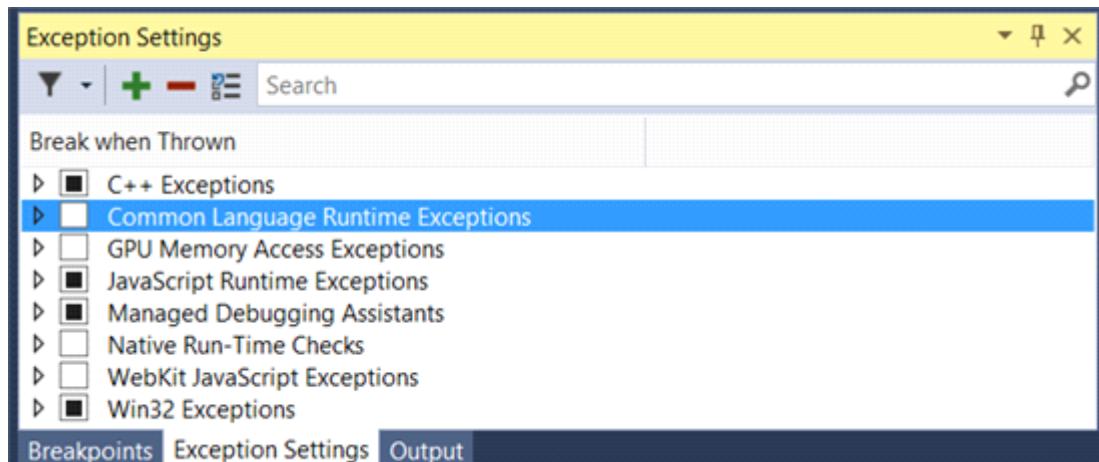
### Answer: D

---

Explanation:

Configuring the debugger to break for first chance exceptions

To change when the debugger breaks, go to Debug->Exceptions...



When you first open this window you will see that there is a tree grid with one column and checkboxes.

\* Break when Thrown. This includes a default list of exceptions known by the debugger, grouped by category.

Note: The possible exceptions that could break from this list is determined by the runtime you are debugging. For example, if you are using managed-only debugging then the debugger will never break for C++, Win32 Exceptions, etc. even if they are configured to break when thrown.

\* Checkboxes. If you check the box for a category, then the debugger will break for all First Chance Exceptions while debugging. If you don't want to enable all First Chance Exceptions, you can find the specific exception types that you wish to configure by using the search box.

Reference: Understanding Exceptions while debugging with Visual Studio

<http://blogs.msdn.com/b/visualstudioalm/archive/2015/01/08/understanding-exceptions-while-debugging-with-visual-studio.aspx>

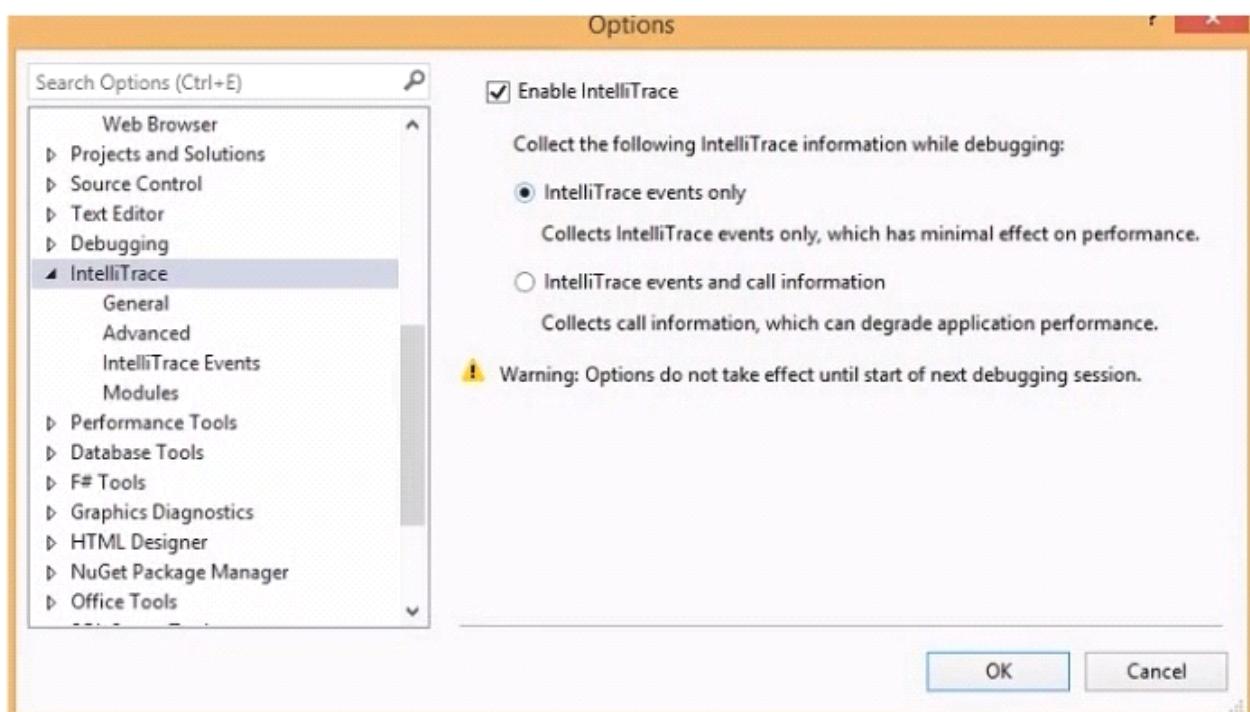
---

### Question: 77

---

HOTSPOT

You are developing an ASP.NET MVC 4 application. You are using IntelliTrace to debug the application. You configure IntelliTrace as shown in the screenshot below.



To answer, make the appropriate selections in the answer area.

#### Answer Area

Which data will be available during debugging?

state for application variables only  
state for application variables and ADO.NET and ASP.NET events  
state for application variables and every method entry and exit

Which debugging features will be disabled?

Edit and Continue  
Tracepoints and breakpoints  
Tracing for every method entry and exit

#### Answer:

Which data will be available during debugging?

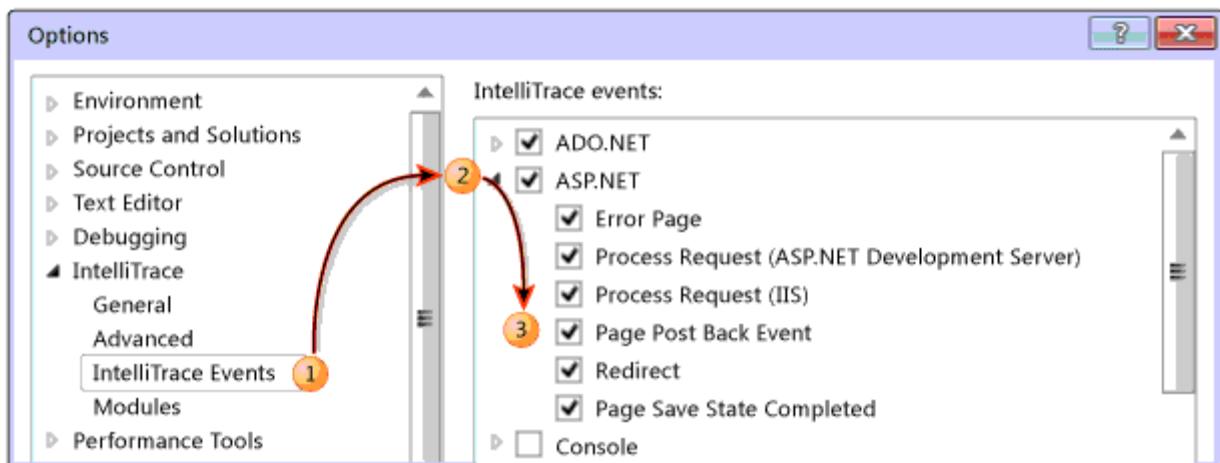
state for application variables only  
state for application variables and ADO.NET and ASP.NET events  
state for application variables and every method entry and exit

Which debugging features will be disabled?

Edit and Continue  
Tracepoints and breakpoints  
Tracing for every method entry and exit

Explanation:

Box 1:



Box 2:

Which data will be available during debugging?

state for application variables only  
 state for application variables and ADO.NET and ASP.NET events  
 state for application variables and every method entry and exit

Which debugging features will be disabled?

Edit and Continue  
 Tracepoints and breakpoints  
 Tracing for every method entry and exit

Reference: Configure IntelliTrace to collect debugging information

<https://msdn.microsoft.com/en-us/library/dd264944.aspx>

## Question: 78

### 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 <b>ActionResult</b> 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 <b>ActionResult</b> 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: 79**

**HOTSPOT**

You are developing an ASP.NET MVC web application that enables users to open Microsoft Excel files. The current implementation of the ExcelResult class is as follows.

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

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

You need to enable users to open Excel files.

You have the following code:

```
var response = context.HttpContext.Response;
var request = context.HttpContext.Request;
Target 1
if (canProcess)
{
    response.Clear();
Target 2
Target 3
response.WriteFile(context.HttpContext.Server.MapPath(Path));
}
```

Which code segments should you include in Target 1, Target 2 and Target 3 to implement the ExecuteResult method? To answer, select the appropriate option or options in the answer area.

**Answer Area**

Target 1:

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

Target 2:

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

Target 3:

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

**Answer:**

Target 1:

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

Target 2:

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

Target 3:

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

**Explanation:****Target 1:**

Name: AcceptTypes

Synopsis: stringArray = Request.AcceptTypes

Return s a String array containing the Multipurpose Internet Mail Extension (MIME) types accepted by the client. You can use this property to determine whether a client can accept certain response types, including application types such as Word or Excel, which are supported only by Internet Explorer.

**Target 2, Target 3:**

Example: Response.AddHeader("content-disposition", "attachment; filename=MyExcelFile.xls");

```
Response.ContentType = "application/ms-excel";
```

**Reference:**

Export data to Excel file with ASP.NET MVC 4 C# is rendering into view

<http://stackoverflow.com/questions/16346227/export-data-to-excel-file-with-asp-net-mvc-4-c-sharp-is-rendering-into-view>

**Question: 80**

**HOTSPOT**

You are developing an ASP.NET MVC application.

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

You need to log the actions and results.

You have the following code:

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

Which code segments should you include in Target 1, Target 2 and Target 3 to implement the LogActionFilter class? (To answer, select the appropriate option from the drop-down list in the answer area.)

**Answer Area**

Target 1:

OnActionExecuting(ActionExecutingContext filterContext)  
 OnActionExecuted(ActionExecutedContext filterContext)  
 OnResultExecuting(ResultExecutingContext filterContext)  
 OnResultExecuted(ResultExecutedContext filterContext)  
 public class LogActionFilter : ActionFilterAttribute  
 public class LogActionFilter : IActionFilter

Target 2:

OnActionExecuting(ActionExecutingContext filterContext)  
 OnActionExecuted(ActionExecutedContext filterContext)  
 OnResultExecuting(ResultExecutingContext filterContext)  
 OnResultExecuted(ResultExecutedContext filterContext)  
 public class LogActionFilter : ActionFilterAttribute  
 public class LogActionFilter : IActionFilter

Target 3:

OnActionExecuting(ActionExecutingContext filterContext)  
 OnActionExecuted(ActionExecutedContext filterContext)  
 OnResultExecuting(ResultExecutingContext filterContext)  
 OnResultExecuted(ResultExecutedContext filterContext)  
 public class LogActionFilter : ActionFilterAttribute  
 public class LogActionFilter : IActionFilter

---

**Answer:**

---

Target 1:

```
OnActionExecuting(ActionExecutingContext filterContext)
OnActionExecuted(ActionExecutedContext filterContext)
OnResultExecuting(ResultExecutingContext filterContext)
OnResultExecuted(ResultExecutedContext filterContext)
public class LogActionFilter : ActionFilterAttribute
public class LogActionFilter : IActionFilter
```

Target 2:

```
OnActionExecuting(ActionExecutingContext filterContext)
OnActionExecuted(ActionExecutedContext filterContext)
OnResultExecuting(ResultExecutingContext filterContext)
OnResultExecuted(ResultExecutedContext filterContext)
public class LogActionFilter : ActionFilterAttribute
public class LogActionFilter : IActionFilter
```

Target 3:

```
OnActionExecuting(ActionExecutingContext filterContext)
OnActionExecuted(ActionExecutedContext filterContext)
OnResultExecuting(ResultExecutingContext filterContext)
OnResultExecuted(ResultExecutedContext filterContext)
public class LogActionFilter : ActionFilterAttribute
public class LogActionFilter : IActionFilter
```

Explanation:

Target 1: IActionFilter

MVC3 introduced a completely new pattern to configure filters for controllers and its actions. While injection of filter attributes is still supported it is recommended using this new pattern for filter configuration because it has the advantage to support constructor injection and does not require the InjectAttribute anymore.

First of all you have to create your filter class by implementing one of the filter interfaces e.g. IActionFilter.

Target 2: public void OnActionExecuting(ActionExecutingContext filterContext)

Target 3: public void OnActionExecuted(ActionExecutedContext filterContext)

Reference: Dependency injection for filters

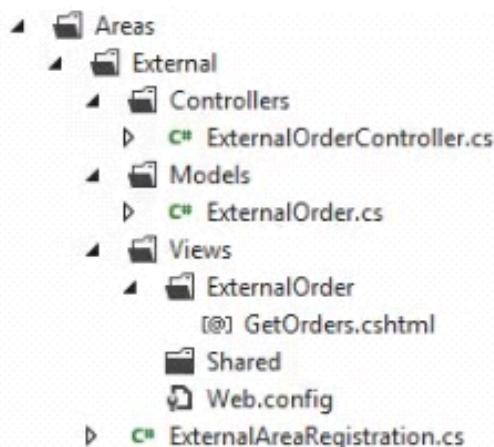
<https://github.com/ninject/Ninject.Web.Mvc/wiki/Dependency-injection-for-filters>

## Question: 81

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,

Explanation:

Target 1: the action is getOrders  
 Target 2: the controller is ExternalOrderController  
 Target 3: The area is External

LinkExtensions.ActionLink Method (HtmlHelper, String, String, String, RouteValueDictionary, IDictionary<String,

---

**Answer:**

Object>)

Use:

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

Reference: How to specify an area name in an action link?

<http://stackoverflow.com/questions/2036305/how-to-specify-an-area-name-in-an-action-link>

## Question: 82

---

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

The application must not retrieve student objects on an HTTP POST request.

You need to implement the controller.

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

- A. 

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

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

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

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

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

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

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

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

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

---

Answer: AC

---

Explanation:

Reference: Examining the Details and Delete Methods

<http://www.asp.net/mvc/overview/getting-started/introduction/examining-the-details-and-delete-methods>

---

### Question: 83

---

You are developing an application that uses many small images.

When the images load, the application runs slowly.

You need to improve the performance of the application.

What should you do?

- A. Preload all the images when the application starts to ensure that the images are cached.
- B. Convert the images to ICO file format and stream all images on a single connection.
- C. Host all images on a Microsoft Azure web role with multiple instances.
- D. Combine all the images into a single image and use CSS to create sprites.

---

Answer: D

---

Explanation:

Because browsers limit how many concurrent HTTP requests they make to a website, a web page with many small icon images can result in a longer load time. You can combine many small images into a single larger image - a CSS sprite - using the free ASP.NET Sprite and Image Optimization Library available from Microsoft.

Reference: CSS Sprites and the ASP.NET Sprite and Image Optimization Library

<http://dotnetslackers.com/articles/aspnet/CSS-Sprites-and-the-ASP-NET-Sprite-and-Image-Optimization-Library.aspx>

---

### Question: 84

---

DRAG DROP

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

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

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

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

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

Which markup segments should you include in Target 1, Target 2 and Target 3 to complete markup? To answer, drag the appropriate markup segments to the correct targets. Each markup segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

**Markup Segments**

`configSource`  
`uiCulture`  
`enableClientBasedCulture`  
`siteMap`  
`globalization`

**Answer Area**

Target 1:

Markup Segment

Target 2:

Markup Segment

Target 3:

Markup Segment

**Answer:**

Target1: globalization

Target2: enableClientBasedCulture

Target3: uiCulture

**Explanation:**

When the `EnableClientBasedCulture` property is enabled, the `Culture` and `UICulture` properties are based on the `AcceptLanguage` header field value that is sent by the client browser. If the `AcceptLanguage` header value cannot be mapped to a specific culture, the `Culture` and `UICulture` values are used. The default value is false.

The following combination of attributes is used in the globalization section: `culture="auto"`, `uiCulture="auto"`, `enableClientBasedCulture="true"`, e.g.:

```
<globalization uiCulture="auto" culture="auto" enableClientBasedCulture="true">
```

**Reference:**

<http://stackoverflow.com/questions/8878856/does-the-enableclientbasedculture-HYPERLINK>

"<http://stackoverflow.com/questions/8878856/does-the-enableclientbasedculture-attribute-in-web-config-work-at-all>" attribute in web config work at all

**Question: 85****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>
<div><input type="submit" value="Email Link" /></div>
}
@section Scripts {
    @Scripts.Render("~/bundles/jqueryval")
}


```

---

**Answer:**

---

Target1: [ValidateAntiForgeryToken]

Target2: @Html.AntoForgeryToken()

Explanation:

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: 86

---

You are developing an ASP.NET MVC application that uses forms authentication against an Oracle database.

You need to authenticate the users.

Which code segment should you use?

- A. 

```
public class OracleMembershipProvider : ProviderBase
{
    ...
}
```
- B. 

```
public class OracleMembershipProvider : ClientFormsMembershipProvider
{
    ...
}
```
- C. 

```
public class OracleMembershipProvider : SqlMembershipProvider
{
    ...
}
```
- D. 

```
public class OracleMembershipProvider : MembershipProvider
{
    ...
}
```

A. Option A

B. Option B

C. Option C

D. Option D

---

**Answer: D**

---

Explanation:

When implementing a custom membership provider, you are required to inherit the `MembershipProvider` abstract class.

There are two primary reasons for creating a custom membership provider.

You need to store membership information in a data source that is not supported by the membership providers included with the .NET Framework, such as a FoxPro database, an Oracle database, or other data source.

You need to manage membership information using a database schema that is different from the database schema used by the providers that ship with the .NET Framework. A common example of this would be membership data that already exists in a SQL Server database for a company or Web site.

Reference: `MembershipProvider` Class

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

---

### Question: 87

---

You are developing an ASP.NET MVC application that uses forms authentication. The application uses SQL queries that

display customer order data.

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

How should you secure the queries?

- A. Implement parameterization.
- B. Pattern check the input.
- C. Filter out prohibited words in the input.
- D. Escape single quotes on string-based input parameters.

---

### Answer: A

---

Explanation:

With most development platforms, parameterized statements that work with parameters can be used (sometimes called placeholders or bind variables) instead of embedding user input in the statement. A placeholder can only store a value of the given type and not an arbitrary SQL fragment. Hence the SQL injection would simply be treated as a strange (and probably invalid) parameter value.

Reference: [https://en.wikipedia.org/wiki/SQL\\_injection#Parameterized\\_statements](https://en.wikipedia.org/wiki/SQL_injection#Parameterized_statements)

---

## Question: 88

---

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: 89

---

#### DRAG DROP

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

The application must:

Use Windows Identity Foundation 4.5.

Support the Windows Azure Access Control Service.

You need to implement authentication.

You have the following code:

```
using Microsoft.IdentityModel.Claims;
public class IdentityClaim
{
    private string _identityProvider;
    private string _identityValue;
    public const string ACSProviderClaim =
        "http://schemas.microsoft.com/accesscontrolservice/...";
    public IdentityClaim(Target 1 identity)
    {
        if (identity != null)
        {
            foreach (var claim in identity.Claims)
            {
                if (claim.Target 2 == Target 3 .NameIdentifier)
                {
                    _identityValue = claim.Value;
                }
                if (claim.Target 4 == ACSProviderClaim)
                {
                    _identityProvider = claim.Value;
                }
            }
        }
    }
}
```

Which code segments should you include in Target 1, Target 2, Target 3 and Target 4 to build the class constructor? To answer, drag the appropriate code segment to the correct targets in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

### Code Segments

ClaimNames

ClaimTypes

IIdentityClaims

IClaimsIdentity

ClaimType

ClaimName

### Answer area

Target 1:

Code Segment

Target 2:

Code Segment

Target 3:

Code Segment

Target 4:

Code Segment

**Answer:**

Target 1: IClaimsIdentity

Target 2: ClaimType

Target 3: ClaimTypes

Target 4: ClaimType

Explanation:

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;  
                }  
            }  
        }  
    }  
}
```

Reference: Azure Acs plus asp.net MVC memberships

<https://garvincasimir.wordpress.com/2011/08/06/azure-acss-plus-asp-net-mvc-memberships/>

## **Question: 90**

DRAG DROP

You are developing an ASP.NET MVC application in a web farm. The application has a page that accepts a customer's order, processes it, and then redirects the browser to a page where the order is displayed along with the shipping information.

The order information should be available only to the page where the order is displayed.

You need to store state and configure the application.

What should you do? To answer, drag the appropriate item to the correct location. Each item may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

Items	Answer area
TempData	Store state in <input type="text"/> Item and set the mode attribute of
ViewData	the sessionState element in the web.config file to <input type="text"/> Item
InProc	
SqlServer	

**Answer:**

Target 1: InProc

Target 2: ViewData

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

Reference:

Understanding ViewData, ViewBag And TempData

<http://www.binaryintellect.net/articles/36941654-8bd4-4535-9226-ddf47841892f.aspx>

**Question: 91**

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:

Reference: How to Use Azure Redis Cache

<https://azure.microsoft.com/sv-se/documentation/articles/cache-dotnet-how-to-use-azure-redis-cache/>

**Question: 92****HOTSPOT**

You develop a new ASP.NET MVC web application. The application is hosted in an Azure Web Role. It includes the following code. Line numbers are included for reference only.

```

01 public override void OnStop()
02 {
03     Trace.TraceInformation("OnStop called within Web Role");
04     var performanceCounterCurrentRequests = new PerformanceCounter("ASP.NET", "Requests Current", "");
05     while (true)
06     {
07         var currentRequestsCount = performanceCounterCurrentRequests.NextValue();
08         Trace.TraceInformation("ASP.NET Requests Current = " + currentRequestsCount);
09         if (currentRequestsCount <= 0)
10         {
11             break;
12         }
13         System.Threading.Thread.Sleep(1000);
14     }
15 }

```

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

**Answer Area**

	Yes	No
When the web server is so busy that the pending requests cannot be completed in five minutes, the Web role is shut down.	<input type="radio"/>	<input type="radio"/>
When an unhandled exception occurs within the Web role, the Stopping event is raised, and the <b>OnStop</b> method code runs.	<input type="radio"/>	<input type="radio"/>
The Web role initiates a shutdown immediately following the return of the <b>OnStop</b> method code.	<input type="radio"/>	<input type="radio"/>

**Answer:**

When the web server is so busy that the pending requests cannot be completed in five minutes, the Web role is shut down.	<input checked="" type="radio"/>	<input type="radio"/>
When an unhandled exception occurs within the Web role, the Stopping event is raised, and the <b>OnStop</b> method code runs.	<input type="radio"/>	<input checked="" type="radio"/>
The Web role initiates a shutdown immediately following the return of the <b>OnStop</b> method code.	<input checked="" type="radio"/>	<input type="radio"/>

Reference: The Right Way to Handle Azure OnStop Events

<http://azure.microsoft.com/blog/2013/01/14/the-right-way-to-handle-azure-onstop-events/>

---

**Question: 93**


---

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

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

You need to configure the application to meet the requirements.

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

- A. profile properties of the Microsoft Azure application
- B. Microsoft Azure session state
- C. SQL Database
- D. Microsoft Azure application state

---

**Answer: A**


---

#### **Explanation:**

In many applications, you want to store and use information that is unique to a user. When a user visits your site, you can use the information you have stored to present the user with a personalized version of your Web application. Personalizing an application requires a number of elements: you must store the information using a unique user identifier, be able to recognize users when they visit again, and then fetch the user information as needed. To simplify your applications, you can use the ASP.NET profile feature, which can perform all of these tasks for you.

### **Case Study: 5**

#### **Flight Information**

#### **Background**

You are developing a flight information consolidation service. The service retrieves flight information from a number of sources and combines them into a single data set. The consolidated flight information is stored in a SQL Server database. Customers can query and retrieve the data by using a REST API provided by the service.

The service also offers access to historical flight information. The historical flight information can be filtered and queried in an ad hoc manner.

The service runs on a Windows Azure Web Role. SSL is not used.

#### **Business Requirements**

- A new data source for historical flight information is being developed by a contractor located on another continent.
- If a time zone is not specified, then it should be interpreted as Coordinated Universal Time (UTC).
- When you upgrade a service from a staging deployment to a production deployment, the time that the service is unavailable must be minimized.
- The default port must be used for HTTP.

#### **Technical Requirements**

The existing sources of flight information and the mechanism of exchange are listed below.

- Blue Yonder Airlines provides flight information in an XML file.
- Consolidated Messenger provides flight information in a Microsoft Access database that is uploaded every 12 hours to the service using SFTP. The company uses port 22 for SFTP.
- Margie's Travel provides and consumes flight information using serialized ADO.NET DataSets. Data is periodically synced between the service and Margie's Travel.
- Trey Research provides data from multiple sources serialized in proprietary binary formats. The data must be read by using .NET assemblies provided by Trey Research. The assemblies use a common set of dependencies. The current version of the Trey Research assemblies is 1.2.0.0. All assemblies provided by Trey Research are signed with a key pair contained in a file named Trey.snk, which Trey Research also supplies.
- The application specification requires that any third-party assemblies must have strong names.

#### **Application Structure**

**FlightInfo.cs**

```
public class FlightInfo
{
    string DataSource { get; set; }
    public string Airline { get; set; }
    public string Flight { get; set; }
    public DateTimeOffset Arrival { get; set; }
    public int Seats { get; set; }
    public bool WasLate { get; set; }
}
```

**BlueYonderLoader.cs**

```
public class BlueYonderLoader
{
    public IEnumerable<RawFlightData> LoadFlights(XDocument feed)
    {
        ...
    }

    private RawFlightData Parse(XElement flightElement)
    {
        ...
    }
}
```

**HistoricalDataLoader.cs**

```
public class HistoricalDataLoader
{
    public static IEnumerable<HistoricalFlightInfo> LoadHistoricalFlights()
    {
        ...
    }

    public void StreamHistoricalFlights(XmlWriter responseWriter, string airline)
    {

        ...
    }

    private XElement ConvertToHistoricalFlight(XElement flight)
    {
        return new XElement("Flight", flight);
    }

    private string GetAirline(XElement flightName)
    {
        return flightName.Value.Substring(0, 2);
    }

    IEnumerable<XElement> RemoteDataStream()
    {
        return XDocument.Load("").Elements();
    }
}
```

**MargiesTravelSync.cs**

```
public class MargiesTravelSync
{
    public void Sync()
    {
        ...
    }

    private DataSet LoadLocal()
    {
        var dataSet = new DataSet();
        dataSet.ReadXml("local");
        return dataSet;
    }

    private StreamWriter SendStream()
    {
        return new StreamWriter("SendStream");
    }

    private StreamReader ReceiveStream()
    {
        return new StreamReader("ReceiveStream");
    }
}
```

**FlightInfoContext.cs**

```
public class FlightInfoContext : DbContext
{
    public DbSet<FlightInfo> FlightInfo { get; set; }

    public override int SaveChanges()
    {
        return base.SaveChanges();
    }

    private bool IsTransient(int ex)
    {
        var errors = new[] { 10053, 10054, 64 };
        return errors.Contains(ex);
    }
}
```

**FlightDataController.cs**

```
public class FlightDataController : ApiController
{
    FlightInfoContext _Context;

    public FlightDataController()
    {
        _Context = new FlightInfoContext();
    }

    [HttpGet]
    public IEnumerable<FlightInfo> GetFlightInfo()
    {
        return _Context.FlightInfo.Select(x => x).AsEnumerable();
    }

    private IEnumerable<HistoricalFlightInfo> LoadHistorical()
    {
        return HistoricalDataLoader.LoadHistoricalFlights();
    }
}
```

**Question: 1**

DRAG DROP

You need to configure the Windows Azure service definition to enable Consolidated Messenger to upload files. What should you do? (To answer, drag the appropriate configuration items to the correct location or locations. Each configuration 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.)

http  
tcp  
https  
InternalEndpoint  
InputEndpoint  
80  
22  
3389

## Answer Area

```

        <Binding name="Website" endpointName="Website" />
        <Binding name="Transfer" endpointName="Transfer" />
    </Bindings>
    </Site>
</Sites>
<Endpoints>

< InputEndpoint name="Website"
    protocol=" http "
    port=" 80 "
    />

< InputEndpoint name="Transfer"
    protocol=" tcp "
    port=" 22 "
    />

</Endpoints>
</WebRole>

```

## Answer:

```

        <Binding name="Website" endpointName="Website" />
        <Binding name="Transfer" endpointName="Transfer" />
    </Bindings>
    </Site>
</Sites>
<Endpoints>

< InputEndpoint name="Website"
    protocol=" http "
    port=" 80 "
    />

< InputEndpoint name="Transfer"
    protocol=" tcp "
    port=" 22 "
    />

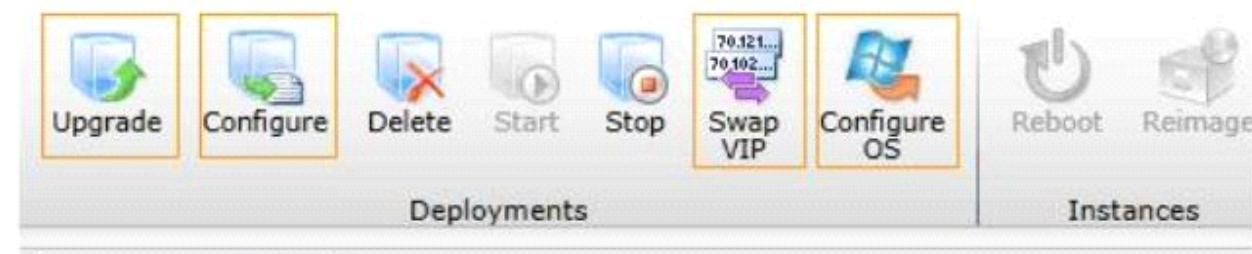
</Endpoints>
</WebRole>

```

**Question: 2****HOTSPOT**

You need to deploy the application to the Windows Azure production environment to meet the business requirements.

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



The screenshot shows the Windows Azure Management Portal interface. At the top, there are several buttons: Upgrade, Configure, Delete, Start, Stop, Swap VIP, Configure OS, Reboot, and Reimage. Below these are two tabs: Deployments and Instances. The Deployments tab is selected, showing a list of resources with columns for Name, Type, and Environment. The list includes:

Name	Type	Environment
Main	Subscription	
Main	Hosted Service	
Certificates		
Windows Azure Tools	Service Certificate	
Main Deployment	Deployment	Production
MvcWebRole1	Role	Production
MvcWebRole1_IN_0	Instance	Production
Main Deployment - staging	Deployment	Staging
MvcWebRole1	Role	Staging
MvcWebRole1_IN_0	Instance	Staging

A "Choose Columns" dropdown is also visible above the table.

**Answer:**

The screenshot shows the Windows Azure Management Portal interface. At the top, there are several action buttons: Upgrade, Configure, Delete, Start, Stop, Swap VIP, Configure OS, Reboot, and Reimage. The 'Swap VIP' button is highlighted with a red box. Below these buttons are two tabs: 'Deployments' and 'Instances'. The 'Deployments' tab is selected, showing a list of resources. The list includes:

Name	Type	Environment
Main	Subscription	
Main	Hosted Service	
Certificates		
Windows Azure Tools	Service Certificate	
Main Deployment	Deployment	Production
MvcWebRole1	Role	Production
MvcWebRole1_IN_0	Instance	Production
Main Deployment - staging	Deployment	Staging
MvcWebRole1	Role	Staging
MvcWebRole1_IN_0	Instance	Staging

### Question: 3

You need to recommend a data access technology to the contractor to retrieve data from the new data source. Which data access technology should you recommend?

- A. LINQ to XML
- B. ADO.NET Entity Framework
- C. ADO.NET DataSets
- D. WCF Data Services

**Answer: D**

### Question: 4

#### DRAG DROP

Flight information data provided by Margie's Travel is updated both locally and remotely. When the data is synced, all changes need to be merged together without causing any data loss or corruption.

You need to implement the Sync() method in the MargiesTravelSync.es file.

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

**Answer Area**

```

XmlReadMode.DiffGram
XmlReadMode.Fragment
XmlReadMode.InferSchema
XmlWriteMode.DiffGram
XmlWriteMode.IgnoreSchema

```

```

public void Sync()
{
    var sendStream = SendStream();
    var receiveStream = ReceiveStream();
    var local = LoadLocal();

    local.WriteXml(sendStream, [ ] );
    local.ReadXml(receiveStream, [ ] );
}

```

**Answer:**

```

public void Sync()
{
    var sendStream = SendStream();
    var receiveStream = ReceiveStream();
    var local = LoadLocal();

    local.WriteXml(sendStream, [ XmlWriteMode.DiffGram ] );
    local.ReadXml(receiveStream, [ XmlReadMode.DiffGram ] );
}

```

**Explanation:**

htHYPERLINK "http://msdn.microsoft.com/en-us/library/ms135424.aspx#\_blank"tp:HYPERLINK  
[//msdn.microsoft.com/en-us/library/ms135424.aspx](http://msdn.microsoft.com/en-us/library/ms135424.aspx#_blank)

**Question: 5****DRAG DROP**

Historical flight information data will be stored in Windows Azure Table Storage using the FlightInfo class as the table entity.

There are millions of entries in the table. Queries for historical flight information specify a set of airlines to search and whether the query should return only late flights. Results should be ordered by flight name.

You need to specify which properties of the FlightInfo class should be used at the partition and row keys to ensure that query results are returned as quickly as possible.

What should you do? (To answer, drag the appropriate properties to the correct location or locations in the answer area. Each property 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 Area

**Airline**

**WasLate**

**Flight**

**Arrival**

Use the  property as the partition key.

Use the  property as the row key.

**Answer:**

Airline  
Flight

**Question: 6**

DRAG DROP

The service has been deployed to Windows Azure.

Trey Research has provided version 1.3.0.0 of the assembly to support a change in the serialization format. The service must remain available during the transition to the new serialization format.

You need to ensure that the service is using the new assembly.

Which configuration setting should you add to the web.config? (To answer, drag the appropriate configuration elements to the correct location or locations in the answer area. Each configuration 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.)

```

codeBase version="1.3.0.0" href="Trey.Serialization.dll"
bindingRedirect oldVersion="1.2.5.0" newVersion="1.3.0.0"
bindingRedirect oldVersion="1.2.0.0" newVersion="1.3.0.0"
runtime
location
< />

<assemblyBinding xmlns="urn:schemas-microsoft-com:asm.v1">
  <dependentAssembly>
    <assemblyIdentity name="Trey.Serialization" />
    < />
  </dependentAssembly>
</assemblyBinding>
</ />

```

---

Answer:

---

```

< runtime >
<assemblyBinding xmlns="urn:schemas-microsoft-com:asm.v1">
  <dependentAssembly>
    <assemblyIdentity name="Trey.Serialization" />
    < bindingRedirect oldVersion="1.2.0.0" newVersion="1.3.0.0" >
      </ />
    </dependentAssembly>
</assemblyBinding>
</ />

```

See: [http://msdn.microsoft.com/en-us/library/7HYPERLINK us/library/7wd6ex19.aspx#\\_blank](http://msdn.microsoft.com/en-us/library/7HYPERLINK us/library/7wd6ex19.aspx#_blank) "http://msdn.microsoft.com/en-us/library/7wd6ex19.aspx"

**Question: 7**

Errors occasionally occur when saving data using the FlightInfoContext ADO.NET Entity Framework context. Updates to the data are being lost when an error occurs.

You need to ensure that data is still saved when an error occurs by retrying the operation. No more than five retries should be performed.

Which code segment should you use as the body of the SaveChanges() method in the FlightInfoContext.es file?

- A. 

```
for (var i = 0; i < 5; i++)
{
    try
    {
        return base.SaveChanges();
    }
    catch (SqlException ex)
    {
        if (IsTransient(ex.Number))
        {
            continue;
        }
    }
}
return base.SaveChanges();
```
- B. 

```
var exception = new EntitySqlException();
while (exception.Data != 0 && exception.Data.Count < 5)
{
    try
    {
        return base.SaveChanges();
    }
    catch (EntitySqlException ex)
    {
        if (IsTransient(ex.HResult))
        {
            exception = ex;
        }
    }
}
return base.SaveChanges();
```

C C. `for (var i = 0; i < 5; i++)  
{  
 try  
 {  
 return base.SaveChanges();  
 }  
 catch (SqlException ex)  
 {  
 if (IsTransient(ex.Number))  
 {  
 break;  
 }  
 }  
}  
return base.SaveChanges();`

C D. `for (var i = 0; i < 5; i++)  
{  
 try  
 {  
 return base.SaveChanges();  
 }  
 catch (SqlException ex)  
 {  
 if (!IsTransient(ex.Number))  
 {  
 continue;  
 }  
 }  
}  
return base.SaveChanges();`

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

---

**Answer: A**

---

### **Question: 8**

---

You are adding a new REST service endpoint to the FlightDataController controller. It returns flights from the consolidated data sources only for flights that are late.

You need to write a LINQ to Entities query to extract the required data.

Which code segment should you use?

- C A. 

```
var historical = LoadHistorical();
var query = _Context.FlightInfo.AsQueryable()
    .Join(historical, x => x.Flight, y => y.Flight, (x, y) => new { Current = x,
Historical = y })
    .Where(x => x.Historical.WasLate)
    .Select(x => x.Current);
```
- C B. 

```
var historical = LoadHistorical();
var query = _Context.FlightInfo.AsEnumerable()
    .Where(x => historical.All(y => y.WasLate && x.Flight == y.Flight))
    .Select(x => x);
```
- C C. 

```
var historical = LoadHistorical();
var query = _Context.FlightInfo.AsQueryable()
    .Where(x => historical.Select(y => y.Flight).Contains(x.Flight))
    .Where(x => historical.Any(y => y.WasLate))
    .Select(x => x);
```
- C D. 

```
var historical = LoadHistorical();
var query = _Context.FlightInfo.AsEnumerable()
    .Join(historical, x => x.Flight, y => y.Flight, (x, y) => new { Current = x,
Historical = y })
    .Where(x => x.Historical.WasLate)
    .Select(x => x.Current);
```

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

---

**Answer: D**

---

**Explanation:**

D is right because you send result as REST so if you use “AsQueryable” the result is deferred to the next enumeration of your result.

D is not optimized but will works.

A will break at runtime.

Credits to Rem

---

### Question: 9

---

Data provided by Consolidated Messenger is cached in the `HttpContext.Cache` object.

You need to ensure that the cache is correctly updated when new data arrives.

What should you do?

- A. Ensure that the `EffectivePrivateBytesLimit` value is greater than the size of the database file.
- B. Change the sliding expiration of the cache item to 12 hours.
- C. Use the `SqlCacheDependency` type configured with a connection string to the database file.
- D. Use the `CacheDependency` type configured to monitor the SFTP target folder.

---

**Answer: D**

---

---

### Question: 10

---

You need to load flight information provided by Consolidated Messenger.  
Which should you use?

- A. SQL Server Data Transformation Services (DTS)
- B. EntityTransaction and EntityCommand
- C. Office Open XML
- D. OleDbConnection and OleDbDataReader

---

**Answer: D**

---

---

### Question: 11

---

DRAG DROP

You need to parse flight information from Blue Yonder Airlines. The content of the XML file is shown below.

```
<?xml version="1.0" encoding="utf-8"?>
<AirlineFeed>
  <Flight xmlns="urn:CFI" name="AS515">
    <Seats>123</Seats>
    <Arrival>5/2/2011 12:01:13</Arrival>
  </Flight>
  <Flight name="UN24">
    <Seats>123</Seats>
    <Arrival>5/1/2012 10:17:57 PM +02:00</Arrival>
  </Flight>
  <FlightManifest>
    ...
  </FlightManifest>
</AirlineFeed>
```

Some airlines do not specify the timezone of the arrival time. If the timezone is not specified, then it should be interpreted per the business requirements.

You need to implement the LoadFlights() and Parse() methods of the BlueYonderLoader class.

What should you do? (To answer, drag the appropriate code segments to the correct location in the answer area. Each 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.)

```

var flights = feed.Elements(
    feed.Root.GetPrefixOfNamespace("{urn:CFI}") + "Flight");
}

var flights = feed.Descendants().Where(x =>
    x.NodeType != XmlNodeType.XmlDeclaration && (string)x ==
    "Flight");

var flights = feed.Descendants("{urn:CFI}Flight")
    .Concat(feed.Descendants("Flight"));

fi.Arrival = DateTimeOffset.Parse(arrivalRaw,
    null, System.Globalization.DateTimeStyles.AssumeUniversal);

fi.Arrival = DateTimeOffset.Parse(arrivalRaw,
    null, System.Globalization.DateTimeStyles.AdjustToUniversal);

fi.Arrival = XmlConvert.ToDateTimeOffset(arrivalRaw,
    new[] { "Local", "Universal" });

public IEnumerable<FlightInfo> LoadFlights(XDocument feed)
{
    return flights.Select(x => Parse(x));
}

private FlightInfo Parse(XElement flightElement)
{
    var fi = new FlightInfo();
    fi.Flight = flightElement.Attribute("name").Value;
    var arrivalRaw = flightElement.Element("Arrival").Value;

    fi.Seats = XmlConvert.ToInt32(flightElement.Element("Seats").Value);
    return fi;
}

```

---

Answer:

```
public IEnumerable<FlightInfo> LoadFlights(XDocument feed)
{
    var flights = feed.Descendants("{urn:CFI}Flight")
        .Concat(feed.Descendants("Flight"));

    return flights.Select(x => Parse(x));
}

private FlightInfo Parse(XElement flightElement)
{
    var fi = new FlightInfo();
    fi.Flight = flightElement.Attribute("name").Value;
    var arrivalRaw = flightElement.Element("Arrival").Value;

    fi.Arrival = DateTimeOffset.Parse(arrivalRaw,
        null, System.Globalization.DateTimeStyles.AssumeUniversal);

    fi.Seats = XmlConvert.ToInt32(flightElement.Element("Seats").Value);
    return fi;
}
```

## Question: 12

You are adding a new REST service endpoint to the FlightDataController controller that returns the total number of seats for each airline.

You need to write a LINQ to Entities query to extract the required data.

Which code segment should you use?

- C A. var query = from flight in \_Context.FlightInfo  
     group flight by flight.Seats into agg  
     let airline = agg.First()  
     select new  
     {  
         TotalSeats = agg.Key,  
         Airline = airline,  
     };
- C B. var query = from flight1 in \_Context.FlightInfo  
     from flight2 in \_Context.FlightInfo  
     where flight1.Airline == flight2.Airline  
     select new  
     {  
         Airline = flight1.Airline,  
         TotalSeats = Math.BigMul(flight1.Seats, flight2.Seats),  
     };
- C C. var query = from flight in \_Context.FlightInfo  
     from airline in flight.Airline  
     group airline by airline into agg  
     select new  
     {  
         Airline = agg.Key,  
         TotalSeats = agg.Sum(x => Convert.ToInt32(x)),  
     };
- C D. var query = from flight in \_Context.FlightInfo  
     group flight by flight.Airline into agg  
     select new  
     {  
         Airline = agg.Key,  
         TotalSeats = agg.Sum(x => x.Seats),  
     };

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

---

**Answer: D**

---

### Question: 13

---

You need to load flight information provided by Consolidated Messenger.  
 What should you use?

- A. Office Open XML
- B. COM interop
- C. OleDbConnection and OleDbDataReader
- D. EntityConnection and EntityDataReader

---

**Answer: C**

---

**Question: 14**

Historical flight information data will be stored in Windows Azure Table Storage using the FlightInfo class as the table entity.

There are millions of entries in the table. Queries for historical flight information specify a set of airlines to search and whether the query should return only late flights. Results should be ordered by flight name.

You need to specify which properties of the FlightInfo class should be used at the partition and row keys to ensure that query results are returned as quickly as possible.

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

- A. Use the WasLate property as the row key.
- B. Use the Airline property as the row key.
- C. Use the WasLate property as the partition key
- D. Use the Arrival property as the row key.
- E. Use the Airline property as the partition key.
- F. Use the Flight property as the row key.

---

**Answer: BF**

---

**Question: 15**

Transformed historical flight information provided by the RemoteDataStream() method must be written to the response stream as a series of XML elements named Flight within a root element named Flights. Each Flight element has a child element named FlightName that contains the flight name that starts with the two-letter airline prefix.

You need to implement the StreamHistoricalFlights() method so that it minimizes the amount of memory allocated.

Which code segment should you use as the body of the StreamHistoricalFlights() method in the HistoricalDataLoader.es file?

- C A. responseWriter.WriteStartElement("Flights");  
 var flights = RemoteDataStream()  
 .OrderBy(x => GetAirline(x.Element("FlightName")));  
 var filteredFlights = flights  
 .SkipWhile(x => GetAirline(x.Element("FlightName")) != airline);  
 foreach (var f in filteredFlights)  
 {  
 var flight = ConvertToHistoricalFlight(f);  
 flight.WriteTo(responseWriter);  
 }  
 responseWriter.WriteEndElement();
- C B. responseWriter.WriteStartElement("Flights");  
 var flights = RemoteDataStream().Select(x =>  
 {  
 if (GetAirline(x) == airline)  
 {  
 return ConvertToHistoricalFlight(x);  
 }  
 return null;  
});  
 flights.TakeWhile(x =>  
{  
x.WriteTo(responseWriter);  
return x != null;  
});  
 responseWriter.WriteEndElement();
- C C. var data = RemoteDataStream().ToDictionary(x =>  
 GetAirline(x.Element("FlightName")),  
 x => new XStreamingElement("Flights", ConvertToHistoricalFlight(x).Descendants()));  
 data[airline].WriteTo(responseWriter);
- C D. var flights = new XStreamingElement("Flights",  
 from flight in RemoteDataStream()  
 where GetAirline(flight.Element("FlightName")) == airline  
 select ConvertToHistoricalFlight(flight));  
 flights.WriteTo(responseWriter);

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

---

**Answer: D**

---

Explanation:

<http://msdn.microsoft.com/en-us/library/system.xml.linq.xstreHYPERLINK> "http://msdn.microsoft.com/en-us/library/system.xml.linq.xstreamingelement.aspx#\_blank" amingelement.aspx and <http://msdn.microsoft.com/en-us/library/bb551307.aspx>

---

### Question: 16

---

Errors occasionally occur when saving data using the FlightInfoContext ADO.NET Entity Framework context. Updates to the data are being lost when an error occurs.

You need to ensure that data is still saved when an error occurs by retrying the operation. No more than five retries should be performed.

With which code segment should you replace the body of the SaveChanges() method in the FlightInfoContext.es file?

C A. var result = FlightInfo.SqlQuery("UPDATE WITH RETRY", FlightInfo, "IsTransient", 5);  
if (result.Count() > 5)  
{  
  result.AsNoTracking();  
  return -1;  
}  
return 0;

C B. try  
{  
  return base.SaveChanges();  
}  
catch (EntityCommandExecutionException ex)  
{  
  if (ex.Data.Keys.Cast<int>().Any(x => IsTransient(x)))  
  {  
    return 5 & SaveChanges();  
  }  
  return -1;  
}  
C C. for (var i = 0; i < 5; i++)  
{  
  try  
  {  
    return base.SaveChanges();  
  }  
  catch (SqlException ex)  
  {  
    if (IsTransient(ex.Number))  
    {  
      continue;  
    }  
  }  
}  
return base.SaveChanges();

C D. var exception = new EntitySqlException();  
while (exception.HResult != 0 && exception.Data.Count < 5)  
{  
  try  
  {  
    return base.SaveChanges();  
  }  
  catch (EntitySqlException ex)  
  {  
    if (IsTransient(ex.HResult))  
    {  
      exception = ex;  
    }  
  }  
}  
return base.SaveChanges();

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

---

**Answer: C**

---

**Explanation:**

**EntitySqlException:** Represents errors that occur when parsing Entity SQL command text. This exception is thrown when syntactic or semantic rules are violated.

**SqlException:** The exception that is thrown when SQL Server returns a warning or error. This class cannot be inherited.

**EntityCommandExecutionException** : Represents errors that occur when the underlying storage provider could not execute the specified command. This exception usually wraps a provider-specific exception.

## Case Study: 6

### ASP.NET MVC

#### Background

You are developing an ASP.NET MVC application in Visual Studio 2012 that will be used to process orders.

#### Business Requirements

The application contains the following three pages:

- A page that queries an external database for orders that are ready to be processed. The user can then process the order.
- A page to view processed orders.
- A page to view vendor information.

The application consumes three WCF services to retrieve external data.

#### Technical Requirements

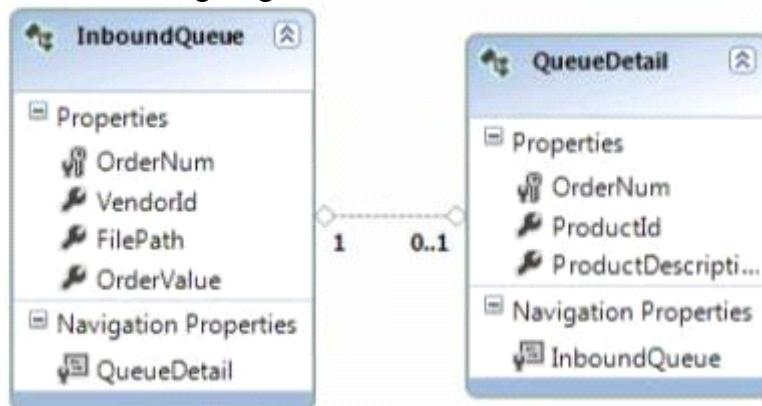
#### Visual Studio Solution:

The solution contains the following four projects.

- ExternalQueue: A WCF service project used to communicate with the external order database.
- OrderProcessor: An ASP.NET MVC project used for order processing and logging order metadata.
- OrderUpload: A WCF service project used to submit order data to an external data source.
- Shipping: A WCF service project used to acquire shipping information.

#### ExternalQueue Project:

Entity Framework is used for data access. The entities are defined in the ExternalOrders.edmx file as shown in the following diagram.



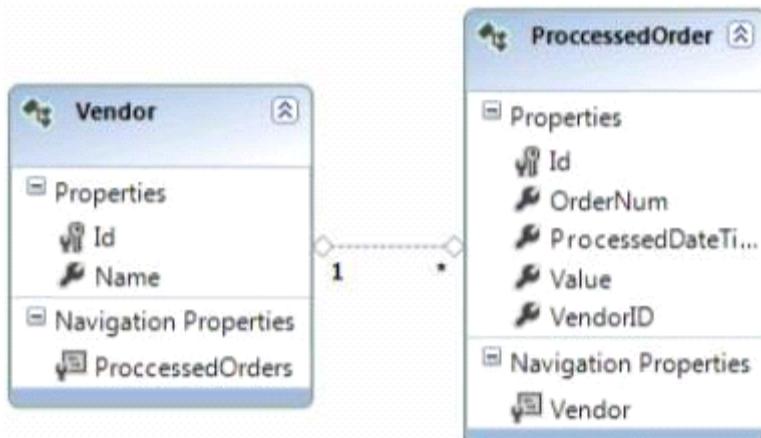
The project contains two services defined in the following files.

- IExternalQueueService.es
- ExternalQueueService.svc

The **ExternalQueue.Helpers** namespace contains a definition for a class named **OrderNotFoundException**.

#### OrderProcessor Project:

Entity Framework is used for data access. The entities are defined in the ProcessedOrders.edmx file as shown in the following diagram.



The classes are contained in the OrderProcessor.Entities namespace. The project contains the following two controllers.

- InboundQueueController.es
- ProcessedOrderController.es

WCF service proxies to the ExternalQueue, Shipping and OrderUpload services have been generated by using the command prompt. The ExecuteCommandProcedure() method in the ExternalQueueService.svc file must run asynchronously.

The ProcessedOrderController controller has the following requirements.

The GetVendorPolicy() method must enforce a 10 minute absolute cache expiration policy.

The GetProcessedOrders() method must return a view of the 10 most recently processed orders.

### **OrderUpload Project:**

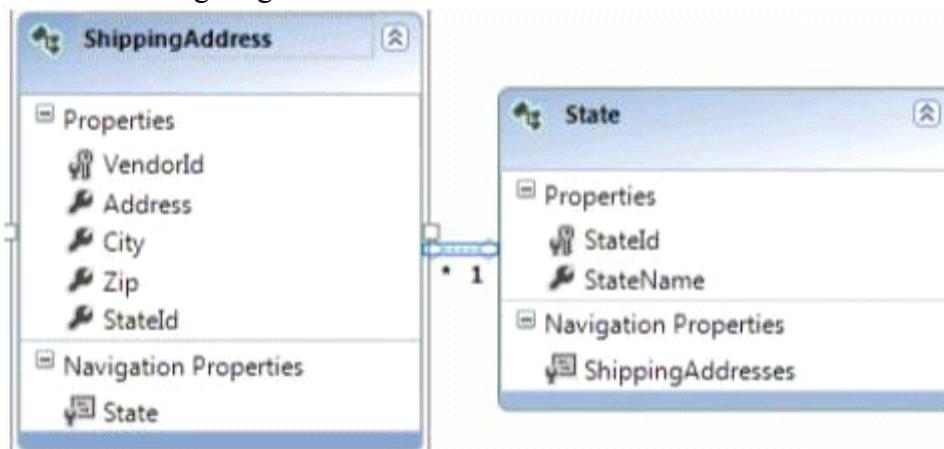
The project contains two services defined in the following files:

- IUploadCallbackService.es
- UploadCallbackService.svc

Data Access is maintained in a file named UploadOrder.es.

### **Shipping Project:**

Entity Framework is used for data access. The entities are defined in the ExternalOrders.edmx file as shown in the following diagram.



The Custom Tool property for ExternalOrders.edmx has been removed.

POCO classes for the Entity Model are located in the ShippingAddress.es file. The POCO entity must be loaded by using lazy loading.

The project contains two services defined in the following files.

- IShippingService.es
- ShippingService.svc

The IShippingService contract must contain an operation that receives an order number as a parameter. The

operation must return a class named ShippingInfo that inherits from a class named State.

### Application Structure

ExternalQueue\IExternalQueueService.cs

```
IQ01 using System.Collections.Generic;
IQ02 using System.ServiceModel;
IQ03 using ExternalQueue.Helpers;
IQ04
IQ05 namespace ExternalQueue
IQ06 {
IQ07     [ServiceContract]
IQ08     public interface IExternalQueueService
IQ09     {
IQ10         [OperationContract]
IQ11         List<Entities.InboundQueue> GetExternalOrders();
IQ12
IQ13         [FaultContract(typeof(OrderNotFoundException))]
IQ14         [OperationContract]
IQ15         void DeleteExternalOrder(int orderNum);
IQ16
IQ17         [OperationContract]
IQ18         Entities.InboundQueue GetExternalOrder(int orderNum);
IQ19     }
IQ20 }
```

OrderProcessor\IExternalQueueService.svc

```

EQ01  using System;
EQ02  using System.Collections.Generic;
EQ03  using System.Linq;
EQ04  using System.Data.EntityClient;
EQ05  using System.Data;
EQ06  using ExternalQueue.Entities;
EQ07  using System.Data.Objects;
EQ08  using ExternalQueue.Helpers;
EQ09  using System.ServiceModel;
EQ10  using System.Threading.Tasks;
EQ11
EQ12 namespace ExternalQueue
EQ13 {
EQ14     public class ExternalQueueService : IExternalQueueService
EQ15     {
EQ16         public List<Entities.InboundQueue> GetExternalOrders()
EQ17         {
EQ18             List<InboundQueue> queueItems = new List<InboundQueue>();
EQ19             return queueItems;
EQ20         }
EQ21
EQ22         public void DeleteExternalOrder(int orderNum)
EQ23         {
EQ24             using (var context = new ExternalOrdersEntities())
EQ25             {
EQ26                 var orders = context.InboundQueues.Where(i => i.OrderNum == orderNum).ToList();
EQ27                 if (orders.Count() > 0)
EQ28                 {
EQ29                     using (EntityCommand cmd = new EntityCommand())
EQ30                     {
EQ31                         cmd.CommandText = "ExternalOrdersEntities.uspInboundQueueDelete";
EQ32                         cmd.CommandType = CommandType.StoredProcedure;
EQ33                         EntityParameter param = new EntityParameter();
EQ34                         param.Value = orderNum;
EQ35                         param.ParameterName = "orderNum";
EQ36                         cmd.Parameters.Add(param);
EQ37                         ExecuteCommandProcedure(cmd);
EQ38                     }
EQ39                 }
EQ40             else
EQ41             {
EQ42                 OrderNotFoundException ex = new OrderNotFoundException();
EQ43                 ex.OrderNum = orderNum;
EQ44                 ex.ExceptionMessage = "Order not found...Cannot delete";
EQ45             }
EQ46         }
EQ47     }
EQ48 }
EQ49
EQ50     private void ExecuteCommandProcedure(EntityCommand command)
EQ51     {
EQ52         using (EntityConnection connection = new EntityConnection("name=ExternalOrdersEntities"))
EQ53         {
EQ54             command.Connection = connection;
EQ55             connection.Open();
EQ56             command.ExecuteNonQuery();
EQ57         }
EQ58     }
EQ59
EQ60     public InboundQueue GetExternalOrder(int orderNum)
EQ61     {
EQ62         using (var context = new ExternalOrdersEntities())
EQ63         {
EQ64             string queryString = string.Empty;
EQ65             ObjectQuery<InboundQueue> query = context.CreateQuery<InboundQueue>(queryString, new ObjectParameter("orderNum", orderNum));
EQ66             return query.First();
EQ67         }
EQ68     }
EQ69 }
EQ70 }
EQ71 }
```

ExternalQueue\ProcessedOrderController.cs

```

PC01 using System;
PC02 using System.Collections.Generic;
PC03 using System.Linq;
PC04 using System.Runtime.Caching;
PC05 using System.Web.Mvc;
PC06 using OrderProcessor.Entities;
PC07 using OrderProcessor.Helpers;
PC08 using System.Configuration;
PC09
PC10 namespace OrderProcessor.Controllers
PC11 {
PC12     public class ProcessedOrderController : Controller
PC13     {
PC14         public ActionResult GetProcessedOrders()
PC15         {
PC16             using (var context = new ProcessedOrders())
PC17             {
PC18                 List<Entities.ProcessedOrder> orders = new List<ProcessedOrder>();
PC19                 return View(orders);
PC20             }
PC21         }
PC22
PC23         private ObjectCache cache {get { return MemoryCache.Default; }}
PC24
PC25         public ActionResult GetVendors()
PC26         {
PC27             List<Entities.Vendor> vendors = cache.Get
("vendorKey") as List<Entities.Vendor>;
PC28             if (vendors == null)
PC29             {
PC30                 using (var context = new ProcessedOrders())
PC31                 {
PC32                     vendors = context.Vendors.ToList();
PC33                 }
PC34             }
PC35         }
PC36         return View(vendors);
PC37     }
PC38
PC39     private CacheItemPolicy GetVendorPolicy()
PC40     {
PC41         CacheItemPolicy vendorPolicy = new CacheItemPolicy();
PC42
PC43         return vendorPolicy;
PC44     }
PC45
PC46     private List<string> GetTriggerPaths()
PC47     {
PC48         List<string> triggerPath = new List<string>();
PC49         triggerPath.Add(@"c:\triggers\vendortrigger.txt");
PC50         return triggerPath;
PC51     }
PC52 }
PC53 }
```

OrderProcessor\InboundQueueController.cs

```

IC01 using System;
IC02 using System.Collections.Generic;
IC03 using System.Web.Mvc;
IC04 using OrderProcessor.Entities;
IC05 using ExternalQueue.Entities;
IC06 using System.ServiceModel;
IC07 using System.Collections;
IC08 using ExternalQueue.Helpers;
IC09 using OrderProcessor.Helpers;
IC10 using System.Linq;
IC11
IC12 namespace OrderProcessor.Controllers
IC13 {
IC14     public class InboundQueueController : Controller
IC15     {
IC16         public ActionResult GetQueueItems()
IC17         {
IC18             IEnumerable<InboundQueue> inboundOrders = Enumerable.Empty<InboundQueue>();
IC19             return View(inboundOrders);
IC20         }
IC21
IC22         public ActionResult ProcessOrder(int orderNum)
IC23         {
IC24             ExternalQueueServiceClient qService = new ExternalQueueServiceClient();
IC25             InboundQueue externalOrder = qService.GetExternalOrder(orderNum);
IC26             if (externalOrder != null)
IC27             {
IC28                 using (var context = new ProcessedOrders())
IC29                 {
IC30                     ProccesedOrder order = new ProccesedOrder();
IC31                     order.OrderNum = externalOrder.OrderNum;
IC32                     order.Value = Convert.ToDouble(externalOrder.OrderValue);
IC33                     order.VendorID = Convert.ToInt32(externalOrder.VendorId);
IC34                     order.ProcessedDateTime = DateTime.Now;
IC35                     context.ProccesedOrders.Add(order);
IC36                     context.SaveChanges();
IC37                 }
IC38                 qService.DeleteExternalOrder(orderNum);
IC39             }
IC40             return RedirectToAction("GetQueueItems");
IC41         }
IC42
IC43         public ActionResult ViewShippingInfo(int orderNum)
IC44         {
IC45             ShippingServiceClient shipService = new ShippingServiceClient();
IC46             var info = shipService.GetShippingInfo(orderNum);
IC47             return View(info);
IC48         }
IC49     }
IC50 }
```

OrderUpload\IUploadCallbackService.cs

```
IU01 using System.ServiceModel;
IU02
IU03 namespace OrderUpload
IU04 {
IU05     [ServiceContract(CallbackContract = typeof(IUploadCallback))]
IU06     public interface IUploadCallbackService
IU07     {
IU08         [OperationContract]
IU09         void UploadOrder(int orderNum);
IU10    }
IU11
IU12    public interface IUploadCallback
IU13    {
IU14        [OperationContract]
IU15        decimal GetOrderValue(int orderNum);
IU16    }
IU17 }
```

OrderUpload\UploadCallbackService.svc

```
US01 using System.ServiceModel;
US02
US03 namespace OrderUpload
US04 {
US05     public class UploadCallbackService : IUploadCallbackService
US06     {
US07         public void UploadOrder(int orderNum)
US08         {
US09         }
US10     }
US11 }
```

Shipping\IShippingService.cs

```
IS01 using System.Runtime.Serialization;
IS02 using System.ServiceModel;
IS03
IS04 namespace Shipping
IS05 {
IS06     public interface IShippingService
IS07     {
IS08
IS09     }
IS10 }
```

## Shipping\ShippingAddress.cs

```

SA01 using System.Collections.Generic;
SA02 using System.Data.Objects;
SA03
SA04 namespace Shipping.POCO
SA05 {
SA06     public class ShippingAddress
SA07     {
SA08         public int VendorId { get; set; }
SA09         public string Address { get; set; }
SA10         public string City { get; set; }
SA11         public int StateId { get; set; }
SA12         public string Zip { get; set; }
SA13         public State State { get; set; }
SA14     }
SA15
SA16     public class State
SA17     {
SA18         public int StateId { get; set; }
SA19         public string StateName { get; set; }
SA20         public List<ShippingAddress> ShippingAddresses { get; set; }
SA21     }
SA22 }
```

**Question: 1****DRAG DROP**

The GetVendorPolicy() private method in the ProcessedOrderController controller is returning a CacheItemPolicy object with default values. The returned policy must expire if the external file located at C:\Triggers\VendorTrigger.txt has been modified or the timeout outlined in the technical requirements is reached. You need to return the policy.

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

**Answer Area**

Priority

ChangeMonitors

AbsoluteExpiration

Expiration

DateTime.AddMinutes

DateTime.Now.AddMinutes

```

private CacheItemPolicy GetVendorPolicy()
{
    CacheItemPolicy vendorPolicy = new CacheItemPolicy();

    vendorPolicy. 

    =  (10);

    vendorPolicy. 

    .Add(new HostFileChangeMonitor(GetTriggerPaths()));

    return vendorPolicy;
}
```

**Answer:**

```

private CacheItemPolicy GetVendorPolicy()
{
    CacheItemPolicy vendorPolicy = new CacheItemPolicy();

    vendorPolicy. AbsoluteExpiration = DateTime.Now.AddMinutes(10);

    vendorPolicy. ChangeMonitors .Add(new HostFileChangeMonitor(GetTriggerPaths()));

    return vendorPolicy;
}

```

Explanation:

[http://msdn.microsoft.com/en-us/library/system.runtime.caching.cacheitempolicy.aspx#\\_blank](http://msdn.microsoft.com/en-us/library/system.runtime.caching.cacheitempolicy.aspx#_blank)"om/en-us/library/system.runtime.caching.cacheitempolicy.aspx

"[http://msdn.microsoft.com/en-](http://msdn.microsoft.com/en-us/library/system.runtime.caching.cacheitempolicy.aspx#_blank)

## Question: 2

The GetExternalOrder() method in the ExternalQueueService service is throwing a runtime error. The method must query the database for a record that matches the orderNum parameter passed to the method.

You need to modify the queryString string to retrieve the record.

With which code segment should you replace line EQ64?

- A. `string queryString = @"SELECT VALUE q FROM ExternalOrdersEntities.InboundQueues AS q WHERE q.OrderNum = @orderNum";`
- B. `string queryString = @"SELECT VALUE * FROM ExternalOrdersEntities.InboundQueues WHERE OrderNum = @orderNum";`
- C. `string queryString = @"SELECT q.OrderNum, q.VendorId, q.FilePath, q.OrderValue FROM ExternalOrdersEntities AS q WHERE q.OrderNum = @orderNum";`
- D. `string queryString = @"SELECT q FROM ExternalOrdersEntities.InboundQueues WHERE q.OrderNum = @orderNum";`

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

---

**Answer: C**

## Question: 3

**DRAG DROP**

You add a class named ShippingInfo.

You need to modify the IShippingService interface and the ShippingInfo class to meet the technical requirements.

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

Answer Area

```
public interface IShippingService
{
    [DataMember]
    [CollectionDataContract]
    [DataContract]
    [ServiceContract]
    [OperationContract]
    ShippingInfo GetShippingInfo(int orderNum);
}

public class State
{
    [DataMember]
    [CollectionDataContract]
    [DataContract]
    [ServiceContract]
    [OperationContract]
    public string StateName { get; set; }
}

public class ShippingInfo : State
{
    [DataMember]
    [CollectionDataContract]
    [DataContract]
    [ServiceContract]
    [OperationContract]
    public string StreetAddress { get; set; }

    [DataMember]
    [CollectionDataContract]
    [DataContract]
    [ServiceContract]
    [OperationContract]
    public string ZipCode { get; set; }
}
```

---

**Answer:**

---

**Answer Area**

[DataMember]

[CollectionDataContract]

[DataContract]

[ServiceContract]

[OperationContract]

[ServiceContract]

[OperationContract]

```

public interface IShippingService
{
    ShippingInfo GetShippingInfo(int orderNum);
}

public class State
{
    [DataMember]
    public string StateName { get; set; }
}

public class ShippingInfo : State
{
    [DataMember]
    public string StreetAddress { get; set; }

    [DataMember]
    public string ZipCode { get; set; }
}

```

Explanation:

<http://msdn.microsoft.com/en-us/library/system.servicemodel.servicecontractattribute.aspx>

#### Question: 4

DRAG DROP

You need to create the ShippingContext class in the ShippingAddress.es file to meet the requirements.

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

**Answer Area**

ObjectSet

ObjectContext

ObjectResult

LazyLoadingEnabled = true;

LazyLoadingEnabled = false;

```

public class ShippingContext : ObjectSet<ShippingAddress>
{
    public ShippingContext()
        : base("name=ShippingAddressEntities")
    {
        this.ContextOptions.
    }

    public ObjectResult<ShippingAddress> ShippingAddresses
    {
        get { return CreateObjectSet<ShippingAddress>(); }
    }

    public ObjectResult<State> States
    {
        get { return CreateObjectSet<State>(); }
    }
}

```

**Answer:**

```
public class ShippingContext : ObjectContext
{
    public ShippingContext()
        : base("name=ShippingAddressEntities")
    {
        this.ContextOptions.LazyLoadingEnabled = true;
    }
    public ObjectSet<ShippingAddress> ShippingAddresses
    {
        get { return CreateObjectSet<ShippingAddress>(); }
    }
    public ObjectSet<State> States
    {
        get { return CreateObjectSet<State>(); }
    }
}
```

### Question: 5

You need to modify the ExecuteCommandProcedure() method to meet the technical requirements.  
Which code segment should you use?

C A. private async Task ExecuteCommandProcedure(EntityCommand command)

```

    {
        using (EntityConnection connection = new EntityConnection
("name=ExternalOrdersEntities"))
        {
            command.Connection = connection;
            await connection.OpenAsync();
            await command.ExecuteNonQueryAsync();
        }
    }

```

C B. private void ExecuteCommandProcedure(EntityCommand command)

```

    {
        using (EntityConnection connection = new EntityConnection
("name=ExternalOrdersEntities"))
        {
            command.Connection = connection;
            command.ExecuteNonQueryAsync();
        }
    }

```

C C. private void ExecuteCommandProcedure(EntityCommand command)

```

    {
        using (EntityConnection connection = new EntityConnection
("name=ExternalOrdersEntities"))
        {
            command.Connection = connection;
            connection.OpenAsync();
            command.ExecuteNonQueryAsync();
        }
    }

```

C D. private async Task ExecuteCommandProcedure(EntityCommand command)

```

    {
        using (EntityConnection connection = new EntityConnection
("name=ExternalOrdersEntities"))
        {
            command.Connection = connection;
            connection.OpenAsync();
            command.ExecuteNonQueryAsync();
        }
    }

```

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

---

**Answer: A**

---

### Question: 6

---

DRAG DROP

You need to complete the GetProcessedOrders() action in the ProcessedOrderController controller to meet the

requirements.

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

**Answer Area**

```

public ActionResult GetProcessedOrders()
{
    using (var context = new ProcessedOrders())
    {
        List<Entities.ProcessedOrder> orders =
            context
                .ProcessedOrders
                .OrderByDescending
                .Take(10)
                .ToList();
        return View(orders);
    }
}

```

---

**Answer:**

---

```

public ActionResult GetProcessedOrders()
{
    using (var context = new ProcessedOrders())
    {
        List<Entities.ProcessedOrder> orders =
            context
                .ProcessedOrders
                .OrderByDescending
                .Take(10)
                .ToList();
        return View(orders);
    }
}

```

---

### Question: 7

---

DRAG DROP

The GetQueueItems() action in the InboundQueueController controller is not populating the view with data. a. The action must populate the view with data by calling the GetExternalOrders() method in the ExternalQueueService service using the ChannelFactory class.

You need to modify the action to populate the view with data.

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

**Answer Area**

```

InboundQueue
IExternalQueueService
BasicHttpBinding
GetExternalOrders
CreateChannel

```

```

ChannelFactory< IExternalQueueService > qFactory =
    new ChannelFactory< IExternalQueueService >(
        new BasicHttpBinding(),
        new EndpointAddress(
            "http://localhost:62965/ExternalQueueService.svc"));

```

```

IExternalQueueService qService =
    qFactory.CreateChannel();
    IEnumerable< InboundQueue > inboundOrders =
        qService.GetExternalOrders();
    return View(inboundOrders);

```

---

### Answer:

---

```

ChannelFactory< IExternalQueueService > qFactory =
    new ChannelFactory< IExternalQueueService >(
        new BasicHttpBinding(),
        new EndpointAddress(
            "http://localhost:62965/ExternalQueueService.svc"));

IExternalQueueService qService =
    qFactory.CreateChannel();
    IEnumerable< InboundQueue > inboundOrders =
        qService.GetExternalOrders();
    return View(inboundOrders);

```

---

### Question: 8

---

The DeleteExternalOrder() method in the ExternalQueueService service is not throwing a FaultException exception as defined by the FaultContractAttribute attribute in the IExternalQueueService.cs file.

You need to throw the FaultException exception.

Which code segments can you insert at line EQ45 to achieve this goal? (Each correct answer presents a complete solution. Choose all that apply)

- A. `throw new FaultException<OrderNotFoundException>(ex.ExceptionMessage);`
- B. `throw new FaultException<OrderNotFoundException>(ex, new FaultReason("Order not found."));`
- C. `throw new FaultException<OrderNotFoundException>(ex);`
- D. `throw new FaultException<OrderNotFoundException>(new OrderNotFoundException(new Exception(ex.ExceptionMessage))), "Order not found.");`

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

---

**Answer: B, C**

---

---

### Question: 9

---

DRAG DROP

The GetExternalOrders() method must use members of the EntityClient namespace to query the database for all records in the InboundQueue entity.

You need to modify the GetExternalOrders() method to return the correct data.

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

ExecuteReader  
ExecuteScalar  
SequentialAccess  
KeyInfo  
ExternalOrders  
ExternalOrdersEntities

Answer Area

```
public List<Entities.InboundQueue> GetExternalOrders()
{
    EntityConnection connection =
        new EntityConnection("name= " + " ") ;

    connection.Open();
    EntityCommand cmd = connection.CreateCommand ();
    cmd.CommandText = @"select q.OrderNum, q.VendorId,
        q.FilePath, q.OrderValue

        from " + " ".InboundQueues as q";

    EntityDataReader rdr =
        cmd. (CommandBehavior. ) ;

    List<InboundQueue> queueItems = new List<InboundQueue>();
    while (rdr.Read ())
    {
        InboundQueue queueItem = new InboundQueue();
        queueItem.OrderNum = Convert.ToInt32(rdr["OrderNum"]);
        queueItem.VendorId = Convert.ToInt32(rdr["VendorId"]);
        queueItem.FilePath = rdr["FilePath"].ToString();
        queueItem.OrderValue = Convert.ToDecimal(rdr["OrderValue"]);
        queueItems.Add(queueItem);
    }
    rdr.Close ();
    connection.Close ();
    return queueItems;
}
```

**Answer:**

```
public List<Entities.InboundQueue> GetExternalOrders()
{
    EntityConnection connection =
        new EntityConnection("name= " + " ExternalOrdersEntities " );

    connection.Open();
    EntityCommand cmd = connection.CreateCommand ();
    cmd.CommandText = @"select q.OrderNum, q.VendorId,
        q.FilePath, q.OrderValue

        from " + " ExternalOrdersEntities ".InboundQueues as q";

    EntityDataReader rdr =
        cmd. ExecuteReader (CommandBehavior. SequentialAccess ) ;
```

**Question: 10**

The GetExternalOrder() method in the ExternalQueueService service is throwing a runtime error. The method must query the database for a record that matches the orderNum parameter passed to the method. You need to modify the queryString string to retrieve the record. With which code segment should you replace line EQ64?

- C A. `string queryString = @"SELECT q.OrderNum, q.VendorId, q.FilePath, q.OrderValue  
FROM ExternalOrdersEntities.InboundQueues AS q WHERE q.OrderNum = @orderNum";`
- C B. `string queryString = @"SELECT * FROM ExternalOrdersEntities.InboundQueues  
WHERE OrderNum = @orderNum";`
- C C. `string queryString = @"SELECT VALUE q FROM ExternalOrdersEntities.InboundQueues AS q  
WHERE q.OrderNum = @orderNum";`
- C D. `string queryString = @"SELECT VALUE FROM ExternalOrdersEntities.InboundQueues  
WHERE OrderNum = @orderNum";`
- A. Option A  
B. Option B  
C. Option C  
D. Option D

---

**Answer: C**

---

### **Question: 11**

---

You need to regenerate the service proxies to include task-based asynchronous method signatures.  
Which command should you use?

- A. `aspnet_regiis.exe /t:code http://localhost:62965/UploadCallbackService.svc`  
B. `svchost.exe /t:code http://localhost:62965/UploadCallbackService.svc`  
C. `aspnet_compiler.exe /t:code http://localhost:62965/UploadCallbackService.svc`  
D. `aspnet_regiis.exe /t:code http://localhost:62965/UploadService.svc`  
E. `svchost.exe /t:code http://localhost:62965/UploadService.svc`

---

**Answer: B**

---

Explanation:

<http://msdn.microsoft.com/en-us/library/aa347733.aspx>

### **Question: 12**

---

The DeleteExternalOrder() method in the ExternalQueueService service is not throwing a FaultException exception as defined by the FaultContractAttribute attribute in the IExternalQueueService.cs file.

You need to throw the FaultException exception.

Which code segment can you insert at line EQ45 to achieve this goal? (Each correct answer presents a complete solution. Choose all that apply.)

- C A. `string queryString = @"SELECT q.OrderNum, q.VendorId, q.FilePath, q.OrderValue  
FROM ExternalOrdersEntities.InboundQueues AS q WHERE q.OrderNum = @orderNum";`
- C B. `string queryString = @"SELECT * FROM ExternalOrdersEntities.InboundQueues  
WHERE OrderNum = @orderNum";`
- C C. `string queryString = @"SELECT VALUE q FROM ExternalOrdersEntities.InboundQueues AS q  
WHERE q.OrderNum = @orderNum";`
- C D. `string queryString = @"SELECT VALUE FROM ExternalOrdersEntities.InboundQueues  
WHERE OrderNum = @orderNum";`

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

---

**Answer: C**

---

### Question: 13

---

#### DRAG DROP

You need to modify the ExecuteCommandProcedure() method to meet the technical requirements.  
 Which code segment should you use?

	<b>Answer Area</b> <pre>private async Task ExecuteCommandProcedure(EntityCommand command) {     using (EntityConnection connection         = new EntityConnection("name=ExternalOrdersEntities"))     {         command.Connection = connection;         await command.ExecuteNonQueryAsync();     } }</pre>
--	---

---

**Answer:**

---

```

private async Task ExecuteCommandProcedure(EntityCommand command)
{
    using (EntityConnection connection
        = new EntityConnection("name=ExternalOrdersEntities"))
    {
        command.Connection = connection;

        await connection.OpenAsync();

        await command.ExecuteNonQueryAsync();
    }
}

```

---

**Question: 14**

---

The GetVendors() action in the ProcessedOrderController controller is querying the database each time it is run. The GetVendors() action must query the database only if the cache is null.

You need to add code to the action at line PC33 to cache the data.

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

- A. cache.Set(new CacheItem("vendorKey", vendors), GetVendorPolicy());
- B. cache.Add("vendors", vendors, new CacheItemPolicy());
- C. cache.Add(new CacheItem("vendorKey", vendors), GetVendorPolicy());
- D. cache.AddOrGetExisting("vendorKey", context, new CacheItemPolicy());

---

**Answer: A, C**

---

---

**Question: 15**

---

The QueueDetail entity type must inherit from the InboundQueue entity type in the ExternalQueue service project using table-per-type inheritance.

You need to modify the entities in the designer.

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

- A. Remove the OrderNum property in InboundQueue.
- B. Remove the OrderNum property in QueueDetail.
- C. Set the QueueDetail BaseType to InboundQueue.
- D. Remove the association between the entities.
- E. Right-click the entities and validate the table mapping.
- F. Set the InboundQueue BaseType to QueueDetail.

---

**Answer: B, C, D, E**

---

Explanation:

[http://www.robbagby.com/entity-framework/entity-framewHYPERLINK framework/entity-framework-modeling-table-per-type-inheritance/#\\_blank](http://www.robbagby.com/entity-framework/entity-framewHYPERLINK framework/entity-framework-modeling-table-per-type-inheritance/#_blank)"ork-modeling-table-per-type-inheritance/

**Question: 16**

DRAG DROP

The UploadOrder() method in the UploadCallbackService service is not implementing the callback behavior defined in the IUploadCallBackService interface.

You need to modify the class to implement the required callback behavior.

What should you do? (To answer, drag the appropriate code segments to the correct location or locations in the answer area. Each code 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.)

**Answer Area**

```
[ServiceBehavior(ConcurrencyMode =
    ConcurrencyMode.Single )]

public class UploadCallbackService : IUploadCallbackService
{
    public void UploadOrder(int orderNum)
    {
        IUploadCallback callback = OperationContext
            .Current.GetCallbackChannel< IUploadCallback >();
        decimal value = callback.GetOrderValue(orderNum);

        UploadDB.UploadOrder.Upload(orderNum, value);
    }
}
```

**Answer:**

```
[ServiceBehavior(ConcurrencyMode =
    ConcurrencyMode.Single )]

public class UploadCallbackService : IUploadCallbackService
{
    public void UploadOrder(int orderNum)
    {
        IUploadCallback callback = OperationContext
            .Current.GetCallbackChannel< IUploadCallback >();
        decimal value = callback.GetOrderValue(orderNum);

        UploadDB.UploadOrder.Upload(orderNum, value);
    }
}
```

**Case Study: 7**  
**Online Bookstore**  
**Background**

You are developing an online bookstore web application that will be used by your company's customers.

## **Technical Requirements**

### **General requirements:**

- The web store application must be an ASP.NET MVC application written in Visual Studio.
- The application must connect to a Microsoft SQL database.
- The GetTop100Books() method is mission critical and must return data as quickly as possible. It should take advantage of fast, forward-only, read-only methods of reading data.
- The ImportBooks() method must keep a copy of the data that can be accessed while new books are being imported without blocking reads.
- The CreateMonthlyTotalsReport() method must lock the data and prevent others from updating or inserting new rows until complete.
- The college textbook area of the web application must get data from a daily updated CSV file.
- The children's book area of the web application must get data directly from a local database. It must use a connection string. It must also support access to the stored procedures on the database. Further, it is required to have strongly typed objects. Finally, it will require access to databases from multiple vendors and needs to support more than one-to-one mapping of database tables.
- The cookbook functionality is contained within a client-side application that must connect to the server using HTTP and requires access to the data using JavaScript.
- The BookApiController class must have a method that is able to perform ad-hoc queries using OData.

The RESTful API of the bookstore must expose the following endpoints.

Action: Get a list of all books

HTTP method: GET

Relative URI: /books

Action: Get a book by id

HTTP method: GET

Relative URI: /books/id

Action: Create a new book

HTTP method: POST

Relative URI: /books

Action: Update a book

HTTP method: PUT

Relative URI: /books/id

Action: Delete a book

HTTP method: DELETE

Relative URI: /books/id

## **Application Structure**

```
public class Book
{
    public int Id { get; set; }
    public string Name { get; set; }
    public string Title { get; set; }
    public decimal Price { get; set; }
    public DateTime PublishDate { get; set; }
    public int Sales { get; set; }
    public static void SaveFeaturedBooks(IEnumerable<Book> books, string file)
    {
        ...
    }
}

public class BookApiController : ApiController
{
    private readonly IBookRepository bookRepository;
    public BookApiController(IBookRepository bookRepository)
    {
        this.bookRepository = bookRepository;
    }
    public List<Book> Get(int id)
    {
        var book = bookRepository.Find(id);
        if (book == null)
        {
            throw new HttpResponseException(HttpStatusCode.NotFound);
        }
        return new List<Book> { book };
    }
    public HttpResponseMessage Post(Book value)
    {
        if (ModelState.IsValid)
        {
            bookRepository.InsertOrUpdate(value);
            bookRepository.Save();
            var response = new HttpResponseMessage(HttpStatusCode.Created);
            string uri = Url.Route(null, new { id = value.Id });
            response.Headers.Location = new Uri(Request.RequestUri, uri);
            return response;
        }
        throw new HttpResponseException(HttpStatusCode.BadRequest);
    }
    public HttpResponseMessage Put(int id, Book value)
    {
```

```
{  
    if (ModelState.IsValid)  
    {  
        bookRepository.InsertOrUpdate(value);  
        bookRepository.Save();  
        return new HttpResponseMessage(HttpStatusCode.NoContent);  
    }  
    throw new HttpResponseException(HttpStatusCode.BadRequest);  
}  
public void Delete(int id)  
{  
    var book = bookRepository.Find(id);  
    if (book == null)  
    {  
        throw new HttpResponseException(HttpStatusCode.NotFound);  
    }  
    bookRepository.Delete(id);  
}  
}  
  
...  
  
private static void ImportBooks()  
{  
    using (SqlConnection connection = new SqlConnection(_connectionString))  
    {  
        connection.Open();  
        SqlCommand command = connection.CreateCommand();  
        SqlTransaction transaction = connection.BeginTransaction();  
        command.Connection = connection;  
        command.Transaction = transaction;  
        try  
        {  
            command.CommandText = _commandText;  
            command.ExecuteNonQuery();  
            transaction.Commit();  
        }  
        catch (Exception ex)  
        {  
            transaction.Rollback();  
        }  
    }  
}
```

```

private static void CreateMonthlyTotalsReports()
{
    using (SqlConnection connection = new SqlConnection(_connectionString))
    {
        connection.Open();
        SqlCommand command = connection.CreateCommand();
        SqlTransaction transaction = connection.BeginTransaction();
        command.Connection = connection;
        command.Transaction = transaction;
        try
        {
            command.CommandText = _reportCommandText;
            command.ExecuteNonQuery();
            transaction.Commit();
        }
        catch (Exception ex)
        {
            transaction.Rollback();
        }
    }
}

```

**PurchaseOrders.xml**

```

<?xml version="1.0"?>
<aw:PurchaseOrder
    aw:PurchaseOrderNumber="99503"
    aw:OrderDate="1999-10-20"
    xmlns:aw="http://www.adventure-works.com">
    <aw:Address aw:Type="Shipping">
        <aw:Name>Ellen Adams</aw:Name>
        <aw:Street>123 Maple Street</aw:Street>
        <aw:City>Mill Valley</aw:City>
        <aw:State>CA</aw:State>
        <aw:Zip>10999</aw:Zip>
        <aw:Country>USA</aw:Country>
    </aw:Address>
    <aw:Address aw:Type="Billing">
        <aw:Name>Tai Yee</aw:Name>
        <aw:Street>8 Oak Avenue</aw:Street>
        <aw:City>Old Town</aw:City>
        <aw:State>PA</aw:State>
        <aw:Zip>95819</aw:Zip>
        <aw:Country>USA</aw:Country>
    </aw:Address>
    <aw:DeliveryNotes>Please leave packages in shed by driveway.</aw:DeliveryNotes>
    <aw:Items>
        <aw:Item aw:PartNumber="872-AA">
            <aw:ProductName>Lawnmower</aw:ProductName>
            <aw:Quantity>1</aw:Quantity>
            <aw:USPrice>148.95</aw:USPrice>
            <aw:Comment>Confirm this is electric</aw:Comment>
        </aw:Item>
        <aw:Item aw:PartNumber="926-AA">
            <aw:ProductName>Baby Monitor</aw:ProductName>
            <aw:Quantity>2</aw:Quantity>
            <aw:USPrice>39.98</aw:USPrice>
            <aw:ShipDate>1999-05-21</aw:ShipDate>
        </aw:Item>
    </aw:Items>
</aw:PurchaseOrder>

```

**FeaturedBooks.xml**

```
<?xml version="1.0" encoding="utf-8" ?>
<featured>
  <book>
    <id>1</id>
    <title>Science</title>
  </book>
  <book>
    <id>1</id>
    <title>Math</title>
  </book>
  <book>
    <id>1</id>
    <title>History</title>
  </book>
</featured>
```

---

### **Question: 1**

---

You need to choose the appropriate data access technology for the children's book area of the web application. Which data access technology should you choose?

- A. Web Service
- B. LINQ to SQL
- C. ADO.NET Entity Framework
- D. WCF Data Services

---

**Answer: C**

---

---

### **Question: 2**

---

You need to update the CreateMonthlyTotalsReports() method to use database transactions. Which code segment should you use?

- A. SqlConnection.BeginTransaction(IsolationLevel.ReadCommitted);
- B. SqlConnection.BeginTransaction(IsolationLevel.ReadUncomited);
- C. SqlConnection.BeginTransaction(IsolationLevel.Chaos);
- D. SqlConnection.BeginTransaction(IsolationLevel.Serializable);

---

**Answer: D**

---

Explanation:

- \* Scenario: The CreateMonthlyTotalsReport() method must lock the data and prevent others from updating or inserting new rows until complete.
- \* Serializable:  
A range lock is placed on the DataSet, preventing other users from updating or inserting rows into the dataset until the transaction is complete.

---

### **Question: 3**

---

The PurchaseOrders.xml file contains all of the purchase orders for the day. You need to query the XML file for all of the shipping addresses.

Which code segment should you use?

- A. 

```
XElement root = XElement.Load("PurchaseOrders.xml");
XNamespace aw = "http://www.adventure-works.com";
IEnumerable< XElement > address =
    from el in root.Elements(aw + "Items")
    where (string)el.Attribute(aw + "Type") == "Billing"
    select el;
foreach ( XElement element in address)
{
    Console.WriteLine(element);
}
```
- B. 

```
XElement root = XElement.Load("PurchaseOrders.xml");
XNamespace aw = "http://www.adventure-works.com";
IEnumerable< XElement > address =
    from el in root.Elements(aw + "Address")
    where (string)el.Attribute(aw + "Type") == "Shipping"
    select el;
foreach ( XElement element in address)
{
    Console.WriteLine(element);
}
```
- C. 

```
XElement root = XElement.Load("PurchaseOrders.xml");
XNamespace aw = "http://www.adventure-works.com";
IEnumerable< XElement > address =
    from el in root.Elements(aw + "Address")
    where (string)el.Attribute(aw + "Type") == "Billing"
    select el;
foreach ( XElement element in address)
{
    Console.WriteLine(element);
}
```
- D. 

```
XElement root = XElement.Load("PurchaseOrders.xml");
XNamespace aw = "http://www.adventure-works.com";
IEnumerable< XElement > address =
    from el in root.Elements(aw + "Items")
    where (string)el.Attribute(aw + "Type") == "Shipping"
    select el;
foreach ( XElement element in address)
{
    Console.WriteLine(element);
}
```

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

---

**Answer: B**

---

#### Question: 4

---

DRAG DROP

An XML file must be produced by the SaveFeaturedBooks() method of the Book class. The schema of the resulting XML file must be identical to the FeaturedBooks.xml file.

You need to write the code to produce the file.

You have the following code:

```
XDocument document = new XDocument ();
 XElement root = new XElement ("Target 1");
 foreach (var book in books)
 {
     XElement bookElement = new XElement ("book");
     bookElement.Add(new XElement ("id", book.Id) );
     bookElement.Add(new XElement ("Target 2", book.Title));
     root.Add (bookElement);
 }
 document.Add (root);
 document.Save (Target 3);
```

Which code segments should you include in Target 1, Target 2 and Target 3 to complete the code? (To answer, drag the appropriate code segments to the correct targets in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content)

Code Segments	Answer Area
featured	Target 1: <input type="button" value="Code"/>
books	Target 2: <input type="button" value="Code"/>
title	Target 3: <input type="button" value="Code"/>
name	
file	
output	

---

**Answer:**

---

Target 1:

Target 2:

Target 3:

---

**Question: 5**

---

You need to choose the appropriate data access strategy for the college textbook area of the web application. Which data access technology should you implement?

- A. ADO.NET
- B. Entity Data Model (EDM)
- C. WCF Data Services
- D. LINQ to SQL

---

### Answer: A

---

**Explanation:**

- \* Scenario: The college textbook area of the web application must get data from a daily updated CSV file.
- \* ADO.NET reads the CSV file in a very similar way as table in database.

---

### Question: 6

---

You need to configure the server to self-host the bookstore's Web API application.

Which code segment should you use?

- A. 

```
var config = new HttpSelfHostConfiguration(_baseAddress);
config.Filters.Add(
    name: "DefaultApi",
    routeTemplate: "api/{controller}/{id}",
    defaults: new { id = RouteParameter.Optional }
);
var server = new HttpSelfHostServer(config);
server.Wait().OpenAsync();
```
- B. 

```
var config = new HttpSelfHostConfiguration(_baseAddress);
config.Routes.MapHttpRoute(
    name: "DefaultApi",
    routeTemplate: "{controller}s/{id}",
    defaults: new { id = RouteParameter.Optional }
);
var server = new HttpSelfHostServer(config);
server.OpenAsync().Wait();
```
- C. 

```
var config = new HttpSelfHostConfiguration(_baseAddress);
config.Routes.MapHttpRoute(
    name: "DefaultApi",
    routeTemplate: "api/{controller}s/{id}",
    defaults: new { id = RouteParameter.Optional }
);
var server = new HttpSelfHostServer(config);
server.OpenAsync().Wait();
```
- D. 

```
var config = new HttpSelfHostConfiguration(_baseAddress);
config.Routes.MapHttpRoute(
    name: "DefaultApi",
    routeTemplate: "{controller}/{id}",
    defaults: new { id = RouteParameter.Optional }
);
var server = new HttpSelfHostServer(config);
server.Wait().OpenAsync();
```

A. Option A

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

---

**Answer: C**

---

Explanation:

MapHttpRoute Method  
Maps the specified route template.  
Use the option with "api/..."

### **Question: 7**

---

You need to return the list of the top 100 books for the GetTopBooks() method.  
Which type should you use to retrieve the data?

- A. SqlDataReader
- B. DataSet
- C. DataTable
- D. Data View

---

**Answer: A**

---

### **Question: 8**

---

You need to choose the appropriate data access technology for the cookbook area of the web application.  
Which data access technology should you choose?

- A. WCF Data Services
- B. LINQ to SQL
- C. Entity Framework
- D. ADO.NET

---

**Answer: A**

---

Explanation:

- \* Scenario: The cookbook functionality is contained within a client-side application that must connect to the server using HTTP and requires access to the data using JavaScript.
- \* WCF Data Services (formerly known as "ADO.NET Data Services") is a component of the .NET Framework that enables you to create services that use the Open Data Protocol (OData) to expose and consume data over the Web or intranet by using the semantics of representational state transfer (REST). OData exposes data as resources that are addressable by URLs. Data is accessed and changed by using standard HTTP verbs of GET, PUT, POST, and DELETE
- \* WCF Data Services uses the OData protocol for addressing and updating resources. In this way, you can access these services from any client that supports OData. OData enables you to request and write data to resources by using well-known transfer formats: Atom, a set of standards for exchanging and updating data as XML, and JavaScript Object Notation (JSON), a text-based data exchange format used extensively in AJAX application.

### **Question: 9**

---

You are preparing to write the data access code for the children's book area of the web site. You need to review the requirements and identify the appropriate data access technology. What should you do?

- A. Use ADO.NET Entity Framework.
- B. Use a Web Service.
- C. Use the WCF Data Services.
- D. Use LINQ to SQL.

---

**Answer: A**

---

**Question: 10**

---

The PurchaseOrders.xml file contains all of the purchase orders for the day.

You need to query the XML file for all of the billing addresses.

Which code segment should you use?

- A. XElement root = XElement.Load("PurchaseOrders.xml");  
 XNamespace aw = "http://www.adventure-works.com";  
 IEnumerable< XElement > address =  
   from el in root.Elements(aw + "Items")  
   where (string)el.Attribute(aw + "Type") == "Shipping"  
   select el;  
 foreach ( XElement element in address)  
 {  
   Console.WriteLine(element);  
 }
- B. XElement root = XElement.Load("PurchaseOrders.xml");  
 XNamespace aw = "http://www.adventure-works.com";  
 IEnumerable< XElement > address =  
   from el in root.Elements(aw + "Address")  
   where (string)el.Attribute(aw + "Type") == "Shipping"  
   select el;  
 foreach ( XElement element in address)  
 {  
   Console.WriteLine(element);  
 }
- C. XElement root = XElement.Load("PurchaseOrders.xml");  
 XNamespace aw = "http://www.adventure-works.com";  
 IEnumerable< XElement > address =  
   from el in root.Elements(aw + "Items")  
   where (string)el.Attribute(aw + "Type") == "Billing"  
   select el;  
 foreach ( XElement element in address)  
 {  
   Console.WriteLine(element);  
 }
- D. XElement root = XElement.Load("PurchaseOrders.xml");  
 XNamespace aw = "http://www.adventure-works.com";  
 IEnumerable< XElement > address =  
   from el in root.Elements(aw + "Address")  
   where (string)el.Attribute(aw + "Type") == "Billing"  
   select el;  
 foreach ( XElement element in address)  
 {  
   Console.WriteLine(element);  
 }

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

---

Answer: D

---

### Question: 11

---

You need to create an OData filter expression that returns books that match the following characteristics:  
 Published after 1/1/2000  
 Have "Science" as the first word  
 Which filter statement should you use?

- A. /books?\$filter=PublishDate greaterthan datetime'2000-1-1'  
and startswith(Title, 'Science')
- B. /search?\$filter=PublishDate greaterthan datetime'2000-1-1'  
and beginswith (Title, 'Science')
- C. /search?\$filter=PublishDate gt datetime'2000-1-1'  
and beginswith(Title, 'Science')
- D. /books?\$filter=PublishDate gt datetime'2000-1-1'  
and startswith(Title, 'Science')

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

---

**Answer: D**

---

Explanation:

\* gt

Greater than

Example:

filter= Entry\_No gt 610

Query on GLEntry service. Returns entry numbers 611 and higher.

\* startswith

filter=startswith(Name, 'S')

Query on Customer service. Returns all customers names beginning with "S".

---

## Question: 12

---

You need to update the ImportBooks() method to use database transactions.

Which code segment should you use?

- A. SqlConnection.BeginTransaction(IsolationLevel.RepeatableRead);
- B. SqlConnection.BeginTransaction(IsolationLeve.ReadUncomvited);
- C. SqlConneetion.BeginTransaction(IsolationLevel.Serializable);
- D. SqlConnection.BeginTransaction(IsolationLevel.Snapshot);

---

**Answer: B**

---

Explanation:

\* scenario: The ImportBooks() method must keep a copy of the data that can be accessed while new books are being imported without blocking reads.

\* ReadUncommitted

A dirty read is possible, meaning that no shared locks are issued and no exclusive locks are honored.

---

## Question: 13

---

You need to implement the Get() method in the bookstore Web API application to be able to find books by using an ad

hoc query.

Which method should you use?

- A. 

```
public Book Get(int id)
{
    var book = bookRepository.Find(id);
    if (book == null)
    {
        throw new HttpResponseException(HttpStatusCode.NotFound);
    }
    return new List<Book> { book };
}
```
- B. 

```
public List<Book> Get(int id)
{
    var book = bookRepository.Find(id);
    if (book == null)
    {
        throw new HttpResponseException(HttpStatusCode.NotFound);
    }
    return new List<Book> { book };
}
```
- C. 

```
public IEnumerable<Book> Get()
{
    return bookRepository.All;
}
```
- D. 

```
public IQueryable<Book> Get()
{
    return bookRepository.All;
}
```

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

---

**Answer: D**

---

### Question: 14

---

DRAG DROP

You need to update the GetBook() method to retrieve book data by using ADO.NET.  
 You have the following code:

```

public Book GetBook(int id)
{
    using (var conn = new SqlConnection(_connectionString))
    using (var cmd = conn.CreateCommand())
    { Target 1
        cmd.CommandText = Target 2
        Target 3
        using (var reader = cmd.ExecuteReader ())
        {
            if (!reader.Read())
            {
                return null;
            }
            return new Book
            { Target 4
                Name = Target 5
            };
        }
    }
}

```

Which code segments should you include in Target 1, Target 2, Target 3, Target 4 and Target 5 to complete the code? (To answer, drag the appropriate code segments to the correct targets in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

#### Code Segments

conn.Open();
conn.Read();
"SELECT id, name FROM Books WHERE id = @id";
"SELECT id, name FROM Books WHERE id = id";
cmd.Parameters.AddWithValue("@id", id);
cmd.Parameters.AddWithValue("@id", "id");
Id = reader.GetInt32(reader.GetOrdinal("id"));
Id = reader.GetGuid(reader.GetOrdinal(@id)),
reader.GetString(reader.GetOrdinal("name"))
reader.GetString(reader.GetOrdinal(@name))

#### Answer Area

Target 1:	Code Segment
Target 2:	Code Segment
Target 3:	Code Segment
Target 4:	Code Segment
Target 5:	Code Segment

---

**Answer:**

---

Target 1:

```
conn.Open();
```

Target 2:

```
"SELECT id, name FROM Books WHERE id = id";
```

Target 3:

```
cmd.Parameters.AddWithValue("@id", id);
```

Target 4:

```
Id = reader.GetGuid(reader.GetOrdinal(@id)),
```

Target 5:

```
reader.GetString(reader.GetOrdinal(@name))
```

### Question: 15

You need to create an OData query expression to return the ten books with the largest number of sales.

- A. /books?\$orderby=sales desc&\$count=10
- B. /search?\$orderby=sales asc&\$count=10
- C. /books?\$orderby=sales desc&\$top=10
- D. /search?\$orderby=sales asc&\$top=10

Which query expression should you use?

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

---

Answer: C

Explanation:

Order by desc(ending) to get the posts with the largest number of sales at the top. Specify to display the top 10 posts.

## Case Study: 8 Mix Questions B

### Question: 1

You are building an ADO.NET Entity Framework application.

You need to validate the conceptual schema definition language (CSDL), store schema definition language (SSDL), and mapping specification language (MSL) files.

Which Entity Data Model tool can you use? (Each correct answer presents a complete solution. Choose all that apply.)

- A. EDM Generator (EdmGen.exe)
- B. ADO.NET Entity Data Model Designer
- C. Entity Data Model Wizard
- D. Update Model Wizard

Answer: AB

### Question: 2

DRAG DROP

You are developing an ASP.NET Web API action method.

The action method must return the following JSON in the message body.

```
{"Name": "Fabrikam", "VendorId": 9823, "Items": ["Apples", "Oranges"]}
```

You need to return an anonymous object that is serialized to JSON.

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

```
public object Get()
{
    {
        Name = "Fabrikam",
        VendorNumber = 9823,
        new List<string> { "Apples", "Oranges" }
    }
    new List<string> { "Apples", "Oranges" }
    return new List<string>
    return new
}
```

Answer:

Box 1: return new List<string>

Box 2: "Fabrikam", VendorNumber=9823,

Box 3: new list<string>{"Apples", "oranges"}

### Question: 3

You are designing an ASP.NET Web API application.

You need to select an HTTP verb to allow blog administrators to moderate a comment.

Which HTTP verb should you use?

- A. GET
- B. POST
- C. DELETE
- D. PUT

---

**Answer: D**

---

#### Question: 4

---

##### DRAG DROP

You are developing an ASP.NET Web API application that will be consumed by a web browser via a composite application that is served from another web domain.

You need to configure the Web API.

What should you do? (To answer, drag the appropriate XML elements to the correct location or locations in the answer area. Each XML 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.)

Access-Control-Allow-Origin

Access-Control-Allow-Headers

Access-Control-Allow-Methods

Access-Control-Request-Method

Access-Control-Request-Headers

\*

POST, GET

Content-Type

Answer Area

```

<httpProtocol>
  <customHeaders>
    <add name="Access-Control-Allow-Origin"
      value="<!-- Drag from left pane -->"/>
    <add name="<!-- Drag from left pane -->">
      value="PUT, DELETE"/>
    <add name="<!-- Drag from left pane -->">
      value="<!-- Drag from left pane -->"/>
  </customHeaders>
</httpProtocol>
```

---

**Answer:**

---

Access-Control-Allow-Origin  
Access-Control-Request-Method  
Access-Control-Request-Headers  
POST, GET

Answer Area

```
<httpProtocol>
<customHeaders>
<add name="Access-Control-Allow-Origin"
      value=" * " />
<add name=" Access-Control-Allow-Methods "
      value="PUT, DELETE" />
<add name=" Access-Control-Allow-Headers "
      value=" Content-Type " />
</customHeaders>
</httpProtocol>
```

### Question: 5

You are developing an ASP.NET MVC web application that contains the following HTML.

<table id= "customer" ></table>

You also have an ASP.NET Web API application that contains a call for retrieving customers.

You must send and retrieve the data in the most compact format possible.

You need to update the HTML for the customers table to contain data from the Web API application.

Which script segment should you use?

C A. `<script>  
$(function () {  
 var $customers = $("#customers");  
 $.ajax({  
 url: "api/customers",  
 dataType: "json",  
 success: function (data) {  
 ...  
 }  
 });  
});  
</script>`

C B. `<script>  
$(function () {  
 var $customers = $("#customers");  
 $.xml({  
 url: "api/customers",  
 dataType: "ajax",  
 success: function (data) {  
 ...  
 }  
 });  
});  
</script>`

C C. `<script>  
$(function () {  
 var $customers = $("#customers");  
 $.json({  
 url: "api/customers",  
 dataType: "ajax",  
 success: function (data) {  
 ...  
 }  
 });  
});  
</script>`

C D. `<script>  
$(function () {  
 var $customers = $("#customers");  
 $.ajax({  
 url: "api/customers",  
 dataType: "xml",  
 success: function (data) {  
 ...  
 }  
 });  
});  
</script>`

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

D. Option D

**Answer: A****Question: 6**

DRAG DROP

You are developing an ASP.NET MVC Web API application.

The method names of the Web API must match naming guidelines for RESTful services.

You need to create methods to support standard insert, select, update, and delete operations in an HTTP service.

What should you do? (To answer, drag the appropriate HTTP methods to the correct row in the table in the answer area. Each HTTP method 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 Area**

Action	HTTP method	Relative URI
Retrieve a list of all customers	<input type="text"/>	/api/customers
Retrieve a customer by id	<input type="text"/>	/api/customers/ <i>id</i>
Retrieve a customer by category	<input type="text"/>	/api/customer/?category= <i>category</i>
Create a new customer	<input type="text"/>	/api/customers
Update a customer	<input type="text"/>	/api/customers/ <i>id</i>
Remove a customer	<input type="text"/>	/api/customers/ <i>id</i>

**Answer:**

Action	HTTP method	Relative URI
Retrieve a list of all customers	<input type="button" value="GET"/>	/api/customers
Retrieve a customer by id	<input type="button" value="GET"/>	/api/customers/ <i>id</i>
Retrieve a customer by category	<input type="button" value="GET"/>	/api/customer/?category= <i>category</i>
Create a new customer	<input type="button" value="POST"/>	/api/customers
Update a customer	<input type="button" value="PUT"/>	/api/customers/ <i>id</i>
Remove a customer	<input type="button" value="DELETE"/>	/api/customers/ <i>id</i>

**Question: 7****DRAG DROP**

You are developing an ASP.NET MVC Web API image management application.

The application must meet the following requirements:

It must send or receive image data without the use of a buffer.

It must allow up to 4 MB of image data to be received.

It must allow up to 3 MB of image data to be sent.

You need to complete the code to meet the requirements.

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

config  
server  
MaxBufferSize  
MaxReceivedMessageSize  
MaxConcurrentRequests  
Streamed  
Buffered

## Answer Area

```
class Program
{
    private static string _baseAddress = "http://localhost:8080/";

    static void Main(string[] args)
    {
        var config = new HttpSelfHostConfiguration(_baseAddress);
        config.Routes.MapHttpRoute(
            name: "DefaultApi",
            routeTemplate: "api/{controller}/{id}",
            defaults: new { id = RouteParameter.Optional }
        );
    }

    config . MaxBufferSize = 1024 * 1024 * 3;

    config . MaxReceivedMessageSize = 1024 * 1024 * 4;

    config . TransferMode =
        TransferMode. Streamed;

    var server = new HttpSelfHostServer(config);
    server.OpenAsync().Wait();
}
```

## Answer:

```
class Program
{
    private static string _baseAddress = "http://localhost:8080/";

    static void Main(string[] args)
    {
        var config = new HttpSelfHostConfiguration(_baseAddress);
        config.Routes.MapHttpRoute(
            name: "DefaultApi",
            routeTemplate: "api/{controller}/{id}",
            defaults: new { id = RouteParameter.Optional }
        );
    }

    config . MaxBufferSize = 1024 * 1024 * 3;

    config . MaxReceivedMessageSize = 1024 * 1024 * 4;

    config . TransferMode =
        TransferMode. Streamed;

    var server = new HttpSelfHostServer(config);
    server.OpenAsync().Wait();
}
```

## Question: 8

You are planning to migrate websites from IIS 6 to IIS 7.5.

You do not have access to SSH or a VPN.

You need to select a deployment tool to securely migrate the websites.

Which tool should you use?

- A. RoboCopy
- B. Web Deploy
- C. Microsoft command-line FTP
- D. xCopy

---

**Answer: B**

---

### **Question: 9**

---

You are developing an ASP.NET MVC application.

Applications can be deployed to remote servers only by administrators who have elevated privileges. The administrators do not have access to Visual Studio 2012.

You need to select a deployment tool to deploy the application to remote servers for testing.

Which tool should you use?

- A. Copy Web Site Tool
- B. One-Click Publish
- C. Publish Web Site Tool
- D. Web Deployment Package

---

**Answer: D**

---

### **Question: 10**

---

You are preparing to develop a set of libraries for a company.

The libraries must be shared across the company.

You need to create a remote NuGet feed that exposes the libraries.

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

- A. Install the NuGet.Feed Package.
- B. Install the NuGet.Server Package.
- C. Configure the Packages folder located in the system.webserver section of the web application's Web.config.
- D. Create a new Empty Web Site in Visual Studio 2012.
- E. Configure the Packages folder located in the appSettings section of the web application's Web.config.
- F. Add packages to the Packages folder.
- G. Create a new Empty Web Application in Visual Studio 2012.

---

**Answer: B, E, F, G**

---

Explanation:

Explanation/Reference:



---

### **Question: 11**

---

You develop an ASP.NET MVC application that is secured by using SSL. You are ready to deploy the application to production.

The deployment package must include the installation of the SSL certificate.

You need to configure the deployment package to meet the requirement.

What should you do?

- A. Create a web publish pipeline target file with a custom web deploy target.
- B. In the Package/Publish settings of the project, select the All Files in this project option.
- C. Extend the CopyAllFilesToSingleFolder target in the project file.
- D. In the Build Events settings of the project, configure a pre-build event to include the SSL certificate.

---

**Answer: A**

---

---

### **Question: 12**

---

You are developing a library to support multiple ASP.NET MVC web applications on a shared server. The library provides implementations of security algorithms.

If a problem with any of the security algorithms is discovered, a new version of the library must be created and deployed. Application downtime during the update must be minimized.

You need to ensure that the new version of the library will be used by all applications as soon as possible.

What should you do?

- A. Build the web applications and include the security assembly as an embedded resource. When an update is needed, copy the new assembly to the bin directory for the application.
- B. Sign all assemblies in each application with the same key used to sign the security assembly.  
When an update is needed, create a new key pair and re-sign all assemblies.
- C. Build the security assembly as a netmodule in a shared location.  
Use the assembly linker to merge the netmodule into the assemblies for the application.  
When an update is needed, update the netmodule in the shared location.
- D. Install the security assembly in the Global Assembly Cache (GAC).  
When an update is needed, update the assembly in the GAC.

---

**Answer: D**

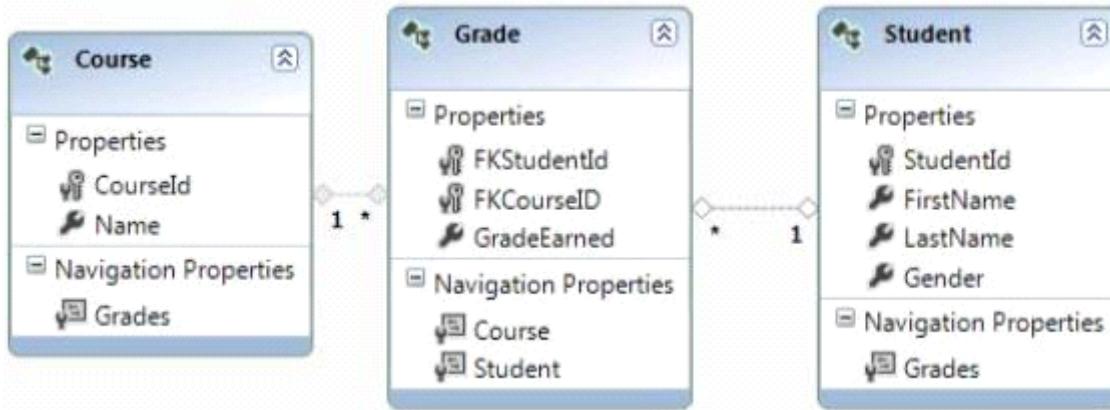
---

---

### **Question: 13**

---

You are developing an application in Visual Studio 2012 to display student information. The application contains the following Entity Framework model.



The application contains a WCF data service named DirectoryService.svc.

You need to create a query expression to display all of the grades for students whose first name is "John". How should you build the expression?

- A. http://localhost:54946/DirectoryService.svc/Students?\$filter=FirstName eq 'John' &\$expand=Grades
- B. http://localhost:54946/DirectoryService.svc/Students?\$filter=FirstName eq 'John'/Grades
- C. http://localhost:54946/DirectoryService.svc/Students?\$filter=FirstName = 'John' &\$expand=Grades
- D. http://localhost:54946/DirectoryService.svc/Grades/Students?\$filter=FirstName eq 'John'

---

**Answer: A**

---

### Question: 14

---

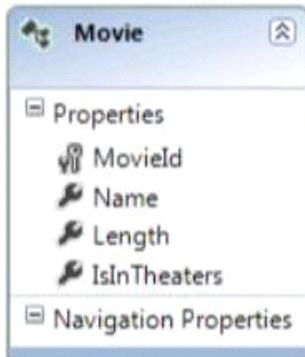
DRAG DROP

You are developing a WCF Data Services service in Visual Studio 2012 to display movie information from a SQL Server database that changes every 24 hours. The service is defined in the following class.

```

public class MovieService : DataService<MovieEntities>
{
    public static void InitializeService(DataServiceConfiguration config)
    {
        config.SetEntitySetAccessRule("Movies", EntitySetRights.AllRead);
        config.DataServiceBehavior.MaxProtocolVersion = DataServiceProtocolVersion.V2;
    }
}
  
```

The application contains the following Entity Framework model.



The service must only return data for movies that are currently in theaters.

You need to add a method to the MovieService class to filter the data.

How should you build the method? (To answer, drag the appropriate code segments to the correct location or locations in the answer area. Each code segment may be used once, more than once, or not at all. You may need to

drag the split bar between panes or scroll to view content.)

Answer Area

```

ChangeInterceptor
QueryInterceptor
"Movies"
"MovieEntities"
Expression
Filter

```

```

public class MovieService : DataService<MovieEntities>
{
    public static void InitializeService(DataServiceConfiguration config)
    {
        config.SetEntitySetAccessRule("Movies", EntitySetRights.AllRead);
        config.DataServiceBehavior.MaxProtocolVersion =
            DataServiceProtocolVersion.V2;
    }

    [ [ ] ( [ ] )]
    public [ ] <Func<Movie, bool>> ApplyTheaterFilter()
    {
        return movie => movie.IsInTheaters == true;
    }
}

```

### Answer:

```

public class MovieService : DataService<MovieEntities>
{
    public static void InitializeService(DataServiceConfiguration config)
    {
        config.SetEntitySetAccessRule("Movies", EntitySetRights.AllRead);
        config.DataServiceBehavior.MaxProtocolVersion =
            DataServiceProtocolVersion.V2;
    }

    [ [ ] ( [ ] )]
    public [ ] <Func<Movie, bool>> ApplyTheaterFilter()
    {
        return movie => movie.IsInTheaters == true;
    }
}

```

### Question: 15

You are developing an ASP.NET MVC application that reads and writes data from a SQL Server database. You need to prevent the application from reading data that is locked by other transactions. You also need to prevent exclusive range locks. Which isolation level should you use?

- A. ReadCommitted

- B. Serializable
- C. Repeatable
- D. ReadUncommitted

---

**Answer: A**

---

**Question: 16**

---

**DRAG DROP**

You are developing a Windows Azure based web application that provides users the ability to rent training videos. The application is deployed to hosted services in Asia and Europe.

The web application must meet the following requirements:

Video files are large and must be able to be streamed.

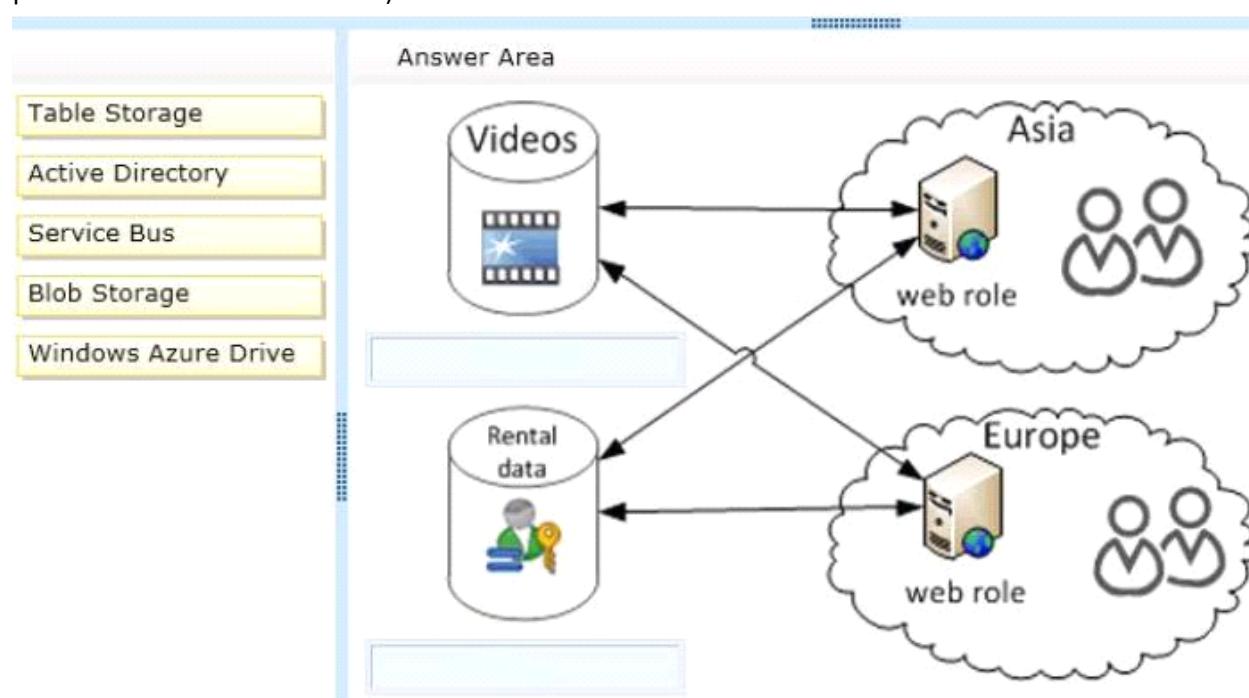
Streaming videos requires low latency network connections.

Rental data contains structured information about the user and the video.

Rental permissions are checked every five seconds during video playback.

You need to recommend a storage architecture for the application.

What should you do? (To answer, drag the appropriate technologies to the correct location or locations in the answer area. Each technology 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:**

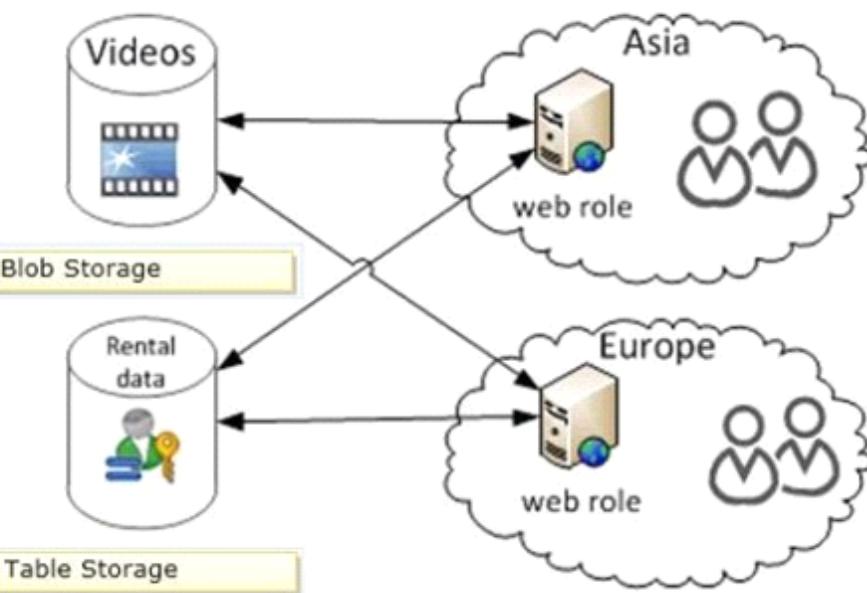
---

Active Directory

Service Bus

Windows Azure Drive

## Answer Area

**Question: 17****DRAG DROP**

You are developing a self-hosted WCF service that returns stock market information.

The service must be discoverable by any client application.

You need to build the service host.

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

UdpDiscoveryEndpoint  
DiscoveryEndpoint  
ServiceBehaviorAttribute  
ServiceDiscoveryBehavior  
ServiceHost

```
Answer Area
static void Main(string[] args)
{
    Uri StockURI = new Uri("http://localhost:8733/StockTicker");
    var mytype = typeof(StockTickerService);

    using ( ServiceHost host
        = new ServiceHost(mytype, StockURI))
    {
        host.AddServiceEndpoint(typeof(IStockTickerService),
            new WSHttpBinding(), "");

        host.Description.Behaviors.Add(new DiscoveryEndpoint());
        host.AddServiceEndpoint(new UdpDiscoveryEndpoint());
        host.Open();
        Console.ReadLine();
        host.Close();
    }
}
```

**Answer:**

```

static void Main(string[] args)
{
    Uri StockURI = new Uri("http://localhost:8733/StockTicker");
    var mytype = typeof(StockTickerService);

    using ( ServiceHost host
        = new ServiceHost (mytype, StockURI))
    {
        host.AddServiceEndpoint(typeof(IStockTickerService),
            new WSHttpBinding(), "");

        host.Description.Behaviors.Add(new ServiceDiscoveryBehavior () );
        host.AddServiceEndpoint(new UdpDiscoveryEndpoint () );

        host.Open();
        Console.ReadLine();
        host.Close();
    }
}

```

**Question: 18**

You are developing a WCF service that compares several data sources. The service takes a long time to complete. The service must meet the following requirements:  
The client must be able to continue processing while the service is running.  
The service must initiate communication with the client application when processing is complete.  
You need to choose a message pattern to meet the requirements.  
Which message pattern should you choose?

- A. One Way
- B. Streaming
- C. Duplex
- D. Request/Reply

**Answer: C****Question: 19****DRAG DROP**

You are developing a WCF service.

You need to implement transport security by using NTLM authentication and NetTcpBindings.

Which configuration values should you use? (To answer, drag the appropriate configuration values to the correct location or locations in the answer area. Each configuration 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.)

binding="netTcpBinding"  
 binding="Duplex"  
 binding="NtLmTcp"  
 mode="netBindingTcp"  
 mode="Transport"  
 mode="Duplex"  
 clientCredentialType="netTcpBinding"  
 clientCredentialType="NtLmTcp"  
 clientCredentialType="NtLm"

**Answer Area**

```

<system.serviceModel>
  <protocolMapping>

    <add scheme="https" binding="netTcpBinding" />

  </protocolMapping>
  <bindings>
    <wsHttpBinding>
      <binding>

        <security mode="Transport" />

        <transport clientCredentialType="NtLm" />

      </binding>
    </wsHttpBinding>
  </bindings>
</system.serviceModel>
  
```

**Answer:**

binding="Duplex"  
 binding="NtLmTcp"  
 mode="netBindingTcp"  
 mode="Duplex"  
 clientCredentialType="netTcpBinding"  
 clientCredentialType="NtLmTcp"

**Answer Area**

```

<system.serviceModel>
  <protocolMapping>

    <add scheme="https" binding="netTcpBinding" />

  </protocolMapping>
  <bindings>
    <wsHttpBinding>
      <binding>

        <security mode="Transport" />

        <transport clientCredentialType="NtLm" />

      </binding>
    </wsHttpBinding>
  </bindings>
</system.serviceModel>
  
```

**Question: 20**

You are developing a WCF service.  
 A new service instance must be created for each client session.  
 You need to choose an instancing mode.  
 Which instance mode should you use?

- A. PerCall
- B. Single
- C. Multiple
- D. PerSession
- E. PerRequest

**Answer: D**

## Question: 21

## DRAG DROP

You are developing a WCF service. The service will stream messages to clients on the internal network.

You must use Windows Authentication, and all messages must be binary encoded.

You need to configure the service.

What should you do? (To answer, drag the appropriate elements to the correct location or locations in the answer area. Each 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 Area

```
<system.serviceModel>
  <bindings>
    <[REDACTED]>
      <binding>
        <security mode="Transport" />
      </binding>
    </[REDACTED]>
  </bindings>
</system.serviceModel>
```

## Answer:

```

<system.serviceModel>
  <bindings>

    < netTcpBinding >
      <binding>
        <security mode="Transport" />
      </binding>
    </ netTcpBinding >

  </bindings>
</system.serviceModel>

```

**Question: 22**

DRAG DROP

You are developing a WCF service.

The WCF service requires implementations of the new data contracts to validate against the old schema.

You need to develop a new data contract without breaking current functionality.

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

\*\*\*\*\*

<div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> [DataContract(Validate = "Profile")] </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> [DataContract(Identifier = "Profile")] </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> [DataContract(Name = "Profile")] </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> [DataContract(TypeID = "Profile")] </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> [DataContract(ID = "Profile")] </div>	<div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;"> <b>Answer Area</b> </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;"> </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;"> public class ProfileV1 {   [DataMember]   public string Username; } </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;"> </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;"> public class ProfileV2 {   [DataMember]   public string Username;    [DataMember]   public string Email; } </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;"> </div>
---	---

**Answer:**

[DataContract(Validate = "Profile")]  
 [DataContract(Identifier = "Profile")]  
 [DataContract(Name = "Profile")]  
 [DataContract(TypeID = "Profile")]  
 [DataContract(ID = "Profile")]

## Answer Area

[DataContract(Name = "Profile")]

```
public class ProfileV1
{
  [DataMember]
  public string Username;
}
```

[DataContract(Name = "Profile")]

```
public class ProfileV2
{
  [DataMember]
  public string Username;

  [DataMember]
  public string Email;
}
```

**Question: 23**

You are developing a WCF service.  
 A new service instance must be created for each client request.  
 You need to choose an instancing mode.  
 Which instancing mode should you use?

- A. Single
- B. PerRequest
- C. PerCall
- D. Multiple
- E. PerSession

**Answer: C****Question: 24****DRAG DROP**

You are creating a WCF service.  
 The service endpoints must be exposed to the Windows Azure Service Bus. The service bus has a namespace named RestaurantSB. The key provider is "owner".  
 You need to modify the web.config file to expose the endpoints.  
 How should you modify the file? (To answer, drag the appropriate attributes to the correct location or locations in the answer area. Each attribute 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 Area

issuerName  
Contract  
issuerKey  
User  
issuerSecret

```
<services>
    <service name="RestaurantService.MenuService">
        <endpoint [REDACTED] = "RestaurantService.IMenuService"
            binding="netTcpRelayBinding"
            address="sb://RestaurantServiceBus.servicebus.windows.net/Menu"
            behaviorConfiguration="sbBehavior"/>
    </service>
</services>
<behaviors>
    <endpointBehaviors>
        <behavior name="sbBehavior">
            <transportClientEndpointBehavior>
                <tokenProvider>
                    <sharedSecret
                        [REDACTED] ="owner"
                        [REDACTED] ="1oAFgNsbaN8+UIN737K="/>
                </tokenProvider>
            </transportClientEndpointBehavior>
        </behavior>
    </endpointBehaviors>
</behaviors>
```

---

**Answer:**

---

```

<services>
  <service name="RestaurantService.MenuService">

    <endpoint Contract="RestaurantService.IMenuService"
      binding="netTcpRelayBinding"
      address="sb://RestaurantServiceBus.servicebus.windows.net/Menu"
      behaviorConfiguration="sbBehavior"/>
  </service>
</services>
<behaviors>
  <endpointBehaviors>
    <behavior name="sbBehavior">
      <transportClientEndpointBehavior>
        <tokenProvider>
          <sharedSecret

            issuerName="" owner=""
            issuerSecret="loAFgNsbaN8+UIN737K=" />

        </tokenProvider>
      </transportClientEndpointBehavior>
    </behavior>
  </endpointBehaviors>
</behaviors>

```

## Question: 25

### DRAG DROP

You are developing a WCF service.

You need to implement transport security by using NTLM authentication and NetTcpBindings.

Which configuration values should you use? (To answer, drag the appropriate configuration values to the correct location or locations in the answer area. Each configuration value may be used once, more than once, or not at all.)

Answer Area	
<code>binding="netTcpBinding"</code>	<code>&lt;system.serviceModel&gt;</code>
<code>binding="Transport"</code>	<code>&lt;protocolMapping&gt;</code>
<code>binding="Ntlm"</code>	<code>&lt;add scheme="https" /&gt;</code>
<code>mode="netTcpBinding"</code>	<code>&lt;/protocolMapping&gt;</code>
<code>mode="Transport"</code>	<code>&lt;bindings&gt;</code>
<code>mode="Ntlm"</code>	<code>&lt;wsHttpBinding&gt;</code>
<code>clientCredentialType="netTcpBinding"</code>	<code>&lt;binding&gt;</code>
<code>clientCredentialType="Transport"</code>	<code>&lt;security /&gt;</code>
<code>clientCredentialType="Ntlm"</code>	<code>&lt;transport /&gt;</code>
	<code>&lt;/security&gt;</code>
	<code>&lt;/binding&gt;</code>
	<code>&lt;/wsHttpBinding&gt;</code>
	<code>&lt;/bindings&gt;</code>
	<code>&lt;/system.serviceModel&gt;</code>

**Answer:**

```

<system.serviceModel>
  <protocolMapping>

    <add scheme="https" binding="netTcpBinding" />

  </protocolMapping>
  <bindings>
    <wsHttpBinding>
      <binding>

        <security mode="Transport">
          <transport clientCredentialType="Ntlm" />

        </security>
      </binding>
    </wsHttpBinding>
  </bindings>
</system.serviceModel>

```

## Question: 26

### DRAG DROP

You are developing an ASP.NET MVC Web API application.

The application must meet the following requirements:

It must send or receive data without the use of a buffer.

It must allow up to 1 MB of data to be received.

It must allow up to 2 MB of data to be sent.

You need to complete the code to meet the requirements.

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

### Answer Area

config  
server  
MaxBufferSize  
MaxReceivedMessageSize  
MaxConcurrentRequests  
Streamed  
Buffered

```

class Program
{
  private static string _baseAddress = "http://localhost:8080/";

  static void Main(string[] args)
  {
    var config = new HttpSelfHostConfiguration(_baseAddress);
    config.Routes.MapHttpRoute(
      name: "DefaultApi",
      routeTemplate: "api/{controller}/{id}",
      defaults: new { id = RouteParameter.Optional }
    );
    [ ] . [ ] = 1024 * 1024 * 2;
    [ ] . [ ] = 1024 * 1024;
    [ ].TransferMode =
      TransferMode. [ ];
  }

  var server = new HttpSelfHostServer(config);
  server.OpenAsync().Wait();
}
}

```

---

Answer:

```

class Program
{
    private static string _baseAddress = "http://localhost:8080/";

    static void Main(string[] args)
    {
        var config = new HttpSelfHostConfiguration(_baseAddress);
        config.Routes.MapHttpRoute(
            name: "DefaultApi",
            routeTemplate: "api/{controller}/{id}",
            defaults: new { id = RouteParameter.Optional }
        );

        Buffered . MaxBufferSize = 1024 * 1024 * 2;

        Streamed . MaxConcurrentRequests = 1024 * 1024;

        config .TransferMode =
            TransferMode.server ;
    }

    var server = new HttpSelfHostServer(config);
    server.OpenAsync().Wait();
}
}

```

---

**Question: 27**

DRAG DROP

You are developing an ASP.NET Web API action method.

The action method must return the following JSON in the message body.

{ "Name": "Fabrikam", "VendorId": 9823, "Items": [ "Dogs", "Cats" ] }

You need to return an anonymous object that is serialized to JSON.

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

-----

**Answer Area**

```

"Fabrikam", VendorNumber = 9823,
"Fabrikam", VendorNumber = "9823",
new List<string> { "Dogs", "Cats" }
new List<string> { "Dogs, Cats" }
return new List<string>
return new

```

```

public object Get()
{
     {
        Name =  "";
        Items =  new List<string> { "Dogs", "Cats" } ;
     };
}

```

---

Answer:

Box 1: return new List<string>  
Box 2: "Fabrikam", VendorNumber=9823,  
Box 3: new list<string>{"Dogs", "Cats"}

### **Question: 28**

You are designing an ASP.NET Web API application.  
You need to select an HTTP verb to allow blog administrators to remove a comment.  
Which HTTP verb should you use?

- A. PUT
- B. DELETE
- C. POST
- D. GET

**Answer: B**

### **Question: 29**

DRAG DROP

You are developing an ASP.NET Web API application for currency conversion that will be consumed by a web browser by using a composite application that is served from another web domain.

You need to configure the Web API.

What should you do? (To answer, drag the appropriate XML elements to the correct location or locations in the answer area. Each XML 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.)

Access-Control-Allow-Origin

Access-Control-Allow-Headers

Access-Control-Allow-Methods

Access-Control-Allow-Request-Method

Access-Control-Allow-Request-Headers

\*

POST, GET

Content-Type

Answer Area

```
<httpProtocol>
  <customHeaders>
    <add name="Access-Control-Allow-Origin"
         value="" />

    <add name="" value="PUT, DELETE" />

    <add name="" value="" />

  </customHeaders>
</httpProtocol>
```

**Answer:**

**Access-Control-Allow-Origin**

**Access-Control-Allow-Request-Method**

**Access-Control-Allow-Request-Headers**

**POST, GET**

#### Answer Area

```
<httpProtocol>
<customHeaders>
<add name="Access-Control-Allow-Origin"
      value=" * " />

<add name=" Access-Control-Allow-Methods "
      value="PUT, DELETE" />

<add name=" Access-Control-Allow-Headers "
      value=" Content-Type " />

</customHeaders>
</httpProtocol>
```

### Question: 30

You are developing an ASP.NET MVC application. The application is an order processing system that uses the ADO.NET Entity Framework against a SQL Server database. It has a controller that loads a page that displays all orders along with customer information. Lazy loading has been disabled.

The Order class is shown below.

```
public partial class Order
{
    ...
    public string CustomerID { get; set; }
    ...
    public virtual Customer Customer { get; set; }
}
```

You need to return the orders and customer information in a single round trip to the database.

Which code segment should you use?

C A. `public ActionResult Index()
{
 IQueryable<Order> orders = db.Orders;
 orders = orders.Include("Customer");
 return View(orders.ToList());
}`

C B. `public ActionResult Index()
{
 IQueryable<Order> orders = db.Orders.Include("Order.Customer");
 return View(orders.ToList());
}`

C C. `public ActionResult Index()
{
 IQueryable<Order> orders = db.Orders;
 orders.Select(o => o.Customer).Load();
 return View(orders.ToList());
}`

C D. `public ActionResult Index()
{
 IQueryable<Order> orders = db.Orders;
 return View(orders.ToList());
}`

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

---

**Answer: A**

---

### Question: 31

---

You are developing an ASP.NET MVC application that reads and writes data from a SQL Server database. You need to maintain data integrity in all situations that use transactions.

- A. ReadUncommitted
- B. Repeatable
- C. Serializable
- D. ReadCommitted

---

**Answer: C**

---

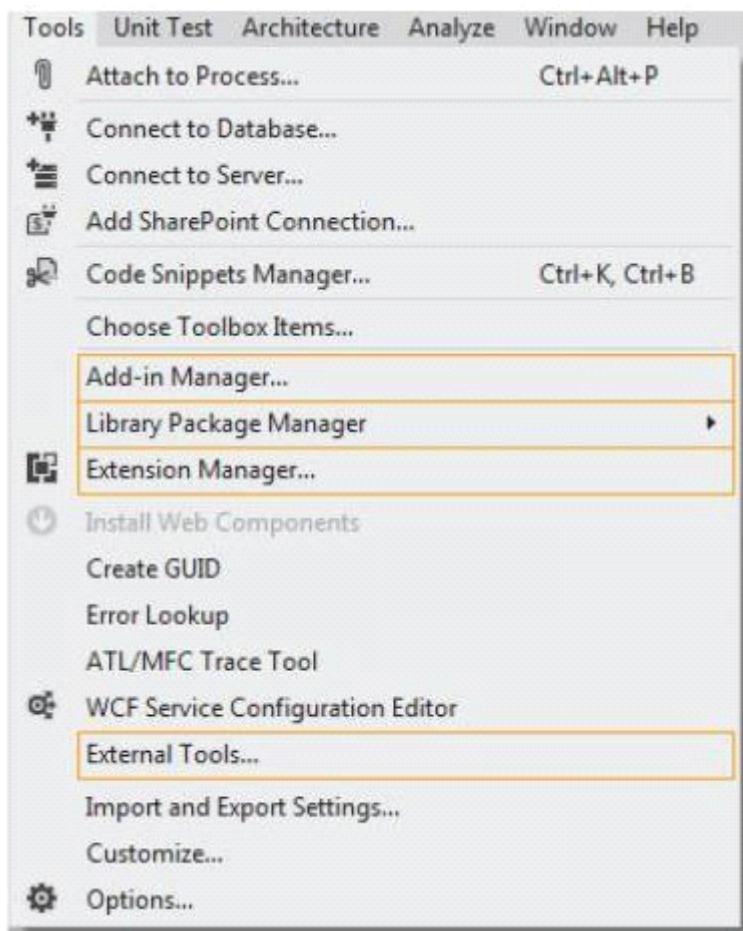
### Question: 32

---

#### HOTSPOT

You are supporting an application that uses the ADO.NET Entity Framework to query and access data. The latest version of Entity Framework contains bug fixes that will improve performance. You need to update Entity Framework.

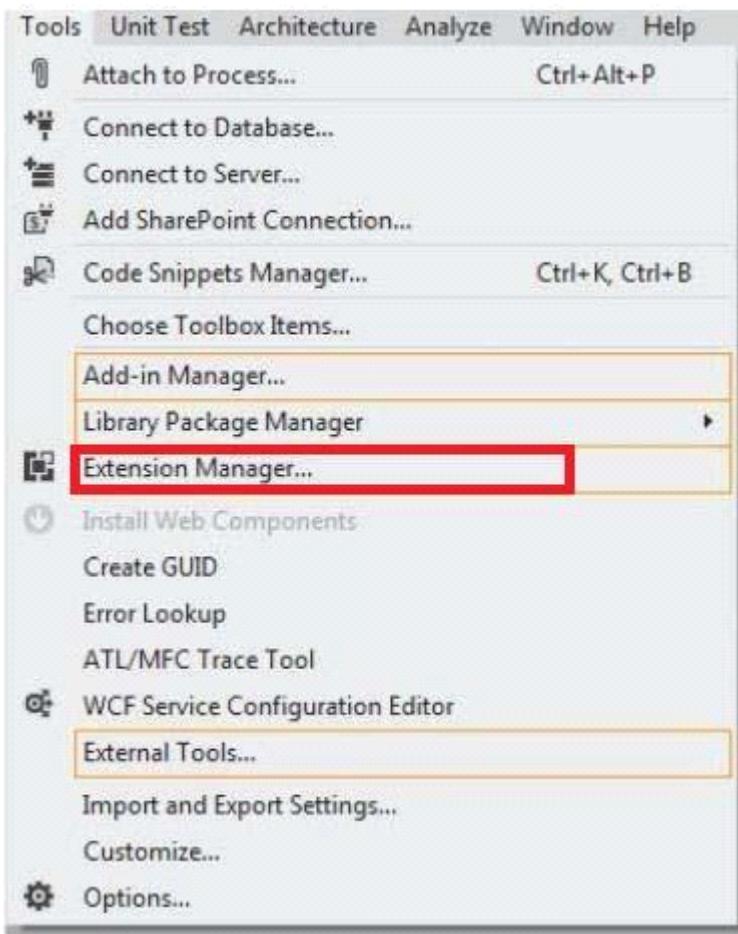
Which Visual Studio 2012 menu item should you choose? (To answer, select the appropriate menu item in the answer area.)



---

**Answer:**

---



### Question: 33

You are developing an ASP.NET MVC application.

Deployment administrators do not have access to Visual Studio 2012, but will have the elevated permissions required to deploy the application to the servers.

You need to select a deployment tool for use by the deployment administrators.

Which tool should you use?

- A. Publish Web Site Tool
- B. Web Deployment Package
- C. One-Click Publish
- D. Deployment Package Editor

---

**Answer: B**

---

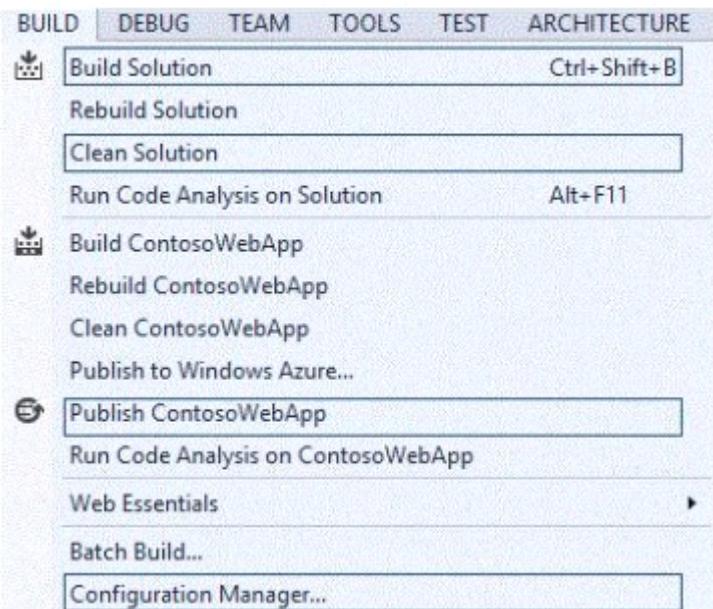
### Question: 34

#### HOTSPOT

You are developing an ASP.NET MVC application named ContosoWebApp. You are ready to deploy the application to your production web server.

You need to import the publishing profile.

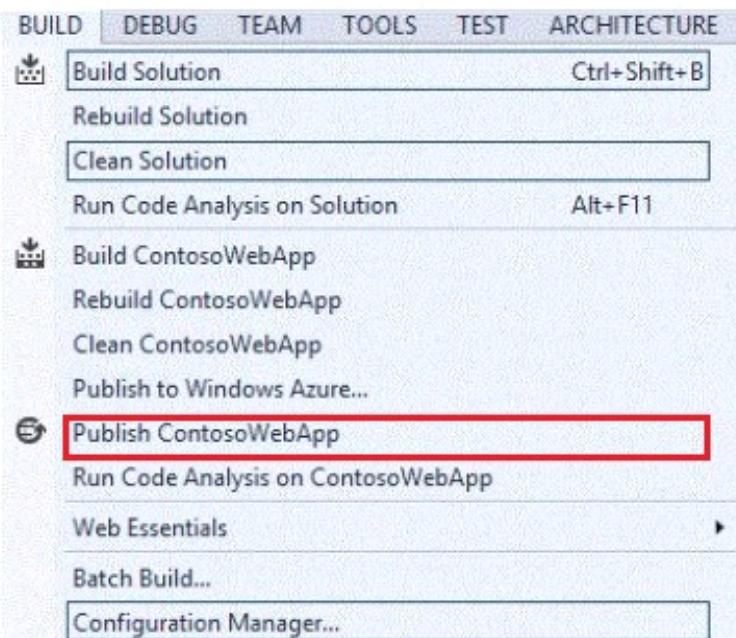
Which menu item should you use? (To answer, select the appropriate menu item in the answer area).




---

**Answer:**


---




---

### Question: 35

---

#### HOTSPOT

You are developing an ASP.NET MVC application. It is ready for deployment to the production web server. A local SQL Express .MDF file was used by the application during development.

The deployment has the following requirements:

The deployment must merge the assemblies on the local machine with those on the host.

The deployment must publish the local database to the remote Microsoft SQL server.

You need to configure the web package settings for deployment.

Which settings should you use? (To answer, select the appropriate setting or settings in the answer area.)

Package/Publish enables you to deploy your Web application to Web servers.

[Learn more about Package/Publish Web](#)

Items to deploy (applies to all deployment methods)

Only files needed to run this application  
All files in this project  
All files in this project folder

- Exclude generated debug symbols
- Exclude files from the App\_Data folder
- Precompile this application before publishing

Items to deploy (applies to Web Deploy only)

- Include all databases configured in Package/Publish SQL tab [Open Settings](#)
- Include IIS settings as configured in IIS Express
  - Include application pool settings used by this Web project

**Answer:**

Package/Publish enables you to deploy your Web application to Web servers.

[Learn more about Package/Publish Web](#)

Items to deploy (applies to all deployment methods)

Only files needed to run this application  
All files in this project  
All files in this project folder

- Exclude generated debug symbols
- Exclude files from the App\_Data folder
- Precompile this application before publishing

Items to deploy (applies to Web Deploy only)

- Include all databases configured in Package/Publish SQL tab [Open Settings](#)
- Include IIS settings as configured in IIS Express
  - Include application pool settings used by this Web project

### Question: 36

You are developing a Microsoft Azure web application. The application will be deployed to 10 web role instances. A minimum of 8 running instances is needed to meet scaling requirements.

You need to configure the application so that upgrades are performed as quickly as possible, but do not violate scaling

requirements.

How many upgrade domains should you use?

- A. 1
- B. 2
- C. 5
- D. 10

---

**Answer: C**

---

### **Question: 37**

---

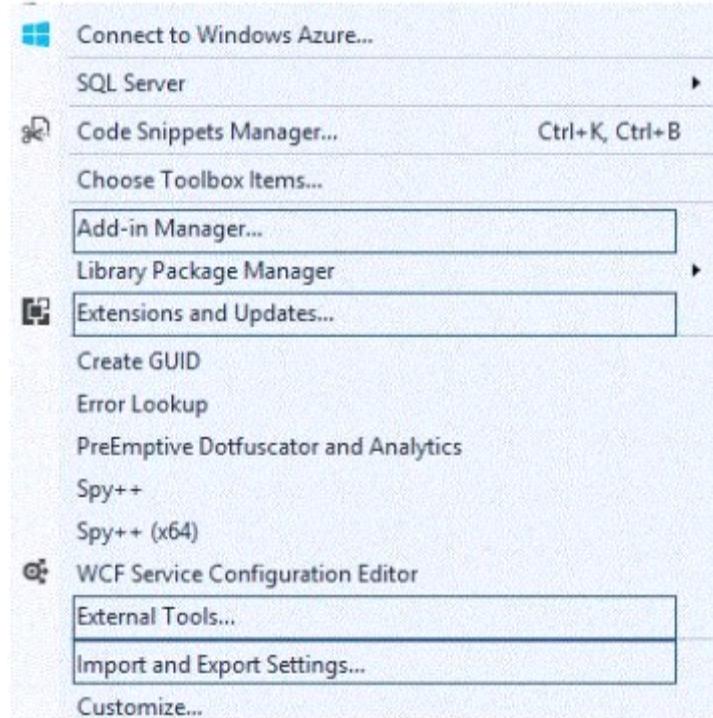
HOTSPOT

You are supporting an application that uses the ADO.NET Entity Framework to query and access data.

The latest version of a tool will add new templates and wizards that will enhance developer productivity.

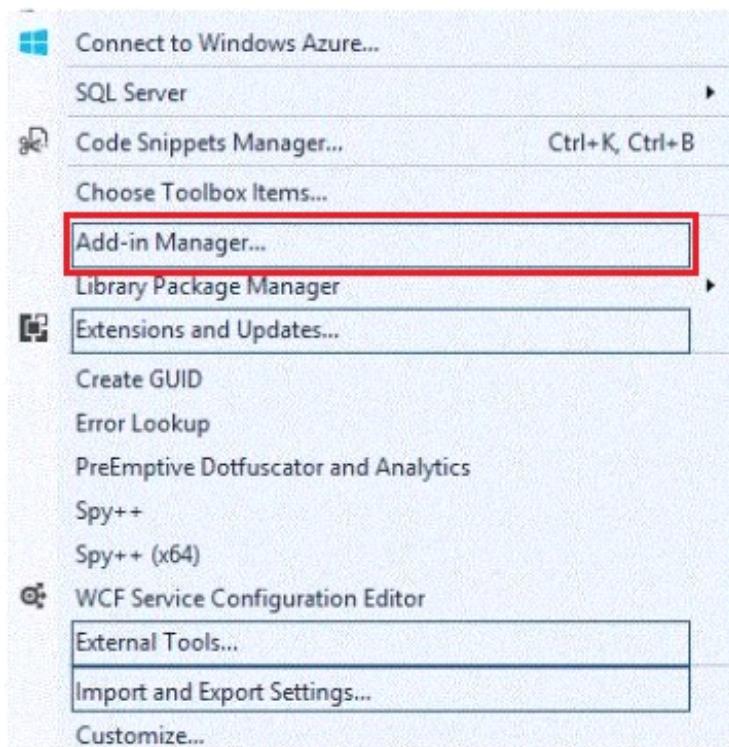
You need to update the tool.

Which Visual Studio 2012 menu item should you choose? (To answer, select the appropriate menu item in the answer area.)



**Answer:**

---



### Question: 38

You are developing an ASP.NET MVC application that displays a report. The report includes large images that are stored in a database. Members of the EntityClient namespace are used to access the database through the ADO.NET Entity Framework data model.

You need to prevent memory exceptions while generating a report using the EntityDataReader type.  
Which CommandBehavior type should you use?

- A. FastForwardReadOnly
- B. SequentialAccess
- C. SingleResult
- D. SingleRow

---

**Answer: B**

Explanation:

SequentialAccess

Provides a way for the DataReader to handle rows that contain columns with large binary values. Rather than loading the entire row, SequentialAccess enables the DataReader to load data as a stream.

### Question: 39

You are developing an ASP.NET MVC application. The application has a page that searches for and displays an image stored in a database. Members of the EntityClient namespace are used to access an ADO.NET Entity Framework data model. Images and associated metadata are stored in a database table.

You need to run a query that returns only the image while minimizing the amount of data that is transmitted.  
Which method of the EntityCommand type should you use?

- A. ExecuteScalar

- B. ExecuteDbDataReader
- C. ExecuteReader
- D. ExecuteNonQuery

---

**Answer: A**

---

Explanation:

ExecuteScalar

Executes the command, and returns the first column of the first row in the result set. Additional columns or rows are ignored.

## Question: 40

---

You are developing an order processing application that uses the ADO.NET Entity Framework against a SQL Server database. Lazy loading has been disabled. The application displays orders and their associated order details. Order details are filtered based on the category of the product in each order.

The Order class is shown below.

```
public partial class Order
{
    ...
    public int OrderID { get; set; }
    ...
    public virtual ICollection<OrderDetail> OrderDetails { get; set; }
    ...
}
```

The OrderDetail class is shown below.

```
public partial class OrderDetail
{
    [Key, Column(Order = 1)]
    public int OrderID { get; set; }
    [Key, Column(Order = 2)]
    public int ProductID { get; set; }
    ...
    public virtual Order Order { get; set; }
    public virtual Product Product { get; set; }
}
```

The Product class is shown below.

```
public partial class Product
{
    ...
    public int ProductID { get; set; }
    public string ProductName { get; set; }
    ...
    public Nullable<int> CategoryID { get; set; }
    ...
    public virtual Category Category { get; set; }
    ...
}
```

The Category class is shown below.

The **Category** class is shown below.

```
public partial class Category
{
    ...
    public int CategoryID { get; set; }
    public string CategoryName { get; set; }
    ...
    public virtual ICollection<Product> Products { get; set; }
}
```

You need to return orders with their filtered list of order details included in a single round trip to the database. Which code segment should you use?

- A. `var orders = db.Orders.SelectMany(o => o.OrderDetails.
 Where(od => od.Product.Category.CategoryName == categoryName)).
 Select(od => new { order = od.Order, detail = od }).
 Select(r => r.order);`
- B. `var orders = db.Orders.SelectMany(o => o.OrderDetails.
 Where(od => od.Product.Category.CategoryName == categoryName)).
 Select(od => new { order = od.Order, detail = od }).ToList().
 Select(r => r.order);`
- C. `var orderDetails = db.Orders.SelectMany(o => o.OrderDetails.
 Where(od => od.Product.Category.CategoryName == categoryName)).ToList();
List<int> orderIDs = orderDetails.Select(od => od.OrderID).ToList();
var orders = db.Orders.Where(o => orderIDs.Contains(o.OrderID));`
- D. `var orderDetails = db.Orders.SelectMany(o => o.OrderDetails.
 Where(od => od.Product.Category.CategoryName == categoryName));
List<int> orderIDs = orderDetails.Select(od => od.OrderID).ToList();
var orders = db.Orders.Where(o => orderIDs.Contains(o.OrderID));`

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

---

**Answer: B**

---

### Question: 41

---

DRAG DROP

You are developing a WCF service application.

The application must meet the following requirements:

Operations must have 30 second timeouts.

The service must have a transaction scope.

Transactions must flow from the client to the server.

You need to write a transactional service contract and implementation class to meet the requirements.

You have the following code:

```

Target 1
interface ITransactionalService
{
    [OperationContract]
Target 2
    Guid Foo (string x1, int x2);
}
Target 3
public class TransactionService: ITransactionalService
{
    Target 4
    public Guid Foo (string x1, int x2)
    {
        throw new NotImplementedException ();
    }
}

```

Which code segments should you include in Target 1, Target 2, Target 3 and Target 4 to complete the code? {To answer, drag the appropriate code segments to the correct targets in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

#### Code Segments

[TransactionFlow(TransactionFlowOption.Allowed)]
[TransactionFlow(TransactionFlowOption.Mandatory)]
[OperationBehavior(TransactionScopeRequired = true)]
[OperationBehavior(TransactionScope.Required)]
[ServiceBehavior(TransactionTimeout = "00:00:30")]
[ServiceBehavior(TransactionTimeout = 30)]
[ServiceContract]

#### Answer Area

Target 1:

Code Segment

Target 2:

Code Segment

Target 3:

Code Segment

Target 4:

Code Segment

---

**Answer:**

---

Target 1:

[ServiceContract]

Target 2:

[TransactionFlow(TransactionFlowOption.Mandatory)]

Target 3:

[ServiceBehavior(TransactionTimeout = "00:00:30")]

Target 4:

[OperationBehavior(TransactionScopeRequired = true)]

## Question: 42

DRAG DROP

You are developing a WCF service.

You need to configure the web.config file to ensure that metadata is exposed only via the MEX protocol.

You have the following markup:

```

<services>
  <service behaviorConfiguration="behavior"
    name="CustomerService.Service">
    <endpoint binding="basicHttpBinding"
      contract="CustomerService.IService" />
    <endpoint address="mex" binding="Target 1"
      contract="Target 2" />
  </service>
</services>
<behaviors>
  <serviceBehaviors>
    <behavior name="behavior">
      <serviceMetadata
        Target 3="Target 4" />
    </behavior>
  </serviceBehaviors>
</behaviors>
```

Which XML elements should you include in Target 1, Target 2, Target 3 and Target 4 to complete the markup? (To answer, drag the appropriate XML elements to the correct targets in the answer area. Each XML 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.)

XML Elements	Answer Area
<code>httpGetBinding</code>	Target 1: <input type="text"/>
<code>httpGetEnabled</code>	Target 2: <input type="text"/>
<code>mexHttpBinding</code>	Target 3: <input type="text"/>
<code>mexTcpBinding</code>	Target 4: <input type="text"/>
<code>mexNamedPipeBinding</code>	
<code>true</code>	
<code>false</code>	
<code>CustomerService.IService</code>	
<code>IMetadataExchange</code>	

---

**Answer:**

---

Target 1:	<code>mexHttpBinding</code>
Target 2:	<code>IMetadataExchange</code>
Target 3:	<code>httpGetEnabled</code>
Target 4:	<code>false</code>

---

**Question: 43**

---

**HOTSPOT**

You are developing a WCF service in Visual Studio 2013 that integrates with the Microsoft Azure service bus relay.

The Azure service bus namespace is named RestaurantServiceBus

You need to obtain the issuer name and secret.

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

**Manage Service Bus**

Name	Type	Status
3-Month Free Trial	Subscription	Active
RestaurantServiceBus	Namespace	Active

**Properties**

- Created On: 5/30/2012 9:01:02 PM UTC
- Subscription ID: 76af80ce469a4560b9a4a45980
- Project ID: 020995cc5ab844a6a085089f55
- Service Gateway: https://restaurantservicebus.se
- Management Endpoint: https://restaurantservicebus-sb
- ACS Version: ACSV2
- Default Key: <Hidden> [View](#)

**Answer:**

**Properties**

- Created On: 5/30/2012 9:01:02 PM UTC
- Subscription ID: 76af80ce469a4560b9a4a45980
- Project ID: 020995cc5ab844a6a085089f55
- Service Gateway: https://restaurantservicebus.se
- Management Endpoint: https://restaurantservicebus-sb
- ACS Version: ACSV2
- Default Key: <Hidden> [View](#)

**Question: 44****DRAG DROP**

You are developing an ASP.NET MVC Web API application.

The methods of the Web API must return details about the result of the operation. You need to create a method to add products.

You have the following code:

```

public Target 1 PostProduct (Target 2 item)
{
    item = repository.Add(item);
    var response = new Target 3 <Product>(
        item, Target 4 .Created);
    string uri = Url.Route("DefaultApi", new { id = item.Id});
    response.Headers Target 5
    return response;
}

```

Which code segments should you include in Target 1, Target 2, Target 3, Target 4 and Target 5 to complete the code? (To answer, drag the appropriate code segments to the correct targets in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

<b>Code Segments</b>	<b>Answer Area</b>
HttpResponseMessage	Target 1: <input type="text"/>
(HttpStatusCode	Target 2: <input type="text"/>
Product	Target 3: <input type="text"/>
.Location = new Uri(uri);	Target 4: <input type="text"/>
.Add(new Uri(uri));	Target 5: <input type="text"/>

---

**Answer:**

---

Target 1:	<input type="text" value="HttpResponseMessage"/>
Target 2:	<input type="text" value="Product"/>
Target 3:	<input type="text" value="HttpResponseMessage"/>
Target 4:	<input type="text" value="(HttpStatusCode"/>
Target 5:	<input type="text" value=".Location = new Uri(uri);"/>

---

**Question: 45**

---

You are developing a .NET application that uses the HttpClient type to call an ASP.NET Web API application. The API call returns a list of customers in JSON format and logs the results.

The URI for the API call is in a variable named address.

You need to make the API call without blocking.

Which code segment should you use?

- A 

```
HttpClient client = new HttpClient();
client.GetAsync(address).ContinueWith(
    (task) =>
{
    task.Result.Content.ReadAsAsync<JsonArray>().ContinueWith(
        (readTask) =>
    {
        foreach (var value in readTask.Result)
        {
            Logger(value.ToString());
        }
    });
});
```
- B 

```
HttpClient client = new HttpClient();
var task = client.GetAsync(address).Result;

var readTask = task.Content.ReadAsAsync<JsonObject>().Result;

foreach (var value in readTask)
{
    Logger(value.ToString());
}
```
- C 

```
HttpClient client = new HttpClient();
var task = client.GetAsync(address).Result;

var readTask = task.Content.ReadAsAsync<JsonArray>().Result;

foreach (var value in readTask)
{
    Logger(value.ToString());
}
```
- D 

```
HttpClient client = new HttpClient();
client.GetAsync(address).ContinueWith(
    (task) =>
{
    task.Result.Content.ReadAsAsync<JsonObject>().ContinueWith(
        (readTask) =>
    {
        foreach (var value in readTask.Result)
        {
            Logger(value.ToString());
        }
    });
});
```

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

---

**Answer: A**

---

Explanation:

Example:

```
// Create an HttpClient instance
11:   HttpClient client = new HttpClient();
12:
13:   // Send a request asynchronously continue when complete
14:   client.GetAsync(_address).ContinueWith(
15:     (requestTask) =>
16:     {
17:       // Get HTTP response from completed task.
18:       HttpResponseMessage response = requestTask.Result;
19:
20:       // Check that response was successful or throw exception
21:       response.EnsureSuccessStatusCode();
22:
23:       // Read response asynchronously as JsonValue and write out top facts for each country
24:       response.Content.ReadAsAsync<JsonArray>().ContinueWith(
25:         (readTask) =>
```

---

**Question: 46**

---

DRAG DROP

You are developing a .NET application that uses the `HttpClient` type to access an ASP.NET Web API application. You need to add a header to specify that data is returned as JSON. You have the following code:

```
HttpClient client = new HttpClient () ;
Client.DefaultRequestHeaders.
    Add("Target 1", "Target 2");
```

Which code segments should you include in Target 1 and Target 2 to complete the code? (To answer, drag the appropriate code segments to the correct targets in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content)

<p><b>Code Segments</b></p> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;">ContentType</div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;">Accept</div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;">AcceptEncoding</div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;">application/xhtml+xml</div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;">application/xml</div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;">application/json</div>	<p><b>Answer Area</b></p> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;">Target 1: <input style="width: 200px; height: 20px;" type="text"/></div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;">Target 2: <input style="width: 200px; height: 20px;" type="text"/></div> <div style="text-align: center; margin-top: 10px;">...</div>
--	--

---

**Answer:**

---

**Target 1:****Accept****Target 2:****application/json**

---

**Question: 47**

---

**HOTSPOT**

You are updating an existing multitenant ASP.NET MVC application for medical clinics. The application aggressively uses output caching to improve performance by caching content for 36 hours. The application uses a query string parameter named "clinicID" that contains the clinic that the user is currently viewing.

Users report that they are occasionally seeing data for the wrong clinic. Users also report that sensitive data is stored in the browser cache folder on their computers.

You need to configure web.config to resolve the reported problems.

You have the following markup:

```
<caching>
  <outputCacheSettings>
    <outputCacheProfiles>
      <clear />
      <add name="primaryCache"
        Target 1
        Target 2
        Target 3 >/
    </outputCacheProfiles>
  </outputCacheSettings>
</caching>
```

Which markup segments should you include in Target 1, Target 2 and Target 3 to complete the markup? (To answer, select the correct markup segment from each drop-down list in the answer area.)

Target 1:

noStore="true"
noStore="false"

Target 2:

varyByCustom="clinicID"
varyByParam="clinicID"
varyByControl="clinicID"

Target 3:

duration="129600"
duration="36h"

**Answer:**

Target 1:

noStore="true"
noStore="false"

Target 2:

varyByCustom="clinicID"
varyByParam="clinicID"
varyByControl="clinicID"

Target 3:

duration="129600"
duration="36h"

**Question: 48**

DRAG DROP

You have a UI element library.

You need to build a NuGet package to integrate the library into your projects.

What should you do? (To answer, drag the appropriate code elements to the correct location or locations in the answer area. Each code 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.)

Code Elements	Answer Area
nupkg	1. Define the package in a . <span style="border: 1px solid black; padding: 2px;">Code</span> file.
nuspec	2. Build the package with the following command. NuGet <span style="border: 1px solid black; padding: 2px;">Code</span> MyPackage. <span style="border: 1px solid black; padding: 2px;">Code</span>
Build	
Pack	

---

**Answer:**

---

1. Define the package in a . nuspec file.

2. Build the package with the following command.

NuGet Pack MyPackage. nuspec

**Explanation:**

Reference: Creating and Publishing a Package

<http://docs.nuget.org/create/creating-and-publishing-a-package>

---

**Question: 49**

---

**HOTSPOT**

You are developing a WCF service.

The service must be interoperable with ASP.NET web service clients. In addition, it must have a time-out of three hours.

You need to configure the service to meet the requirements.

You have the following markup:

```
<?xml version="1.0" encoding="utf-8" ?>
<configuration>
  <system.serviceModel>
    <services>
      <service name="MyNamespace.Orderservice">
        <endpoint address=""
                  contract="MyNamespace.IOrderservice"
                  binding="Target 1"
                  bindingConfiguration="Target 2">
        </endpoint>
      </service>
    </services>
    <bindings>
      <Target 3>
        <binding name="Target 4"
                 Target 5="Target 6"/>
      </Target 7>
    </bindings>
  </system.serviceModel>
</configuration>
```

Which markup segments should you include in Target 1, Target 2, Target 3, Target 4, Target 5, Target 6 and Target 7 to complete the markup? (To answer, select the appropriate markup segment from each drop-down list in the answer area.)

Answer Area

Target 1:

basicHttpBinding  
closeTimeout  
timeout  
wsHttpBinding

Target 2:

basicHttpBinding  
closeTimeout  
timeout  
wsHttpBinding

Target 3:

basicHttpBinding  
closeTimeout  
timeout  
wsHttpBinding

Target 4:

basicHttpBinding  
closeTimeout  
timeout  
wsHttpBinding

Target 5:

basicHttpBinding  
closeTimeout  
timeout  
wsHttpBinding

Target 6:

03:00:00  
00:03:00  
00:00:03

Target 7:

basicHttpBinding  
closeTimeout  
timeout  
wsHttpBinding

---

Answer:

---

## Answer Area

Target 1:

**basicHttpBinding**

closeTimeout

timeout

wsHttpBinding

Target 2:

**basicHttpBinding**

**closeTimeout**

timeout

wsHttpBinding

Target 3:

**basicHttpBinding**

**closeTimeout**

timeout

wsHttpBinding

Target 4:

**basicHttpBinding**

**closeTimeout**

timeout

wsHttpBinding

Target 5:

**basicHttpBinding**

**closeTimeout**

timeout

wsHttpBinding

Target 6:

**03:00:00**

00:03:00

00:00:03

Target 7:

**basicHttpBinding**

**closeTimeout**

timeout

wsHttpBinding

**Question: 50**

## DRAG DROP

You are configuring a web application for deployment.

You need to create a SetParameters.xml file to configure the IIS application pool.

You have the following markup:

```
<?xml version="1.0" encoding="UTF-8"?>
<parameters>
  <setParameter
    Target 1
    Target 2
  </setParameter>
</parameters>
```

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

<b>Configuration Values</b> <pre> key="applicationPool" name="applicationPool" setting="applicationPool" setting="MyServiceNameAppPool" /&gt; param="MyServiceNameAppPool" /&gt; value="MyServiceNameAppPool" /&gt; </pre>	<b>Answer Area</b> <p>Target 1: <input type="text"/> Configuration Value</p> <p>Target 2: <input type="text"/> Configuration Value</p> <p>⋮</p>
--	---

**Answer:**

Target 1:

Target 2:

**Question: 51**

You are developing an ASP.NET MVC application. The application has a page that updates an image stored in a database. Members of the EntityClient namespace are used to access an ADO.NET Entity Framework data model. Images and associated metadata are stored in a single database table.

You need to run a single query that updates an image and associated metadata in the database while returning only the number of affected rows.

Which method of the EntityCommand type should you use?

- A. ExecuteNonQuery()
- B. ExecutcScalar()
- C. ExecuteDbDataReader()
- D. ExecuteReader()

**Answer: A****Question: 52**

You are developing a new ASP.NET MVC application that does not have an existing database.

The requirements for the application are not complete, and the SQL data model will likely change.

You need to choose an approach to visually manage a data model.

Which approach should you use?

- A. Physical First

- B. Database First
- C. Code First
- D. Model First

---

**Answer: D**

---

**Explanation:**

With the model first workflow, you can design a model in a designer.

---

### **Question: 53**

---

You are designing an ASP.NET Web API application.

You need to select an HTTP verb to allow blog administrators to modify the text of a comment.

Which HTTP verb should you use?

- A. GET
- B. DELETE
- C. POST
- D. PUT

---

**Answer: D**

---

---

### **Question: 54**

---

You are preparing to develop a set of libraries that uses large data sets.

The libraries must be shared across an organization and distributed to several servers.

You need to create a remote NuGet feed that exposes the libraries for developer use.

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

- A. Add packages to the Packages folder.
- B. Create a new Empty Web Application in Visual Studio.
- C. Configure the Packages folder located in the appSettings section of the web application's Web.config.
- D. Install the NuGet.DataFeed Package.
- E. Install the NuGet.Server Package.
- F. Create a new Empty Web Site in Visual Studio.

---

**Answer: ABCE**

---

**Explanation:**

**Creating Remote Feeds**

You can host a remote (or internal) feed on a server that runs IIS.

Step 1 (B): Create a new Empty Web Application in Visual Studio

Step 2 (E): Install the NuGet.Server Package

Step 3 (C): Configure the Packages folder

Step 4 (A): Add Packages to the Packages folder

Step 5: Deploy and run your brand new Package Feed!

Reference: Hosting Your Own NuGet Feeds

---

### **Question: 55**

---

**DRAG DROP**

You are supporting a WCF data contract that returns a price calculation that can be expanded to add new data members.

Clients using the old version of the data contract must be supported.

You need to define the data contract so that the data serializer can put unknown data members into a property bag.

You have the following code:

```
[DataContract]
public class PriceCalculationResponse : Target 1
{
    public Target 2 ExtensionData { get; set; }
    [DataMember]
    public int Flag { get; set; }
    [DataMember]
    public double Price { get; set; }
    [DataMember]
    public string Currency { get; set; }
}
```

Which code segments should you include in Target 1 and Target 2 to complete the data contract? (To answer, drag the appropriate code elements to the correct targets in the answer area. Each code 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.)

Code Elements	Answer Area
<code>ExpansionDataObject</code>	Target 1: <input type="text"/>
<code>IExtensibleDataObject</code>	Target 2: <input type="text"/>
<code>IExpansionDataObject</code>	
<code>ExtensionDataObject</code>	
<code>ExtensionData</code>	
<code>IExtensionDataObject</code>	

---

**Answer:**

---

Target 1:

IExtensibleDataObject

Target 2:

ExtensionDataObject

### Question: 56

You are developing an ASP.NET MVC application that reads and writes data from a SQL Server database. You need to maintain data integrity including retrieving identical sets across reads in all situations that use transactions. Which isolation level should you use?

- A. Repeatable
- B. Serializable
- C. ReadUncommitted
- D. ReadCommitted

Answer: A

Explanation:

REPEATABLE READ

Specifies that statements cannot read data that has been modified but not yet committed by other transactions and that no other transactions can modify data that has been read by the current transaction until the current transaction completes.

### Question: 57

DRAG DROP

You are developing a RESTful application by using ASP.NET MVC. The application is a pet management system and implements the following method in a controller for retrieving pet data.

```
public Pet Get(int id)
{
    return new PetRepository().GetPetById(id);
}
```

The method must only accept JSON data using the standard MIME type.

You need to implement a controller that saves pet data and return a properly formatted HTTP/1.1 protocol response.

You have the following code:

```

public Target 1 Post ()
{
    if (Request.Content.Headers.ContentType.MediaType !=

        Target 2)
    {
        throw new HttpResponseMessage(JsonMessage);
    }
    Pet pet = new Pet ();
    var response = new Target 3 (pet,
        HttpStatusCode.Created);
    var relativePath = Target 4 ;
    response.Headers.Location = new Uri (Request.RequestUri,
        relativePath);
    return response;
}

```

Which code segments should you include in Target 1, Target 2, Target 3 and Target 4 to complete the code? {To answer, drag the appropriate code segments to the correct targets in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Code Segments		Answer Area
<code>ActionResult</code>		Target 1: <input type="text"/>
<code>HttpResponseMessage&lt;Pet&gt;</code>		Target 2: <input type="text"/>
<code>HttpMessageContent</code>		Target 3: <input type="text"/>
<code>"/api/get/pet/" + pet.Id</code>		Target 4: <input type="text"/>
<code>"/pet/get/" + pet.Id</code>		
<code>"/api/pet/" + pet.Id</code>		
<code>"text/json"</code>		
<code>"json"</code>		
<code>"application/json"</code>		

---

Answer:

---

Target 1:

`HttpResponseMessage<Pet>`

Target 2:

`"application/json"`

Target 3:

`HttpResponseMessage<Pet>`

Target 4:

`"/api/pet/" + pet.Id`

### Question: 58

DRAG DROP

You are developing an ASP.NET MVC Web API application.

The methods of the Web API must return details about the result of the operation.

You need to create methods to update and delete products.

You have the following code:

```
public void PutProduct (int id, Product contact)
{
    contact.Id = id;
    if (!repository.Update(contact))
    {
        throw new Target 1 (
            new Target 2 (
                HttpStatusCode. Target 3 ));
    }
}
public HttpResponseMessage DeleteProduct (int id)
{
    repository.Remove (id);
    return new Target 4 (
        HttpStatusCode. Target 5 );
}
```

Which code segments should you include in Target 1, Target 2, Target 3, Target 4 and Target 5 to complete the code? (To answer, drag the appropriate code segments to the correct targets in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Code Segments	Answer Area
<code>HttpResponseException</code>	Target 1: <input type="text"/>
<code>HttpResponseMessage</code>	Target 2: <input type="text"/>
<code>NotFound</code>	Target 3: <input type="text"/>
<code>NoContent</code>	Target 4: <input type="text"/>
	Target 5: <input type="text"/>

**Answer:**

- Target 1:  `HttpResponseException`
- Target 2:  `HttpResponseMessage`
- Target 3:  `NotFound`
- Target 4:  `HttpResponseMessage`
- Target 5:  `NoContent`

---

**Question: 59**

---

**HOTSPOT**

You are developing an application.

The application must be deployed from Team Foundation Server after a successful build is completed. The Process tab of the Build Definition screen is shown in the exhibit. (Click the Exhibit button.)

- ▲ **1. Required**
- ▷ Items to Build
- ▲ **2. Basic**
- ▷ Automated Tests
- Build Number Format
- Clean Workspace
- Logging Verbosity
- Perform Code Analysis
- ▷ Source And Symbol Server Settings
- ▲ **3. Advanced**
- ▷ Agent Settings
- Analyze Test Impact
- Associate Changesets and Work Items
- Create Work Item on Failure
- Disable Tests
- Get Version
- Analyze Test Impact
- Associate Changesets and Work Items
- Create Work Item on Failure
- Disable Tests
- Get Version
- Label Sources
- MSBuild Arguments
- MSBuild Multi-Proc
- MSBuild Platform
- Private Drop Location
- Solution Specific Build Outputs

You need to configure the automated deployment.

In which section should you define the parameters for the automated deployment? (To answer, select the appropriate section in the answer area.)

## Answer Area

### ▲ **1. Required**

▷

\*\*\*

### ▲ **3. Advanced**

\*\*\*

MSBuild Multi-Proc

Private Drop Location

---

Answer:

---

## Answer Area

### 1. Required

▷ Items to Build

...

### 3. Advanced

...

MSBuild Arguments

MSBuild Multi-Proc

MSBuild Platform

Private Drop Location

Solution Specific Build Outputs

## Question: 60

### DRAG DROP

You are developing an ASP.NET Web API for a home inventory management system.

You need to limit access to users with IP addresses based only in the United States.

You have the following code:

```
public class HomeInventoryAuthorization: Target 1
{
    public override void OnAuthorization (Target 2 context)
    {
        var isUSIP = IP.IsUSIPAddress (context);
    }
}
```

Which code segments should you include in Target 1 and Target 2 to complete the code? (To answer, drag the appropriate code segments to the correct targets in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Code Segments	Answer Area
<code>HttpContext</code>	Target 1: <input type="text" value="Code Segment"/>
<code>AuthorizeAttribute</code>	Target 2: <input type="text" value="Code Segment"/>
<code>AuthorizationFilterAttribute</code>	
<code>AuthorizationContext</code>	
<code>CountryContext</code>	
...	

---

**Answer:**

---

Target 1: Target 2: 

---

**Question: 61**

---

**DRAG DROP**

You are developing an Internet-based ASP.NET Web API application that manages pet data.

You install an SSL certificate on the web server to encrypt calls to the API. You create a class named PetAuthorization, which inherits from a type named AuthorizeAttribute, and implements the OnAuthorization() method.

You need to implement basic authentication for the API.

What should you do? (To answer, drag the appropriate words to the correct targets in the answer area. Words may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content)

Words	Answer Area
<b>Forms</b>	Set the authentication mode in the web.config file to
<b>None</b>	<input type="text"/> Word , then apply the <input type="text"/> Word
<b>Windows</b>	attribute to the controller. Finally, add code to the AuthorizeAttribute to return a
<b>Authorize</b>	<input type="text"/> Word header in the case of a failed authentication.
<b>PetAuthorization</b>	
<b>SecurityPermission</b>	
<b>WWW-Authenticate</b>	
<b>Authorization</b>	
<b>Proxy-Authenticate</b>	
<b>Allow</b>	

**Answer:**

Set the authentication mode in the web.config file to

None , then apply the  PetAuthorization

attribute to the controller. Finally, add code to the AuthorizeAttribute to return a

WWW-Authenticate header in the case of a failed authentication.

**Question: 62**

You are developing an ASP.NET MVC application. The application is an order processing system that uses the ADO.NET Entity Framework against a SQL Server database. It has a controller that loads a page that displays customers. Customers are filtered on Country and, if provided, on CompanyName.

You have an Entity Framework context named db.

The Customer class is shown below.

```
public partial class Customer
{
    ...
    public string CustomerID { get; set; }
    public string CompanyName { get; set; }
    public string ContactName { get; set; }
    public string Country { get; set; }
    ...
}
```

You need to execute a single deferred query to return the filtered list of customers.

Which code segment should you use?

A. public ActionResult Index(string country, string CompanyName)  
 {  
     IQueryable<Customer> customers;  
     query = db.Customers.Where(c => c.Country == country);  
     if (!string.IsNullOrEmpty(CompanyName))  
     {  
         customers = query.Where(c => c.CompanyName.ToLower().StartsWith(CompanyName.ToLower()));  
     }  
     return View(customers);  
 }  
  
 B. public ActionResult Index(string country, string CompanyName)  
 {  
     IQueryable<Customer> customers;  
     query = db.Customers.Where(c => c.Country == country);  
     if (!string.IsNullOrEmpty(CompanyName))  
     {  
         customers = query.Where(c => c.CompanyName.ToLower().StartsWith(CompanyName.ToLower()));  
     }  
     return View(customers);  
 }  
  
 C. public ActionResult Index(string country, string CompanyName)  
 {  
     IQueryable<Customer> customers;  
     query = db.Customers.Where(c => c.Country == country);  
     query.Load();  
     if (!string.IsNullOrEmpty(CompanyName))  
     {  
         customers = query.Where(c => c.CompanyName.ToLower().StartsWith(CompanyName.ToLower()));  
     }  
     return View(customers);  
 }  
  
 D. public ActionResult Index(string country, string CompanyName)  
 {  
     IQueryable<Customer> customers;  
     query = db.Customers;  
     query.Load();  
     query = query.Where(c => c.Country == country);  
     if (!string.IsNullOrEmpty(CompanyName))  
     {  
         customers = query.Where(c => c.CompanyName.ToLower().StartsWith(CompanyName.ToLower()));  
     }  
     return View(customers);  
 }

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

---

Answer: C

---

### Question: 63

---

#### DRAG DROP

You are developing a self-hosted WCF service to display data about books. The solution contains a service named BookService that implements the IBookService interface.

You need to expose the metadata in the service host programmatically.

You have the following code:

```

static void Main(string[] args)
{
    Target 1 host = new Target 2 (
        typeof(BookService), new Uri(ServiceUrl));
    host.AddServiceEndpoint(
        typeof(IBookService), new WSHttpBinding(), "");
    Target 3 behavior =
        new Target 4 ();
    behavior.HttpGetEnabled = Target 5 ;
    host.Description.Behaviors.Add(behavior);
    host.Open();
    ...
    host.Close();
}

```

Which code segments should you include in Target 1, Target 2, Target 3, Target 4 and Target 5 to build the service host? (To answer, drag the appropriate code segments to the correct targets in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Code Segments	Answer Area	
true	Target 1:	Code Segment
false	Target 2:	Code Segment
ServiceMetadataBehavior	Target 3:	Code Segment
ClientViaBehavior	Target 4:	Code Segment
ServiceHost	Target 5:	Code Segment

---

Answer:

---

Target 1: **ServiceHost**

Target 2: **ServiceHost**

Target 3: **ServiceMetadataBehavior**

Target 4: **ServiceMetadataBehavior**

Target 5: **true**

#### **Question: 64**

You are developing an ASP.NET MVC application. The application is a loan processing system that uses the ADO.NET Entity Framework against a SQL Server database. It has a controller that loads a page that displays all loans along with rate information. Lazy loading has been disabled.

The Loan class is shown below.

```
public partial class Loan
{
    ...
    public string RateID { get; set; }
    ...
    public virtual Rate Rate { get; set; }
}
```

You need to return the loans and rate information in a single round trip to the database.  
Which code segment should you use?

- A. `public ActionResult Index()`  
`{`  
 `IQueryable<Loan> loans = db.Loans;`  
 `return View(loans.ToList());`  
`}`
- B. `public ActionResult Index()`  
`{`  
 `IQueryable<Loan> loans = db.Loans;`  
 `loans = loans.Include("Rate");`  
 `return View(loans.ToList());`  
`}`
- C. `public ActionResult Index()`  
`{`  
 `IQueryable<Loan> loans = db.Loans.Include("Loan.Rate");`  
 `return View(loans.ToList());`  
`}`
- D. `public ActionResult Index()`  
`{`  
 `IQueryable<Loan> loans = db.Loans;`  
 `loans.Select(o => o.Rate).Load();`  
 `return View(loans.ToList());`  
`}`

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

---

Answer: B

---

### Question: 65

---

You are developing a library management application that uses the ADO.NET Entity Framework against a SQL Server database. The application has a method that returns check outs filtered by date.

The Book class is shown below.

```
public partial class Book
{
    ...
    public Nullable<System.DateTime> CheckoutDate { get; set; }
    ...
}
```

You must filter the data on the SQL server before it is returned to the application server.

You need to return books checked out more recently than the entered date.

Which code segment should you use?

- A. `IQueryable<Book> books = db.Books;  
books = books.Where(b => b.CheckoutDate >= date);`
- B. `IEnumerable<Book> books = db.Books.ToList().AsQueryable();  
books = books.Where(b => b.CheckoutDate >= date);`
- C. `IQueryable<Book> books = db.Books.ToList().AsQueryable();  
books = books.Where(b => b.CheckoutDate >= date);`
- D. `IEnumerable<Book> books = db.Books;  
books = books.Where(b => b.CheckoutDate >= date);`

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

---

**Answer: A**

---

**Explanation:**

The difference is that `IQueryable<T>` is the interface that allows LINQ-to-SQL (LINQ.-to-anything really) to work. So if you further refine your query on an `IQueryable<T>`, that query will be executed in the database, if possible. For the `IEnumerable<T>` case, it will be LINQ-to-object, meaning that all objects matching the original query will have to be loaded into memory from the database.

---

**Question: 66**

---

You are developing a WCF service.

You need to create a duplex contract.

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

- A. Apply the `MessageContractAttribute` attribute to every public method signature included in the appropriate contract.
- B. Create an interface for the client-side duplex contract.
- C. Create an interface for the server-side duplex contract.
- D. Apply the `MessageContractAttribute` attribute to the appropriate interface.
- E. Apply the `ServiceContractAttribute` attribute to the appropriate interface. Then, apply the `OperationContractAttribute` attribute to every public method signature included in that contract.
- F. Set the `CallbackContract` property to the appropriate interface.

---

**Answer: CEF**

---

**Explanation:**

To create a duplex contract

(C) Create the interface that makes up the server side of the duplex contract.

(E) Apply the `ServiceContractAttribute` class to the interface.

Declare the method signatures in the interface.

(E) Apply the `OperationContractAttribute` class to each method signature that must be part of the public contract.

Create the callback interface that defines the set of operations that the service can invoke on the client.

Declare the method signatures in the callback interface.

Apply the `OperationContractAttribute` class to each method signature that must be part of the public contract.

(F) Link the two interfaces into a duplex contract by setting the `CallbackContract` property in the primary interface to the type of the callback interface.

Reference: How to: Create a Duplex Contract