C# INTERVIEW QUESTIONS

This is a list of questions I have gathered from other sources and created myself over a period of time from my experience, many of which I felt where incomplete or simply wrong. I have finally taken the time to go through each question and correct them to the best of my ability. However, please feel free to post feedback to challenge, improve, or suggest new questions. I want to thank those of you that have contributed quality questions and corrections thus far.

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Does C# support multiple-inheritance?
No.
Who is a protected class-level variable available to?
It is available to any sub-class (a class inheriting this class).
Are private class-level variables inherited?
Yes, but they are not accessible. Although they are not visible or accessible via the class interface, they are inherited.
Describe the accessibility modifier a protected internal.
It is available to classes that are within the same assembly and derived from the specified base class.
What is the top .NET class that everything is derived from?

Ans: System. Object.
What does the term immutable mean?
The data value may not be changed. Note: The VARIABLE value may be changed, but the original immutable data value was discarded and a new data value was created in memory.
What is the difference between System. String and System.Text.StringBuilder classes?
System.String is immutable. System.StringBuilder was designed with the purpose of having a mutable string where a variety of operations can be performed.
What is the advantage of using System.Text.StringBuilder over System.String?
StringBuilder is more efficient in cases where there is a large amount of string manipulation. Strings are immutable, so each time a string is changed, a new instance in memory is created.
Can you store multiple data types in System.Array?
No.

What is the difference between the System.Array.CopyTo() and System.Array.Clone()?

The Clone() method returns a new array (a shallow copy) object containing all the elements in the original array. The CopyTo() method copies the elements into another existing array. Both perform a shallow copy. A shallow copy means the contents (each array element) contains references to the same object as the elements in the original array. A deep copy (which neither of these methods performs) would create a new instance of each element's object, resulting in a different, yet identacle object.

How can you sort the elements of the array in descending order?

By calling Sort() and then Reverse() methods.

What is the .NET collection class that allows an element to be accessed using a unique key?

HashTable.

What class is underneath the SortedList class?

A sorted HashTable.

Will the finally block get executed if an exception has not occurred?

Yes.

What is the C# syntax to catch any possible exception?

A catch block that catches the exception of type System.Exception. You can also omit the parameter data type in this case and just write catch {}.

Can multiple catch blocks be executed for a single try statement?

No. Once the proper catch block processed, control is transferred to the finally block (if there are any).

Explain the three services model commonly know as a three-tier application.

Presentation (UI), Business (logic and underlying code) and Data (from storage or other sources).

Class Questions

What is the syntax to inherit from a class in C#?

Place a colon and then the name of the base class.

Example: CLASS MYNEWCLASS : MYBASECLASS

Can you prevent your class from being inherited by another class?

Yes. The keyword sealed will prevent the class from being inherited.

Can you allow a class to be inherited, but prevent the method from being over-ridden?

Yes. Just leave the class public and make the method sealed.

What is an abstract class?

A class that cannot be instantiated. An abstract class is a class that must be inherited

and have the methods overridden. An abstract class is essentially a blueprint for a class without any implementation.

When do you absolutely have to declare a class as abstract?

1. When the class itself is inherited from an abstract class, but not all base abstract methods have been overridden.
2. When at least one of the methods in the class is abstract.

What is an interface class?

Interfaces, like classes, define a set of properties, methods, and events. But unlike classes, interfaces do not provide implementation. They are implemented by classes, and defined as separate entities from classes.

Why can't you specify the accessibility modifier for methods inside the interface?

They all must be public, and are therefore public by default.

Can you inherit multiple interfaces?

Yes. .NET does support multiple interfaces.

What happens if you inherit multiple interfaces and they have conflicting method names?

It is up to you to implement the method inside your own class, so implementation is left entirely up to you. This might cause a problem on a higher-level scale if similarly named methods from different interfaces expect different data, but as far as compiler cares you are okay.

To Do: Investigate

What is the difference between an interface and abstract class?

In an interface class, all methods are abstract - there is no implementation. In an abstract class some methods can be concrete. In an interface class, no accessibility modifiers are allowed. An abstract class may have accessibility modifiers.

What is the difference between a Struct and a Class?

Structs are value-type variables and are thus saved on the stack, additional overhead but faster retrieval. Another difference is that structs **cannot** inherit.

Method and Property Questions

What is the implicit name of the parameter that gets passed into the set method/property of a class?

Value. The data type of the value parameter is defined by whatever data type the property is declared as.

1. **What does the keyword virtual declare for a method or property?**
   The method or property can be overridden.

2. **How is method overriding different from method overloading?**
   When overriding a method, you change the behavior of the method for the derived class. Overloading a method simply involves having another method with the same name within the class.

3. **Can you declare an override method to be static if the original method is not static?**
   No. The signature of the virtual method must remain the same. (Note: Only the keyword virtual is changed to keyword override)

4. **What are the different ways a method can be overloaded?**
   Different parameter data types, different number of parameters, different order of parameters.

5. **If a base class has a number of overloaded constructors, and an inheriting class has a number of overloaded constructors; can you enforce a call from an inherited constructor to a specific base constructor?**
   Yes, just place a colon, and then keyword base (parameter list to invoke the appropriate constructor) in the overloaded constructor definition inside the inherited class.

Events and Delegates

1. **What is a delegate?**
   A delegate object encapsulates a reference to a method.

2. **What is a multicast delegate?**
   A delegate that has multiple handlers assigned to it. Each assigned handler (method) is called.

XML Documentation Questions

1. **Is XML case-sensitive?**
   Yes.

2. **What is the difference between // comments, /* */ comments and /// comments?**
   Single-line comments, multi-line comments, and XML documentation comments.

3. **How do you generate documentation from the C# file commented properly with a command-line compiler?**
   Compile it with the /doc switch.

Debugging and Testing Questions

1. **What debugging tools come with the .NET SDK?**
   1. CorDBG command-line debugger. To use CorDbg, you must compile the original C# file using the /debug switch.
   2. DbgCLR graphic debugger. Visual Studio .NET uses the DbgCLR.

2. **What does assert() method do?**
   In debug compilation, assert takes in a Boolean condition as a parameter, and shows the error dialog if the condition is false. The program proceeds without any interruption if the condition is true.

3. **What is the difference between the Debug class and Trace class?**
   Documentation looks the same. Use Debug class for debug builds, use Trace class for both debug and release builds.

4. **Why are there five tracing levels in System.Diagnostics.TraceSwitcher?**
   The tracing dumps can be quite verbose. For applications that are constantly running you run the risk of overloading the machine and the hard drive. Five levels range from None to Verbose, allowing you to fine-tune the tracing activities.

5. **Where is the output of TextWriterTraceListener redirected?**
   To the Console or a text file depending on the parameter passed to the constructor.

6. **How do you debug an ASP.NET Web application?**
   Attach the aspnet_wp.exe process to the DbgClr debugger.

7. **What are three test cases you should go through in unit testing?**
   1. Positive test cases (correct data, correct output).
   2. Negative test cases (broken or missing data, proper handling).
   3. Exception test cases (exceptions are thrown and caught properly).

8. **Can you change the value of a variable while debugging a C# application?**
   Yes. If you are debugging via Visual Studio.NET, just go to Immediate window.

ADO.NET and Database Questions

1. **What is the role of the DataReader class in ADO.NET connections?**
   It returns a read-only, forward-only rowset from the data source. A DataReader provides fast access when a forward-only sequential read is needed.

2. **What are advantages and disadvantages of Microsoft-provided data provider classes in ADO.NET?**
   SQLServer.NET data provider is high-speed and robust, but requires SQL Server license purchased from Microsoft. OLE-DB.NET is universal for accessing other sources, like Oracle, DB2, Microsoft Access and Informix. OLE-DB.NET is a .NET layer on top of the OLE layer, so it not as fastest and efficient as SqlServer.NET.

3. **What is the wildcard character in SQL?**
   Let's say you want to query database with LIKE for all employees whose name starts with La. The wildcard character is %, the proper query with LIKE would involved.

4. **Explain ACID rule of thumb for transactions.**
   A transaction must be:
   1. **Atomic** - it is one unit of work and does not dependent on previous and following transactions.
   2. **Consistent** - data is either committed or roll back, no in-between case where something has been updated and something has not.
   3. **Isolated** - no transaction sees the intermediate results of the current transaction).
   4. **Durable** - the values persist if the data had been committed even if the system

crashes right after.

5. **What connections does Microsoft SQL Server support?**
   Windows Authentication (via Active Directory) and SQL Server authentication (via Microsoft SQL Server username and password).

6. **Between Windows Authentication and SQL Server Authentication, which one is trusted and which one is untrusted?**
   Windows Authentication is trusted because the username and password are checked with the Active Directory, the SQL Server authentication is untrusted, since SQL Server is the only verifier participating in the transaction.

7. **What does the Initial Catalog parameter define in the connection string?**
   The database name to connect to.

8. **What does the Dispose method do with the connection object?**
   Deletes it from the memory.
   To Do: answer better. The current answer is not entirely correct.

9. **What is a pre-requisite for connection pooling?**
   Multiple processes must agree that they will share the same connection, where every parameter is the same, including the security settings. The connection string must be identical.

Assembly Questions

1. **How is the DLL Hell problem solved in .NET?**
   Assembly versioning allows the application to specify not only the library it needs to run (which was available under Win32), but also the version of the assembly.

2. **What are the ways to deploy an assembly?**
   An MSI installer, a CAB archive, and XCOPY command.

3. **What is a satellite assembly?**
   When you write a multilingual or multi-cultural application in .NET, and want to distribute the core application separately from the localized modules, the localized assemblies that modify the core application are called satellite assemblies.

4. **What namespaces are necessary to create a localized application?**
   System.Globalization and System.Resources.

5. **What is the smallest unit of execution in .NET?**
   An Assembly.

6. **When should you call the garbage collector in .NET?**
   As a good rule, you should not call the garbage collector. However, you could call the garbage collector when you are done using a large object (or set of objects) to force the garbage collector to dispose of those very large objects from memory. However, this is usually not a good practice.

7. **How do you convert a value-type to a reference-type?**
   Use Boxing.

8. **What happens in memory when you Box and Unbox a value-type?**
   Boxing converts a value-type to a reference-type, thus storing the object on the heap. Unboxing converts a reference-type to a value-type, thus storing the value on the stack.

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1. Explain the differences between Server-side and Client-side code?
   ANS: Server side code will execute at server end all the business logic will execute at server end where as client side code will execute at client side at browser end.
   2. What type of code (server or client) is found in a Code-Behind class?
   ANS: Server side.
   3. Should validation (did the user enter a real date) occur server-side or client-side? Why?
   ANS: client side there is no need to go to validate user input. If it relates to data base validation we need to validate at server side.
   4. What does the "EnableViewState" property do? Why would I want it on or off?
   ANS: IT keeps the data of the control during post backs.
   if we turn off the values should not populate during server round trip.
   5. What is the difference between Server.Transfer and Response.Redirect? Why would I choose one over the other?
   ANS: Server.Trnasfer will prevent round trip. it will redirect pages which or in the same directory. NO way to pass the query strings . Thru http context we can able to get the previous page control values.
   Response.Redirect : There is a round trip to process the request. We can redirect to any page external / internal other than aspx. We can pass the query string thru which

we can manage sessions.
6. Can you give an example of when it would be appropriate to use a web service as opposed to a non-serviced .NET component
ANS : Web services are best suite for Hetrogenious environment.
Remoting is best suite for Homogenious environment. The systems that under CLR.
7. 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

We need to have Wrapper to communicate COM components in .net. and vis versa

CCW : Com Callable wrapper.
RCW : RUN time callable wrapper.

8. Can you explain the difference between an ADO.NET Dataset and anADO Recordset?\
ANS : DIsconnected architechure . Maintainace relation schemas. MUtilple table grouping.
Connected one .
9. Can you give an example of what might be best suited to place in the Application_Start and Session_Start subroutines?

ANS: APplication_start need for global variable which are available over the application.
Sesssion_Start : login dependent (user dependent)

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

ANS: Database Support.
or Thru state service.

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

ANS: ASP Interprepter use the script engine.
ASP.Net Compiled.

12. How does VB.NET/C# achieve polymorphism?
ANS: Function overloading.
Operator overloading.
11. Can you explain what inheritance is and an example of when you might use it?

ANS: Heridity.
Use the existing functionality along with its own properities.

13. How would you implement inheritance using VB.NET/C#?
ANS: Derived Class : Basecalss
VB.NEt : Derived Class Inherits Baseclass
14. Whats an assembly
ANS : A Basic unit of executable code >

Which contains : Manifest - Meta data
versioning , Calture , IL, Reference

15. Describe the difference between inline and code behind - which is best in a loosely coupled solution

Tightly coupled - INLINE
ANS: inline function bind at compile time can write in aspx page with in <% %> .

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

ANS : is an xml grammer. it talk about state of node in xml file.

18. Where would you use an iHTTPModule, and what are the limitations of any approach you might take in implementing one

ANS: Preprocessing before going to IIS.

20. What are the disadvantages of viewstate/what are the benefits
ANS : IT can be hacked . page is size is heavy.

21 Describe session handling in a webfarm, how does it work and what are the limits

ANS:
Session - mode
State sever
OUtprocess
sql

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

ANS: ---- Install Mod_AspDotNet
Add at the end of C:\Program Files\Apache Group\Apache2\conf\httpd.conf the following lines

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

ANS : Microsoft Intermeidate lanaguage. which is the out put for all the .net supported languages after comiplation will produce.
Appreciation for cross language support.

24. In what order do the events of an ASPX page execute. As a developer is it important to undertsand these events?
ANS : INIT, PageLoad, Prerender , UNload.

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

Fill()

26. Can you edit data in the Repeater control?
NO

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

28. How can you provide an alternating color scheme in a Repeatercontrol?

AlternateItemTemplate

29. What property must you set, and what method must you call in your code, in order to bind the data from some data source to the Repeatercontrol?

Datasource,
DataBind

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

System.Web.UI.Page

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

abondon()

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

33. Which two properties are on every validation control?
control to validate, error message
34. What tags do you need to add within the asp:datagrid tags to bind columns manually?
autogenerated columns is set to false
35. How do you create a permanent cookie?
Cooke = ne cookee().
cooke.adddate.

36. What tag do you use to add a hyperlink column to the DataGrid?
hyper link column

37. What is the standard you use to wrap up a call to a Web service
---
38. Which method do you use to redirect the user to another page without performing a round trip to the client?
server.transfer
39. What is the transport protocol you use to call a Web service SOAP
http

40. True or False: A Web service can only be written in .NET
false
41. What does WSDL stand for? webservice discription language. it is used to generate for proxy(server object)

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

43. Where on the Internet would you look for Web services?
UDDI
44. What tags do you need to add within the asp:datagrid tags to bind columns manually.

Autogenerate columns

45. 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?

datatext
datavalue

46. How is a property designated as read-only?
get
47. Which control would you use if you needed to make sure the values in two different controls matched?
compare filed validator

48. True or False: To test a Web service you must create a windows application or Web application to consume this service?
no
49. How many classes can a single .NET DLL contain?
As many as u want.

WHAT IS SERIALIZATION?

Serialization is the process of converting an object or a con-nected graph of objects into a contiguous stream of bytes. Deserialization is the process of converting a

contiguous stream of bytes back into its graph of connected objects. The ability to convert objects to and from a byte stream is an incredibly useful mechanism. Here are some examples:
An application's state (object graph) can easily be saved in a disk file or database and then restored the next time the application is run. ASP.NET saves and restores session state by way of serialization and deserialization.
A set of objects can easily be copied to the system's clipboard and then pasted into the same or another application. In fact, WindowsÂ® Forms uses this procedure.
A set of objects can be cloned and set aside as a backup while a user manipulates the main set of objects.
A set of objects can easily be sent over the network to a process running on another machine. The Microsoft® .NET Framework remoting architecture serializes and deserializes objects that are marshaled by value.
Why would you want to use serialization? The two most important reasons are
to persist the state of an object to a storage medium so an exact copy can be recreated at a later stage, and
to send the object by value from one application domain to another.

ASP.NET Interview Questions

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1. **Describe the role of *inetinfo.exe, aspnet_isapi.dll* and*aspnet_wp.exe* in the page loading process**.
   inetinfo.exe is theMicrosoft 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 tothe actual worker process aspnet_wp.exe.

2. **What is the difference between Response.Write() andResponse.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 userâ€™s locale?**
   System.Web.UI.Page.Culture

7. **Whatâ€™s the difference between Codebehind="MyCode.aspx.cs" andSrc="MyCode.aspx.cs"?**
   CodeBehind is relevant to Visual Studio.NET only.

8. **What is 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 eventhandlers, 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 feasable 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 performas 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:
    Â· A DataSet can represent an entire relational database in memory, complete with tables, relations, and views.
    Â· A DataSet is designed to work without any continuing connection to the original data source.
    Â· Data in a DataSet is bulk-loaded, rather than being loaded on demand.
    Â· There's no concept of cursor types in a DataSet.
    Â· DataSets have no current record pointer You can use For Each loops to move through the data.
    Â· You can store many edits in a DataSet, and write them to the original data source in a single operation.
    Â· 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

1. **What is the transport protocol you use to call a Web service?**
   SOAP (Simple Object Access Protocol) is the preferred protocol.

2. **True or False: A Web service can only be written in .NET?**
   False

3. **What does WSDL stand for?**
   Web Services Description Language.

4. **Where on the Internet would you look for Web services?**
   http://www.uddi.org

5. **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.

State Management Questions

1. **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 the retain the state of server-side objects between postabacks.

2. **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).

3. **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.

4. **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 "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

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Question: What is Cascade and Restrict when we use DROP table in SQL SERVER ?
Answer:- When we are using Drop table in SQL the syntax is simple.
Drop table table_name(CASCADE / RESTRICT)
We use cascade to drop table although it have some dependencies just like triggers,stroeprocrdure,primarykey,foreignkey it will delete first.
But if we use restrict a error message is shown on using of DROP if the table have relation Trigger,storeprocedure.

Question: What is COMMIT & ROLLBACK statement in SQL?
Answer: Commit statement helps in termination of the current transaction and do all the changes that occur in transaction persistent and this also commits all the changes to the database.COMMIT we can also use in store procedure.
ROLLBACK do the same thing just terminate the currenct transaction but one another thing is that the changes made to database are ROLLBACK to the database.

Question:-What is difference between OSQL and Query Analyzer?
Answer:-Both are the same but ther eis little diffrence OSQL is command line tool whic is execute qery and display the result same a query analyzer but query analyzer is graphical and OSQL is a command line tool.OSQL have not ability like query analyzer to analyze queries and show statics on speed of execution and other usefull thing about OSQL is that its helps in scheduling.

Question: What is SQL whats its uses and its component ?
Answer: The Structured Query Language (SQL) is foundation for all relational database systems. Most of the large-scale databases use the SQL to define all user and administrator interactions. QL is Non-Procedural language . Its allow the user to concentrate on specifying what data is required rather than concentrating on the how to get it.

1. **The DML component of SQL comprises four basic statements:**
   * **SELECT** to get rows from tables
   * **UPDATE** to update the rows of tables
   * **DELETE** to remove rows from tables
   * **INSERT** to add new rows to tables

Question: What is DTS in SQL Server ?
Answer: If a organization is big then it is also there that there is multiple option to store data some people are using EXCEL some are using ACCESS and some of they are using SQL SERVER and in some other format also but there a problem is arise that how to merge that data into one format there is diffrent tool are there for doing this funtion. One of product of SQL SERVER-2000 DTS helps in this problem it provides a set of tool from that tool we can customise are database acording to our need DTSRun is a command-prompt utility used to execute existing DTS packages.

Question: What is the difference between SQL and Pl/Sql?
Answer: We can get modify, Retrieve by single command or statement in SQL but PL/SQL process all SQL statements one at a time. With PL/SQL, an entire block of statements process in a single command line.sql is structured query language ,various queries are used to handle the database in a simplified manner. while pl/sql is procedural language contains various types of variable,functions and procedures and other major diffrence is Sql as the name suggest it is just structured query language wheareas PLSQL is a commbination of Programming language & SQL.

Question: Can You explain integration between SQL Server 2005 and Visual Studio 2005 ?
Answer: This intergration provide wider range of development with the help of CLR for database server.Becasue CLR helps developers to get flexibility for developing database applications and also provides language interoperability just like Visual C++, Visual Basic .Net and Visual C# .Net. The CLR helps developers to get the arrays, classes and exception handling available through programming languages such as Visual C++ or Visual C# which is use in stored procedures, functions and triggers for creating database application dynamically and also provide more efficient reuse of code and faster execution of complex tasks. We particularly liked the error-checking powers of the CLR environment, which reduces run-time errors

Question: What are Checkpoint in SQL Server?
Answer: When we done operation on SQL SERVER that is not commited directly to the database.All operation must be logged in to Transaction Log files after that they should be done on to the main database.CheckPoint are the point which alert Sql Server to save all the data to main database if no check point is there then log files get full we can use Checkpoint command to commit all data in the SQL SERVER.When we stop the SQL Server it will take long time because Checkpoint is also fired.

Question: What is the difference between UNION ALL Statement and UNION?
Answer:- The main difference between UNION ALL statement and UNION is UNION All statement is much faster than UNION,the reason behind this is that because UNION ALL statement does not look for duplicate rows, but on the other hand UNION statement does look for duplicate rows, whether or not they exist.

Question: Write some disadvantage of Cursor?
Answer:- Cursor plays there row quite nicely but although there are some disadvantage of Cursor .
Because we know cursor doing roundtrip it will make network line busy and also make time consuming methods. First of all select query gernate output and after that cursor goes one by one so roundtrip happen.Another disadvange of cursor are ther are too costly because they require lot of resources and temporary storage so network is quite busy.

Question: What is Log Shipping and its purpose?
Answer: In Log Shipping the transactional log file from one server is automatically updated in backup database on the other server and in the case when one server fails the other server will have the same DB and we can use this as the DDR(disaster recovery) plan.

Question: What are the null values in SQL SERVER?
Answer: Before understand the null values we have some overview about what the value is. Value is the actual data stored in a particular field of particular record. But what is done when there is no values in the field.That value is something like <null>.Nulls present missing information. We can also called null propagation.

Question: What is difference between OSQL and Query Analyzer ?
Answer: Both are same for functioning but there is a little difference OSQL is command line tool which execute query and display the result same a Query Analyzer do but Query Analyzer is graphical.OSQL have not ability like Query Analyzer to analyze queries and show statistics on speed of execution .And other useful thing about OSQL is that its helps in scheduling which is done in Query Analyzer with the help of JOB.

SQL SERVER 2000 QUERY

Question: What are the different types of Locks?
Answer: There are three main types of locks that SQL Server
(1) Shared locks are used for operations that does not allow to change or update data, such as a SELECT statement.
(2)Update locks are used when SQL Server intends to modify a page, and later promotes the update page lock to an exclusive page lock before actually making the changes.
(3)Exclusive locks are used for the data modification operations, such as UPDATE, INSERT, or DELETE.

Question: Explain some SQL Server 2000 Query?
Answer: Here are some sql server 2000 query like Sql Insert Query, Delete Sql Query, Update Sql Query and Sql Create Query:
1) Sql Insert Query:
a) How to encrypt data by using Sql Insert Query.
--: insert into table_name(Tablecolumn1, tablecolumn2,. . . . .) values ('value1', pwdencrypt('value'),. . . .)

b) How to copy data from one table to another with the help of Sql Insert Query.
--: insert into table_name(column1,column2,. . . .) select column1, column2, ... from table_name2

c) Sql Insert Query using where clause
--: insert into tablename(column1,column2) select column1,column2 from tablename2 where id=value.

Question: What is 'Write-ahead log' in Sql Server 2000 ?
Answer: Before understanding it we must have an idea about the transaction log files. These files are the files which holds the data for change in database .
Now we explain when we are doing some Sql Server 2000 query or any Sql query like Sql insert query,delete sql query,update sql query and change the data in sql server database it cannot change the database directly to table .Sql server extracts the data that is modified by sql server 2000 query or by sql query and places it in memory.Once data is stores in memory user can make changes to that a log file is gernated this log file is gernated in every five mintues of transaction is done. After this sql server writes changes to database with the help of transaction log files. This is called Write-ahead log.

2. ***Question: What do u mean by Extents and types of Extends ?***
Answer: *An Extent is a collection of 8 sequential pages to hold database from becoming fregmented. Fragment means these pages relates to same table of database these also holds in indexing. To avoid for fragmentation Sql Server assign space to table in extents. So that the Sql Server keep upto date data in extents. Because these pages are continously one after another. There are usually two types of extends:-Uniform and Mixed.*

Uniform *means when extent is own by a single object means all collection of 8 ages hold by a single extend is called uniform.*

Mixed *mean when more then one object is comes in extents is known as mixed extents.*

3. ***Question: What is different in Rules and Constraints ?***
   Answer: *Rules and Constraints are similar in functionality but there is a An little diffrence between them.Rules are used for backward compatibility . One the most exclusive diffrence is that we an bind rules to a datatypes whereas constraints are bound only to columns.So we can create our own datatype with the help of Rules and get the input according to that.*

4. ***Question: What is defaults in Sql Server and types of Defaults ?***
   Answer: *Defaults are used when a field of columns is allmost common for all the rows for example in employee table all living in delhi that value of this field is common for all the row in the table if we set this field as default the value that is not fill by us automatically fills the value in the field its also work as intellisense means when user inputing d it will automatically fill the delhi . There are two types of defaults object and definations.*
   Object deault:-These defaults are applicable on a particular columns . These are usually deined at the time of table designing.When u set the object default field in column state this column in automatically field when u left this filed blank.
   Defination default:-When we bind the datatype with default let we named this as dotnet .Then every time we create column and named its datatype as dotnet it will behave the same that we set for dotnet datatype.

5. ***Question: What Is Database ?***
   Answer: *A database is similar to a data file in that it is a storage place for data. Like a data file, a database does not present information directly to a user; the user runs an application that accesses data from the database and presents it to the user in an understandable format.Database systems are more powerful than data files in that data is more highly organized. In a well-designed database, there are no duplicate pieces of data that the user or application must update at the same time. Related pieces of data are grouped together in a single structure or record, and relationships can be defined between these structures and records.When working with data files, an application must be coded to work with the specific structure of each data file. In contrast, a database contains a catalog that applications use to determine how data is organized. Generic database applications can use the catalog to present users with data from different databases dynamically, without being tied to a specific data format. A database typically has two main parts: first, the files holding the physical database and second, the database management system (DBMS) software that applications use to access data. The DBMS is responsible for enforcing the database structure, including: · Maintaining relationships between data in the database. Ensuring that data is stored correctly, and that the rules defining data relationships are not violated. · Recovering all data to a point of known consistency in case of system failures.*

   Question: what is Relational Database ?
   Answer: *Although there are differe nt ways to organize data in a database, relational databases are one of the most effective. Relational database systems are an application of mathematical set theory to the problem of effectively organizing data. In a relational database, data is collected into tables (called relations in relational theory). A table represents some class of objects that are important to an organization. For example, a company may have a database with a table for employees, another table for customers, and another for stores. Each table is built of columns and rows (called attributes and tuples in relational theory). Each column represents some attribute of the object represented by*

the table. For example, an Employee table would typically have columns for attributes such as first name, last name, employee ID, department, pay grade, and job title. Each row represents an instance of the object represented by the table. For example, one row in the Employee table represents the employee who has employee ID 12345. When organizing data into tables, you can usually find many different ways to define tables. Relational database theory defines a process called normalization, which ensures that the set of tables you define will organize your data effectively.

Question: What is Data Integrity and it's categories ?

Answer: *Enforcing data integrity ensures the quality of the data in the database. For example, if an employee is entered with an employee_id value of 123, the database should not allow another employee to have an ID with the same value. If you have an employee_rating column intended to have values ranging from 1 to 5, the database should not accept a value of 6. If the table has a dept_id column that stores the department number for the employee, the database should allow only values that are valid for the department numbers in the company. Two important steps in planning tables are to identify valid values for a column and to decide how to enforce the integrity of the data in the column. Data integrity falls into these categories:*

1) Entity integrity
2) Domain integrity
3) Referential integrity
4) User-defined integrity

Entity Integrity: *Entity integrity defines a row as a unique entity for a particular table. Entity integrity enforces the integrity of the identifier column(s) or the primary key of a table (through indexes, UNIQUE constraints, PRIMARY KEY constraints, or IDENTITY properties).*

Domain Integrity: *Domain integrity is the validity of entries for a given column. You can enforce domain integrity by restricting the type (through data types), the format (through CHECK constraints and rules), or the range of possible values (through FOREIGN KEY constraints, CHECK constraints, DEFAULT efinitions, NOT NULL definitions, and rules).*

Referential Integrity: *Referential integrity preserves the defined relationships between tables when records are entered or deleted. In Microsoft® SQL Server™ 2000, referential integrity is based on relationships between foreign keys and primary keys or between foreign keys and unique keys (through FOREIGN KEY and CHECK constraints). Referential integrity ensures that key values are consistent across tables. Such consistency requires that there be no references to nonexistent values and that if a key value changes, all references to it change consistently throughout the database. When you enforce referential integrity, SQL Server prevents users from:*

· Adding records to a related table if there is no associated record in the primary table.
· Changing values in a primary table that result in orphaned records in a related table.
· Deleting records from a primary table if there are matching related records.

For example, with the sales and titles tables in the pubs database, referential integrity is based on the relationship between the foreign key (title_id) in the sales table and the primary key (title_id) in the titles table.

User-Defined: *Integrity User-defined integrity allows you to define specific business rules that do not fall into one of the other integrity categories. All of the integrity categories support user-defined integrity (all column- and table-level constraints in CREATE TABLE, stored procedures, and triggers).*

Question: SQL Server runs on which TCP/IP port and From where can you change the default port?

Answer: *SQL Server runs on port 1433 but we can also change it for better security and From the network Utility TCP/IP properties -->Port number.both on client and the server.*

6. ***Question: What is the use of DBCC commands?***
   Answer: *DBCC stands for database consistency checker. We use these commands to check the consistency of the databases, i.e., maintenance, validation task and status checks.DBCC CHECKDB - Ensures that tables in the db and the indexes are correctly linked.and DBCC CHECKALLOC To check that all pages in a db are correctly allocated. DBCC SQLPERF - It gives report on current usage of transaction log in percentage. DBCC CHECKFILEGROUP - Checks all tables file group for any damage.*

7. ***Question: What is the difference between a HAVING CLAUSE and a WHERE CLAUSE?***
   Answer: *Having Clause is basically used only with the GROUP BY function in a query. WHERE Clause is applied to each row before they are part of the GROUP BY function in a query.*

8. ***Question: When do you use SQL Profiler?***
   Answer: *SQL Profiler utility allows us to basically track Connections to the SQL Server and also determine activities such as which SQL Scripts are running, failed jobs etc.*

9. ***Question: Can you explain the role of each service?***
   Answer: *SQL SERVER - is for running the databases SQL AGENT - is for automation such as Jobs, DB Maintenance, Backups DTC - Is for linking and connecting to other SQL Servers.*

Question: What is Normalization?
Answer: *The logical design of the database, including the tables and the relationships between them, is the core of an optimized relational database. A good logical database design can lay the foundation for optimal database and application performance. A poor logical database design can impair the performance of the entire system.*

Normalizing a logical database design involves using formal methods to separate the data into multiple, related tables. A greater number of narrow tables (with fewer columns) is characteristic of a normalized database. A few wide tables (with more columns) is characteristic of an nonnomalized database. Reasonable normalization often improves performance. When useful indexes are available, the Microsoft® SQL Server™ 2000 query optimizer is efficient at selecting rapid, efficient joins between tables.

Some of the benefits of normalization include:
·Faster sorting and index creation.
·A larger number of clustered indexes. For more information, Narrower and more compact indexes.
·Fewer indexes per table, which improves the performance of INSERT, UPDATE, and DELETE statements.
·Fewer null values and less opportunity for inconsistency, which increase database compactness.

As normalization increases, so do the number and complexity of joins required to retrieve data. Too many complex relational joins between too many tables can hinder performance. Reasonable normalization often includes few regularly executed queries that use joins involving more than four tables.

Sometimes the logical database design is already fixed and total redesign is not feasible. Even then, however, it might be possible to normalize a large table selectively into several smaller tables. If the database is accessed through stored procedures, this schema change could take place without affecting applications. If not, it might be possible to create a view that hides the schema change from the applications.

Question: Can you explain what View is in SQL?
Answer: *View is just a virtual table nothing else which is based or we can say devlop with SQL SELECT query.So we can say that its a real database table (it has columns and rows just like a regular table),but one difference is that real tables store data,but views can't. View data is generated dynamically when the view is referenced.And view can also references one or more existing database tables or other views. We can say that it is filter of database.*

Question: How to get which Process is Blocked in SQL SERVER?
Answer:- *There are two ways to get this* ***sp_who*** *and* ***sp_who2*** *. You cannot get any detail about the sp_who2 but its provide more information then the sp_who . And other option from which we can find which process is blocked by other process is by using Enterprise Manager or Management Studio, these two commands work much faster and more efficiently than these GUI-based front-ends.*

Question: Can you tell me the difference between DELETE &TRUNCATE commands?
Answer: *Delete command removes the rows from a table based on the condition that we provide with a WHERE clause. Truncate will actually remove all the rows from a table and there will be no data in the table after we run the truncate command.*