Introduction to C# Programming

= C# language is pronounce as 'c sharp' or 'see sharp' is a complete object oriented programming language (OOPS) developed by Microsoft Corporation to become a key or .Net software development platform.

⊦ The C# language is based on C++ language, but it is mostly developed on the lines of Microsoft Visual basic.

This principle designer of C# language Anders Hazelesberg

⊦ C# was designed to take advantage of Common language runtime (CLR)

All applications written in C# required CLR to run.

All the .Net programming language have the .Net framework class library. The .Net class library also support functions such as file id, database operations, XML and SOAP (Simple Object Access pro

Example of C# —:

```
public class class1
{
    static void Main (string [] args)
    {
        System.Console.WriteLine ("Hello");
    }
}
```

Characteristics of C# language

i) Object Oriented Design:

C# contain completely object Oriented features or golden principle of object orientation, inheritance, encapsulation, overloading, overridding, polymorphism has made C# programming a great choice of .Net application developers.

Although, C# has components of high level business object and wide range of component to system level software applications. C# construct these component into XML web service which permits them to be involved across the internet from any language running on any operating system.

ii) Simple and Modern Language:

\# Pointers are missing in C#.

\# Unsafe operation such as direct memory manipulation are not allowed.

\# In C#, there is no usage of ':::' or '→' operator.

\# C# inherits the feature automatic memory management and the garbage collection.

\# Varying ranges of the primitive data type like integers float etc.

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① **object oriented :⇒** C# content completley object oriented features or golden Primciple of object oriention, inheritance encaplustion, overloading, overridding, Polymorphism has made C# Programming 'A' grade choice of Net application's developers also C# has Components of high level business object and wild range of. Components to system level s/w application's C# Constract these Comboments into XML web service which permits then to be invoked apporch accros the internet from any languag Numing on any O.S.

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⇒ C# inherit's the Feature automatic Memory management and the Jarbadge Collection,

⇒ vorying or the Primitive data types like integer, flot etc.

⇒ integer value of 0 and 1 are No longer accepted as boolean value's are true or false values im C# C-sharp so for No more error's of "=" or "==" operator

⇒ "==" operator's is use for Comperision operator operation's

⇒ "=" operator is use for Assignment operation.

⇒ C# has a based according to the current trained and is very Powerful and Simple for building Intes opuble, skillable, Yobust application

⇒ C# include building support to turn any Component into a web service that can be involve over the internet from any application Numing on any Platform.

\# Integer Value of 0 and 1 are no longer accepted as boolean value. boolean Values are True or false Values in C#. So no more errors of " = " or " == " operators.

\# " == " ≠ Operators is use for comparison operator operation.
" = " ≠ operator is usefull asignment operation.

(☆) C# has a based according to the Current trend and is very Powerfull and Simple for building inter. optable. Scalable Rovenst application.

(☆) C# includes building support to turn any component into a web service and can be involve over the internet from any application running on only Platform.

(☆) (☆) Types if ≠ in C# be Cannot Perform unsafe Cast like Convert double to a boolean

\# Value type (int, float, double) are initilized to zero (0) and referenc type object/class array string) are initialize to null by the Compiler automatically

Array are zero base indexing
and are bound check
overflow type can be check

(IV) Exception handling :- .Net Standardized
the exception handling across
languages C# offers the condition
key word to control flow
and make the code more reliable
readable scale

(V) Scaleable and adelaotable :- .Net has
introduce cassemblies
which are safe describing by
means of their many test.

** very important **
(I) 90% # Many test content the assembly
identity, version, Culture and
digital signature etc.

in our applications to delete the
call files and updating them.
new ones without the registering
of dll (dynamic link library).

inter operability :- C# include
native support for COM and
compounds based application.
C# allow the users to use Pointer
and unsafe code block to manipulate your old code.

Make

#

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File Ques:
What is operator overloading? Explain with example.
What is Exception Handling? Explain with example. (Use try catch block)

<u>Data Type</u>: The following are two types in C#
1. Value Type
2. Reference Type

<u>Value Type</u> + Integral type (Signed while, Unsigned while, Char, Short, Unsigned, Short, Int, Unsigned Int or long).
2. Floating and Decimal Type (Float oo Decimal

<u>Reference Types</u> : 1. Object Type
2. Class Type
3. Interfaces
4. Delegates
5. String
6. Array
7. Struct

<u>Boxing & Unboxing</u> (5 marks) &
Boxing — Convert value types to Reference type:
Ex - Int32 a = 10.
System. Console. WriteLine (Convert. To String (a));

Unboxing — Convert Reference Type to Value Type
Ex - String a = "20";
Console. WriteLine (Convert. To Int32 (a));

<u>Access Modifiers</u>

Private: Access limited to containing type or can only reached by members of the same class.

Public: Its member can be reached from anywhere.

Protected: Its members can only be reached within same class or from class which inherits from this class.

Internal: Its members can be reached from within the same project only.

Protected Internal: This is same as internal except the class which inherits from this class can reach its members even from another project.

Introduction to ASP. NET

*ASP. Net is a technology used to create dynamic web applications or web sites (Internet based Applications). This is based on the .Net platform and it support most .Net capatable languages for its applications.

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Monday.

ASP. Net provides an infrastructure for faster and easier development of reliable and secure web application. ASP. Net provides easy programming model flexible language option and compiled execution.

Features of ASP. Net

ASP. Net can recognize the type of browsers. This is using display the content accordingly to the client.

ASP. Net improve performance by using server side caching It allow you to cache the entire output of a web page for use by other client.

ASP Net having functionality can be coded using different languages like C# or Vb Net, However only one language can be used for coding in a single page.

ASP. Net is a container with many built-in server controls that have the common required functionalities

Asp Net code is contain within hierarchical namespaces that you can organise code in structured manner.

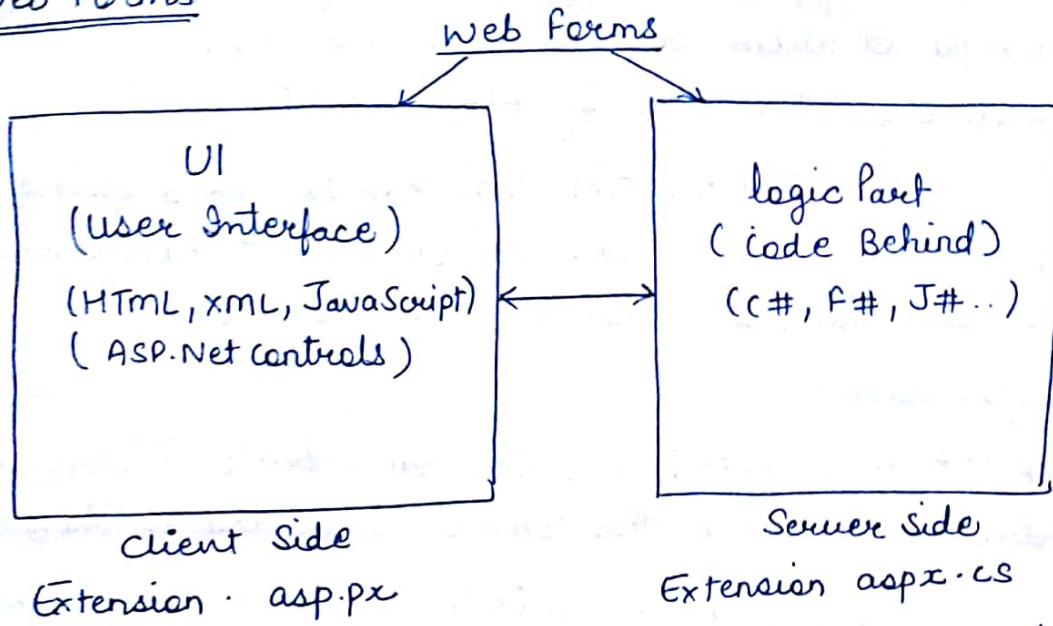# Web Services

Master Pages

ADO. Net

Ajax Control toolkit.

Model View Controller (MVC)

#

Web Forms

```
          Web Forms
         /          \
   ┌──────────────┐   ┌──────────────────┐
   │     UI       │   │   logic Part     │
   │(User Interface)│  │  ( Code Behind)  │
   │              │   │                  │
   │(HTML, XML, JavaScript)│←→│  (C#, F#, J#...)│
   │ ( ASP.Net controls )│  │                  │
   └──────────────┘   └──────────────────┘
     Client Side          Server Side
  Extension · asp.px    Extension aspx.cs
```

\# web Forms in Asp. Net have user Interface, centered or interacting with the users. Through form controls such as buttons, list box, text box and so on. These tools for creating web applications or these controls are called web forms.

\# The ASP.Net web form is divided into two parts visual part or User Interface. The visual part or UI part used to interact with the clients by the controls. The UI page stored in a file with the extension of .Aspx.

*
\# Logic or Code behind, the code are written is a separate file, dynamically interaction with the UI page called 'Code Behind file'? This file extension is

<u>.Cs or .aspx.cs.</u>

web forms inherits from <u>System. Web. UI. Page</u> namespace. The body of the page using the standard

HTML forms tag like < FORM   id = "Form1" Root = "Server" >
. . . . .   </FORM>

ASP. Net web Controls / Web Server Controls

* Asp. Net web controls are object of an Asp. Net web page
that run when the page requested and render markup
to a browser. Many web servers controls are similar to
HTML elements Such as button and text box.

* Other Asp. Net controls have complex behaviours Such
as Calender Control and AdRelator Control. Other Controls
that manage data connection like Grid View Control,
Data List Control called Data Controls.

* The following are the categories of Asp. Net and web
controls:

Simple Web.C	List Controls	Rich Web Controls	Validation Controls
Label	Drop Down List	Calendar	Required Field Validator
Text Box	Radio Button List	Ad Relator	Range Validator
Image	Check Box List	File Uploader	Compare Validator
Radio Button	Button List		Regular Expression Val.
CheckBox	List Box		Custom Validator
HyperLink			Validation Summary
Link Button		Data Controls	
Image Button		Grid View	
Button		Data List	
		Data Grid	
		Repeater	
		Detail View	

Simple Web Controls

1. Label Control:

This control is used to display server of text or a message on clients browser. For Example-

```
<asp:Label ID="lbl1" Runat="Server" Text="Hello">
</asp:Label>
```

Output : Hello World

Properties → Text, FontSize, ForeColor, BorderColor, Style.

2. Text Box :

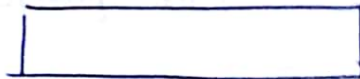Text box control is same as HTML text element. This control is used to input any text by the user or client. For example --

```
<asp:TextBox ID="Tb1" Runat="Server" TextMode="Singleline"
    MaxLength="10" />
```
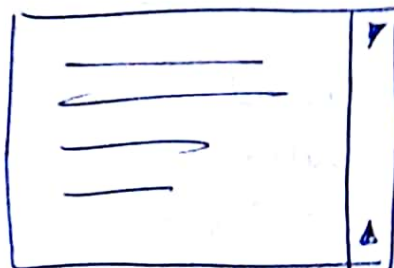   "Password"
                                                "Multiline"

Output :

 Singleline.

 Password

 Multiline

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```
<asp: ID="Image1" Runat="Server" ImageUrl="image/logo.Ptg"
Alternate Text="Logo" Border="0">
```

```
<asp: RadioButton  ID="Radio1"  Runat="Server" GroupName
                                        ="Gender" Text="Male"/>
```

```
<asp: RadioButton  ID="Radio2"  Runat="Server"  GroupName=
                    "Gender"  Text="Female"/>
```

```
<asp: CheckBox  ID="CheckBox1"  Runat="Server"  Text="I Agree"/>
```

```
<asp: HyperLink  ID="HyperLink1"  Runat="Server"
         NavigateUrl="http://google.com"  Text="Click Here"/>
```

```
<asp: LinkButton  ID="LinkButton1"  Runat="Server"
         PostBackUrl="http://google.com"  Text="click Here"/>
```

```
<asp: ImageButton  ID="ImageButton1"  Runat="Server"
         PostBackUrl="http:/google.com"  ImageUrl=
                                        "Search.Png"/>
```

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```
<asp: HiddenField  ID="hidden1"  Runnat="Server"  Text="Hello"/>
```

```
<asp: DropDownList  ID="DDL1"  Runnat="Server"
                    Auto Post Back="True">
```

```
<asp: List Item  Value="0"  Text="..Select Any language">
                                    <asp: List Item>
```

```
<asp: List Item  value="1"  Text="C#">           ""
```

```
<asp: List Item  value="2"  Text="C++">          ""
```

```
<asp: List Item  Value="3"  Text="F#">           ""
```

```
<asp: List Item  Value="4"  Text="java">         ""
```

```
<asp: List Item  value="5"  Text="Visual">       ".
```

```
</asp: DropDownList>
```

Create Drop down value at Runtime

String a = DropDownList1. Selected Item. Text;

Add Item in Runtime

DropDown List1. Items. Add (new Item ("J#", "c"));

Radio Button

```
<asp: Radio Button  ID ="Rd Btn 1"  Runat ="Server"
Repeated Direction =" Horizontally / Vertically"
Repeat column = "1"  Repeat Layout = "Table" >
Auto Post Back =" True" >
            < List Item >
```

Check Box List

```
<asp: Check Box List   ID="ChkBL"  Runat- "Server"
          Repeal Direction =Horizontal"  Repeat Column =" ">
               ( Same   as  above>

< List Item>

    String values =" ";
foreach ( ListItem In ChkBL).
       {
        if ( Item. Selected)
          {
        Values += Item. Text + ", ";
          }
lbl Print. Text = "You have selected "+ Values;
```

< List Box.

< asp : List Box   ID = "List Box 1" Runat = "Server" AutoPostBack = "True" >.

   < List Item >

Event : Selected Index Changed.

Bullet List

< asp : Bullet List   ID = "ListBox 1" Runat = "Server"
    List Style = "Circle"   Display Mode = "Text"   ImageUrl = "--" >
          "Square"   "HyperLink"
          " Disk"   " LinkButton"
          " Numbered"
          "Custom Image"

   < List Item > .

File upload Control

27/8/2018

Rich Web Controls

1. Calender :

        Calender Control is a functionalities rich web control which provides following capabilities.

a) Displaying 1 month at a time

b) Selecting a day, a week or a month.

c) Selecting a range of days.

d) Moving from one month to month.

e) Controlling the display of the day.