- ASP.NET
- INTERVIEW QUESTION AND ANSWERS

- What is .NET ?
- What is .NET Framework?
- What is ASP?
- What is ASP.NET?
- What is the difference between ASP Session State and ASP. NET Session State?
- What is the difference between Classic ASP and ASP. NET?

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What is .NET ?

.NET is a platform which is used to develop the different types of Applications.

NET Consist on:

- .NET Framework
- Visual Studio .NET IDE

What is .NET Framework?

Microsoft introduced Dot Net programming concepts in the year **1999**. Dot Net contains a **collection of languages** like VC#.Net, VB.Net, VJ#.Net, VC++.Net, ASP. Net(specification) etc. All the Dot Net programming languages **works based on a common platform called Dot Net framework**.

.NET Frameworks provide a **Environment** which **allow us to develop the different kinds of applications**.

- Windows -based Applications
- Web based Applications
- Console Applications
- Building Windows Device Driver

.NET Frameworks consists of two parts:

- .NET Common Language Runtime
- .NET Class Library

These **two components** are packaged together into the .NET Frameworks SDK

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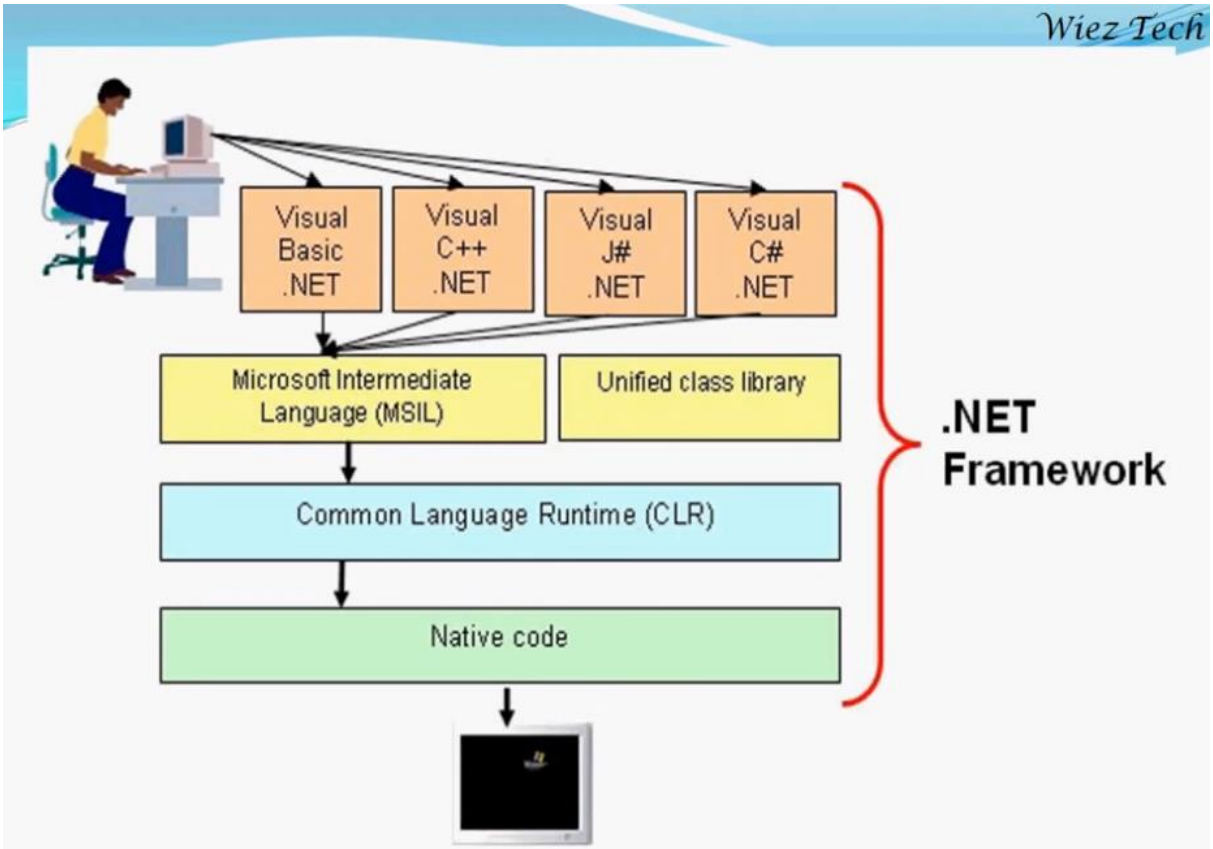

Dot Net Framework Main Objectives

- It supports **platform independent concepts**
- It supports **language independent** concepts
- It supports language interoperability concepts
- It supports pure **OOPs concepts**
- It supports to develop background processes with the help of windows services
- It supports to work with databases with the help of ADO.NET
- It supports to **develop 3-tier architecture** with the help of Dot Net remoting
- It supports to develop game programming with the help of **multi-threading**
- It supports to work with **link programming**
- It supports to work with **WPF** for developing animations

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What is ASP?

- ASP stands for **Active Server Pages**.
- It is also known as **classic ASP**.
- It is a **server side technology** provided by Microsoft which is used to create dynamic and user-friendly web pages.
- It uses different scripting languages to **create dynamic web pages** which can be **run on any type of browsers**.

What is ASP.NET?

- ASP.NET is a **server side scripting technology** that enables scripts to be executed by an Internet server.
- It is part of Microsoft .NET Platform .
- ASP.NET also support ADO.NET
- Run on IIS.
- ASP.NET is a specification developed by Microsoft to **create dynamic Web applications, Web sites and Web services**.
- It is a **part of .NET Framework**.
- The ASP.NET compiles the Web Pages and provides **much better performance than scripting languages, such as VBScript**.
- The **Web Forms support** to create powerful forms based Web pages.
- ASP.NET Web server controls to create interactive Web applications with the help of Web server controls, you can **easily create a Web application**.

What is the difference between Classic ASP and ASP. NET?

Classic ASP

- ASP is **Interpreted language** based on scripting languages like Jscript or VBScript.
- ASP has **Mixed HTML and coding logic**.
- **Limited** development and debugging **tools** available.
- **Limited OOPS support**.
- **Limited** session and application **state management.**

ASP. NET

- ASP. Net is supported by compiler and has **compiled language support**.
- **Separate** code and design logic possible.
- **Variety of compilers** and tools available including the Visual Studio.NET.
- **Completely Object Oriented.**
- **Complete** session and application **state management.**
- **Full XML Support** for easy data exchange.

What is the difference between Classic ASP Session State and ASP. NET Session State?

ASP Session:

- **ASP only support InPorc** sessions so it can not span in multiple Servers.
- **ASP** Sessions are process **dependent in IIS** so if we restart the IIS session will also Recycled.
- **ASP** sessions are **cookies dependent**. So Asp session will work when browser support the cookie

ASP.NET Session:

- **ASP.NET** session **support InProc and OutProc(SQL server session and State Server)** so it can span in multiple server.
- **ASP.NET** session are **process independent**. It can maintained even IIS is reboot.
- **ASP.NET** sessions are **cookieless session**. So these are cookie independent.

- ASP.NET
- INTERVIEW QUESTION AND ANSWERS

- What are the Components of the.NET Frameworks ?
- What are the procedure for compile the C# code ?
- What is delay signing ?
- How can say, .NET is platform Independent ?
- Which Namespace is used in .NET class Libraries?
- What is Meta Data in .NET ?

Wiez Tech

What are the Components of the.NET Frameworks ?

There are following components of the .NET Frameworks.

- Common Language Runtime (CLR)
- Common Type System(CTS)
- Meta Data and Assemblies
- NET Framework class Library
- ASP.NET
- ADO.NET
- Windows Workflow Foundation(WWF)
- Windows Communication Foundation(WCF)
- Windows Presentation Foundation(WPF)
- LINQ

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What are the procedure for compile the C# code ?

This is the way to compile the c# Code

C# Code -------→csc compiler -------→MSIL + Meta Data ----------
→JIT Compiler----→Native code

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What is delay signing ?

It allows you to place shared assembly in the GAC folder by signing the assembly with public key or private key.

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How can say, .NET is platform Independent ?

MSIL code is CPU Independent .

MSIL Code must be converted into CPU specific code(Machine language code) either by JIT compiler or Ngen.exe Tool, so that you can say .NET is platform Independent like java.

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Which Namespace is used in .NET class Libraries?

System.object

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What is Meta Data in .NET ?

Meta Data is known as **Data about Data**.

You can easily find Meta Data of an Assembly File(.exe code) through the concept of Reflection.

Which Utilities is used in .NET to compile the Managed code Assembly to the processor specific native code?

Native Image Generator(Ngen.exe).

- ASP.NET
- INTERVIEW QUESTION AND ANSWERS

- What is an assembly/ .NET Assembly ?
- What are different Types of assemblies?
- What are the advantage of an assembly?
- What is Global assembly cache in .NET?
- What is side by side Execution in .NET?
- When did release .NET Framework?

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What is an assembly/ .NET Assembly?

A assembly is the **smallest units of versioning** and deployment in the .NET Application.

In other way - A **single deployment unit** is known as an assembly file. After compilation of the code, we get ,is called assembly file.

We generally use following assembly file in .NET Application.

- Web services
- Windows Services
- Service components
- Remoting Application
- WCF Services

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What are different Types of assemblies?

There are following types of assemblies

- Private assemblies
- Public/Shared assemblies

Private assemblies

- ✓ Private assembly is **used inside an application only**.
- ✓ We **can't access it from out side the application**.
- ✓ It is **not identified** by a **strong Name**.
- ✓ Private assembly has **no version Constraints**.

Public/Shared assemblies

- ✓ Shared assembly can be **used in multiple applications**.
- ✓ It can be **used inside or outside the applications**.
- ✓ It contains a **strong name**.
- ✓ A public assembly is **stored in GAC** (Global assembly cache).
- ✓ It has version Constraint. It also **stores the Shared assemblies file**.

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What are the advantage of an assembly?

There are following advantage of an assembly

- Managed code
- Encapsulation
- Better performance

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What is Global assembly cache in .NET?

A Global assembly cache (GAC) is the **central place for registration assemblies** in .NET.

There are some ways to deploy an assembly in the Global assembly cache .

- GAC Tool (Gacutil.exe)
- An installer that is designed to work with GAC.
- Drag and Drop assembly into the cache from the Windows Explorer

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What is side by side Execution in .NET?

The process of **execution of multiple versions of an assembly or application** is known as side by side Execution in .NET.

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When did release .NET Framework?

.NET Framework version	Release date	Development tool
1	13-Feb-02	Visual Studio .NET 2002
1.1	24-Apr-03	Visual Studio .NET 2003
2	7-Nov-05	Visual Studio 2005
3	6-Nov-06	Expression Blend
3.5	19-Nov-07	Visual Studio 2008
4	12-Apr-10	Visual Studio 2010
4.5	15-Aug-12	Visual Studio 2012
4.5.1	17-Oct-13	Visual Studio 2013
4.5.2	5-May-14	N/A
4.6	20-Jul-15	Visual Studio 2015
4.6.1	30-Nov-15	Visual Studio 2015 Update 1
4.6.2	2-Aug-16	N/A
4.7	5-Apr-17	Visual Studio 2017

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- ASP.NET
- INTERVIEW QUESTION AND ANSWERS

- What are the benefits of the .NET Framework?
- What is a Strong Name in .NET ?
- Where is shared assembly file stored ?
- How to create a strong name for a .NET Application ?
- Can we place two files with same file name in GAC Folder ?
- How does GAC differentiate two files with same name ?

Wiez Tec

What are the benefits of the .NET Framework?

There are some benefits of the .NET Framework.

- Cross -platform support
- Language Interoperability
- Consistent Programming Model
- Automatic Management of Resources
- Very easy in Development

Wiez Tech

What is a Strong Name in .NET ?

A Strong Name contains the name of the assembly ,Version number, culture and a public key tokens.

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Where is shared assembly file stored ?

Global assembly cache

Wiez Tech

How to create a strong name for a .NET Application ?

To create a strong Name ,We use a strong Name tool (sn.exe).

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Can we place two files with same file name in GAC Folder ?

Yes.

Wiez Tech

How does GAC differentiate two files with same name ?

GAC does differentiate two files with same name by version number.

Example

If first file has version number = 1.0.0.0 then
second file has version number = 1.1.0.0

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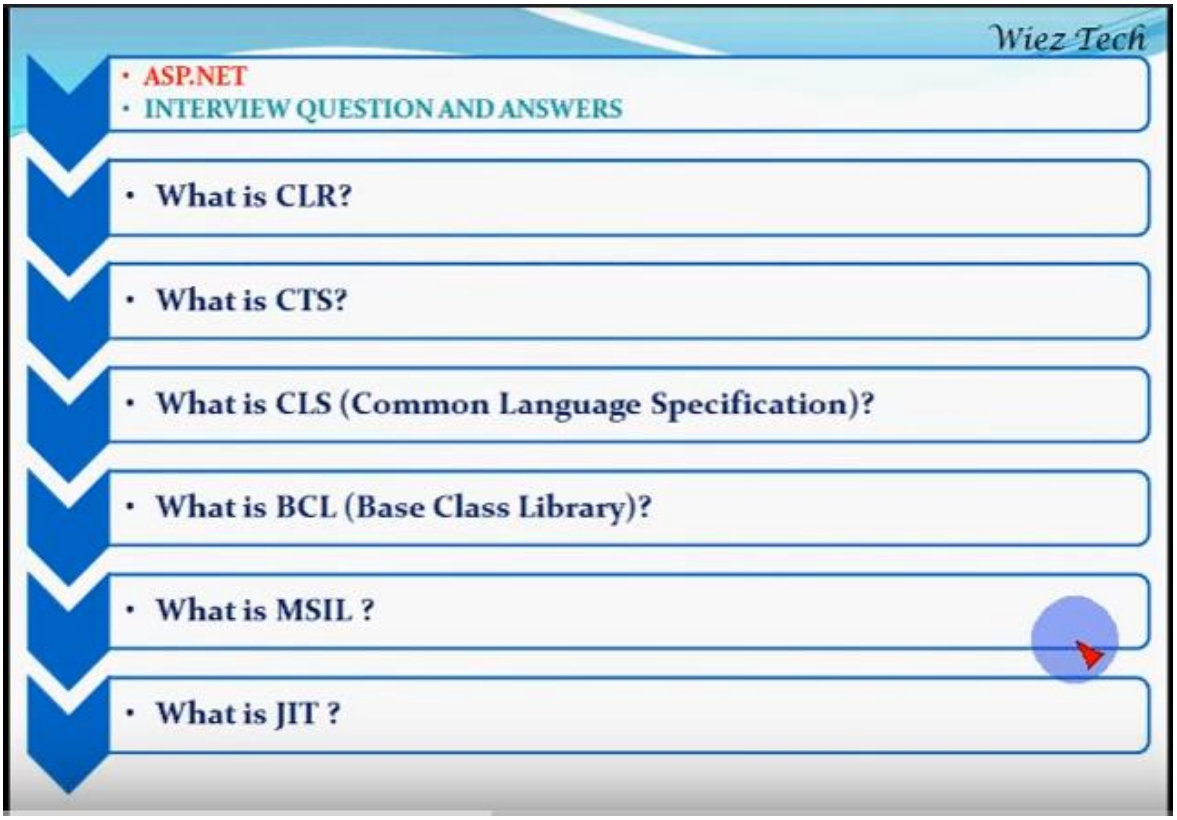
Which types of classes is used in .NET Framework?

.NET Class Libraries.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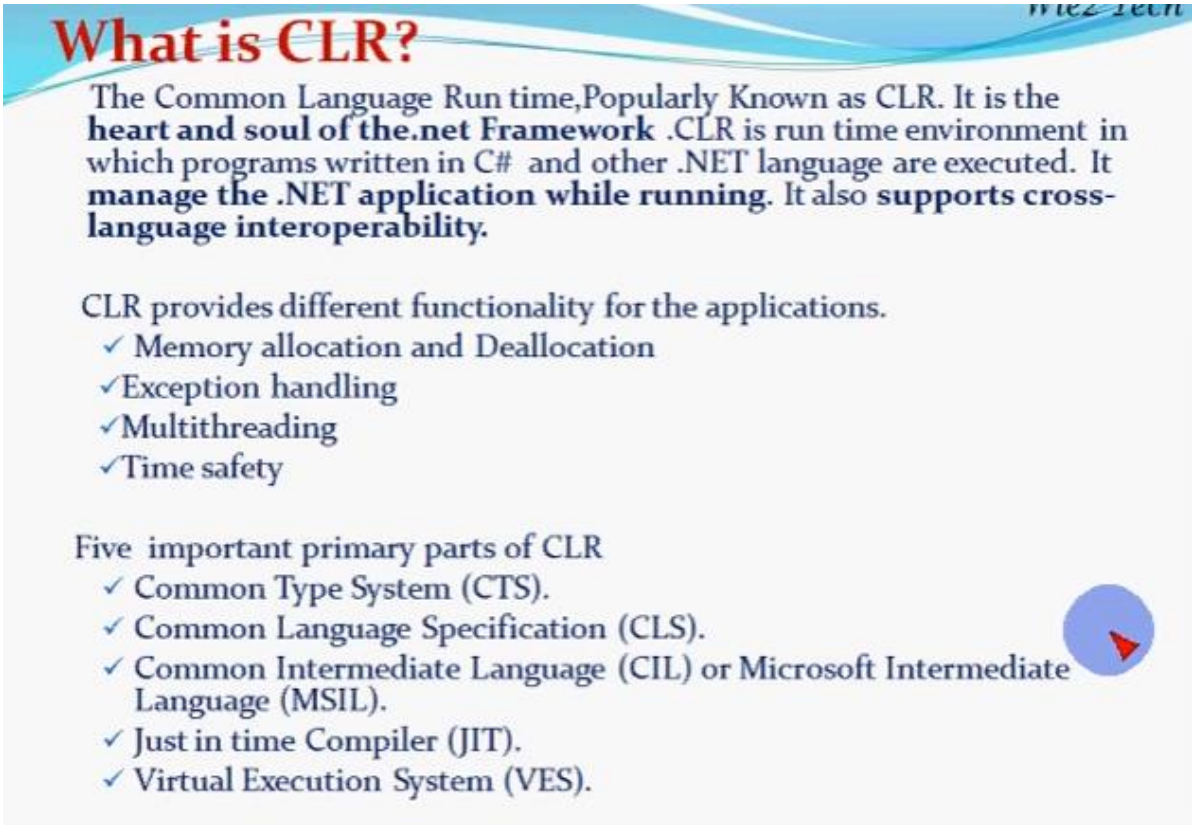
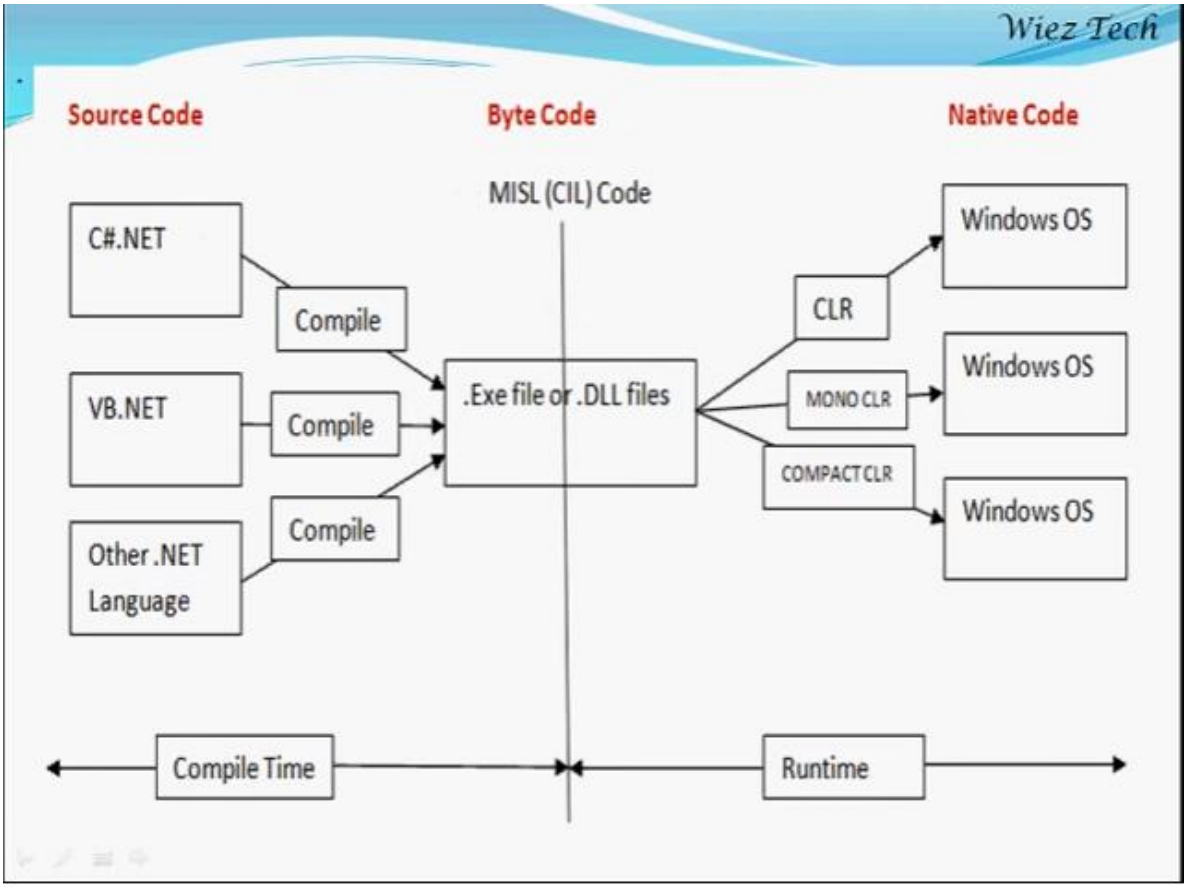
ASP.NET
INTERVIEW QUESTION AND ANSWERS
What is CLR?
What is CTS?
What is CLS (Common Language Specification)?
What is BCL (Base Class Library)?
What is MSIL ?
What is JIT ?


What is CLR?
The Common Language Run time,Popularly Known as CLR. It is the heart and soul of the.net Framework .CLR is run time environment in which programs written in C# and other .NET language are executed. It manage the .NET application while running. It also supports cross-language interoperability.
CLR provides different functionality for the applications.
✓ Memory allocation and Deallocation
✓Exception handling
✓Multithreading
✓Time safety
Five important primary parts of CLR
✓ Common Type System (CTS).
✓ Common Language Specification (CLS).
✓ Common Intermediate Language (CIL) or Microsoft Intermediate Language (MSIL).
✓ Just in time Compiler (JIT).
✓ Virtual Execution System (VES).



What is CTS?

The .NET Framework provides multiple language support using the feature known as Common Type System that is built into the CLR . CTS provides common data type for all the language.

What is CLS (Common Language Specification)?

CLS is a set of rules which must be followed by all the language compiler that we want to use on .NET platform.

The CLS is a subset of CTS and therefore the language supporting the CLS can use each other.

What is BCL (Base Class Library)?

BCL is a collection of predefined classes and Namespaces. The top most name space is "**SYSTEM**" and the top most class is "**OBJECT**".

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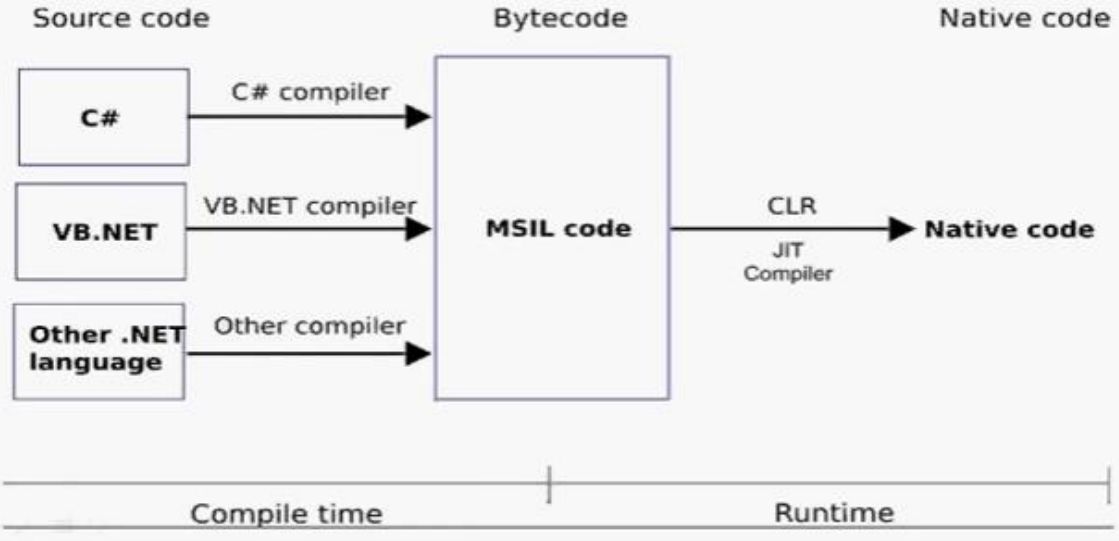
What is MSIL ?

MSIL is a **Microsoft Intermediate Language. CSC compiler(C# Compiler) convert** the C# code to **a different language** that is Known as **MSIL** .

It is also known as **assembly code and meta data.**



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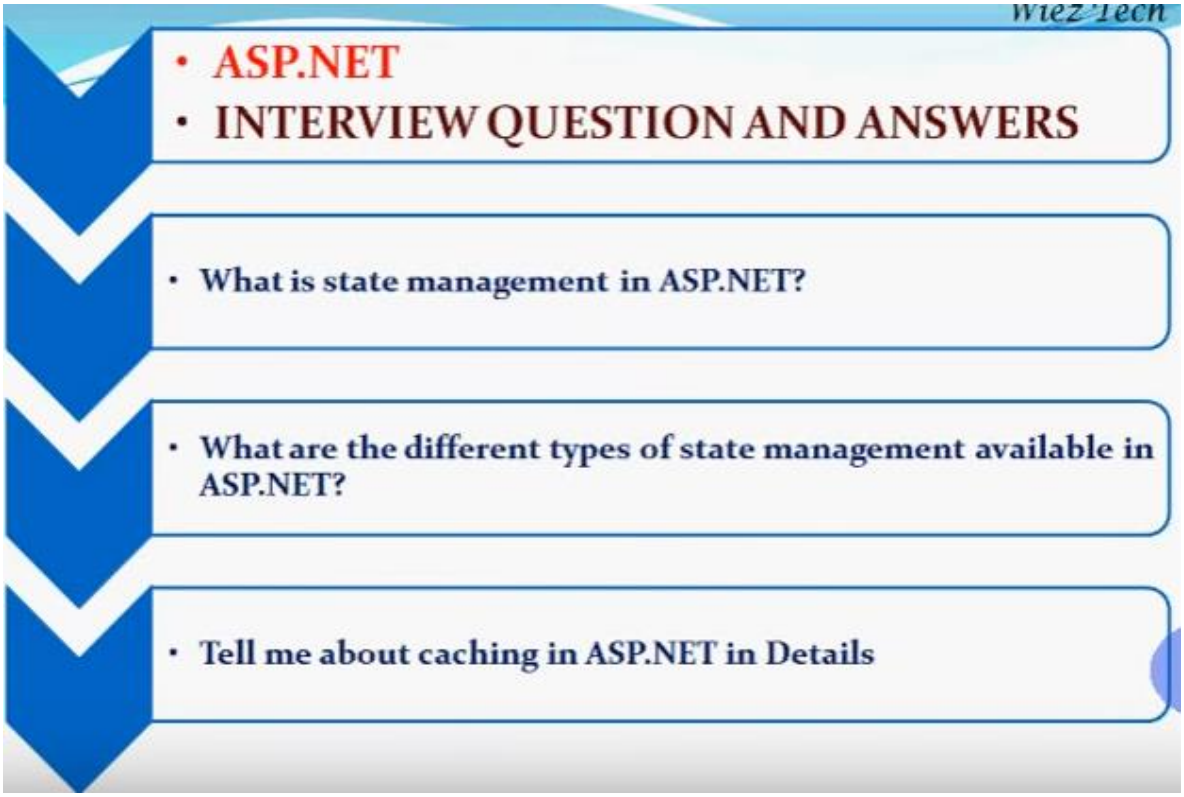
What is JIT ?

JIT is a **Just -in-Time compiler** ,that is used to **convert** the **MSIL code to the Native code(CPU understanding code)**. Native code is known as machine language code, which is executed at any machine. So that we can say it is platform independent like java.



What is state management in ASP.NET?

State Management in ASP.NET

- ✓ A new instance of the Web page class is created each time the page is posted to the server.
- ✓ In traditional Web programming, all information that is associated with the page, along with the controls on the page, would be lost with each roundtrip.
- ✓ The Microsoft ASP.NET framework includes several options to help you preserve data on both a per-page basis and an application-wide basis.

These options can be broadly divided into the following **two categories**:

- ➢ Client-Side State Management
- ➢ Server-Side State Management

What are the different types of state management available in ASP.NET?

There are 2 types of state management available in ASP.NET

- Client-Side State Management
- Server-Side State Management

Client-Side State Management

Client-based options involve storing information either in the page or on the client computer.

Some client-side state management options are:

- ✓ Hidden fields
- ✓ View state
- ✓ Cookies
- ✓ Query strings

Server-Side State Management

There are situations where you need to store the state information on the server side. Server-side state management enables you to manage application-related and session-related information on the server.

Some Server-side state management options are:

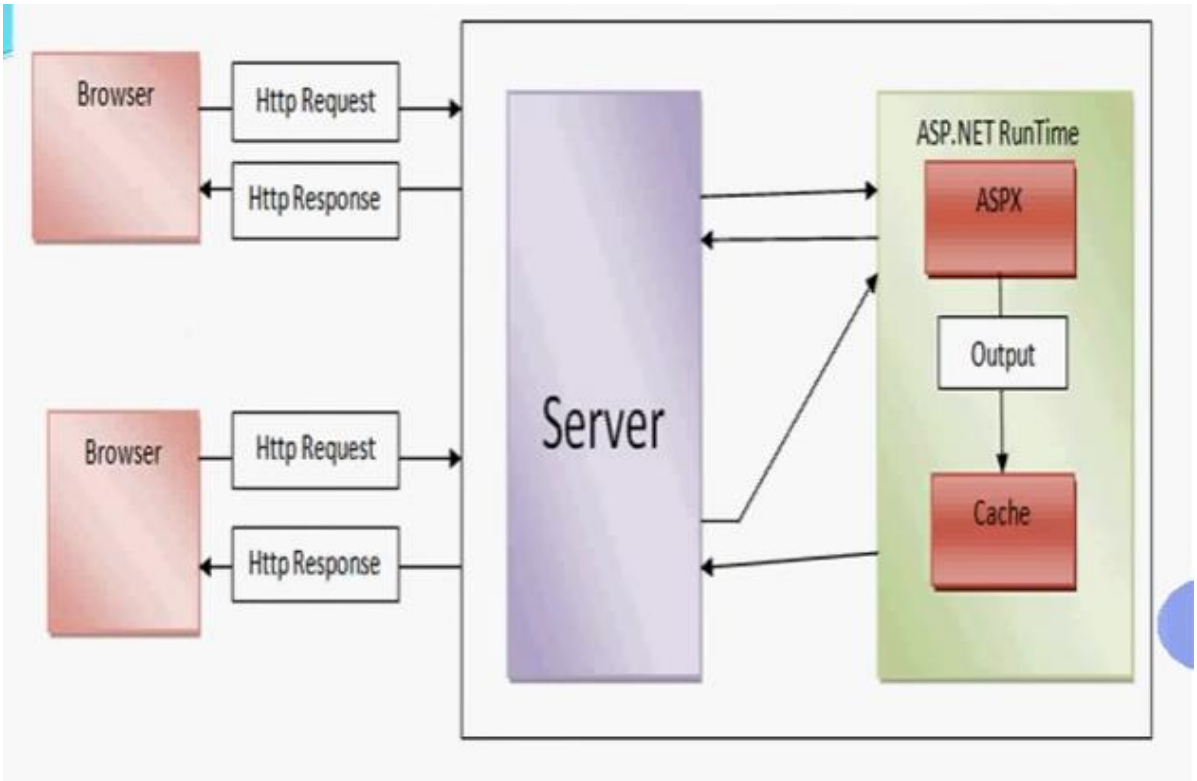
- ✓ Application state
- ✓ Session state
- ✓ Database

What is caching in ASP.NET?

- ✓ Caching is one of the most interesting **concept** and operation in ASP.NET.
- ✓ Caching is the **process** of **storing data, pages or parts of a web page in memory** so that they can be retrieved faster than they could be accessed from a file or a database.
- ✓ This helps to **improve performance** and increase the **scalability** of a web application.

For example,

if you have an e-commerce website with a product catalogue, you can cache a huge part of the catalogue. Data that changes infrequently but is accessed by a lot of users is a good example of what you can cache. The first request to the data stores it in the cache and subsequent requests are served from the cache until the cache expires.



How many types of caching in ASP.NET?

There are following types of caching

- Page Caching
- Fragment Caching
- Data Caching

What is Page Caching in ASP.NET?

In this case **entire page go for cache**. To cache an entire page's output we need to specify a directive at the top of our page, this directive is the @OutputCache.

```
<%@ OutputCache Duration = 5 VaryByParam = "ID" %>
```

Here, in that statement **Duration** and **VarByParam** are the two attributes of the OutputCachedirective.

Duration Attribute

This attributes **represents** the **time in seconds** of how long the output cache should be **stored in memory**. After the defined duration the content stored in the memory will be cleared automatically.

VarByParam Attribute

This is the most important attributes. It generally **defines** the **query string parameters to vary the cache (in memory).**

You can also **specify it as "*".** In this case the **cached** content is varied for **all the parameters** using in the querysrting.

For example:

```
<%@ OutputCache Duration = 5 VaryByParam = "*"%>
```

In case of caching a page, some pages can generate different content for different browsers. In that scenario we need to add an additional attribute to our statement for overcoming the preceding problem.

For example:

```
<%@ OutputCache Duration = 5 VaryByParam = "ID" VaryByCustom = "Browser"
%>
<%@ OutputCache Duration = 5 VaryByParam = "*" VaryByCustom = "Browser"
%>
```


What is Fragment Caching in ASP.NET?

In some scenarios we only need to **cache only a some segment of a page.**

For example

Contact us page in a main page will be the same for all the users and for that there is no need to cache the entire page. So for that we prefer to use fragment caching option.

For example

```
<%@ OutputCache Duration = 10 VaryByParam = "None" %>
<%@ OutputCache Duration = 5 VaryByParam = "None" VaryByCustom = "Browser" %>
```

What is Data Caching in ASP.NET?

ASP.NET also supports **caching of data as objects**. We can **store objects in memory** and **use** them **across various pages** in our application.

This feature is implemented using the **Cache class**.

This cache has a lifetime equivalent to that of the application.

Objects can be stored as name value pairs in the cache. A string value can be inserted into the cache as follows:

```
Cache["name"]="Rakesh";
```

The stored string value can be retrieved as

```
if (Cache["name"] != null)
{
  Label1.Text= Cache["name"].ToString();
}
```

To insert objects into the cache, **different versions of the Insert method** of the Cache class can be used. These methods allow us to use the more powerful features provided by the Cache class. One of the overloads of the Insert method is used as follows:

```
Cache.Insert("Name", strName,
new CacheDependency(Server.MapPath("name.txt"),
DateTime.Now.AddMinutes(2), TimeSpan.Zero);
```

- ✓ The first **two parameters** are the **key** and the **object** to be inserted.
- ✓ The **third parameter** is of type **CacheDependency** and helps us set a dependency of this value to the file named name.txt. So whenever this file changes, the value in the cache is removed.
- ✓ We can specify null to indicate no dependency.
- ✓ The **fourth parameter** specifies the **time** at which the value should be removed from cache.
- ✓ The **last parameter** is the **sliding expiration** parameter which shows the time interval after which the item is to be removed from the cache after its last accessed time.

What is scavenging in ASP.NET?

The **cache automatically removes** the least used items from memory, when system memory becomes low. This process is called **scavenging**.

We can specify priority values for items we add to the cache so that some items are given more priority than others:

```
Cache.Insert("Name", strName,    new
CacheDependency(Server.MapPath("name.txt"),
DateTime.Now.AddMinutes(2), TimeSpan.Zero,
CacheItemPriority.High, null);
```

The **CacheItemPriority** enumeration has members to set various priority values. The **CacheItemPriority.High** assigns a priority level to an item so that the item is least likely to be deleted from the cache.

How many types of Cache Dependency ?

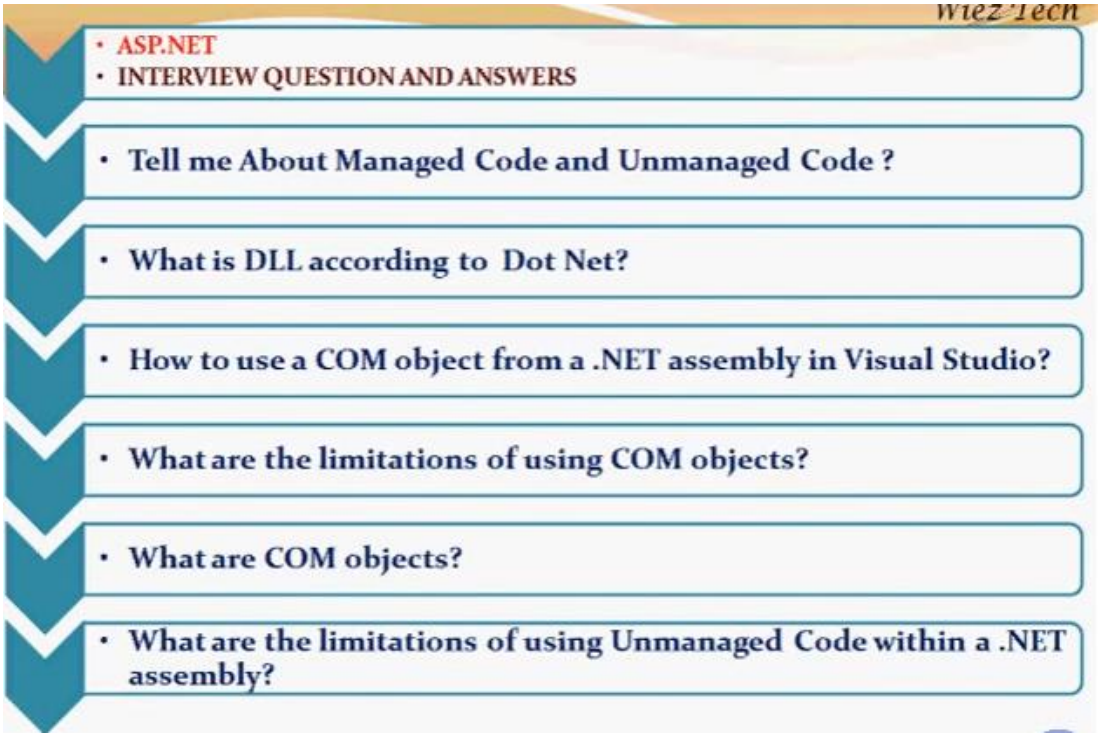
There are following types of **Cache Dependency**

- ***File-Based Dependency***: It allows to validate a cached item with external file such as Extensible Markup Language(XML) and database.
- ***Key-Based Dependency:*** It allows to manage relationship among cached items. Which depends on each other.
- ***SQL-Based Dependency***: It allows to validate a cached item with the Sql Database.
- ***Aggregate Dependency***: It allow s to validate a cached items to multiple resources, such as External file or Sql Database.
- ***Custom Dependency***: It allows to build and use your own dependency instead of using built in dependency.
- ***Time Dependency***: It allows to define the expiration time of a particular item of database .

What is Advantages of Caching in ASP.NET?

There are following Advantages of Caching

- ✓ It **decreases server round trips** for fetching data from the database by persisting data in the memory.
- ✓ The page **download is faster.**
- ✓ It reduces the load on the web services or database.
- ✓ It **increases reliability**.
- ✓ Reduce the processing Time
- ✓ Reduce the Network Traffic
- ✓ Improve the **Performance** of web application
- ✓ Enhance the user Experience
- ✓ Improve the site performance
- ✓ Large data management



What is Managed Code in ASP.NET?

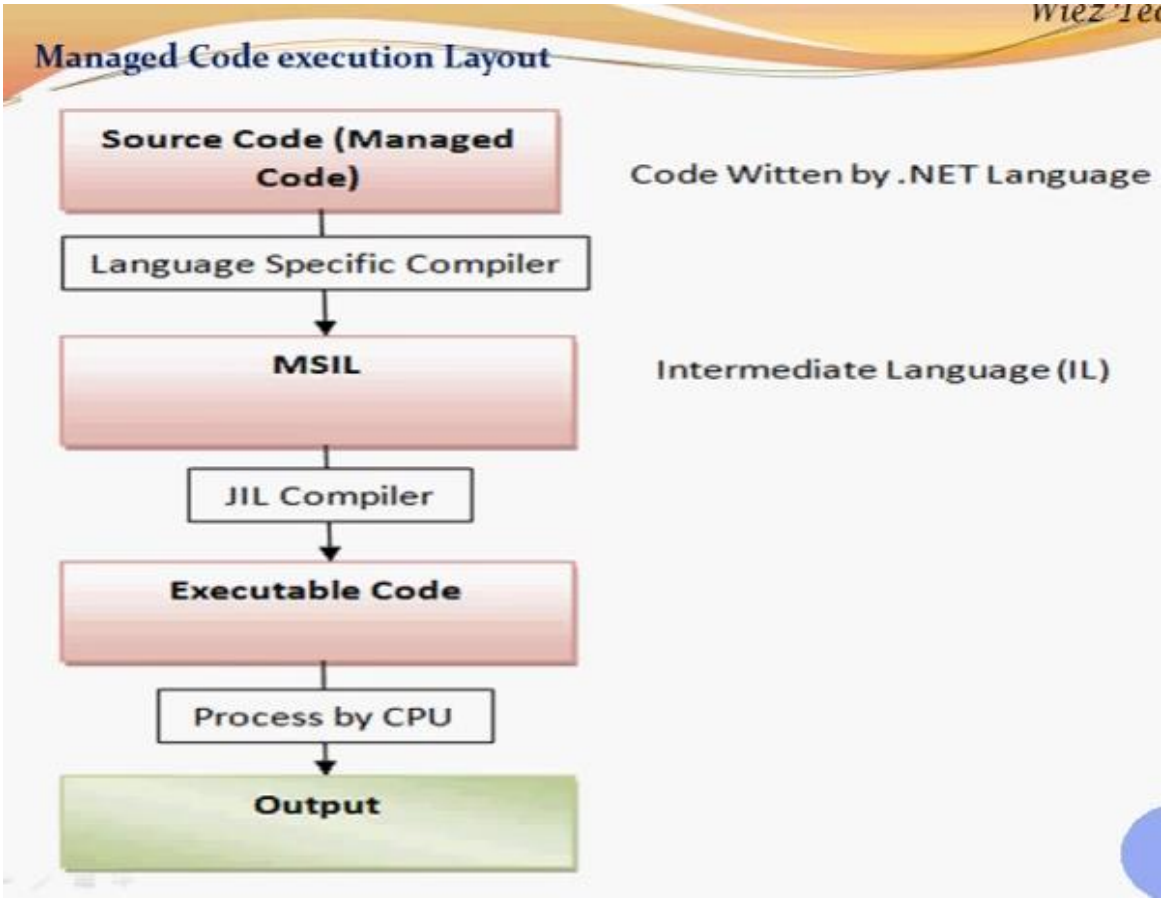
Managed code is the code that directly **executed by the CLR**. Managed code is **always executed by the runtime execution environment** and not the operating system directly

A Managed code is execute by the CLR as Following ways

- Select the Language compiler
- Compile the code to MSIL(CSC Compiler).
- Compile the MSIL code to Native code(JIT Compiler)
- Execute the code

CLR provides the below services for the managed code

- ✓Automatic memory management (Memory allocation and release)
- ✓Type checking
- ✓Exception handling
- ✓Code security
- ✓Thread support
- ✓Type check
- ✓Debug support



What are the limitations of using Unmanaged Code within a .NET assembly?

There are following limitations of using Unmanaged Code within a .NET assembly

- ✓ Performance
- ✓ Type safety
- ✓ Code security
- ✓ Versioning

What are the limitations of using COM objects?

The following are the limitations of using COM objects from .NET

- ✓ Shared solutions might not allow COM objects
- ✓ COM objects are prone to memory leaks
- ✓ Type libraries might be inaccurate
- ✓ COM is unmanaged code

How to use a COM object from a .NET assembly in Visual Studio?

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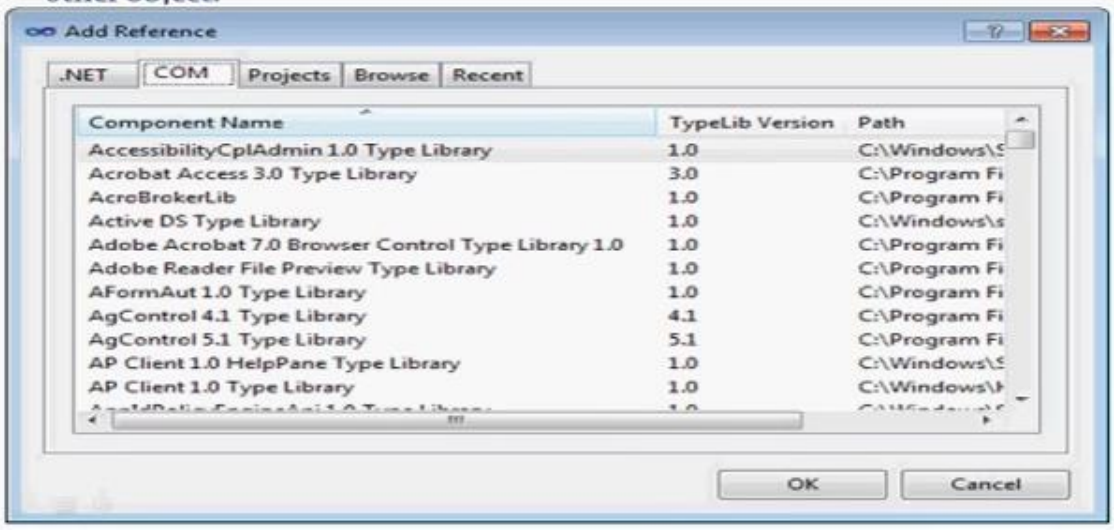
- Open the .NET project in Visual Studio, and **add a reference to the COM object**, as shown in diagram below. If the COM object **does not appear** then you can **add a reference by clicking Browse**.
- Create an instance of the COM object in code, and use it as you would any other object.



- ASP.NET
- INTERVIEW QUESTION AND ANSWERS

- What are the different environments in development process or development life cycle?
- ASP.NET Page is very slow. What will you do to make it fast?
- What is the difference between layers and tiers in ASP.NET?
- What is the advantages and disadvantage of 3 Tier Architecture?

What are the different environments in development process or development life cycle?

There are following environments in development process or development life cycle

Development Environment **:**All the developers check in their current work into development environment.

QA (Quality Assurance) Environment: This is the environment, where testers (QA) test the application.

Staging Environment: Many organizations, try to keep their staging environment as identical as possible to the actual production environment. The primary reason for this environment is to identify any deployment related issues. Usually setup this staging environment for complete end to end testing.

Production Environment: The actual live environment, that we use for day to day business.

Code flows from **Development => QA => Staging => Production**

ASP.NET Page is very slow. What will you do to make it fast?

There are several reasons for the page being slow.

If the application is slow due to database side :

If the page is executing SQL queries or stored procedures, run those on the database and **check how long do they take to run**. If the queries are taking more time, then you have to **tune the queries** for better performance. To tune the queries, there are several ways

- Check if there are indexes to help the query
- Select only the required columns, avoid Select *.
- Reduce the number of joins as per requirement.
- If possible use NO LOCK on your select statements
- Check if there are cursors then replace them with joins as per condition.

If the queries are running fine , then **slowness of application is due to application code.**

Isolate the page event that is **causing the issue by turning tracing on**. To turn tracing on, set **Trace="true"** in the page directive. Once you have **tracing turned on** you should see trace information.

In this case Page Load event is taking the maximum time. So we know, the code in Page_Load event is causing the issue. Once you look at the code, you should be able to nail down the issue.

```
<%@ Page Title="Home Page" Language="C#" MasterPageFile="~/Site.master" AutoEventWireup="true"
    CodeBehind="Default.aspx.cs" Inherits="WebApplication1._Default" Trace="true" %>
```

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Trace Information

Request Details

Session Id:	ycrxj3ggt0dosxycjwq3fcp3	**Request Type:**	GET
Time of Request:	5/14/2017 11:32:51 AM	**Status Code:**	200
Request Encoding:	Unicode (UTF-8)	**Response Encoding:**	Unicode (UTF-8)

Trace Information

Category	Message	From First(s)	From Last(s)
aspx.page	Begin PreInit		
aspx.page	End PreInit	0.0273663949493297	0.027366
aspx.page	Begin Init	0.0276285524555612	0.000262
aspx.page	End Init	0.0279503767040334	0.000322
aspx.page	Begin InitComplete	0.0280158218406845	0.000065
aspx.page	End InitComplete	0.0280816499369629	0.000066
aspx.page	Begin PreLoad	0.0281463231543592	0.000065
aspx.page	End PreLoad	0.0282494923344914	0.000103
aspx.page	Begin Load	0.0283210948251802	0.000072
aspx.page	End Load	0.0289301009556623	0.000609
aspx.page	Begin LoadComplete	0.0290036282444879	0.000074
aspx.page	End LoadComplete	0.0290679165022568	0.000064
aspx.page	Begin PreRender	0.0291229657289692	0.000055
aspx.page	End PreRender	0.0294964728074143	0.010374
aspx.page	Begin PreRenderComplete	0.0295969472776155	0.000100
aspx.page	End PreRenderComplete	0.0296631603260608	0.000066
aspx.page	Begin SaveState	0.0304362554977047	0.010773
aspx.page	End SaveState	0.0538527721905165	0.003417
aspx.page	Begin SaveStateComplete	0.0539359234700261	0.000083
aspx.page	End SaveStateComplete	0.854058340631526	0.800122
aspx.page	Begin Render	0.854143031749545	0.000085
aspx.page	End Render	0.858035358541773	0.003892

Control Tree

Control UniqueID	Type	Render Size Bytes	ViewState Size Bytes	ControlState Size Bytes

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What is the difference between layers and tiers in ASP.NET?

Layers refer to **logical separation of code.** Logical layers help you organize your code better.

Application have the following layers.

- ✓ Presentation Layer or UI Layer
- ✓ Business Layer or Business Logic Layer
- ✓ Data Access Layer or Data Layer

Understanding

- ✓ Above three layers reside in their own projects, may be 3 projects or even more. When we compile the projects get respective layer DLL. So we have 3 DLL's now. If we deploy all the DLL's on the same machine, then we have only **1 physical tier but 3 logical layers**.
- ✓ If we choose to deploy each DLL on a separate machine, then we have 3 tiers and 3 layers.

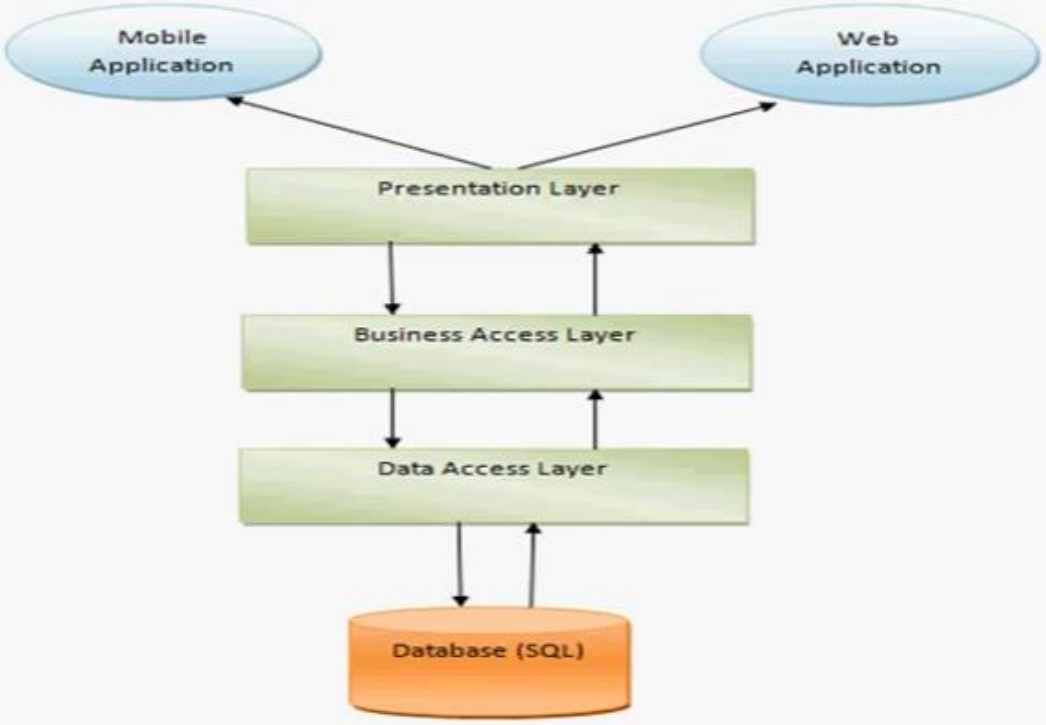
So, **Layers are a logical separation** and **Tiers are a physical separation.** We can say that, **tiers are the physical deployment of layers**.

✓**Layer communicates** with each other either **by Value or by Reference**. However the **Tiers** could be **on different machines**, so they **communicate by Value** only as serialized objects.

In Simple word we can say that

Layers- 3- layers application on single or same server.
Tier-3- tier application on different server like a Your presentation(UI) is on India and Business is on Australia and Database is on USA.

Three Layer Architecture Design



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What is the advantages and disadvantage of 3 Tier Architecture?

Advantages of 3 Tier Architecture

- It makes the logical **separation between business layer and presentation layer and database layer**.
- As application **deployed in multiple systems**, load will be shared among the tiers that's why **scalability will increase**.
- It is possible to **make changes** on the presentation level **without affecting the other two** (business or data access layer).
- Since the client doesn't have direct access to the database means **business logic is more secure.**
- When **one tier fails** there is **no data loss**, because you are always secure by accessing the other tier.
- Migration to **new graphical environments is faster**.
- As each tier is independent it is **possible to enable parallel development** of each tier by using different sets of developers.
- **Easy to maintain and understand** large project and complex project.

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Advantages of 3 Tier Architecture

- **Posted data** from presentation layer can be **verified or validated at application layer** before updating it to the database.
- **Database Security** can be provided at application layer.
- Application layer or middle layer or business layer can be a **protection shield to the database.**
- **New rules or new validation** rules can be defined any time and changes made to middle layer **will not effect presentation layer**.
- Define any **logic once** within the business layer and that logic can be **shared among any number of components** in the presentation layer.
- We can **hide unnecessary methods from business layer** in the presentation layer.
- Easy to apply **object oriented concept**
- Easy to **update data provider queries**.

Disadvantages of 3 Tier Architecture

- It is **more complex to build**.
- **More difficult to set up and maintain** it as well.
- The physical separation of the **tiers may affect the performance** between the three.
- It is **more difficult to built a 3-tier** application .
- To implement even small part of application it will **consume lots of time**.
- Need good expertise in **object oriented concept** (classes and objects).
- There is **more processing** on the web server

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