

WEB TECHNOLOGY 2 MARKS

1. What is VB script?

VBScript is an interpreted script language from Microsoft that is a subset of its Visual Basic programming language designed for interpretation by Microsoft's Internet Explorer (IE) web browser. VBScript compares to other early scripting languages that were used for the web development, including the following:

- Netscape's JavaScript
- Sun Microsystem's Tcl
- Unix-derived Perl □ IBM's REXX simple example of VBScript embedded in HTML.

```
<html>
  <head>
    <title>VBScript Tutorial!!!</title>
  </head>
  <body>
    <script type="text/vbscript">
      document.write("VB script tutorial!")
    </script>
  </body>
</html>
```

2. Define constants.

A constant is an identifier (name) for a simple value. The value cannot be changed during the script. A valid constant name starts with a letter or underscore (no \$ sign before the constant name). Note: Unlike variables, constants are automatically global across the entire script.

Syntax:

define(name, value, case_insensitive)

A constant is a data item whose value cannot change during the program's execution. Thus, as its name implies – the value is constant. A variable is a data item whose value can change during the program's execution. Thus, as its name implies – the value can vary.

3. What is conditional statement?

A conditional statement, often referred to as a conditional or an "if-then" statement, is a fundamental concept in programming and logic. It's a statement that specifies that if a certain condition is true, then a particular action or set of actions should be performed. Conditional statements are used to control the

flow of a program, making it possible to execute different blocks of code based on whether specific conditions are met...

Syntax:

```
if ( condition )
{
  // If the condition is met, //code
  will get executed.
}
```

Conditional statements in JavaScript allow you to execute specific blocks of code based on conditions. If the condition meets then a particular block of action will be executed otherwise it will execute another block of action that satisfies that particular condition.

There are several methods that can be used to perform Conditional Statements in JavaScript.

- if Statement
- if-else Statement
- else if Statement
- switch Statement
- Ternary Operator

4. Name the types of assignment operators in JavaScript.

JavaScript **assignment operator** is **equal (=)** which assigns the value of the right-hand operand to its left-hand operand. That is if $a = b$ assigns the value of b to a .

The simple assignment operator is used to assign a value to a variable. The assignment operation evaluates the assigned value. Chaining the assignment operator is possible in order to assign a single value to multiple variables. See the example.

Syntax: **data=value**

OPERATOR NAME	SHORTHAND OPERATOR	MEANING
<u>Addition Assignment</u>	$a+=b$	$a=a+b$
<u>Subtraction Assignment</u>	$a-=b$	$a=a-b$
<u>Multiplication Assignment</u>	$a*=b$	$a=a*b$
<u>Division Assignment</u>	$a/=b$	$a=a/b$

<u>Remainder Assignment</u>	a%=b	a=a%b
<u>Exponentiation Assignment</u>	a**=b	a=a**b

5. Write the If...else syntax in Java Script.

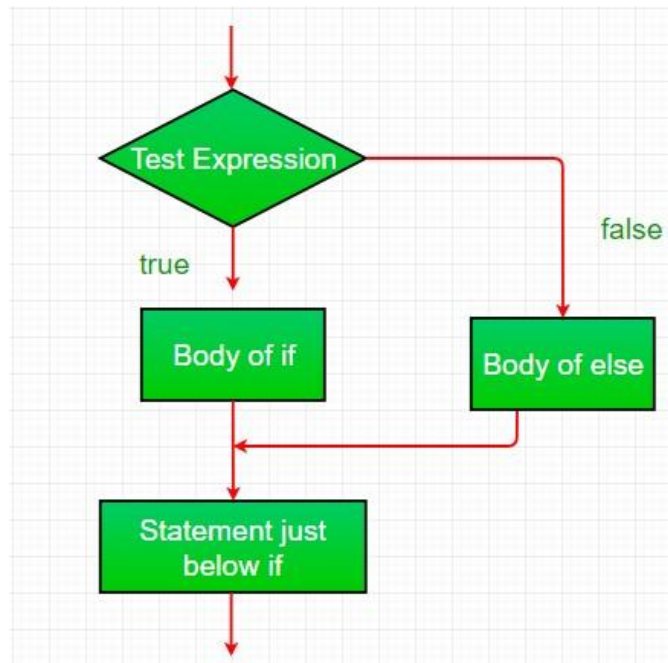
- if
- if-else
- nested-if
- if-else-if ladder

The **if-else** or conditional statement will perform some action for a specific condition. If the condition meets then a particular block of action will be executed otherwise it will execute another block of action that satisfies that particular condition. Such control statements are used to cause the flow of execution to advance and branch based on changes to the state of a program.

- **if-else Syntax:**

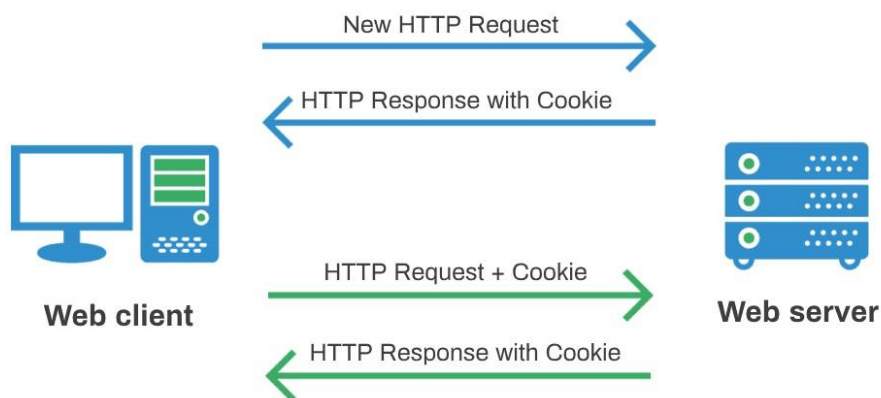
```
if (condition)
{
    // Executes this block if
    // condition is true
}
else
{
    // Executes this block if
    // condition is false
}
```

Flow chart:



6. What is cookies?

A cookie is a piece of data from a website that is stored within a web browser that the website can retrieve at a later time. Cookies are used to tell the server that users have returned to a particular website.

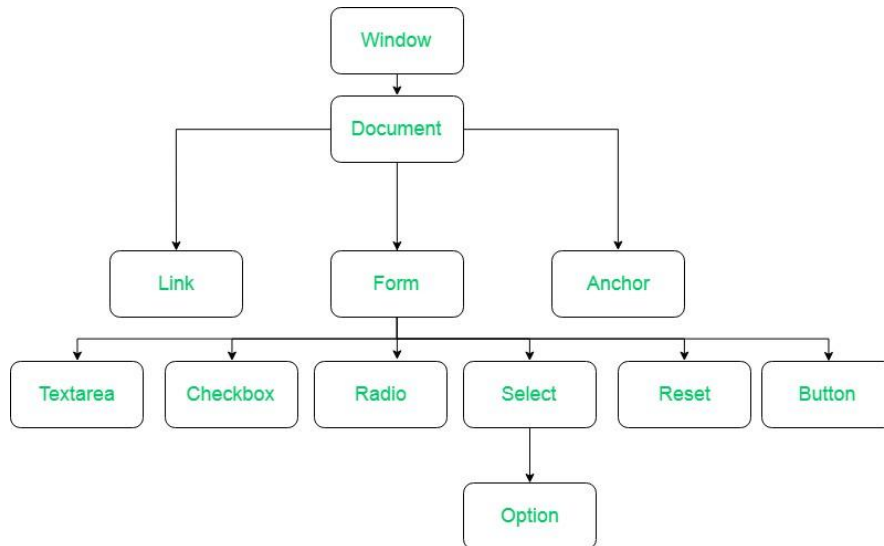


cookies and examples:

Cookies are small files of information that a web server generates and sends to a web browser. Web browsers store the cookies they receive for a predetermined period of time, or for the length of a user's session on a website. They attach the relevant cookies to any future requests the user makes of the web server.

7. Define DOM. Or DOCUMENT OBJECT MODEL:

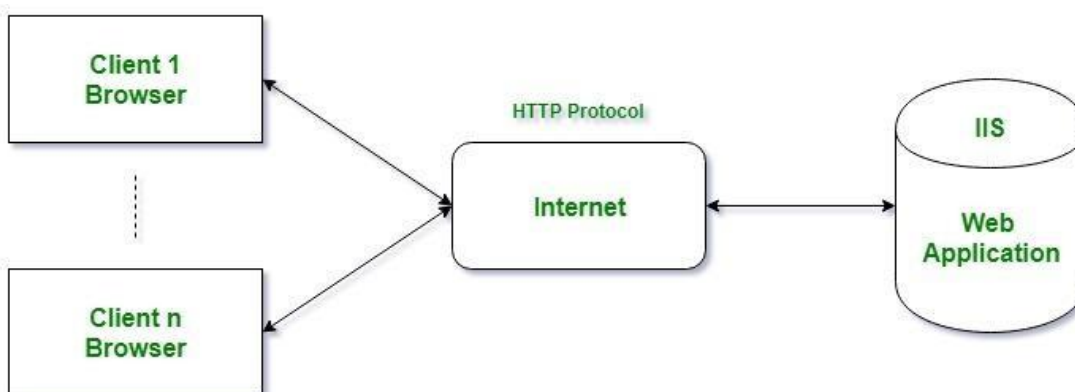
The Document Object Model (DOM) is a **programming interface** for **HTML(HyperText Markup Language)** and **XML(Extensible markup language)** documents. It defines the **logical structure** of documents and the way a document is accessed and manipulated.



DOM is a way to represent the webpage in a structured hierarchical way so that it will become easier for programmers and users to glide through the document. With DOM, we can easily access and manipulate tags, IDs, classes, Attributes, or Elements of HTML using commands or methods provided by the Document object.

8. What is ASP.NET?

ASP.NET is a web application framework developed by Microsoft for building dynamic and interactive web applications and services. The name "ASP.NET" stands for "Active Server Pages .NET." It is a part of the larger .NET framework and provides a programming model, tools, and libraries for creating web applications and services.

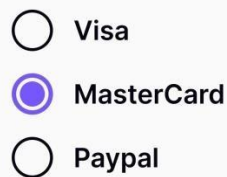


ASP.NET supports multiple programming languages, including C#, VB.NET, and F#, and it's highly extensible, allowing developers to integrate third-party libraries and components.

In summary, ASP.NET is a versatile framework for building web applications and services, offering a range of tools and technologies to accommodate various development needs. The choice between ASP.NET Web Forms, ASP.NET MVC, or ASP.NET Core depends on the project requirements and goals.

9. What is Radio button?

Radio buttons are an important term that belongs to the HTML family. They are mostly used in HTML forms. A radio button is operated to choose only one alternative out of multiple functional options.



Radio buttons, also called option buttons, let users select one option from a collection of two or more mutually exclusive, but related, options. Radio buttons are always used in groups, and each option is represented by one radio button in the group.

10. What is E-mail?

Email, short for "electronic mail," is a method of exchanging digital messages over the Internet or other computer networks. It is a widely used communication tool for both personal and business purposes. Email allows individuals and organizations to send text-based messages, documents, images, and other types of digital content to one or more recipients.

11. Write the methods of response object.

The **Response Object** is used to send a response to the client request from a server. It has many predefined methods, properties, and collections.

- **AddHeader:** This method is used to specify for adding a new name for the HTTP Header and provide and given a value to the HTTP Response.
- **AppendToLog:** This Method is used for adding a string to the end of the server log entry for this request.
- **Clear:** This Method is used to clear or erase a Buffered HTML Output.
- **End:** This Method is used to ensure the webserver stops the processing of the scripts and returns the current result.
- **Flush:** This Method is used to send buffered Output immediately. □ **Redirect:** This Method is used to redirect the client to a different URL □ **Write:** This method writes a specified string to the output.

12. List the HTML server controls.

In the context of web development with ASP.NET, HTML server controls are elements that are part of the ASP.NET framework and provide a way to create interactive and dynamic web applications. These controls are similar to standard HTML elements but are processed on the server-side, allowing for more flexibility and control. Here are some commonly used HTML server controls in ASP.NET:

1. **asp:Label**: A server control for displaying text or other content on a web page.
2. **asp:TextBox**: A control that provides a text input field for user input.
3. **asp:Button**: A button control that can trigger server-side events when clicked.
4. **asp:LinkButton**: Similar to a button, but it's often used for hyperlink-like functionality.
5. **asp:ImageButton**: An image-based button that can trigger server-side events.

1. What is Variable?

A variable is a fundamental concept in computer programming and mathematics. It is a symbolic name or identifier associated with a memory location used to store data in a computer program. Variables allow programmers to work with and manipulate data in a flexible and dynamic way.

SYNTAX:

```
data_type variable_name = value; // defining single variable
or
data_type variable_name1, variable_name2; // defining multiple variable
S
```

Variable

Variable : A letter that represents an unknown number. eg. x , a , n

$$x + 4 = 7$$

↑
variable

A variable is a value that can change, depending on conditions or on information passed to the program. Typically, a program consists of instructions that tell the computer what to do and data that the program uses when it is running.

2. Define Data types in VB Script.

VBScript has only one data type called a **Variant**. It is a special kind of the data type that can contain different kinds of information, depending on how it's used. Because Variant is the only data type in VBScript, it's also the data type returned by all functions in VBScript.

Data types in vbscript.

- There are many different data types you might want to be able to store into variable: numbers, words, dates and many more.
- VBScript supports the following data types
 - 1) Integer
 - 2) Float
 - 3) String
 - 4) Date
 - 5) Boolean
 - 6) Currency
 - 7) Object
 - 8) Variant

3. How to declare a variable in Java Script?

we can declare a variable in different ways by using different keywords. Each keyword holds some specific reason or feature in JavaScript. Basically, we can declare variables in three different ways by using **var**, **let** and **const** keywords. Each keyword is used in some specific conditions.

Syntax:

```
var variableName = "Variable-Value;"
```

JavaScript var	JavaScript let	JavaScript const
Can be redeclared	Cannot be redeclared	Cannot be redeclared
Can be reassigned a value	Can be reassigned a value	Cannot reassign the value
Only have global and function scope	Can have a block scope	Can have a block scope

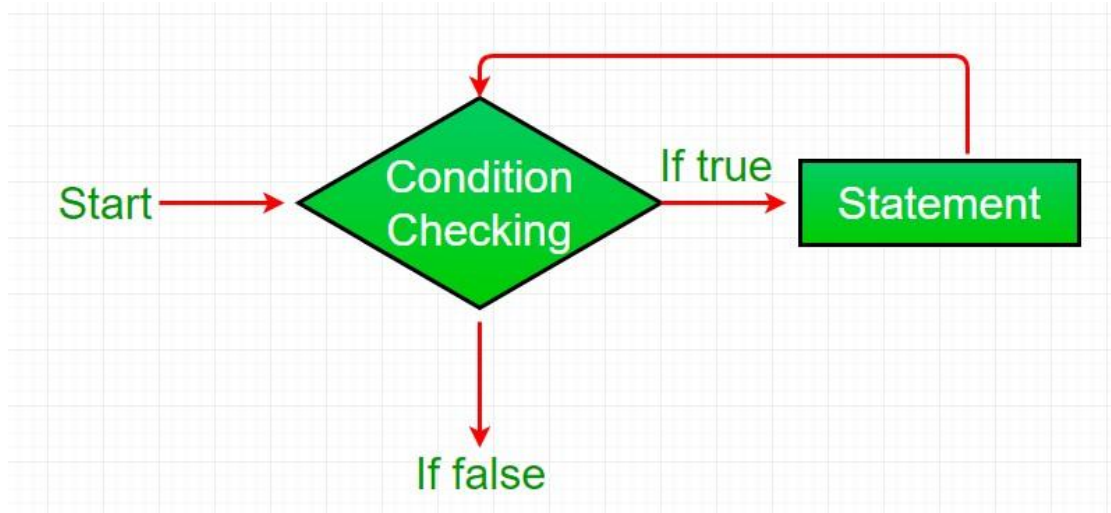
4. What is looping?

Looping in programming languages is a feature that facilitates the execution of a set of instructions/functions repeatedly while some condition evaluates to true. For example, suppose we want to print "Hello World" 10 times.

Syntax :

```
while (boolean condition)
{
    loop statements...
}
```

Flowchart:



6. Define the term Object.

In the context of computer programming and software engineering, an object is a fundamental concept that represents a real-world entity or a concept. Objects are a way of organizing and modelling data and behaviour in a structured and reusable manner. They are a key concept in object-oriented programming (OOP), a popular programming paradigm.

7. List any four Events.

In the context of computer programming and software engineering, an object is a fundamental concept that represents a real-world entity or a concept. Objects are a way of organizing and modelling data and behaviour in a structured and reusable manner. They are a key concept in object-oriented programming (OOP), a popular programming paradigm.

Here are the core characteristics and principles associated with objects:

1.	State:	Objects have attributes or properties that define their current state. These properties hold data or values that describe the object. For example, a "car" object might have properties such as "colour," "make," and "model."
2.		Objects can exhibit behaviour through methods or functions associated with them. Methods define what an object can do or how it can interact with other objects. For example, a "car" object might have methods like "start," "stop," and "accelerate."
3.	Behaviour:	
4.	Encapsulation:	Encapsulation is the concept of bundling an object's data (properties) and behaviour methods) into a single unit. This bundling hides the internal details of an object and exposes only necessary interfaces for interacting with it. Encapsulation helps maintain data integrity and reduce complexity.
5.	Abstraction:	Abstraction is the process of simplifying complex systems by breaking them down into smaller, manageable parts. Objects provide a level of abstraction by allowing you to focus on relevant attributes and behaviours of an entity while ignoring unnecessary details.
6.	Inheritance:	Inheritance is a mechanism in OOP that allows objects (typically referred to as classes) to inherit properties and behaviours from other objects. It promotes code reuse and the creation of hierarchies of objects.
	Polymorphism:	Polymorphism is the ability of objects to take on multiple forms. It allows different objects to respond to the same message (method call) in ways that are specific to their individual types.

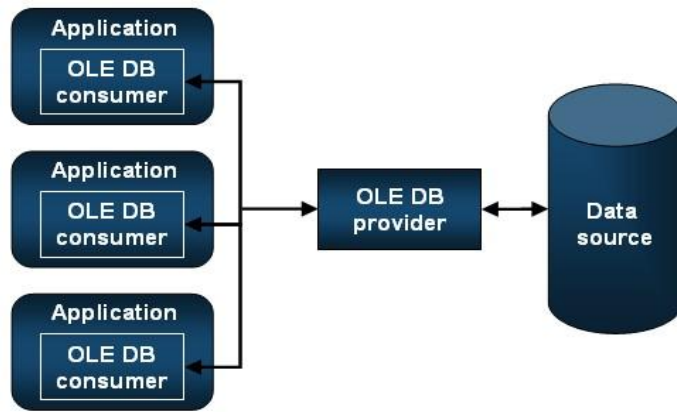
8. What is Text Box?

A text box is an object you can add to your document that lets you put and type text anywhere in your file. Text boxes can be useful for drawing attention to specific text and can also be helpful when you need to move text around in your document.

Alternatively called a **text field**, a **text box** is a section or object on a page that allows a user to enter text. Text boxes are used on the Internet for pages requiring user input. You may also see a text box in a word processing program when creating a form that requires a user to enter information.

9. What is OLEDB? Object Linking and Embedding Database Mean

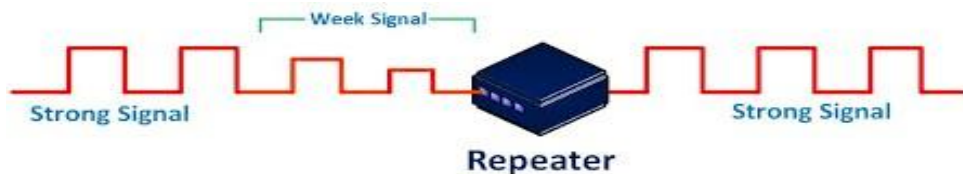
Object Linking and Embedding Database (OLE DB) is a group of APIs used to facilitate and abstract access to application data of different file formats, including spreadsheets, structured query language (SQL)-based database management systems (DBMS), indexed-sequential files, and personal databases.



OLE DB is based on the Component Object Model (COM) and is part of the Microsoft Data Access Components (MDAC) software package, which is used to read and write data.

10. What is Repeater?

Repeaters are network devices operating at **physical layer** of the **OSI model** that amplify or regenerate an incoming signal before retransmitting it. They are incorporated in networks to expand its coverage area. They are also known as signal boosters.



Types of Repeaters

According to the types of signals that they regenerate, repeaters can be classified into two categories –

- Analog Repeaters – They can only amplify the analog signal.
- Digital Repeaters – They can reconstruct a distorted signal.

11. What are called Page Directives?

The **page** directive is used to provide instructions to the container that pertain to the current JSP page. You may code the page directives anywhere in your JSP page. By convention, page directives are coded at the top of the JSP page.

Following is the basic syntax of page directive –

```
<%@ page attribute = "value" %>
```

the XML equivalent of the above syntax as follows –

```
<jsp:directive.page attribute = "value" />
```

Attributes

Following table lists out the attributes associated with the page directive –

S.No.	Attribute & Purpose
1	buffer Specifies a buffering model for the output stream.
2	autoFlush Controls the behavior of the servlet output buffer.
3	contentType Defines the character encoding scheme.
4	errorPage Defines the URL of another JSP that reports on Java unchecked runtime exceptions.
5	isErrorPage Indicates if this JSP page is a URL specified by another JSP page's errorPage attribute.

12. What is IP Address?

All the computers of the world on the Internet network communicate with each other with underground or underwater cables or wirelessly. If I want to download a file from the internet or load a web page or literally do anything related to the internet, my computer must have an address so that other computers can find and locate mine in order to deliver that particular file or webpage that I am requesting. In technical terms, that address is called **IP Address or Internet Protocol Address..**



1. What are operators?

Operators can be defined as the symbols that help us to perform specific mathematical, relational, bitwise, conditional, or logical computations on operands. In other words, we can say that an operator operates the operands. For example, '+' is an operator used for addition, as shown below: **c = a + b;**

Types of Operators in C

C has many built-in operators and can be classified into 6 types:

1. Arithmetic Operators
2. Relational Operators
3. Logical Operators
4. Bitwise Operators
5. Assignment Operators
6. Other Operators

Operators in C

	Operators	Type
Unary Operator →	++, --	Unary Operator
Binary Operator {	+, -, *, /, %	Arithmetic Operator
	<, <=, >, >=, ==, !=	Relational Operator
	&&, , !	Logical Operator
	&, , <<, >>, ~, ^	Bitwise Operator
	=, +=, -=, *=, /=, %=	Assignment Operator
Ternary Operator →	?:	Ternary or Conditional Operator

3. What is Javascript?

JavaScript is a *lightweight, cross-platform, single-threaded, and interpreted compiled* programming language. It is also known as the scripting language for webpages. It is well-known for the development of web pages, and many non-browser environments also use it.

SYNTAX:

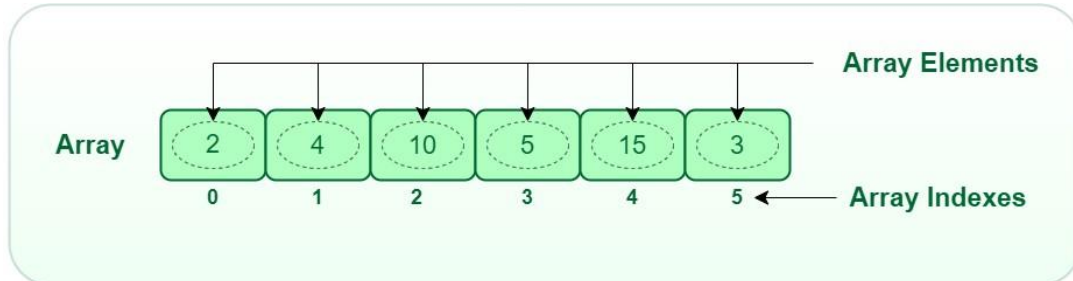
```
<script>
  // JavaScript Code
</script>
```

JavaScript is a **weakly typed language (dynamically typed)**. JavaScript can be used for **Client-side** developments as well as **Server-side** developments. JavaScript is both an imperative and declarative type of language. JavaScript contains a standard library of objects, like **Array**, **Date**, and **Math**, and a core set of language elements like **operators**, **control structures**, and **statements**.

4. Define Array.

An array is a collection of items of same data type stored at contiguous memory locations. For simplicity, we can think of an array as a flight of stairs where on each step is placed a value (let's say one of your friends).

An array is a collection of items of same data type stored at contiguous memory locations.



5. What is an event?

Events are things that happen in the system you are programming — the system produces (or "fires") a signal of some kind when an event occurs, and provides a mechanism by which an action can be automatically taken (that is, some code running) when the event occurs. Events are fired inside the browser window, and tend to be attached to a specific item that resides in it. This might be a single element, a set of elements, the HTML document loaded in the current tab, or the entire browser window. There are many different types of events that can occur.

An example: handling a click event

In the following example, we have a single `<button>` in the page:

HTMLPlayCopy to Clipboard

```
<button>Change color</button>
```

6. List any four built in object.

The built-in objects are Date, Math, String, Array, and Object. Each is used in a unique and not-quiteconsistent way.

the 5 built in objects in JavaScript::

JavaScript also has constructors for Boolean and Number types.

- 7.1 Built-in functions. JavaScript has five functions built in to the language. ...
- 7.2 Array Object. ...
- 7.3 Boolean Object. ...
- 7.4 Date Object. ...
- 7.5 Math Object. ...
- 7.6 Number Object. ... □ 7.7 String Object.

7. How to incorporate Image in Asp.NET?

1. **Image Tag ():** The simplest way to display an image is by using the HTML `` tag within your ASP.NET web page. You can specify the image source using either a relative or an absolute URL.

htmlCopy code

```

```

Make sure the image file is located in the appropriate directory or provide the correct path to the image.

2. **ASP.NET Web Forms:** If you're using Web Forms, you can use the `Image` control to display images. Here's an example:

htmlCopy code

```
<asp:Image ID="Image1" runat="server" ImageUrl="~/Images/image.jpg" AlternateText="Image Description" />
```

You can set the `ImageUrl` property to the relative path of your image.

8. What is a form?

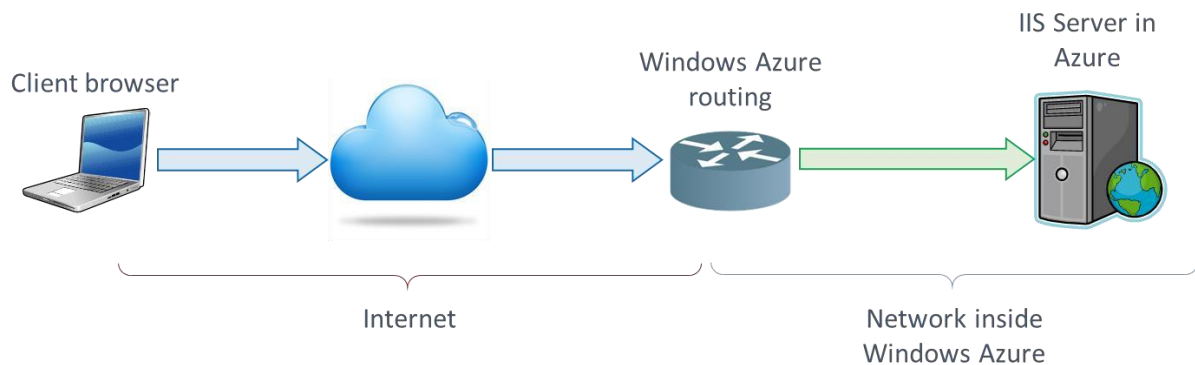
A form, in the context of web development and HTML, is an essential element used to collect and submit data from website visitors. Forms are a fundamental part of user interaction on the web and are used for various purposes, such as user authentication, data input, search queries, and more.
Example

First name:

Last name:

9. What is IIS?

IIS, or Internet Information Services, is a web server software developed by Microsoft for hosting and serving web applications and websites on Windows-based servers. It is an essential component for running web applications on the Windows operating system and provides a robust and feature-rich platform for hosting and managing web content and services.



10. Define Cookies.

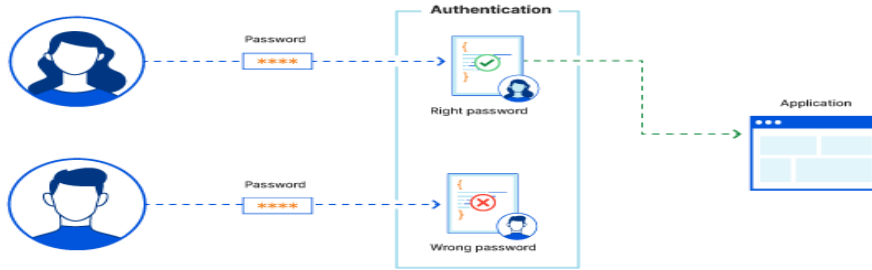
A cookie is a piece of data from a website that is stored within a web browser that the website can retrieve at a later time. Cookies are used to tell the server that users have returned to a particular website.



A cookie is a small file of letters and numbers that is downloaded on to your computer when you visit a website. Cookies are used by many websites and can do a number of things, eg remembering your preferences, recording what you have put in your shopping basket, and counting the number of people looking at a website.

11. What is Authentication?

In authentication, the user or computer has to prove its identity to the server or client. Usually, authentication by a server entails the use of a user name and password. Other ways to authenticate can be through cards, retina scans, voice recognition, and fingerprints.



5 Common Authentication Types

- Password-based authentication. Passwords are the most common methods of authentication. ... □
Multi-factor authentication. ...
- Certificate-based authentication. ...
- Biometric authentication. ...
- Token-based authentication.

12. What is SSL?

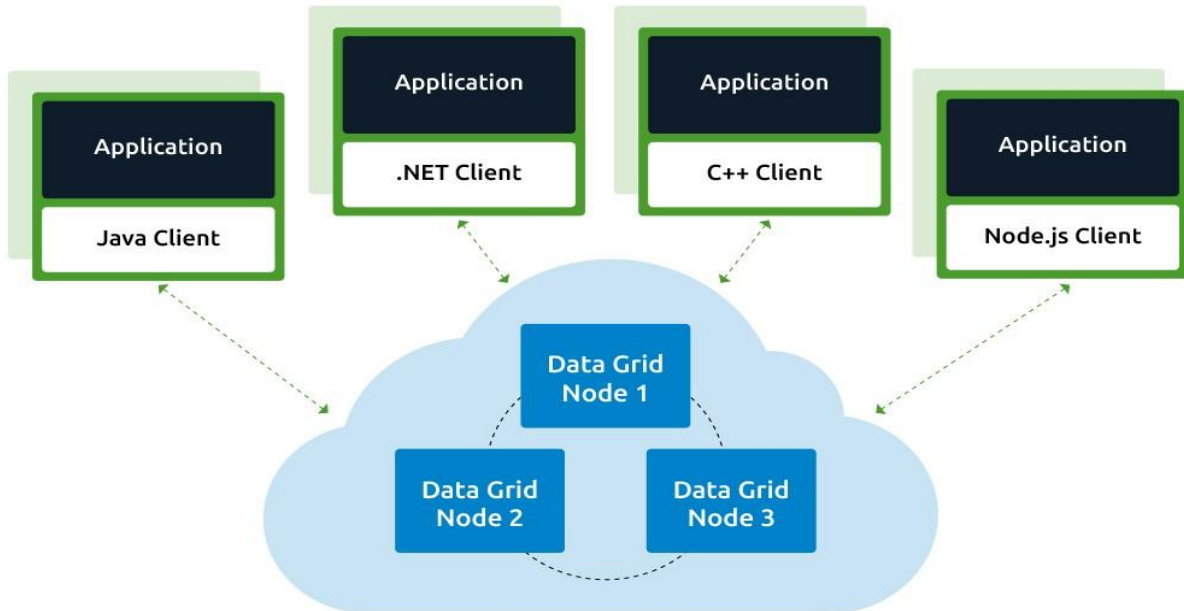
[Secure Socket Layer \(SSL\)](#) provides security to the data that is transferred between web browser and server. SSL encrypts the link between a web server and a browser which ensures that all data passed between them remain private and free from attack.

Secure Socket Layer Protocols:

- SSL record protocol
- Handshake protocol
- Change-cipher spec protocol
- Alert protocol

6. Define data grid.

A data grid, also known as a data grid view or grid control, is a graphical user interface (GUI) component used in software applications to display and manipulate tabular data in a structured and interactive format. Data grids are commonly found in various types of software applications, including spreadsheet software, database management systems, web applications, and more.



A Data Grid is a system composed of multiple servers that work together to manage information and related operations - such as computations - in a distributed environment.

8. List any four HTML server controls.

HTML server controls are elements used in ASP.NET web applications to provide server-side functionality and rendering. They are similar to standard HTML elements but are processed on the server, allowing for dynamic and interactive web applications. Here are four HTML server controls commonly used in ASP.NET:

1. `<asp:TextBox>`: This control creates an HTML input field for text input. It allows users to enter text data, and the input can be accessed and processed on the server-side.

```

<<html
<asp:TextBox ID="txtUsername" runat="server" />
<<
  
```

2. `<asp:Button>`: The `<asp:Button>` control generates an HTML button element that can trigger server-side events when clicked. It's commonly used for submitting forms or triggering server-side actions.

```

<<html
<asp:Button ID="btnSubmit" runat="server" Text="Submit" OnClick="Submit_Click" />
<<
  
```

3. `<asp:Label>`: The `<asp:Label>` control creates an HTML label element that can display text on the web page. It's often used for displaying dynamic text or feedback to the user.

```
``html
<asp:Label ID="lblMessage" runat="server" Text="Welcome!" />
``
```

4. `<asp:DropDownList>`: This control generates an HTML `<select>` element with a list of options. Users can select one option from the list, and the selected value can be processed on the server.

```
``html
<asp:DropDownList ID="ddlOptions" runat="server">
  <asp:ListItem Text="Option 1" Value="1" />
  <asp:ListItem Text="Option 2" Value="2" />
  <asp:ListItem Text="Option 3" Value="3" />
</asp:DropDownList>
``
```

These are just a few examples of HTML server controls in ASP.NET. ASP.NET offers a wide range of server controls that help developers create dynamic and interactive web applications with serverside processing. Each control has its specific use case and properties for customization.

10. Name any two user defined functions in Java scripts.

User-Defined Functions

- Scalar JavaScript UDFs: these are vanilla JavaScript functions that return a single value. These are the most common ones.
- Tabular JavaScript UDFs: these are JavaScript functions that return iterables and can be used as SQL table functions that produce rows.

11. What is Data Adapter?

A DataAdapter is used to retrieve data from a data source and populate tables within a DataSet. The DataAdapter also resolves changes made to the DataSet back to the data source.

A Data Adapter is a crucial component in database programming that acts as a bridge between a database and a dataset or data source in various programming frameworks and database management systems. Its primary role is to facilitate the exchange of data between the database and the application, allowing you to retrieve, manipulate, and update data in a more structured and programmatic way. Data Adapters are commonly used in ADO.NET (used in .NET applications) and other similar technologies.
