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# Unit -2

## CLIENT SIDE PROGRAMMING

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### 2.1 SCRIPTING LANGUAGES

Scripting languages are becoming more popular due to the emergence of web-based applications. The new scripting languages allow users with little or no programming expertise to develop interactive web pages with minimum effort.

*A scripting language is a programming language that supports scripts and programs that are written for a special run-time environment. They are interpreted rather than compiled.*

An interpreter checks the syntax of the code and generates object code one source line at a time. The language is interpreted at run-time so that the instructions are executed immediately. There are two types of scripting languages: Server side scripting languages and Client side scripting languages

#### Server side scripting Languages

Server side scripting Languages are run on a web server (back end). This environment is known as **Server side scripting environment**. The user issues a request and it is fulfilled by running a script, directly on the web server. The web server will generate dynamic HTML pages as the output according to the script. This HTML is then sent to the client browser. These languages are mostly used in interactive web sites that are connected to databases.

**Examples:** PERL, ASP (Active Server Pages).

#### Advantages of Server side scripting Languages

These languages support high customization of the response based on the user's requirements.

#### Disadvantages of Server side scripting Languages

They impart more load to the web server. They can introduce processing overhead that can decrease performance and force the user to wait for the page to be processed and

recreated. Once the page is posted back to the server, the client must wait for the server to process the request and send the page back to the client.

**Client side scripting Languages**

They run on a browser (front end). This environment is known as **Client side scripting environment**. The processing of the scripts takes place on the end users computer. The source code of the requested service or web page is transferred from the web server to the end users computer over the internet and run directly in the browser. The scripting language must be enabled on the client computer. They make interactive and dynamic webpages. They also interact with temporary storage and local storage and provide remote services for client-side applications. **Examples:** VB script, JavaScript.

**Advantages of Client side scripting Languages**

- No load on the server since all the processing is done in the browser.
- These languages are easier than server side scripting languages.

**Disadvantages of Client side scripting Languages**

- Minimal customization of web pages.

**Difference between server side and client side scripting languages**

Server side Scripting Languages	Client side Scripting Languages
The scripting code is run at the back end (i.e.) at the web server.	The scripting code is run in the back end (i.e) in the end user's browser.
They are less interactive.	They are more interactive.
Any change by these languages will be reflected on the database.	The changes are done only at the client side, so the database will not get affected.
More overhead on the server.	The overhead is on the local browser.
The server side scripts are not visible to the user.	The client side scripts are visible to the user.
They allow a level of privacy and personalization.	The security features are less efficient.

**Advantages of scripting languages:**

- Any errors in the scripting language will terminate the execution of the source code. They have a simple syntax. They are easy to learn and use.

- This does not require programming expertise. It allows complex tasks to be performed in relatively few steps. It allows simple creation and editing. It could be done in a variety of text editors
- It facilitates the addition of dynamic and interactive activities to web pages. They are portable across various hardware and network platforms and scripts can be embedded in standard text document also.
- Instantaneous error reporting and error correction. The debugging process is also easy.

**Disadvantages of scripting languages**

- Dubious web sites or unauthorized programs are easily accessed without the user's knowledge because the executable code is run on the end user's browser.
- The above action may harm the end user's system.

**Difference between programming languages and scripting languages**

Programming Languages	Scripting Languages
They are compiled.	They are interpreted.
They cannot be run directly without compilation.	They can be directly run. No explicit compilation is needed.
They have complete syntax and semantic rules.	They are unstructured subset of programming language.
They are used to build applications.	They are used to control the behavior of an application.

