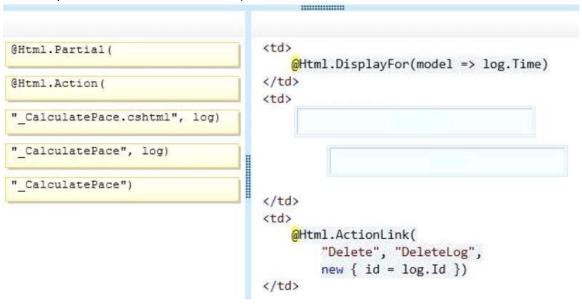➢ **Vendor: Microsoft**

➢ **Exam Code: 70-486**

➢ **Exam Name: Developing ASP.NET MVC (5.1) Web Applications**

➢ **Question 61 – Question 90**

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QUESTION 61
Drag and Drop Question
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>


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

Answer:

```
@Html.Partial(

@Html.Action(

"_CalculatePace.cshtml", log)

"_CalculatePace", log)

"_CalculatePace")
```

```
<td>
    @Html.DisplayFor(model => log.Time)
</td>
<td>
    @Html.Partial(

        "_CalculatePace", log)

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

QUESTION 62
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
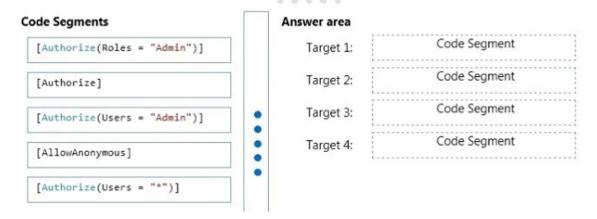
QUESTION 63
Drag and Drop Question
You need to implement security according to the business requirements. You have the following code:

```
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)

    ...
}
```
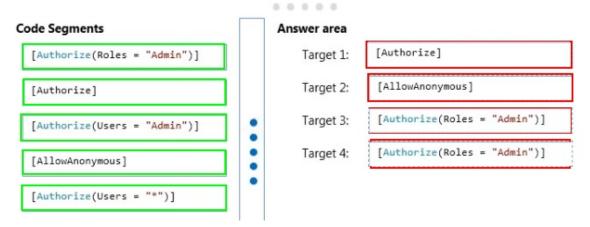
Which code segments should you include in Target 1, Target 2, Target 3 and Target 4 to modify RunLogController? To answer, drag the appropriate code segment to the correct targets. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll 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:

Code Segments

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

Answer area

Target 1: [Authorize]
Target 2: [AllowAnonymous]
Target 3: [Authorize(Roles = "Admin")]
Target 4: [Authorize(Roles = "Admin")]

QUESTION 64
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)
      {
          ...
      }
```
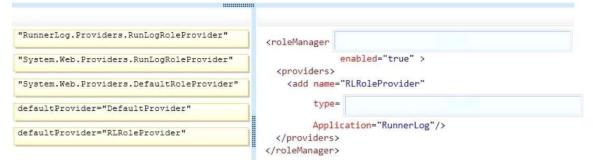
A. Option A
B. Option B
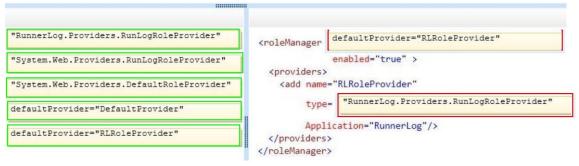C. Option C
D. Option D

Answer: C

QUESTION 65
Drag and Drop Question
You need to ensure that the application uses RunLogRoleProvider custom role provider. How should you modify the web.config file? (To answer, drag the appropriate line of code to the correct location or locations. Each line of code may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

```
"RunnerLog.Providers.RunLogRoleProvider"

"System.Web.Providers.RunLogRoleProvider"

"System.Web.Providers.DefaultRoleProvider"

defaultProvider="DefaultProvider"

defaultProvider="RLRoleProvider"
```

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

Answer:

```
"RunnerLog.Providers.RunLogRoleProvider"

"System.Web.Providers.RunLogRoleProvider"

"System.Web.Providers.DefaultRoleProvider"

defaultProvider="DefaultProvider"

defaultProvider="RLRoleProvider"
```

```
<roleManager  defaultProvider="RLRoleProvider"
              enabled="true" >
   <providers>
      <add name="RLRoleProvider"
         type=  "RunnerLog.Providers.RunLogRoleProvider"
      Application="RunnerLog"/>
   </providers>
</roleManager>
```
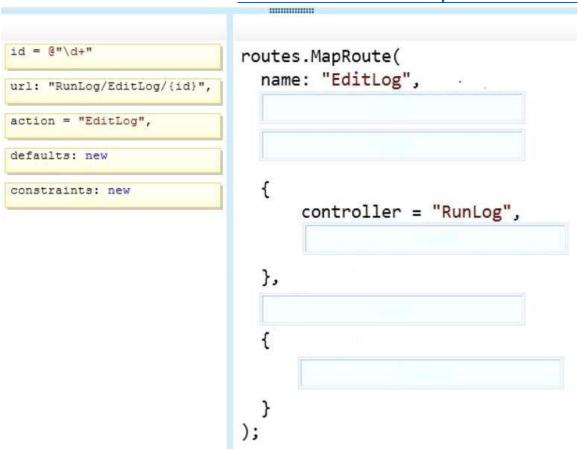
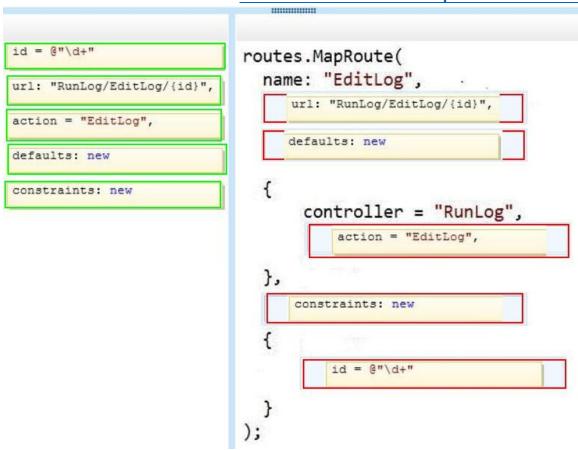**QUESTION 66**
Drag and Drop Question
You need to ensure that only valid parameters are passed to the EditLog action. How should you build the route? (To answer, drag the appropriate code segments to the correct location or locations. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

```
id = @"\d+"

url: "RunLog/EditLog/{id}",

action = "EditLog",

defaults: new

constraints: new
```

```
routes.MapRoute(
    name: "EditLog",




    {

        controller = "RunLog",


    },

    {


    }
);
```

Answer:

```
id = @"\d+"

url: "RunLog/EditLog/{id}",

action = "EditLog",

defaults: new

constraints: new
```

```
routes.MapRoute(
    name: "EditLog",
        url: "RunLog/EditLog/{id}",
        defaults: new

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

QUESTION 67

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 68

You need to add an action to RunLogController to validate the users' passwords. Which code segment should you use?

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();
}
```

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.
```
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();
}
```

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 69
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">
    < [                    ▼] >
        source src="map.mp4" type="video/mp4"
        source src="map.ogv" type="video/ogg"
        source src="map.webm"type="video/webm"

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

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

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

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

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

    </ [          ▼] >
        embed
        object
        video
        canvas

</video>
```

Answer:

Work Area

```
<video width="320" height="240">
< [                              ▼] >
    source src="map.mp4" type="video/mp4"
    source src="map.ogv" type="video/ogg"
    source src="map.webm"type="video/webm"
< [                              ▼] >
    source src="map.mp4" type="video/mp4"
    source src="map.ogv" type="video/ogg"
    source src="map.webm"type="video/webm"
< [                              ▼] >
    source src="map.mp4" type="video/mp4"
    source src="map.ogv" type="video/ogg"
    source src="map.webm"type="video/webm"
< [        ▼] width="320" height="240">
    embed
    object
    video
    canvas
    < [        ▼] name="movie" value="map.swf" />
        object
        param
        option
        embed
    < [        ▼] src="map.swf" />
        video
        param
        embed
        source
</ [        ▼] >
    embed
    object
    video
    canvas
</video>
```

QUESTION 70

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 71

Hotspot Question

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",          .
```

[dropdown ▼]

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

[dropdown ▼]

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

```
    {
        controller = "RunLog",
```

[dropdown ▼]

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

```
    },
```

[dropdown ▼]

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

```
    {
```

[dropdown ▼]

```
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
   }
);
```

Case Study 2 - Shopping Web Application (QUESTION 72 - QUESTION 86)

For help on how to answer the questions, click the Instuctions button on the question screen.

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

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

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

Product.cs

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

ImageConverter.cs

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

web.config

```xml
<?xml version="1.0" encoding="utf-8"?>
```

web.config

```xml
<?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 72
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 73
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: AD

QUESTION 74
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 75
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.WriteLog(filterContext.Exception);

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

○ B.
```
protected override void OnException(ExceptionContext filterContext)
{
    Utility.WriteLog(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.WriteLog(filterContext.Exception);
        filterContext.ExceptionHandled = true;
        this.View("Error").ExecuteResult(this.ControllerContext);
    }
}
```

○ D.
```
protected override void OnException(ExceptionContext filterContext)
{
    Utility.WriteLog(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 76
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: AD
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 77
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 78
You need to modify the application to meet the productId requirement. Which code segment should you use?

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

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

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

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

QUESTION 79
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 CustomerController 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: AC
Explanation:
We could annotate Edit method with Authorize attribute to make sure that only administrator can edit Customers.

QUESTION 80
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(IndexOutOfBoundsException),
          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(IndexOutOfBoundsException),
          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 81
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 82
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: CD

QUESTION 83
You need to implement client-side animations according to the business requirements. Which line of code should you use? (Each correct answer presents a complete solution. Choose all that apply.)

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

Answer: BC

QUESTION 84
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: AD

QUESTION 85
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
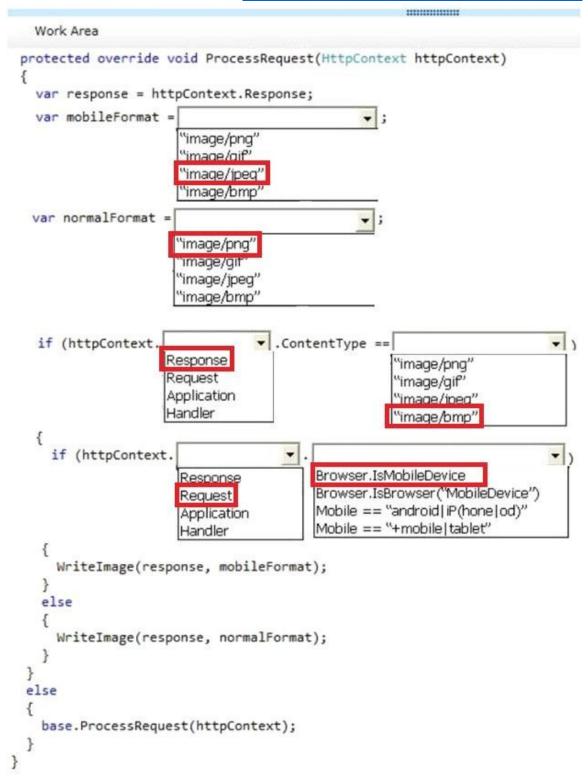C. AutoDetect
D. SqlServer

Answer: AD

QUESTION 86
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 = [                  ▼] ;
                        "image/png"
                        "image/gif"
                        "image/jpeg"
                        "image/bmp"

    var normalFormat = [                  ▼] ;
                        "image/png"
                        "image/gif"
                        "image/jpeg"
                        "image/bmp"

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

Case Study 3 - Video Transcoding Service (QUESTION 87 - QUESTION 97)

For help on how to answer the questions, click the Instuctions button on the question screen.
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 TranscodeWorkerRole : RoleEntryPoint
{
  public override void Run()
  {
    while (true)
    {
      var nextWorkItem = GetWorkItem();
      TranscodeService.Start(new [] { nextWorkItem } );
    }
  }

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

VideoController.cs

```csharp
[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;
  }
}
```

ImageConverter.cs

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

QUESTION 87
You need to secure the administrative functions for all MVC controllers. Which code segment should you use as the body for the CreateController method in AdminVerfierFactory.cs?

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

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

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

return controller;
```

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

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

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

return controller;
```

Answer: D
Explanation:
The MemberInfo.CustomAttributes property gets a collection that contains this member's custom attributes. The Any() statement will either return null or a collection of matched custom attributes. If it matches one or more, the controller is secure, otherwise an exception is thrown. From scenario: The application contains a header that is visible on every page. If the logged-on user is an administrator, then the header will contain links to administrative functions. This information is read from a cookie that is set on the server. The administrative links must not be present if an error condition is present.
Incorrect:
Not B: controller.GetType().Attributes will not return custom attributes.
https://msdn.microsoft.com/en-us/library/system.reflection.memberinfo.customattributes(v=vs.110).aspx

QUESTION 88
Customers download videos by using HTTP clients that support various content encodings. You need to configure caching on the DownloadVideo action to maximize performance. Which attribute should you add?

A. `[OutputCache(Location = OutputCacheLocation.Downstream, VaryByParam = "videoId", VaryByCustom = "browser")]`

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

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

D. `[OutputCache(Location = OutputCacheLocation.Downstream, VaryByContentEncoding = "gzip;q=1.0, compress; q=0.5, *;q=0")]`

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

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

Answer: E

QUESTION 89
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?

```
○ A.   varcontroller = base.CreateController(requestContext, controllerName) asController;

       varattributes = controller.GetType().Attributes.ToString();

       if(!attributes.Contains("VideoAdminAttribute"))

         thrownewException("Not an Administrator");

       returncontroller;

○ B.   if(requestContext.HttpContext.Items["Administrator"] == null)

         thrownewException("Not an Administrator");

       returnbase.CreateController(requestContext, controllerName) asController;


○ 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;

○ 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 90
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: CD