Syllabus Details

Sr.no	Chapter Name	Marks
1	Basics of JavaScript Programming	12
2	Array , Function and String	14
3	Form and Event Handling	10
4	Cookies and Browser Data	08
5	Regular Expression , Rollover & Frames	14
6	Menus , navigation and web page protection	12
Total		**70**

Course Introduction

➢ JavaScript is limited featured client side programming language.

➢ JavaScript runs at the client end through the user's browser without sending messages back and forth to the server.

➢ It is widely used by the web developers to do things such as build dynamic web pages, respond to events, create interactive forms, validate data that the visitor enters into a form, control the browser etc.

➢ This course helps student to create highly interactive web pages and Dynamic Web Pages using the these features.

Basic Knowledge Required

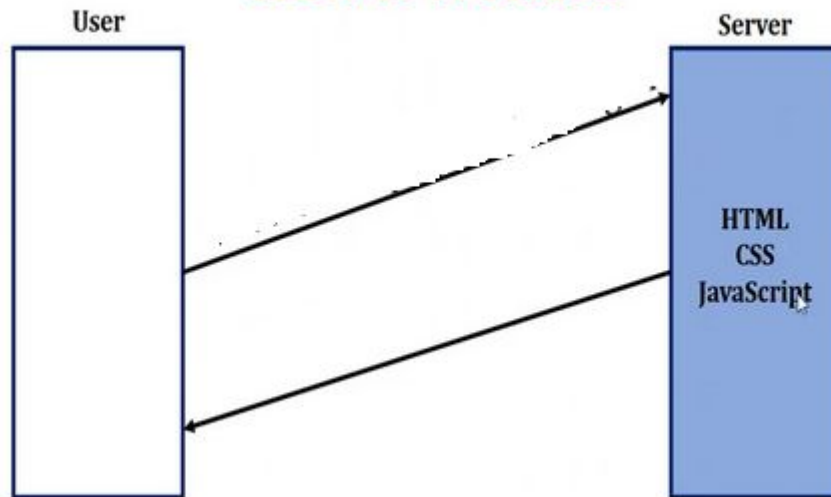- HTML-Hypertext Markup Language.

- CSS-Cascading Style Sheets.

What is scripting language....?

➤ All scripting languages are programming languages.

➤ The scripting language is basically a language where instructions are written for a run time environment.

➤ They do not require the compilation step and are rather interpreted.

➤ A scripting language is a programming language designed for integrating and communicating with other programming languages.
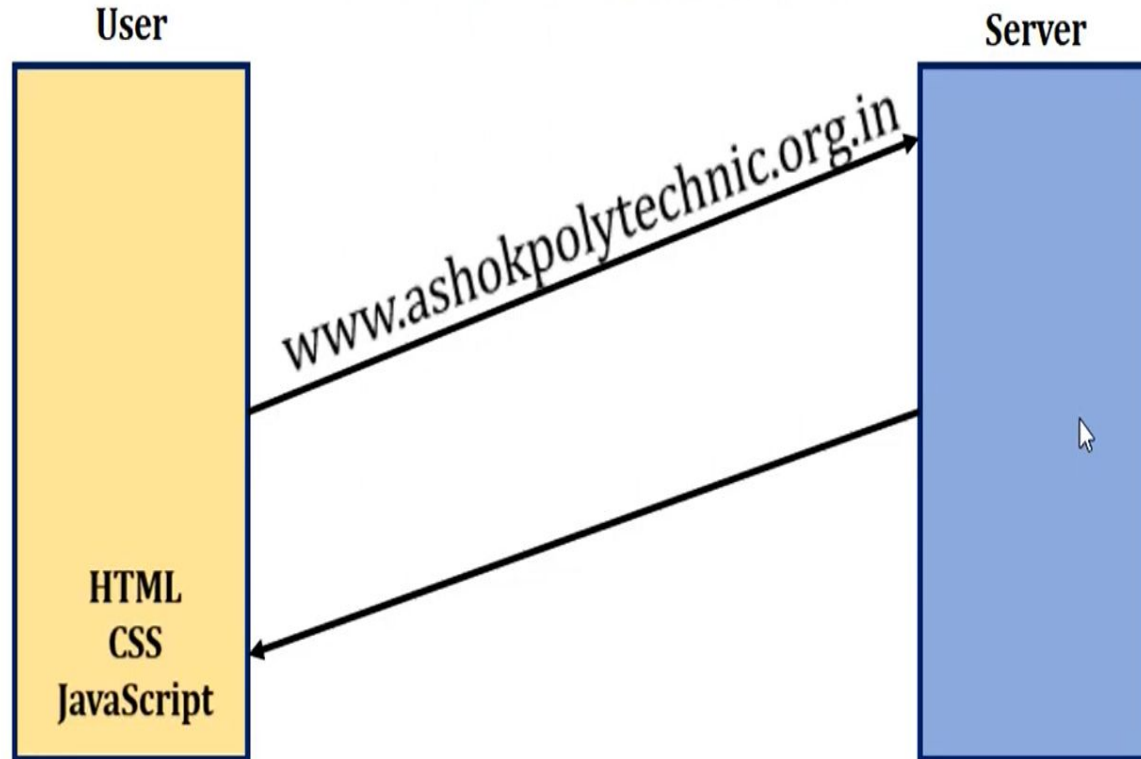
What is JavaScript...?

➢ JavaScript is the Programming language of HTML and Web Pages.

➢ It makes web pages dynamic.

➢ It is an interpreted programming language with object oriented capabilities.

How it Works...

User

Server

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HTML
CSS
JavaScript

Difference between Java and JavaScript

➢ Java and JavaScript are two completely different languages in both concept and design.

➢ However, the syntax is similar.

➢ Java (developed by Sun Microsystems) is a powerful and much more complex programming language - in the same category as C and C++.

➢ JavaScript is not a full-featured programming language.

➢ JavaScript only executed in a browser.

What is JavaScript

➢ JavaScript is popular, light weight and an Open Source Client Side Language supported by all browsers.

➢ JavaScript is a dynamic computer programming language .When JavaScript is applied with an HTML document, it can provide dynamic interactivity on website.

➢ JavaScript is also being used in many Game development and Mobile Application development.

(1.1) Features of JavaScript —

1> Light-weight, interpreted programming language.

2> Scripting language. and it is not Java.

3> Browser support

4> JS is case sensitive.

5> Object based language. as it provides predefined objects.

6> Giving the user more control over the browser.

7> Interpreter based scripting language.

8> most of control statement syntax same as C language.

Features of JavaScript

- Light Weighted Scripting Language

- Case Sensitive

- Interpreter Based

- Client Side Technology

- Validating User's Input

- Object-Based Scripting Language

- Event Handling

- Looping Statement (for, while ,do while)

- if...else Statement (if, if else ,if else if ,nested if)

- Control Statement (switch , continue , break)

- In-Built Function

- Every statement in JavaScript must be terminated with semicolon (;)

- Most of the JavaScript control statements syntax is same as syntax of control statements in C language.

- An important it part of JavaScript is the ability to create new functions within scripts. Declare a function using function keyword.

Mauli

1) Speed — JS runs fast as code runs on browser.
2) Simplicity — Simple to learn and implement
3) Versatility — can be used in a huge variety of applications.
4) Server load — Reduces website server load.
5) Less server interaction — Saver server traffic.
6) Easy to debug — easy to debug & testing
7) Richer interfaces — drop-down menu, sliders, etc.
8) Immediate feedback to ~~users~~ visitors — User don't have to wait for a page ~~reload~~ reload.
9) Increased interactivity — create interfaces that react when user mouse over them.
10) Lightweight and Interpreted — allows to build interactivity to static HTML pages
11) Build Dynamic web pages
12) Display alert boxes
13) Validate information in forms

12) Display alert boxes 13) Validate information in forms

Disadvantages of Java Script —

1) <u>Security</u> — user's computer can expoited for malicious ~~programs~~ purpose.

2) <u>Relying on end user</u> — As JS sometimes interpreted differently by different browsers.

3) Does not allow the reading or writing of files

4) Can not be used for Networking applications.

5) Does not have any multitasking or multi-process capabilities.

Softwares required for running Javascript programs

You can use softwares like <u>Notepad</u> and <u>Browser</u> which installed already in the system. Except this you can also use following IDE or softwares

1) Notepad ++
2) Sublime
3) Atom
4) Visyal Studio Code   (VS Code)
5) Microsoft FrontPage
6) Macromedia Dreamweaver , etc.
7) Webstorm
8) Netbeans

`</script>`

Comments in JavaScript

JavaScript supports both C-style and C++-style comments.

① Single line comment → `// . . . . . . .`

② multiline comment `/* . . . . . . */`

③ HTML comment `<!-- . . . . -->`

④ Javascript comment `<!--`

`//-->`

How to Write JavaScript ?

➢ Script tag with example

      JavaScript is implemented by adding <script>......</script> tag within HTML tag in a web page.

Script tag can be inserted within webpage by following ways:

Script in head section
```
<head>
<script>
//JavaScript code
</script>
</head>
```

Script in body section
```
<body>
<script>
//JavaScript code
</script>
</body>
```

<script> Tag

➢ <script> tag has following attributes
   1. **Language**
   2. **Type**

1.Language-The language attribute set value to "JavaScript".

2.Type-The type attribute tells the browser that the script is in plain text and the text is organized in the format of a JavaScript.

<script language="JavaScript" , type="text/javascript">
docment.write("Hello")
</script >

Object Name

➤ A JavaScript object is a collection of named values and these named vales are properties of object.

➤ A web page contains various objects; some of them are of same type whereas some of them are of different type of object.

➤ Each object should be uniquely identified by a name or Ids in web age to distinguished between them

➤ JavaScript supports various objects like document, form , button, window etc.

Object Example

Object	Properties	Method
student	student.name="Vijay" student.age=21 student.year="TY"	student.display()

Property

➢ Property is a value associated with an object.

➢ Every object has its own set of properties for example window has properties like width,height,backgroundcolor etc.

➢ A property is a **"key:value"** pair.
    Key (property name)
    value (property value)

Method

➤ Method is a set of instructions performed by an object when it receives a message.

➤ Methods are stored in properties as function definitions.

Accessing object method:

Syntax:

    Objectname.methodname0

E.g.

    Name=person.fullname0

Dot Syntax

➤ We can access an **object's properties** and **method** by using the **dot syntax** with the object name and it's property or method.

➤ Dot (.) separates the **name of object** from the **property** or **method**.

Object	Properties	Method
bike	bike.make="Bajaj" bike.name="Platina" bike.m_year=2020	bike.add() bike.name()

Main Event

➤ In JavaScript , an **event** is the way to start executing your code like on **mouse click, button click** etc.

➤ JavaScript reacts to events with the help of **event handling**.

➤ The function written for event handling are known as **event handler.**