**CHAPTER 2**

**TOOLS AND ENVIRONMENT USED**

**2.1 HTML**

HTML or Hyper Text Markup Language is the main markup language for creating web pages and other information that can be displayed in a web browser.HTML is written in the form of HTML elements consisting of tags enclosed in angle bracket (like <html>), within the web page content. HTML tags most commonly come in pairs like <h1> and <h1>, although some tags represent empty elements and so are unpaired, for example <img>. The first tag in a pair is the start tag, and the second tag is the end tag (they are also called opening tags and closing tags). In between these tags web designer can add text, further tags, comments and other types of text-based content.The purpose of a web browser is to read HTML documents and compose them into visible audible web pages. The browser does not display the HTML tags, but uses the tags to interpret the content of the page,HTML elements form the building blocks of all websites. HTML allows images and objects to be embedded and can be used to create interactive forms. It provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. It can embed scripts written in languages such as JavaScript which affect the behavior of HTML web pages,

|  |  |
| --- | --- |
| Tag | Description |
| <!DOCTYPE> | Defines the document type. |
| <html> | Defines the HTML document. |
| <title> | Defines a title for the document. |
| <body> | Defines the document body. |
| <h1>to<h6> | Defines HTML heading. |
| <p> | Defines a paragraph. |
| <!--..--> | Defines a comment. |

Table:2.1 Basic HTML Tag

**2.2 CSS**

Cascading Style. Sheets (CSS) is a style sheet language used for describing the look and formatting of a document written in a markup language. While most often used to style web pages and interfaces written in HTML and XHTML, the language can be applied to any kind of XML document including plain XML, SVG and XUL. CSS is a cornerstone specification of the web and almost all web pages use CSS style sheets to describe their presentation..CSS is designed primarily to enable the separation of document content from document presentation, including elements such as the layout, colors, and fonts. 1. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple pages to share formatting, and reduce complexity and repetition in the structural content (such as by allowing for table less web design).

CSS can also allow the same markup page to be presented in different styles for different rendering methods, such as on-screen, in print by voice (when read out by a speech based browser or screen reader) and on Braille-based, tactile devices. It can also be used to allow the web page to display differently depending on the screen size or device on which it s being viewed. While the author of a document typically links that document to a CSS file, readers can use a different style sheet, perhaps one on their own computer, to override the one the author has specified. However if the author or the reader did not link the document to a specific style sheet the default style of the browser will be applied.

CSS specifies a priority scheme to determine which style rules apply if more than one rule matches against a particular element. In this so-called cascade, priorities or weights are calculated and assigned to rules, so that the results are predictable.The CSS specifications are maintained by the World Wide Web Consortium (W3C). Internet media type (MIME type) text/css is registered for use with CSS by RFC 2318 (March 1998), and they also operate a free CSS validation service.

**2.2.1 Declaration Block**

A declaration block consists of a list of declarations in braces. Each declaration itself consists of a property, a colon (:), and a value. If there are multiple declarations in a block, a semicolon (i) must be inserted to separate each declaration.

**2.2.2 Use**

Before CSS, nearly all of the presentational attributes of HTML documents were contained within the HTML markup; all font colors, background styles, element alignments, borders and sizes had to be explicitly described, often repeatedly,within the HTML, CSS allows authors to move much of that information to another file, the style sheet, resulting in considerably simpler HTML.Headings (hl elements), sub-headings (h2), sub-sub-headings (his), etc., are defined structurally using HTML.In print and on the screen, choice of font, size, color and emphasis for these elements is presentational.

Before CSS, document authors who wanted to assign such typographic characteristics to, say, alth2 headings had to repeat HTML presentational markup for each occurrence of that heading type. This made documents more complex, larger, and more error-prone and difficult to maintain. CSS allows the separation of presentation from structure, CSS can define color, font, text alignment, size, borders, spacing, layout and many other typographic characteristics, and can do so independently for on-screen and printed views. CSS also defines non-visual styles such as the speed and emphasis with which text is read out by aural text readers. The W3C has now deprecated the use of all presentational HTMI markup. citation needed

|  |  |  |
| --- | --- | --- |
| High  Priority | CSS Source Type | Description |
| 1 | User Define | Most browsers have the accessibility feature:a user defined CSS |
| 2 | Inline | A style applied to an HTML element via HTML 'style' property |
| 3 | Media Type | A property definition applies to all media types, unless a media specific CSS defined |
| 4 | Importance | The 'important value overwrites the previous priority types |
| 5 | Selector specificity | A specific contextual selector (#heading p) overwrites generic definition |
| 6 | Rule order | Last rule declaration has a higher priority |
| 7 | Parent inheritance | If a property is not specified, it is inherited from a parent element |
| 8 | CSS property definition  In HTML Document | CSS rule or CSS inline style overwrites a default browser value |
| 9 | Browser default | The lowest priority: browser default value is determined by W3C initial value specifications |

Table:2.2 CSS Priority Scheme (Highest To Lowest)

**2.3 JavaScript**

JavaScript (JS) is a dynamic computer programming language. It is most commonly used as part of web browsers, whose implementations allow client-side scripts to interact with the user, control the browser, communicate asynchronously, and alter the document content that is displayed. It is also being used in server-side programming, game development and the creation of desktop and mobile applications,

JavaScript is a prototype-based scripting language with dynamic typing and has first class functions. Its syntax was influenced by C. JavaScript copies many names and naming conventions from Java, but the two languages are otherwise unrelated and have very different semantics. The key design principles within JavaScript are taken from the Self and Scheme programming languages. It is a multi-paradigm language, supporting object-oriented, imperative, and functional programming styles.

The application of JavaScript in use outside of web pages-for example,in PDF documents, site-specific browsers, and desktop widgets-is also significant. Newer and faster JavaScript VMs and platforms built upon them (notably Node.js) have also increased the popularity of JavaScript for server side web applications. On the client side, JavaScript was traditionally implemented as an interpreted language but just-in-time compilation is now performed by recent (post-2012) browsers.JavaScript was formalized in the ECMAScript language standard and is primarily used as part of a web browser (client-side JavaScript). This enables programmatic access to computational objects within a host environment,

**2.3.1 Server Side Java Script**

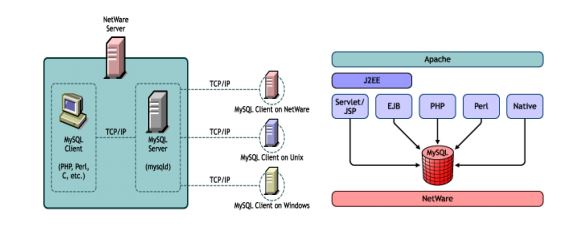
Netscape introduced an implementation of the language for server-side scripting (SSJS) with Netscape Enterprise Server, first released in December, 1994 (soon after releasing JavaScript for browsers). Since the mid-2000s, there has been a proliferation of server-side JavaScript implementations. Node.js is one recent notable example of server side JavaScript being used in real-world applications,

**2.4 MySQL**

MySQL is the world's most popular open source database, enabling the cost-effective delivery of reliable, high-performance and scalable Web-based and embedded database applications. On top of that, it is very commonly used in conjunction with PHP scripts to create powerful and dynamic server-side applications .MySQL is easy to use, yet extremely powerful, secure, and scalable. And because of its small size and speed, it is the ideal database solution for Web sites.

**2.4.1 Architecture of MySQL**

MySQL runs over TCP/IP, making it highly accessible and capable of integrating into a Web environment. Clients across multiple platforms can access MySQL databases through the use of scripting languages such as PHP or Perland C. On a NetWare 6.5 server, MySQL can be installed with other Web components to provide an optimal Web architecture where you can build, deploy, and host Web database applications using PHP, Perl, EJBs, servlets, and JSPs. When you install the Web components included with NetWare, NetWare 6.5 is J2EE compliant

Figure2.1: MySQL Working Process

**2.4.2 Benefits**

* It's easy to use.
* It's secure.
* It's inexpensive.
* It's fast.
* It's scalable.
* It manages memory very well.
* It supports Novell Cluster Services.
* It runs on many operating systems.
* It supports several development interfaces.

**2.4.3 Created a Database**

The CREATE DATABASE statement is used to create a database in MySQL.We must add the CREATE DATABASE statement to the mysqli\_query() function toexecute the command.Syntax: $var\_name="CREATE DATABASE database name";

**2.4.4 Create a Table**

The CREATE TABLE statement is used to create a table in MySQL. We must add the CREATE TABLE statement to the mysqli\_query() function to execute the command. Syntax:$var\_name="CREATE TABLE tablename (Valuenamel datatypel (size), Valuename2 datatype2(size), Valuename3 datatype 3 (size)";

**2.4.5 Commands**

* Insert Into: The INSERT INTO statement is used to add new records to a database table.
* Select: The SELECT statement is used to select data from a database.
* Where: The WHERE clause is used to extract only those records that fulfill a specified criterion.
* Order By: The ORDER BY keyword is used to sort the data in a record.
* Set Update: The UPDATE statement is used to update existing records in a table.
* .Delete: The DELETE FROM statement is used to delete records from a database. table.

**2.5 PHP**

PHP is a powerful server-side scripting language designed for creating dynamic and interactive websites,

PHP is a programming language that can do all sorts of things: evaluate form data sent from a browser, build custom web content to serve the browser, talk to a database, and even send and receive cookies (little packets of data that your browser uses to remember things, like if you're logged in to any website). PHP is the widely-used, free, and efficient alternative to competitors such as Microsoft's ASP.

PHP is perfectly suited for web development and can be embedded directly into the HTML code. It can be deployed on most web servers and on almost every operating system and platform free of charge. PHP is installed on more than 20 million websites and 1 million web servers.

PHP syntax is very similar to Perl and C. PHP is often used together with Apache (web server) on various operating system. It also supports ISAPI and can be used with Microsoft's IIS on Windows.

The PHP code is interpreted by a web server with a PHP processor module, which geneates the resulting web page: PHP commands can be embedded directly into an HTML source document rather than calling an external file to process data. It has also evoyed to include a command-line interface capability and can be used in standalone graphical applications.

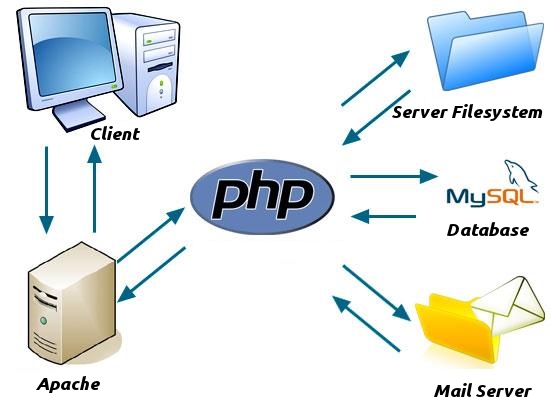


Figure2.2: PHP Working Process

**2.5.1 Basic PHP Syntax**

A PHP script can be placed anywhere in the document. A PHP script with <?php and ends with ?> <?php / /PHP code goes here ?> The default file extension for PHP files is “ php” A PHP file normally contains HTML tags and some PHP scripting code.

**2.5.2 Advantages of PHP**

* PHP is easy to understand and learn, particularly for those who have a background in HTML or JavaScript.
* PHP uses very limited system resources and will not interface unduly with the running of other processed.
* PHP uses a modular system of extensions that enable it to interact with other tools such as XML and encrypting scripts.
* PHP users can customize the language by writing their own extensions and executable scripts,
* 5. PHP is compatible with the vast majority of servers (Apache, IIS, etc.) and is capable of running on most platforms (UNIX, windows, etc.)
* 6. PHP is open-source and is freely available to download and manipulate according to individual requirements.

**2.5.3 Server Support**

* It generally runs on a web server like Apache.
* It also supports ISAPI and Microsoft's IIS on Windows.

**2.5.4 Database Support**

PHP supports many databases like

* MySQL
* Informix
* Oracle
* Solid
* PostgreSQL
* ODBC etc.
* The most popular used is MySQL.

**2.5.5 What Can PHP Do?**

* PHP can generate dynamic page content.
* PHP can create, open, read, write, delete, and close files on the server.
* PHP can collect form data.
* PHP can send and receive cookies.
* PHP can add, delete, modify data in your database.
* PHP can restrict users to access some pages on your website.
* PHP can encrypt data.

**2.5.6 Why PHP?**

* PHP runs on various platforms (Windows, Linux, UNIX, Mac OS X, etc.)
* PHP is compatible with almost all servers used today (Apache, IIS, etc.)
* PHP supports a wide range of databases
* PHP is free. Download it from the official PHP resource: [www.php.net](http://www.php.net)
* PHP is easy to learn and runs efficiently on the server side.

**2.5.7 What is a PHP File?**

PHP files can contain text, HTML, CSS, JavaScript, and PHP code PHP code are executed on the server, and the result is returned to the browser as plain HTMLPHP files have extension".php."

**2.6 Boostrap**

Bootstrap is a free and open-source front-end web framework for designing websites and web applications. It contains HTML-and CSS-based design templates for typography, forms, buttons, navigation and other interface components, as well as optional JavaScript extensions. Unlike many web frameworks, it concerns itself with front-end development only. Bootstrap is the modular and contains different elements of the toolkit. These style sheets are generally compiled in a bundle and include in web pages, but individual components can be included or removed. Bootstrap provides a number of configurable variables.

Since Bootstrap 2, the Bootstrap documentation has included a customization wizard which generates a customized version of Bootstrap based on the requested components and various settings. As of Bootstrap 4, Sass is used instead of the style sheets Each Bootstrap component consists of an HTML structure, CSS declarations, and in some cases accompanying JavaScript code.

Grid system and responsive design comes standard with a 1170 pixel wide grid layout. Alternatively, the developer can use a variable-width layout. For both cases, the toolkit has four variations of different resolutions and types of devices: mobile phones, portrait and landscape, tablets and PCs with low and high resolution. Each variation adjusts the width of the columns

**2.6.1 Bootstrap Boiled Files**

* bootstrap css-a CSS framework.
* bootstrap.js-a javaScript quiry framework.
* graphic icon-a font .

**2.7** **The** **Laravel PHP Framework**

Laravel is a web application framework with expressive, elegant syntax. Development must be an enjoyable, creative experience to be truly fulfilling. Laravel attempts to take the pain out of development by easing common tasks used in the majority of web projects, such as authentication, routing, sessions, and caching.

Laravel aims to make the development process a pleasing one for the developer without sacrificing application functionality. Happy developers make the best code.

Laravel is accessible, yet powerful, providing powerful tools needed for large, robust applications. A superb inversion of control container, expressive migration system, and tightly integrated unit testing support give you the tools you need to build any application

**2.8 Apache Server**

Apache is generally recognized as the world's most popular Web server (HTTP server). Originally designed for Unix environments, the Apache Web server has been ported to Windows and other network operating systems. The name "Apache" derives from the word "patchy" that the Apache developers used to describe early versions of their software.

The Apache Web server provides a full range of Web server features, including CGI, SSL, and virtual domains. Apache also supports plug-in modules for extensibility. Apache is free software, distributed by the Apache Software Foundation that promotes various free and open source advanced Web technologies. Apache features a modular design and supports dynamic selection of