

Dot Net - Asp.Net

1 . Describe the role of inetinfo.exe, aspnet_isapi.dll and aspnet_wp.exe in the page loading process.

inetinfo.exe is the Microsoft IIS server running, handling ASP.NET requests among other things. When an ASP.NET request is received (usually a file with .aspx extension), the ISAPI filter aspnet_isapi.dll takes care of it by passing the request to the actual worker process aspnet_wp.exe.

2 . What's the difference between Response.Write() and Response.Output.Write()?

Response.Output.Write() allows you to write formatted output.

3 . What methods are fired during the page load?

Init() - when the page is instantiated

Load() - when the page is loaded into server memory

PreRender() - the brief moment before the page is displayed to the user as HTML

Unload() - when page finishes loading.

4 . When during the page processing cycle is ViewState available?

After the Init() and before the Page_Load(), or OnLoad() for a control.

5 . What namespace does the Web page belong in the .NET Framework class hierarchy?

System.Web.UI.Page

6 . Where do you store the information about the user's locale?

System.Web.UI.Page.Culture

7 . What's the difference between CodeBehind="MyCode.aspx.cs" and Src="MyCode.aspx.cs"?

CodeBehind is relevant to Visual Studio.NET only.

8 . What's a bubbled event?

When you have a complex control, like DataGrid, writing an event processing routine for each object (cell, button, row, etc.) is quite tedious. The controls can bubble up their event handlers, allowing the main DataGrid event handler to take care of its constituents.

9 . Suppose you want a certain ASP.NET function executed on MouseOver for a certain button. Where do you add an event handler?

Add an OnMouseOver attribute to the button. Example:

```
btnSubmit.Attributes.Add("onmouseover","someClientCodeHere()");
```

10 . What data types do the RangeValidator control support?

Integer, String, and Date.

11 . Explain the differences between Server-side and Client-side code?

Server-side code executes on the server. Client-side code executes in the client's browser.

12 . What type of code (server or client) is found in a Code-Behind class?

The answer is server-side code since code-behind is executed on the server. However, during the code-behind's execution on the server, it can render client-side code such as JavaScript to be processed in the clients browser. But just to be clear, code-behind executes on the server, thus making it server-side code.

13 . Should user input data validation occur server-side or client-side? Why?

All user input data validation should occur on the server at a minimum. Additionally, client-side validation can be performed where deemed appropriate and feasible to provide a richer, more responsive experience for the user.

14 . What is the difference between Server.Transfer and Response.Redirect? Why would I choose one over the other?

Server.Transfer transfers page processing from one page directly to the next page without making a round-trip back to the client's browser. This provides a faster response with a little less overhead on the server. Server.Transfer does not update the clients url history list or current url. Response.Redirect is used to redirect the user's browser to another page or site. This performs a trip back to the client where the client's browser is redirected to the new page. The user's browser history list is updated to reflect the new address.

15 . Can you explain the difference between an ADO.NET Dataset and an ADO Recordset?

Valid answers are:

- A DataSet can represent an entire relational database in memory, complete with tables, relations, and views.
- A DataSet is designed to work without any continuing connection to the original data source.
- Data in a DataSet is bulk-loaded, rather than being loaded on demand.
- There's no concept of cursor types in a DataSet.
- DataSets have no current record pointer You can use For Each loops to move through the data.
- You can store many edits in a DataSet, and write them to the original data source in a single operation.
- Though the DataSet is universal, other objects in ADO.NET come in different versions for different data sources.

16 . What is the Global.asax used for?

The Global.asax (including the Global.asax.cs file) is used to implement application and session level events.

17 . What are the Application_Start and Session_Start subroutines used for?

This is where you can set the specific variables for the Application and Session objects.

18 . Can you explain what inheritance is and an example of when you might use it?

When you want to inherit (use the functionality of) another class. Example: With a base class named Employee, a Manager class could be derived from the Employee base class.

19 . Whats an assembly?

Assemblies are the building blocks of the .NET framework. Overview of assemblies from MSDN

20 . Describe the difference between inline and code behind.

Inline code written along side the html in a page. Code-behind is code written in a separate file and referenced by the .aspx page.

21 . Explain what a diffgram is, and a good use for one?

The DiffGram is one of the two XML formats that you can use to render DataSet object contents to XML. A good use is reading database data to an XML file to be sent to a Web Service.

22 . Whats MSIL, and why should my developers need an appreciation of it if at all?

MSIL is the Microsoft Intermediate Language. All .NET compatible languages will get converted to MSIL. MSIL also allows the .NET Framework to JIT compile the assembly on the installed computer.

23 . Which method do you invoke on the DataAdapter control to load your generated dataset with data?

The Fill() method.

24 . Can you edit data in the Repeater control?

No, it just reads the information from its data source.

25 . Which template must you provide, in order to display data in a Repeater control?

ItemTemplate.

26 . How can you provide an alternating color scheme in a Repeater control?

Use the AlternatingItemTemplate.

27 . What property must you set, and what method must you call in your code, in order to bind the data from a data source to the Repeater control?

You must set the DataSource property and call the DataBind method.

28 . What base class do all Web Forms inherit from?

The Page class.

29 . Name two properties common in every validation control?

ControlToValidate property and Text property.

30 . Which property on a Combo Box do you set with a column name, prior to setting the DataSource, to display data in the combo box?

DataTextField property.

31 . Which control would you use if you needed to make sure the values in two different controls matched?

CompareValidator control.

32 . How many classes can a single .NET DLL contain?

It can contain many classes.

Web Service Questions

33 . What is the transport protocol you use to call a Web service?

SOAP (Simple Object Access Protocol) is the preferred protocol.

34 . What does WSDL stand for?

Web Services Description Language.

35 . Where on the Internet would you look for Web services?

<http://www.uddi.org>

36 . True or False: To test a Web service you must create a Windows application or Web application to consume this service?

False, the web service comes with a test page and it provides HTTP-GET method to test.

37 . Can you give an example of when it would be appropriate to use a web service as opposed to a non-serviced .NET component

Webservice is one of main component in Service Oriented Architecture. You could use webservices when your clients and servers are running on different networks and also different platforms. This provides a loosely coupled system. And also if the client is behind the firewall it would be easy to use webservice since it runs on port 80 (by default) instead of having some thing else in SOA apps

State Management Questions

38 . What is ViewState?

ViewState allows the state of objects (serializable) to be stored in a hidden field on the page. ViewState is transported to the client and back to the server, and is not stored on the server or any other external source. ViewState is used to retain the state of server-side objects between postbacks.

39 . What is the lifespan for items stored in ViewState?

Item stored in ViewState exist for the life of the current page. This includes postbacks (to the same page).

40 . What does the "EnableViewState" property do? Why would I want it on or off?

It allows the page to save the users input on a form across postbacks. It saves the server-side values for a given control into ViewState, which is stored as a hidden value on the page before sending the page to the clients browser. When the page is posted back to the server the server control is recreated with the state stored in viewstate.

41 . What are the different types of Session state management options available with ASP.NET?

ASP.NET provides In-Process and Out-of-Process state management. In-Process stores the session in memory on the web server. This requires the a "sticky-server" (or no load-balancing) so that the user is always reconnected to the same web server. Out-of-Process Session state management stores data in an external data source. The external data source may be either a SQL Server or a State Server service. Out-of-Process state management requires that all objects stored in session are serializable.

42 . Let's say I have an existing application written using Visual Studio 6 (VB 6, InterDev 6) and this application utilizes Windows 2000 COM+ transaction services. How would you approach migrating this application to .NET

You have to use System.EnterpriseServices namespace and also COMInterop the existing application

43 . Can you give an example of what might be best suited to place in the Application_Start and Session_Start subroutines?

In the Application_Start event you could store the data, which is used throughout the life time of an application for example application name, where as Session_Start could be used to store the information, which is required for that session of the application say for example user id or user name.

44 . If I'm developing an application that must accomodate multiple security levels though secure login and my ASP.NET web application is spanned across three web-servers (using round-robin load balancing) what would be the best approach to maintain login-in state for the users?

Use the state server or store the state in the database. This can be easily done through simple setting change in the web.config.

```
<sessionState  
mode="InProc"  
stateConnectionString="tcpip=127.0.0.1:42424"
```

```
sqlConnectionString="data source=127.0.0.1;user id=sa;password="
cookieless="false"
timeout="30"
/>
```

in the above one instead of mode="InProc", you specify stateserver or sqlserver.

45 . What are ASP.NET Web Forms? How is this technology different than what is available though ASP (1.0-3.0)?

ASP.NET webforms are analogous to Windows Forms which are available to most VB developers. A webform is essentially a core container in a Page. An empty webform is nothing but a HTML Form tag(control) running at server and posting form to itself by default, but you could change it to post it to something else. This is a container, and you could place the web controls, user controls and HTML Controls in that one and interact with user on a postback basis.

46 . How does VB.NET/C# achieve polymorphism?

Polymorphism is achieved through virtual, overloaded, overridden methods in C# and VB.NET

47 . Describe session handling in a webform, how does it work and what are the its limits

Sometimes it is necessary to carry a particular session data across pages. And HTTP is a stateless protocol. In order to maintain state between page calls, we could use cookies, hidden form fields etc. One of them is using sessions. each sessions are maintain a unique key on the server and serialize the data on it. Actually it is a hashtable and stores data on key/value pair of combination. You could set a session using Session Object and retrieve the same data/state by passing the key.

```
//Set
```

```
Session["abc"] = "Session Value";
```

```
// Get
```

```
string abc = Session["abc"].ToString();
```

The downside of sessions is scalability. Say your application gets more and more hits and you though instead of one webserver handling it, have it in a webfarm (multiple web servers working under one domain). You cannot transfer the session so easily across multiple websevers. Reason is like I said, it physically serializes the state data to webserver hard disk. .NET proposes a new way to handle this using a stateserver (actually a trimmed down sql server) storing the web session data in a factory configured database schema or using Database with your own schema defined to handle the sessions.

48 . How would you get ASP.NET running in Apache web servers - why would you even do this?

You need to create a CLRHost, which hosts the CLR (ASP.NET) on top of Apache.

Since Apache is #1 webserver used by many companies, this would allow more number of web site owners to take advantage of ASP.NET and its richness.

49 . Whats MSIL, and why should my developers need an appreciation of it if at all?

MSIL is Microsoft Intermediate (Intermediary) Language. It is Microsoft's implementation of CIL (standard recognized by ECMA and ISO) as part of CLI and C# Standardization.

.NET supports more than 21 language (I think 24 now). They compile to IL first and then this IL would get JITted to Native code at runtime. Learning IL is advantageous in many terms. The important one is sometimes you need to optimize your code, so you could disassemble your compiled assembly using ILDASM and tweak your code and reassemble it using ILASM.

50 . In what order do the events of an ASPX page execute. As a developer is it important to understand these events?

This is the order of Page events

- i. Page_Init
- ii. Page_LoadViewState
- iii. Page_LoadPostData
- iv. Page_Load
- v. Page_RaisePostDataChanged
- vi. Page_RaisePostBackEvent
- vii. Page_PreRender
- viii. Page_SaveViewState
- ix. Page_Render
- x. Page_Dispose
- xii. Page_Error (this is caused whenever there is an exception at the page level).

Out of all the Page_Load is the one where your code gets loaded and your magic should be written. page_init occurs only once, i.e. when the page is initially created.

As a developer you need to know these, because your development activity is coding for these only.

51 . Which method do you invoke on the DataAdapter control to load your generated dataset with data?

Fill()

52 . Can you edit data in the Repeater control?

No. Only DataList and DataGrid provide you editing capabilities.

53 . What method do you use to explicitly kill a user's session?

Session.Abandon

54 . How do you turn off cookies for one page in your site?

Actually I never did this. But there should be a way to do this. May be need to write your own code to do this using Response.Cookies collection and HTTPCookie class and also SessionStateMode. Or there may be some simple way to do it. Need to do further research on this.

55 . Which two properties are on every validation control?

The common properties are:

- i. IsValid (bool)
- ii. ControlToValidate (string)
- iii. ErrorMessage (string)
- iv. ValidationDisplay (Display)
- v. Text (string)

The common method is:

Validate()

56 . What tags do you need to add within the asp:datagrid tags to bind columns manually?

You need to set AutoGenerateColumns Property to false.

57 . How do you create a permanent cookie?

If you are developing web services and the cookies need to be travelled across multiple requests, then you need to have permanent or persistent cookie.

In order to do this, you have to set the your web service CookieContainer to a newly created CookieContainer, and the

its cookie to a session value and then store the cookie(s) into the Service CookieCollection from that cookie container

if something is there otherwise add cookie to the container.

58 . What tag do you use to add a hyperlink column to the DataGrid?

HyperLinkColumn

59 . What is the standard you use to wrap up a call to a Web service

SOAP.

60 . Which method do you use to redirect the user to another page without performing a round trip to the client?

Server.Transfer

Response.Redirect also does that but it requires round trip between client and server.

61 . What does WSDL stand for?

Web Services Description Language.

62 . True or False: A Web service can only be written in .NET

False.

63 . What property do you have to set to tell the grid which page to go to when using the Pager object?

CurrentPageIndex. You need to set this one with the DataGridPageChangedEventArgs' NewPageIndex.

64 . Which control would you use if you needed to make sure the values in two different controls matched?

Use CompareValidator

65 . True or False: To test a Web service you must create a windows application or Web application to consume this service?

False. The webservice comes with a test page and it provides HTTP-GET method to test. And if the web service turned off HTTP-GET for security purposes then you need to create a web application or windows app as a client to this to test.

66 . How many classes can a single .NET DLL contain?

many is correct. Yes an assembly can contain one or more classes and an assembly can be contained in one dll or could spread across multiple dlls. too. Take System.dll, it is collections of so many classes.

67 . Why would you use an array vs linked-list ?

Linked List:

? They allow a new element to be inserted or deleted at any position in a constant number of operations (changing some references) $O(1)$.

? Easy to delete a node (as it only has to rearrange the links to the different nodes)., $O(1)$.

? To find the nth node, will need to recurse through the list till it finds [linked lists allow only sequential access to elements.], $O(n)$

Array

? Insertion or deletion of element at any position require a linear ($O(n)$) number of operations.

? Poor at deleting nodes (or elements) as it cannot remove one node without individually shifting all the elements up the list by one., $O(n)$

? Poor at inserting as an array will eventually either fill up or need to be resized, an expensive operation that may not even be possible if memory is fragmented. Similarly, an array from which many elements are removed may become wastefully empty or need to be made smaller, $O(n)$

? easy to find the nth element in the array by directly referencing them by their position in the array.[arrays allow random access], $O(1)$