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UNIT - I

Dot Net :-

- .Net platform is a set of technologies that provides a completly new interfaces and web based infrastructure .Net framework support.

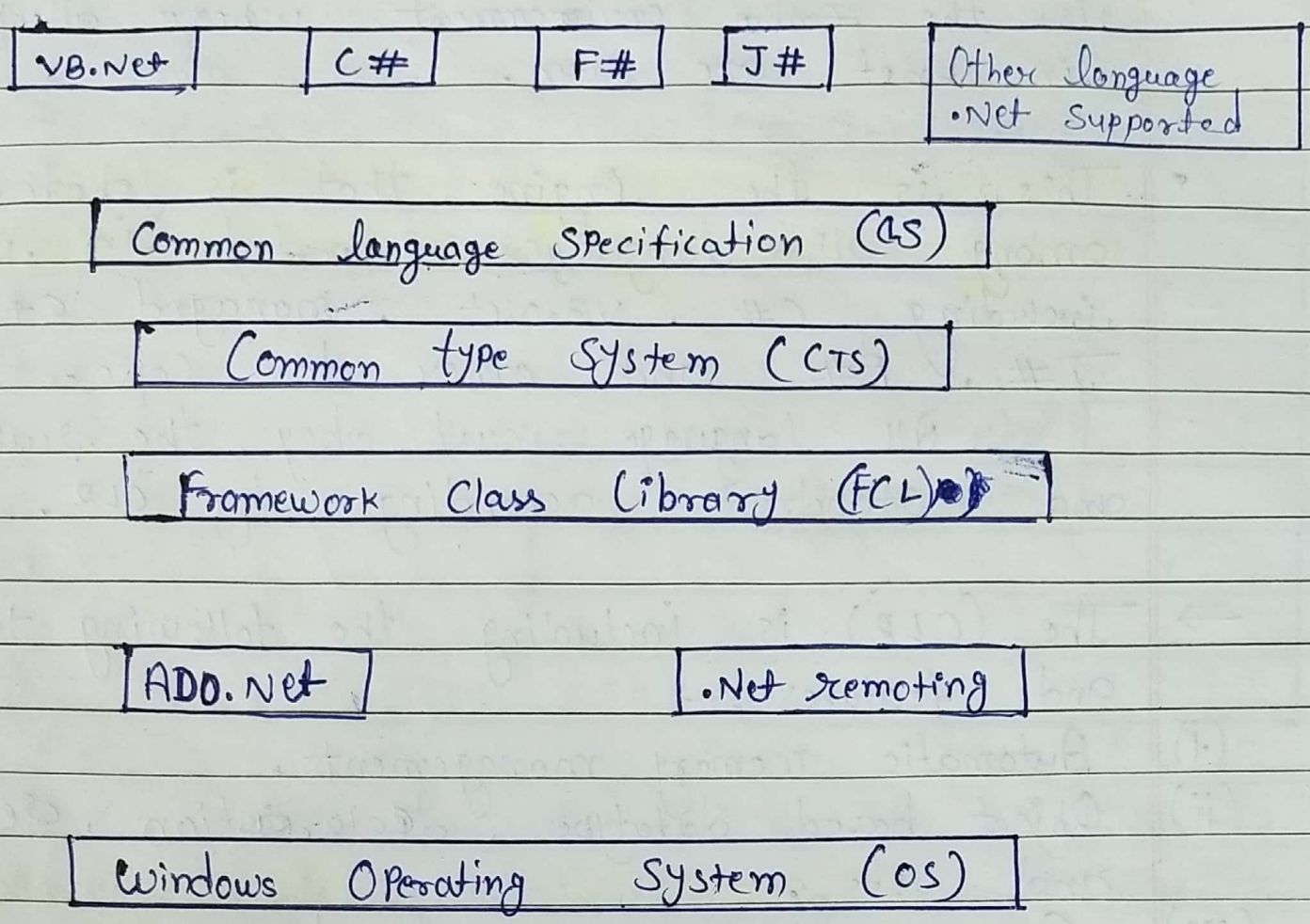
- Multiple language which are completly object oriented like C++, C#, VB.Net, J#, F# and J. script, etc. And third party languages APL, COBOL, FORTRON, PASCAL, PYTHON will also be avabite available for building feature of .Net applications.

- It Consist of virtual execution system known as common language runtime and a set of class libraries which includes name spaces, Classes, interfaces, Datatypes etc.

- It helps to develop portable, Scalable, secure, powerful & robust .net generation application which are running on multiple devices and ~~data~~ platforms.

- The first version of .Net framework is 1.0 which was launch in november 2002 with visual studio .Net 2002 the latest framework of .Net version is 4.8 which is launch in april 2019 with new visual studio 2017 and above.

•Net framework architecture :—



Code is execute in (CLR) Also called "virtual machine execute engine".

→ .Net framework has two main components :-

(i) Common language runtime (CLR).

(ii) Framework class library (FCL/BCL).

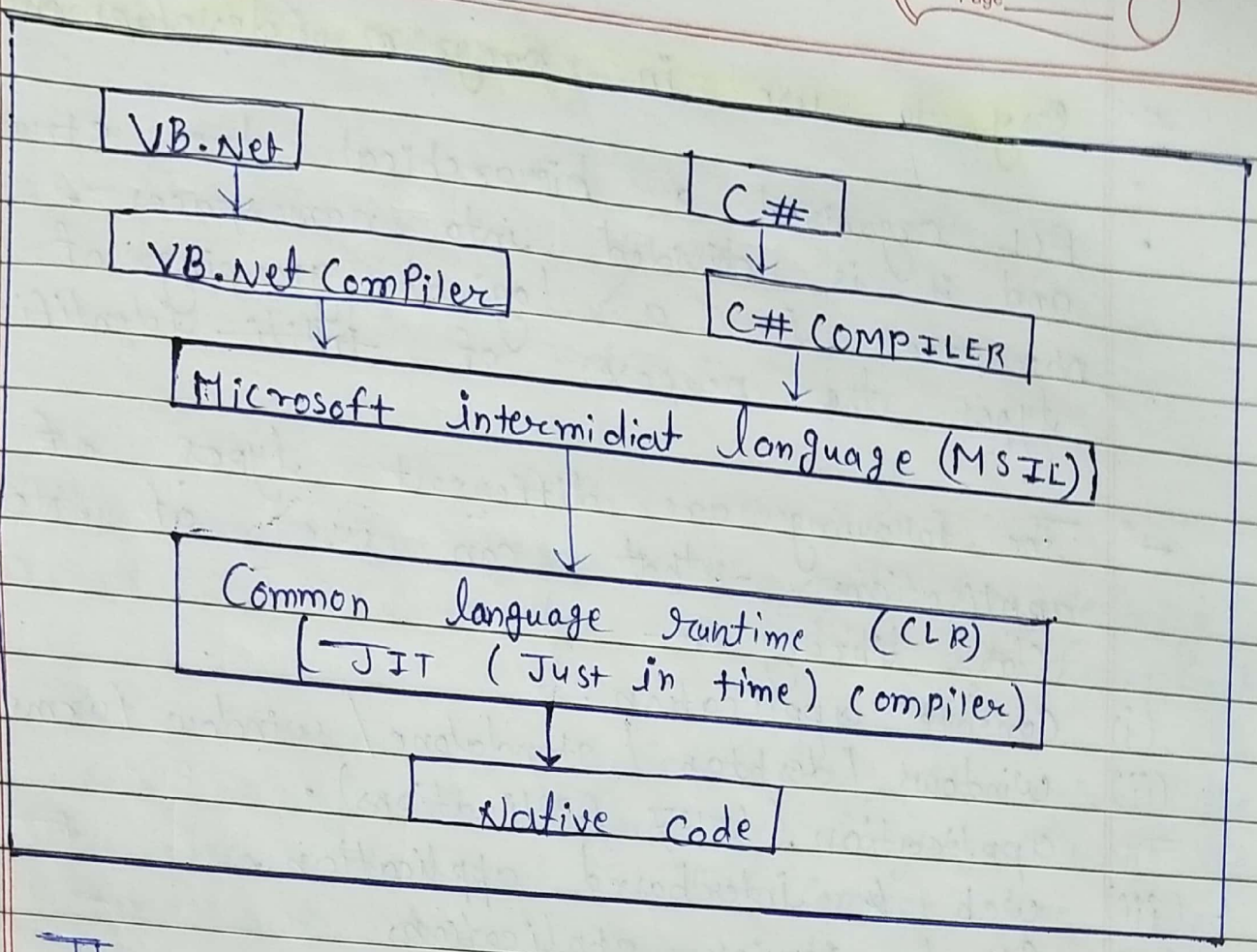
(1.) CLR (Common language runtime) :-

CLR is the environment where all programe in .net are run.

- This is the engine that is shared among all languages supported in .Net including C#, VB.Net, managed C++, J#, F# and other to come.
  All language must obey the rules and standred according by CLR.

→ The (CLR) is including the following tasks and features :-

(i) Automatic memory management.
(ii) Object based datatype, declaration, creation and uses.
(iii.) Error and exception handling.
(iv.) Grabage Collection.
(v) Thread management.
(vi) Debugger, Code Coverage analyser.
(vii) NO unsafe part, No initilized variables no out of bound array indexing.
(viii) Select Configration.
(ix) The code compile at initial time or runtime.
(x) Safty type varification by IL (Intermidiat language).



- The main function of CLR is to convert the managed code into 'native code' and then execute the program. In other words CLR work as an execution engine in .Net.

(2.) Framework Class Library :-

- This is also called based class library (BCL). This is common for all type of application developed in microsoft .Net framework.

- The (FCL) Compelet the object oriented library above five thousand class to perform just about everything. The FCL is collection of classes, methods and propeties functions. input-output management window and

Easy to use in program development.

- FCL organised a hierarchical tree structure and it is divided into namespaces. Namspace is a logical grouping of types the purpose of ~~initi~~ identification.

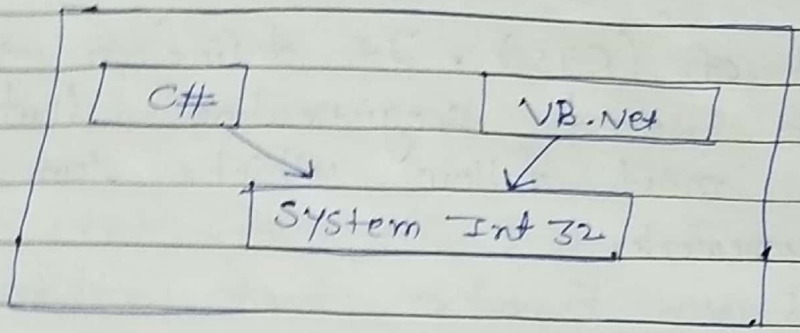
→ The following are different types of applications that can use of .Net Class library :—

(i) Console application.
(ii) Windows / desktop / standalone / window forms application. (GUI Applications).
(iii) web & interbased application.
(iv) Client server applications
(v) XML web services.
(vi) WPF (window Presentation foundation) application.

→ Features of .Net :—

(i) Rich functionality out of the box.
(ii) OOPs supported.
(iii) Easy development of web application.
(iv) Multi language and multi device support.
(v) Automatic memory management. ~~supp~~
(vi) Strong XML Support.
(vii) high Security.
(viii) Easy development & Configuration.

Common Type System :-



- The Common type system is standard for defining and using data types in the .net framework.
- The Common type system (CTS) standarized the datatype of all programming languages using the umbrella of .Net. The common type for easy and smooth communication among these .Net languages.
- It is the Componend of (CLR) which contains guidlines for declaring, using and managing data types at runtime. CTS ensured that object return in different .Net language can interact with each other.

The Common language system support two general categories of type :-

(1.) Value type :- int, short, long. (Int 64) etc.
(1.) Refercncial type :- String, array, class, struct etc.

Common language specification (CLS) :-

- It is a subset of (CTS). It define a set of rules and registration that every language must follow which run under .Net framework.

- Those language which follows CLS set of rules are set to be compilent language. These features or process are called cross language integration.

MSIL (Microsoft intemidiat language) :-

MSIL

- During the compile time the compiler convert the source code into (MISL).

- Microsoft Intermidiat language (MSIL) is a CPU independent set of instructions that can be ~~effeciti~~ efficiently convert to the native code.

- Just in time (JIT) compiler during runtime convert the (MISL) code into the native code to the operating system. (MSIL) is also called Intermidiate language (IL) or common intermidiate language (CIL).

- MSIL include instructions for loading, storing, intializing, calling mathod, objects and as well as instructions for arithmetic and logical operation, control flow allow direct memory access, exception handling and other operation.

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Ans.

Metadata :-

- Metadata is a machine readable information of a source like DDL, class and assamblies. These information is related to Client application program provided by metadata. Use current program by used type, classes, type of application, version, information about external assemblies, assamblies reference and so on.

- In other word metadata in .net is binary information which describe the characteristics of a resources. This information include description of the assembly, datatype and member with declarations and implementation, reference to other type and members, security permission etc..

- When code is executed, the runtime loads metadata into memory and references is discover information about your code, classes, members, inheritance and so on

Assemblies :- (Dynamic Line library)

An assemblies either a .DDL or .exe that forms a part of an application. It Contains MSIL code that is executed by CLR.

→ The following are feature of assemblies :-

(1) It is the unit on which permission are granted.
(2) Every assemblies Contains a version.
(3) Assamblies Contains interfaces and classes. they may also Contain other resources such as bitmap or jpeg

(4.) Every assemblies contains assemblies-Metadata. which contain information about assemblies. CLR use this information at the runtime of executing assemblies.

(5.) ~~Ass~~ Two assemblies of the same name but with a different version can run side by side allowing application that depend on specific version.

(6) Assemblies are two type :—

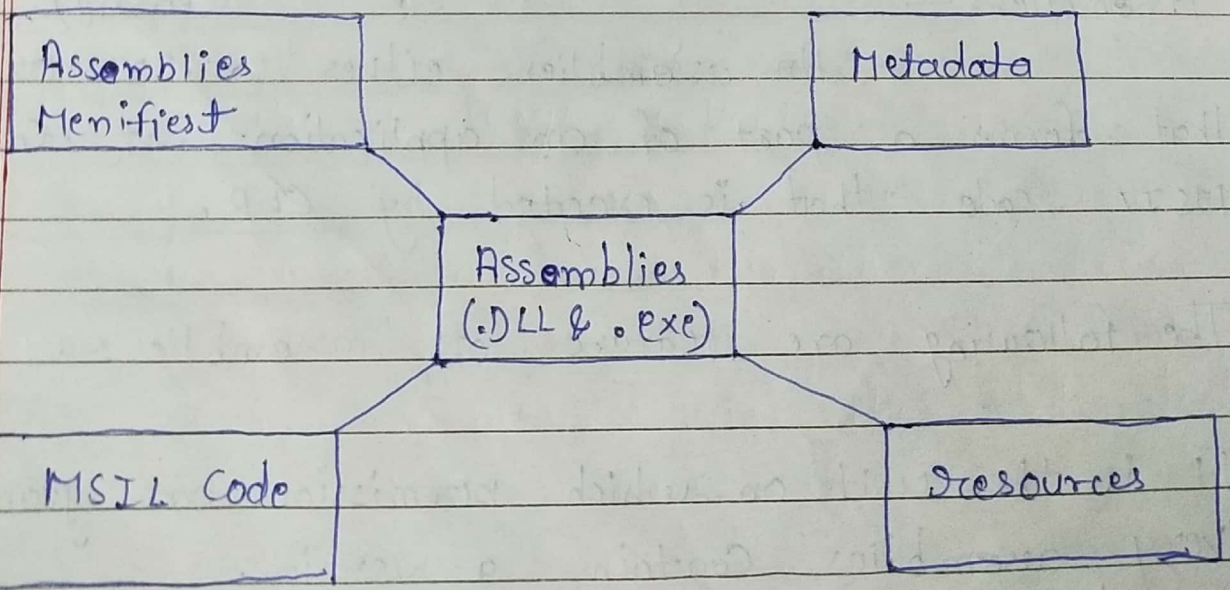
(i.) Private assemblies :—

This assembly use only one application.

(II) (Global) assembly :—

Use by many and any application at a time.

- Assembly has four parts :—



(i) Assembly manifest :—

Contain, Name, version, culture information about referenced assembly.

(ii) Metadata :—

Contain information about type of assemblies.

(iii.) MSIL Code :—

MSIL code.

(iv.) Resources :—

Such as .bmp and .Jpg file.

Namespaces :—

Namespaces are the way to organise .Net framework class library into a logical grouping according to their functionally usability as well as category. they should belongs to or we can say namespace is the logical group of type that is a container of classes, structure, interfaces, enumeration, deligates etc.

Example :—

(i) System :—

System contain all the based datatype and either important Classes using perform different task according to their functionality by the programmer.

The System namespace is also called "father of all .NET framework namespaces".

(ii.) System.IO :-

Logically group of input & output feature.

(iii.) System.Data.SQLClient :-

It is the logical group of ADO.NET Connectivity with SQL Server related feature.

(iv.) System.Text :-

This namespace contain classes for encoding, decoding and manipulation array list.

(v.) System.Collection :-

This namespace contain from standard collection type ; # table, array list.

- (FCL) is a large collection of about thousand of classes, these classes are organise in a Hirarchical tree.
- The system namespace is the ~~stot~~ stock for all name spaces.

Create namespace :-

```
Using system:-
Using first-space;
Using second_space;
name_space first_space
{
    Class abc
        {
            Public void fun1 ()
            {
                System.Console.WriteLine("Inside first namespace");
            }
        }
}

namespace second_space
 {
     Class efg
     {
         Public void fun2 ()
         {
             System.Console.WriteLine("Inside second namespace");
         }
     }
 }

 Class test
{
    Public static void main (String [] args)
    {
```

UNIT-II

Introduction to C# programing language :-

- The C# language pronounce 'c sharp' or 'see sharp'. It is compeletly object oriented programing language (OOPs) developed by microsoft to become a key part of .NET software development platform.
- C# is designed to take advantages of the common language runtime (CLR). All application written in C# required (CLR) to run. All the .NET programming language have the .NET framwork class library also support functions such as file IO, Database operations, XML, Simple object Access protocol.

Characteristics of C# programming language :-

(1.) C# Object oriented design :-

C# has completely object oriented features like overloading, overriding inharitence, encapsulation and polymorphism has made C# a choice for developers for developing different type of application.

(2.) Simple & morden language :-

- Pointers are missing in C#. Unsafe operation such as direct memory management are not allowed. In C# there is uses of "::" and "→" operators.
- C# inharits the properties / feature of Automatic

memory management and grabage collection.

- Various range of primitive datatype like Integer, float, short etc.
- Integer value of 0 & 1 are no longer accepted as boolean values. Boolean values are pure true and false in C#.
- No more errors of "=" "==".

"=" :- This operator is used for assignment operations.

"==" :- This operator is used for comparision operation.

- C# includes building support to turn any components into a web service. and can be invoked over the internet from any applications running on any platform.
- C# is morden language according to current trend and it is very powerful and simple for building interoperable, scalable, robust, fast, ~~Secu~~ Secure and dynamic application.

(3.) Type Safe :-

- In C# we cannot perform unsafe part like Convert to double to a boolean.

- Value type (integer, float, double) are intialized to 0, and reference type (objects and classes) intialized to null by compiler automatically.

(4.) Exception handling :-

.NET standarized the exception handling accross the language c#. Offer the conditional keyword to control flow and make the code more readable.

(5.) Indexer :-

C# has indexer which helps to access value in a class with an array like syntax.

(6.) Inter operability :-

- C# includes native support for COM and windows based application.
- C# allowed users, the component from VB.Net and other manage code languages directly used in C#.

(7) Scalable and adabtable :-

In our application delete the old file and updates them in new one without no registering of DLL (Dynamic link library).

- .NET has introduces assemblies manifiest stablise the assemby identity, version, culture & degital signals etc

(5.) Boxing & unboxing :—

Boxing :—

Value type to reference type

```
Int 32  a = 10;
Exp = Convert.ToString (a);
System.Console.writeline (exp);
```

Unboxing :—

reference type to value type

```
String a = "10";
Int 32 exp = Convert.ToInt32 (a);
System.Console.writline (exp);
```

Datatypes in C# :—

Two categories of datatypes in .NET

(1.) Value type :—

(a) Integeral type :—

(signed byte and unsigned byte)

Char, Short, int, unsigned int or long etc.

(b) floating and decimal type :—

Float, double, decimal.

(2) reference type :—

(a) object type

(b) class type

(c) interfaces

(d) deligates

(e) string

(f) array

Difference b/w Int16, Int32, Int64 :—

	Int16	Int32	Int64
①	Signed & take 16 bit	Signed & take 32 bit	Signed & take 64 bit also called long.
②	-32768 to 32767	-2147483648 to +2147483647	-9,223,372,036,854,775,808. -9,223,372,036,854,775,807.

example of Class in C# :—

```
Public class class1
{
    Static void main (String [] args)
    {
        System. Console . writeline ("Hellowoorld ");
    }
}
```

Class :—

Class is a container or collection of variables, datatypes, properties, methods and functions etc.

Access Modifiers in C# :—

(i) Public :—

It's member can be reached form anywhere or modifier access is not restricted.

(ii) Private :—

It's member can be reached from some

class and access limit is containing type.

(iii) Protected :-

It's member can only be reached from within the same class or form a class which inherits from this class.

(iv) Internal :-

It's member can be reached within the same project only. or access into the correct assemblies.

(v) Protected internal :-

Both feature protected and internal modifiers.

Introduction to Asp.NET

- Asp.NET is a technology, used to create internet based and web based dynamic application. This is based on the .NET platform and must support .NET compactable language for it's application.

- Asp.NET provide an infrastructure for faster and easier development of reliable and secure next generation web application.

- Asp.NET provide easy programming language option and compiled execution.

Features of asp.Net :—

(1.) It is purely server side technology so asp.NET code is execute on the server before it send to the browser.

(2) ASP.NET makes for easy developement there is need to register component because the configuration information is built-in.

(3) The source code & html code are together therefore ASP.NET page are easy to maintain and write. Also the source code is executed on the server this provide lot of power & flexiblity to the webpage.

(4) ASP.NET functionality can be coded using different language like C# or VB.NET. however only one language can be used for coding in a single file.

(5) ASP.NET is a container with many built in server controlls that have the common required functionality.

(6) ASP.NET is reduce amount of code required to built a large application.

Web forms :—

- A web application is a collection of webforms which are interlink each other through the navigation.
- A webform is a container of many built in web server controll text, picture, multimidia contant etc.

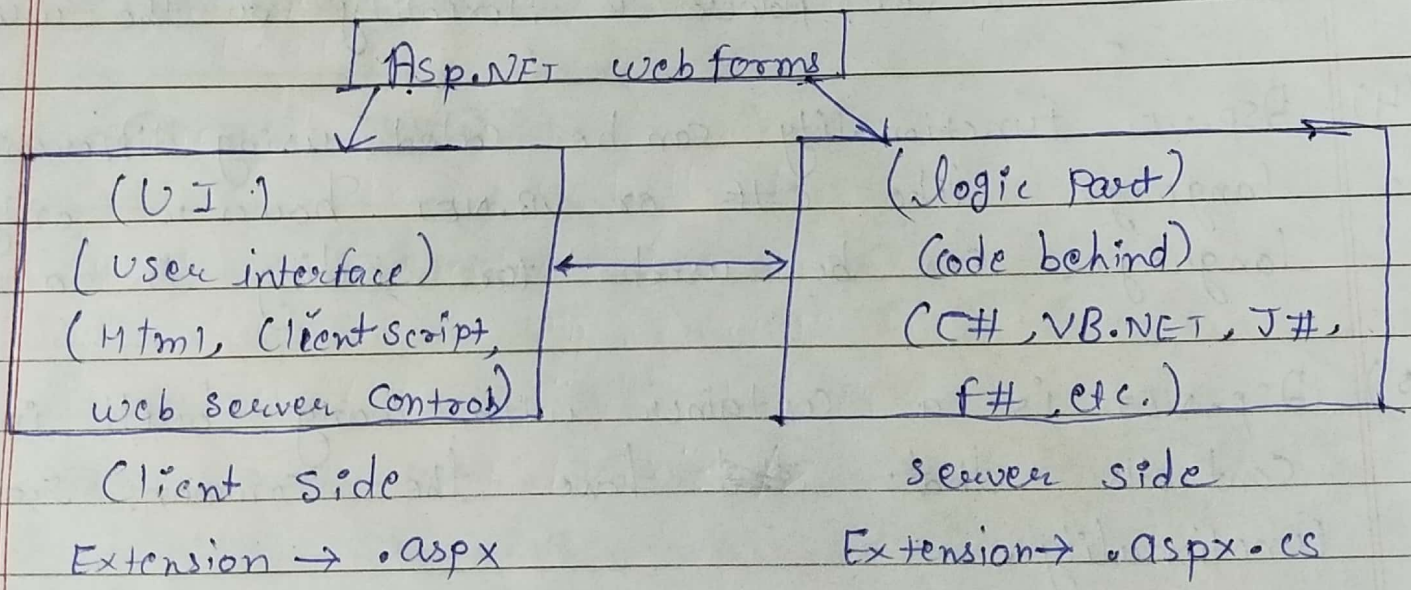
- Asp.net webform is a part of the Asp.net frame application & framework and it include in visual studio, you can used to create web application.

- Web form is a combination of html & client script, server control and server code return in different type of language like C#, VB.Net etc.

Asp.net web forms has two parts

(i) UI part (presentation)

(ii) ~~coding~~ logic part / code behind



Client side

Extension → .aspx

server side

Extension → .aspx.cs

General web controls	List controll	Rich webcontroll	Validation Controll	Data Controlls
Label	RadioButton list	File upload	Required field validator	Grid view
Textbox	CheckBox list	Calendar	Range validator	Data Grid
Image	Drop Down list	Ad Rotator	Regular Expression Validator	data list
button	List Box		Comparision validator	Repeator
Radio Button	Bullet List		Custom validator	Details view
Check Box			Validation Summery	
Image Button				
hyperlink				
Link Button				
Panel				
Placeholder				

Generical web controlls :-

(1.) Labels :-

Lable control is used to display message on webform running on the browser.

Ex:- <asp:Label ID="Label1" Runat="Server" Text="Hellow World" /></asp.Label>

(2.) TextBox :-

TestBox is used to input text by the user in web browser in Asp.NET.

Ex:- <asp:TextBox ID="TextBox1" Runat="Server" TextMode="(Single line / Password / Multiline)" MaxLegnth="10" ReadOnly="True" />

(3.) Image :-

Image Controll is used to display an image on browser in Asp.NET.

Ex:- <asp:Image ID="Image1" Runat="Server" ImageUrl="Images/Logo.Png" AlternativeText="Subodh logos" Styles="Border: 1Px solid black" />

(4.) Button :-

Button Controll is used to generally Submitting user information on the server & So on.

Ex:- <asp:Button ID="Btn1" Runat="server" Text="Submit" />

We can also give the hight and ~~width~~ wideth of button in pixels (Px).

(5) Radio Button :-

Radio Button is Used to one selection from multiple selection at a time.

<asp:RadioButton ID="Grn1" Runat="server" Text="male" GroupName="g1" Checked="True" />

<asp:RadioButton ID="Grn2" Runat="server" Text="Female" GroupName="g1" />

(6.) CheckBox :-

Checked Box Controll is used to multiple Selection at a time.

Eg:- <H1> The following programming language do you like</H1>

<asp:CheckBox ID="CH1" Runat="server" Text="C#" />

<asp:CheckBox ID="CH2" Runat="server" Text="VB.NET" />

<asp:Check-Box ID="CH3" Runat="server" Text="C++" />

<asp:CheckBox ID="CH4" Runat="server" Text="Java" />

(7.) Hyperlink Controll :-

Hyperlink is used to create a link on webform same as anchor tag (<a>) work in html.

Eg:- <asp:Hyperlink ID="Hyper1" Runat="server" NavigateURL="http://www.Subodh Pur College.Com" Text="Click here" Target="blank" ToolTip="Click here to open College site" />

(8.) Link Button :—

LinkButton display same as hyperlink but here used to link as button in asp.NET.

Ex:— <ASP:LinkButton ID="LinkButton1" Runat="Server" PostBackURL="http://www.subodhPGcollege.com" Text="Clickhere" />

(9.) Image Button :—

ImageButton is used to link a image using Image URL property.

Ex:— <ASP:ImageButton ID="ImgBtn1" Runat="Server" ImageUrl="Image/....Png/JPG" />

(10.) Pannel controll :—

Pannel control is used to create a custom controll with use of (group of) multiple web controlls.

Ex:— <asp:Panel ID="Panel1" Runat="Server">
</asp:Panel>

Page load event :—

```
TextBox txt1 = new TextBox();
Txt1.ID = "Txt";
Txt1.Size = "200Px";
Txt1.MaxLength = "30";
Pan1.Add (Txt1);
```

List Controll :-

(1.) For Radio Button list :-

```
<asp:RadioButtonList ID="RDL1" Runat="server" PostURL="
  True" Repeat = "" Repeat direction = "vertical">

<asp:ListItem Value="1" Text="MsOffice">

</asp:ListItem>
        :
        :
        :
</asp:RadioButtonList>
```

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(2.) For Making dropdownlist :-

```
<asp:DropDownList ID="List" Runat="server" PostBackURL=
  "" True">
<asp:ListItem Value="0" Text="Select Software">
</asp:ListItem>
<asp:ListItem Value="1" Text="MsOffice">
</asp:ListItem>
<asp:ListItem Value="2" Text="windows">
</asp:ListItem>
<asp:ListItem Value="3" Text="visual studio">
</asp:ListItem>
<asp:ListItem Value="4" Text="photoshop">
<asp:ListItem>
    :
</asp:DropDownList>
```

(3.) For CheckBox List :—

<asp: CheckBoxList ID="List1" Runat="Server">
. . . .
<asp: ListItem>
⋮
</asp: ListItem>
</asp: checkBoxList>

(4.) Bullet list :—

<asp:BulletList ID="BulletList1" Runat="Server"
BulletStyle = "(Disc)" BulletImageURL = ".PNG/JPG" />
(Circle / Square / Number / Custom Image)
DisplayMode :— "Text/Hyperlink/LinkButton"

(5.) ListBox :—

<asp:ListBox ID="List1" Runat="Server" selection
Mode = "Multiple">
<asp: ListItem Value = "0" > Text = Jaipur
<asp: ListItem Value = "1" > Text = Udaipur
<asp: ListItem Value = "2" > Text = Ajmer
<asp: ListItem Value = "3" > Text = "Jodhpur"
<asp: ListItem Value = "4" > Text = Kota
⋮
</asp: ListBox>

Rich web controll :-

(1.) File upload controll :-

This control is used to upload any file on server from the directory of the local computer. (Physical location).

Ex:-

```
<asp:FileUpload ID="File1" Runat="server" />
<asp:Button ID="btn1" Runat="server" Text="Uploadfile" />
<asp:Label ID="lblPrint" Runat="server" />

if (File1.HasFile)
{
    String FileName = System.IO.Path.GetFileName(File.file name)
    File1.SaveAs(server.MapPath("~") + Filename
    lblPrint.Text = "File Successfully Upload";
}

else
{
    lblPrint.Text = "kindly select file for upload";
}
```

(2) AdRotator Control :—

AdRotator control randomly select banner graphics, JPG file from a list which is specified in an external XML shedule file is called the advertisement file.

The AdRotator allow you to specified advertisement file and the type of windows that the link should follow advertisement file and the target property respectively

```
< asp: AdRotator ID = "AdRotator1" Runat = "Server"
    Advertisement = "~/Ads.XML" Target = "_blank" />
```

Advertisement File :—

Advertisement file is a XML file which contain the information about the advertisement to be display.

There are following standard XML element that are commonly used in the advertisement file.

	Elements	Description
(1.)	<Advertisement>	enclose the advertisement file.
(2.)	<Ad>	Define Ad Seperatly
(3.)	<Image Navigate Url>	The path of image that will be displayed.
(4.)	<Navigate Url>	The link that will be followed when the user clicks

	on the ad.
(5) <Alternate Text>	The text that will be displayed instead on the pictures it can not be displayed.
(6.) <keyword>	The keyword identifie a group of Advertisement this is used for filtering.
(7) <Impression>	The number indicating how often an advertiesme will appear.
(8) <Hight>	Hight of the image to be displayed.
(9.) <width>	width of the image to be displayed.

(3) Calender Controll :—

The Calender controll have a functionality of rich web controlls also provids following capability.

- Displaying one month at a time.
- Selecting a day, a week or a month.
- Selecting a range of days.
- Moving from month to month.
- Controlling the displayed of the days programmatically

Ex:— <asp: Calender ID = "Cal1" Runat = "server" Selection Mode = "Day/week/Month" />

<Asp:Lable ID="lblTodaydate" Runat="Server" />
<Asp:Lable ID="lblMybirthdate" Runat="Server" />

On selection changed :-
lblTodaysDate.Text = Cal1.Todaysdate.ToShortDateString();
lblTodaysDate.Text = Cal1.SelectedDate.ToShortDateString();

Validation Controlls :-

Asp.NET Validation controll validate the user for input authenticate or write formate value.

(1.) Required field validator :-

The required field validator assure that the required field is not empty it is generally applied to a text box to force input text.

Ex:- <asp:RequiredFieldValidator ID="Reg1" Runat="Server" ControlToValidate="TxtName" ErrorMessage="The name Field is mandatory" Display="None/Static/Dynamic" />

ErrorMessage ⟹ "*" ⟹ "The name field mandetory"

(2.) Range validator :-

The Range validator control varify the input value field in the text box to a determine range.

Ex:- <asp:RangeValidator ID="Range1" Runat="Server" control ToValidate="txtAge" Minimum="20" Maximum="40" ErrorMessage="The age must be between 20-40" display="MyName" />

(3) Regular Expression validator :—

Regular expression validator allow validting the input text by matching against a pattern to a ~~range~~ regular expression it is set in the validation Expression properties.

Ex :- <asp: RegularExpressionValidator ID = "Reg1" Runat "Server" ValidationExpression = "\w+([-+.])*@\w+([-.]\w+)*\\w+([-.]\w+)*" ErrorMessage = "Invalid Email" Display = "Dynamic" />

(4) Compare Validator :—

The Compare validator Controll Compare a value in one controll with the fix value or a value in another Controll.

Ex :- <asp: CompareValidator ID = "CMPV" Runat = "Server" ControlToValidate = "txt2" ControlToCompare = "txt1" ErrorMessage = "No Match" Display = "Dynamic" />

(5) CustomValidator :—

Custom validator contol allow writing application specific custom validator apply for both client side & server side validation.

Ex :- <asp: CustomValidator ID = "Cust1" Runat = "Server" ControlToValidate = "TxtUser" ErrorMessage = "User name must be 8-16 character" Display = "Dynamic" />

Event on Server validate :—

```
if (TxtUser.Text.length >= 8 && TxtUser.Text.length <= 16)
{
    Page is valid = True;
}
```

```
Else
{
    Page.IsValid = false;
}
```

(6.) Validation Summary :—

Validation Summary allow to summarise of all validation error message from all validators in a single location. The error message in this control is specified by the error message properties of validation control. The error message propertie of the validation control is not set, no error message is display for these validation control via set propertie display is None.

ex :—

```
<asp:ValidationSummary ID = "ValidationSummary1"
Rynat = "Server" HeaderText = "you must enter value
following field :-" DisplayMode = "BulletList/List/SingleParagraph"
ShowSummary = "True" ShowMessageBox = "True/false" />
                                        false
```

Propeties	Description
(1) Display Mode	How to display the summary value the Bullet list, list and single paragraph.
(2) Header Text	The Header in validation summary Control.
(3) Show Message Box	A Boolean value that specifie weather the validation summary

	.	Should be display in a message box or not.
(4)	Show Summary	A Boolean value that specifies weather the validation summary should be display or hidden.

V.V. Imp.

IS PostBack Propertie :—

IS PostBack Propertie check weather an asp.net pages are IspostBack or not from the server in other word the ISPostBack propertie check the page loaded from the server first time or again.

For Example :—

```
if (ISPostBack)
  {
    lbl.Text = "Page IS postBack fist time";
  }
else
  {
    lbl.Text = "Page ISPostBack again";
  }
```

Imp

Q. What is Exception handing ? Explain with suitable example.

D—

Different b/w Response.Redirect() and Server.Transfer()

caused when our stoped.

	Response.Redirect()	Server.Transfer()
(i)	Response.Redirect() have a round trip	But server.Transfer() have no round trip.
(ii)	Response.Redirect() is client process.	Server.Transfer() is a server process.
(iii)	Response.Redirect() preserve Query string and form variable from the original request.	Server.Transfer() does not preserve Query string and form variable.
(iv)	We can redirect the user to both type if page .html and .aspx.	We can redirect user to .aspx or .asp Page.
v)	Url change in Response.Redirect().	Url is not change in Server.Transfer().

Event Handling in Asp.Net :-

(1) Common Control events :-

	Event	Attributes	Controls
(i)	Click	On Click	Button, Link Button, Image Button.
(ii)	Command	On Command	Button, Link Button, Image Button.
(iii)	Text Changed	On Text changed	Text Box.
(iv)	Selet Index Changed	On select Index Changed	Drop Down list, Radio Button list, check Box list, List Box, Data list, Data card.
(v)	Check Changed	on check changed	check Box, Radio Button.
(vi)	Selection changed	on selection changed	Calender.
(vi)	PageIndexchanged	On page Index changed	Grid view control

(2) Application and selection event :-

(i) Application - start :-

This is raised when over application website is started.

(ii) Application - End :-

This is raised when our application website is ~~stpr~~ stoped.

(iii) Session_start :-

It is raised when a user first request a page from the application.

(iv) Session_End :-

It is raised when a Session End.

Imp.
(3) Page life Cycle Event in Asp.NET :-

(initialization)

(i) Pre Init :-

Pre init is the first event in page lifecycle its check Is PostBack Properties and determines (Weather) the page is a PostBack. It set the themes and master pages create dynamic control and gets and sets profile properties values.

This event can be handled by overloading on OnPre init method or Created a Page_Pre init handler

(ii) Init :-

Init event ~~initi~~ initialize control properties and the control tree is Built.

This event can be handled by overloading the OnInit method or creating a Page_Init handler.

(iii) Init Complete :-

Init Complete event allows tracking of view states all the controls turn on view state tracking.

(iv) Load view state :-

Load view state allows loading view state information into the control.

(v) Load Post State :-

During this phase the content of all the input field define with the <Form> tag are proceed.

(vi) PreLoad :-

PreLoad occurs Before the PostBack data is loaded in this control.
This event can be handle By overloading the OnPreLoad method or Creating Page_Preload handler.

(vii) Load :-

Load event is raised for the page first and then recursively for all child control.
The controls in the controlls tree are created.
This event can be handled by OnLoad method or Creating a Page_Load handler.

(viii) Load Complete :-

The Loading process completed, Control event handler are run and page

validation take place.
This event can be handled by onLoad Complete method or Creating a Page_Load complete handler.

ix) ~~Page Render~~ :- Pre Render :-
The Pre Render event occur just before the output is render. By handling this event. Page and control can perform any update before the output is rendered.

x) Pre-Render Complete :-
The Pre-Render Compelete event recursively fired for all child contols, this event ensure that ~~completio~~ Completation of the Pre-Render Phase.

xi) Save State Complete :-
This event state of the control on the page is save personalization. control state and view state information is saved The html makepp goreented this state can be handled by overriding the save state ~~Competete~~ Complete method or creating a page. Save State handler.

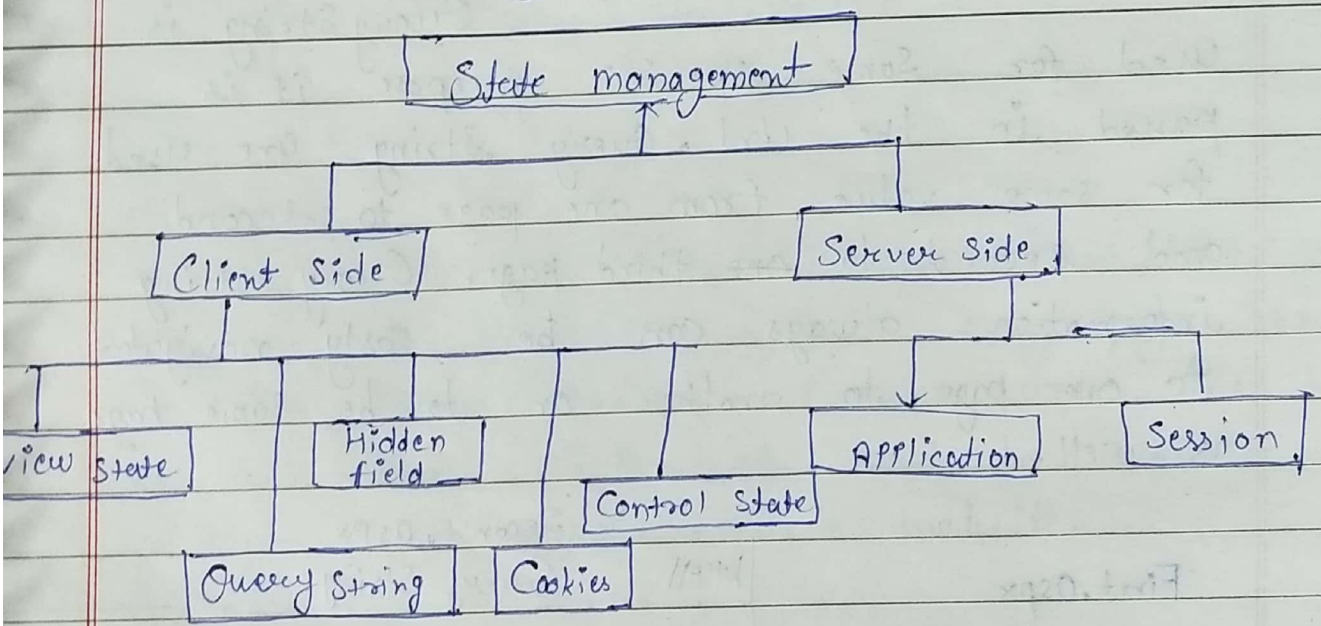
xii) Unload :-
This Upload phase is last phase of page life cycle. It raised unload event for all control recursively and lastly for

the page itself. finally Cleanup is done. All the resources and reference such as data base Connection are free. This event can be handled by UnLoad method or Creating a Page_UnLoad handler.

State management in Asp.net :-

State management is the process by which you maintain state & page information over multiple request for the same or different pages.

There are two types of state management :-



- Client side :-

(i) View state :-

View state object (variable) are used to store page related data or information which are preserve Between the round track from client to server and server to client

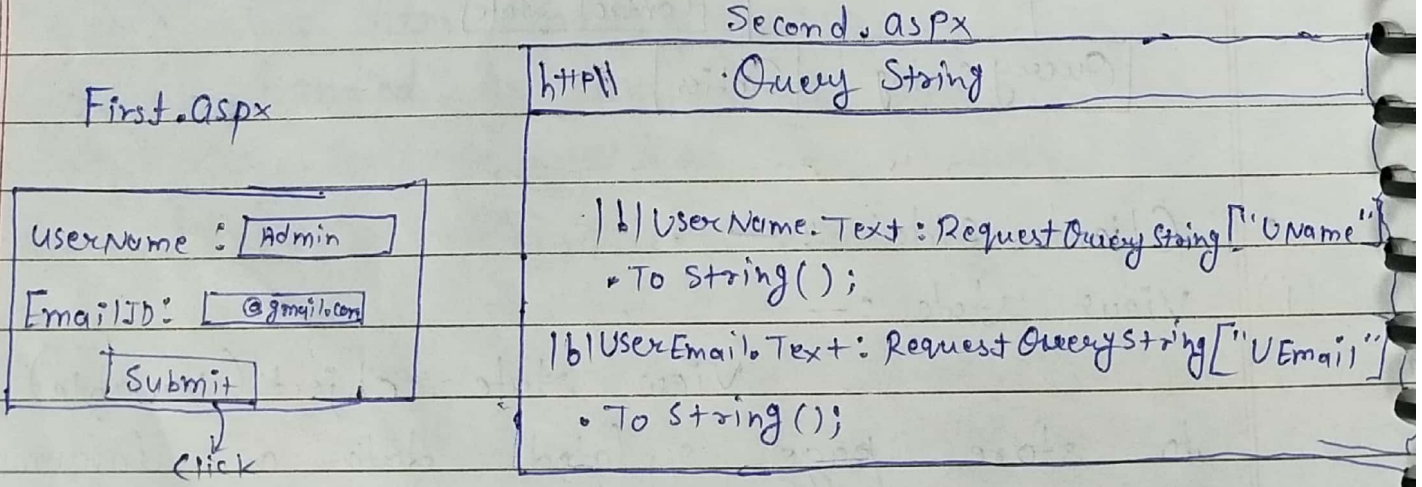
View state is maintain as a hidden field in the page

```
if (!IsPostBack)
    {
     ViewState["Count"] = 0;
    }

Btn_Click
    ViewState["Count"] = Convert.ToInt32(ViewState["Count"]) + 1;
    lbl Text.Text = ViewState["count"].ToString();
```

(ii) ~~Over String~~ :— Query String :-

Query String is used for some specific purpose it is passed in the Url. Query String are used for some value from one page to second and second to ~~one~~ third page. Query string information always can be easly navigated to one page to another or to be same page as well.




```
Response.Redirect("Second.aspx?UrlName=" +
                  txt User.Text + "&UEmail=
                  " + TxtEmail.Text);
```

(iii) Hidden field :-

A Hidden field used for storing small amount of data on the client side. Hidden field are similler to a Text Box But does not get display on the Browser. In other word it just a container of some object but their result is no rendered on web browser It is invisib in the browser.

~~first .cspx~~

(hidden field)

```
Int32 a = convert.ToInt32 (hidden1.Value)+1;
hidden1.Value = a.ToString();
lbl1.Text = hidden1.Value;
```

(iv) Cookies :-

Cookies store a value and hold small amount of data send with every page request to the same browser. Cookies are the best way to store state data must be available for multiple web pages on a website.

```
Int32 a;
if (Request.Cookies["count"] != null)
    {
    a=Convert.ToInt32 (Request.Cookies["count"]    )+1;
    }
  else
    {    a=1;
    }
Button_Chide
Response.Redirect ["count].value = a.ToString();
lbl.Text = Response cookies ["count"].values
```

Cookies have two types :—

(i) Persistent cookies :—

This type of cookies having an expirion date called a persistent cookies. This type of cookies reachs there end as there expiretion date comes to ~~the~~ end.

(ii) NON persistent Cookies :—

NON persistent type of cookies are not stored in the Client hard drive permanently. It maintain user information as long as the user access or use these services.

Session state :-

- Session state information is available to all pages opned by a user during a single visit.

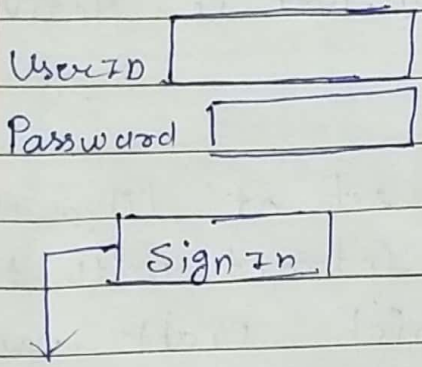
- Both application state or session state information is lost when the application restarts. To persist user data application restart. You can store it using profile properties.

Asp.Net allows you to save value using session state, a storage machanism that is accessible from all page requested by a single web browser session. Therefore you can use session state user specific information. session state is similar to application state except that is scoped to the current browser session.

- If different users using your application each user session has different session state.

- In addition if user leaves your application & then return later after the session timeout period, session state information is lost and a next session is created for the user. session state is stored in the session key (value) dictionary.

Single.aspx



Btn_Click

```
If (txtuser.Text == "Admin && txtPass.Text = "12345")
  {
    Session ["user"] = txtuser.Text;
    Session ["Pass"] = txtuser.Text;
    Response.Redirect ("Inbox.aspx");
  }
```

Inbox.aspx

PageLoad

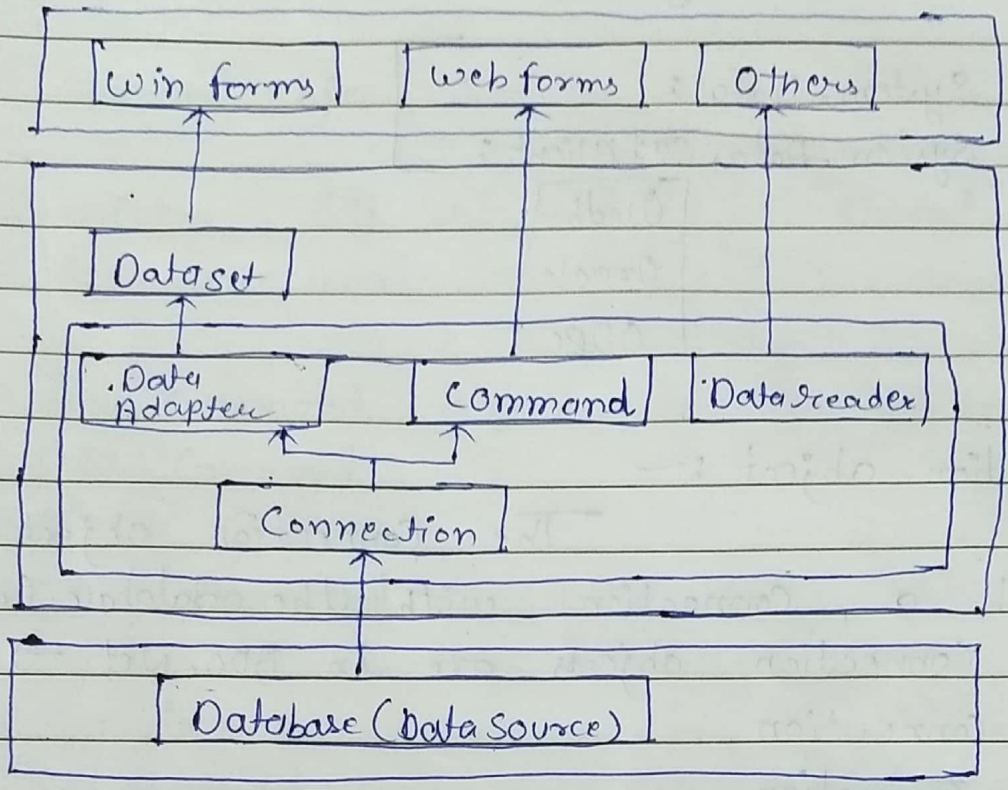
```
if ( Session ["user"] = "Admin" && Session ["Pass"]
      == "12345")
  {
    lbl.Text = "you are valid user";
  }
```

ADO.Net :—

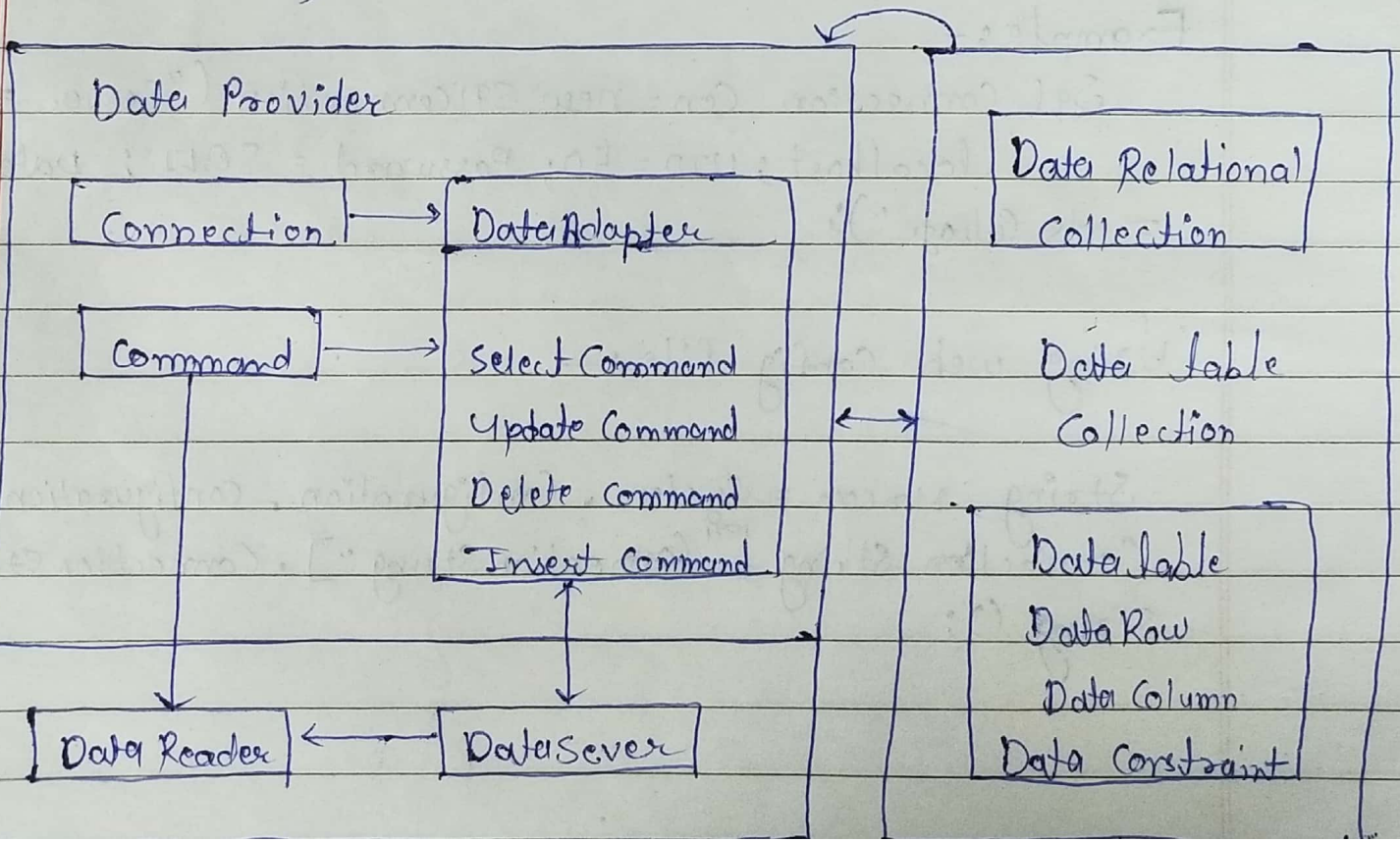
Full form of ADO.Net is "Active X Data object".

- ADO.Net is a object oriented set of libraries that allows our application intract with the data source (Database) and which enable user that communicate with the datasource.
- It is a set of classes that are used for connecting to a database like Relation database management system (RDBMS) and DBMS databases.
- The Relational database lik Microsoft Sql server, MySql, oracle, MS.Access .etc. and non Relational database like XML file, MS Excel, Notepad etc.
- It is based on Disconnected Architecture which means after data provide to our application Connection is not continuously maintain.
- It provide facility to developer for creating dynamic application with many type of database operation - Insert, update, delete data with database table.

ADO.Net Architecture :-



ADO.Net Object Model :-



Two Namespaces are important for connection with database using system

```
Using System.Data;
Using System.Data.SqlClient;
```

- OledDb
- Oracle
- ODBC

Connection object :—

The Connection object is establish a connection with the database (datasource). The Connection objects are in ADO.Net →

(i) Sql Connection
(ii) OleDb Connection
(iii) Oracle Connection

Example :—

```
Sql Connection Con = new SqlConnection ("Server =
    localhost; UID = 50; Password = SQLI; Database
= ds College");
```

Using web Config file :—

```
String strcon = System.Configuration.ConfigurationManager.
ConnectionString["ConnectionString"].ConnectionString.To
String();
```

Sql Connection Con = new Sql connection (Str con);
Con.Open();

Command object :-
The command object use to perform Sql statement or stored procedure to the executed at the data source.

The command object are in ADO.net are →
(i) Sql Command
(ii) OleDb Command
(iii) Oracle Command

Exampl:-
Sql Command Com = new Sql Command ("Delete from tbl Student where Roll no. = 1001", "com");
Com.Execute Non Query ();
Com. Execute Scalor ();
Com. Execute Reader ();

Date
Page

Data adpater :-

data ~~obj~~ adpater
bridge b/w dB (data source) & data set
~~data adapter~~ ~~work~~ in other work this
object ↑ as a getway b/w disconnected or
connected flavour of ADO.Net.

Data adapter object popularly data set obj:
with result from a datasource

Data adpater have various data adpater
Sql Data Adpeter → Exampl:-
Ole Db Data Adpater
Oracle Data Adpater

Exampl
Sql DataAdapter :-
Adpater = new SqlDataAdpater ("Select * from tbl Student", Con);
Dataset ds = new Dataset ();
Adpater Fill (ds, "tbl student");

Data Reader object :-

DRO is a stream based fast forward only, Read only Retrived of query results from the datasource

Imp Note:- Stream based fast forward only to dataset

DRO Reture the result of the quary one row at a time when you move forward to the nex raw as well as ~~priouse~~ Previous raw.

Various types of data reader :—

(i) Sql DataReader
(ii) OleDb DataReader
(iii) Oracle DataReader

Example :—

Sql DataReader :-

```
Sql Command com = new Sql Command ("Select * from tbl student
", com);
    Sql DataReader dr = com. Execute Reader();
    while (dr.Reader)
{
    if (Txtuser.Text == dr["userName"] && TxtPass.Text == dr
    ["userPass"])
    {
        lbl.Text = "you are a vaild user";
    }
else
    {
        lbl.Text = "you are not a vaild user";
    }
}
```

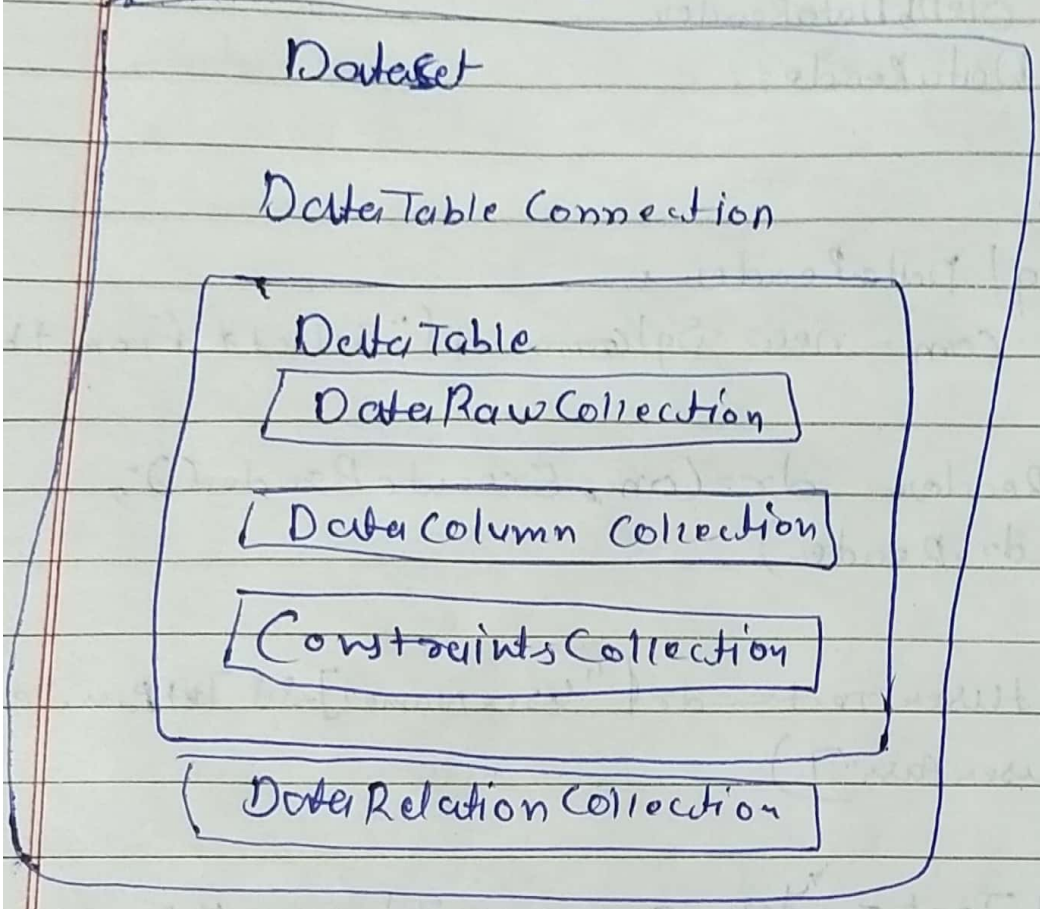
Dateset :-

Dateset is a collection of datatable objects that you can which can related to each other with DataRelation object.

Dateset content dataTable including DataRow, Datacoulmn, Primary key & Constraint.

DateSet provide a disconnected Representation

of result set from the dataSource.
It is completly independent form the datasource.



DataTable :—

DataTable is collection of DataRows DataColumns primary key, Constraints and Relation set, Extandred property etc

The DT hasbeen populated by select Data The Database, reading data from a file or manualy populating with in Code (Programatically).

Date
Page

DataTable

- Raw – DataRaws
- Columns – DataColumns
- Constraints – Constraints
- ExtendedProperties – objects

Example :-

Populating by dataTable

```
DataTable dt = new DataTable();
Adapte.fill(dt, "tblstudents");
```