

CHAPTER 7: WEBSITE DESIGN

7.1 Introduction

This unit specifies competencies required Design a Website. It involves gathering data required, determining website design tool, developing functional website, host website developed and perform website routine maintenance.

7.2 Performance Standard

- Obtained and analysed website requirements
- Designed Website based on the obtained requirements.
- Identified the Appropriate website authoring software suite
- Linked the website with the database
- Implemented Website security measures
- Performed website maintenance

7.3 Learning Outcome

7.3.1 List of the Learning Outcomes

These are the key learning outcomes, which make up workplace function:

- Gather data required
- Determine Website design tool
- Develop functional website
- Host Website developed
- Perform Website Routine Maintenance

7.3.2 Learning Outcome 1: Gather data required

7.3.2.1 Learning Activities

The following are the performance criteria:

- Website requirements are obtained and analysed as per website type to be developed
- Website design is done based on the obtained requirements.
- Website design is done as per the data gathered

Trainees to demonstrate knowledge in relation to:

- Meaning of web terms
- Importance of website
- Types of websites
- Website requirements
- Web Programming languages

7.3.2.2 Information Sheet

The Web is the common name for the World Wide Web, a subset of the Internet consisting of the pages that can be accessed by a Web browser. Many people assume that the Web is the same as the Internet, and use these terms interchangeably. However, the term Internet actually refers to the global network of servers that makes the information sharing that happens over the Web possible. So, although the Web does make up a large portion of the Internet, but they are not one and same.

Read: About Web and Internet: <https://www.lifewire.com/difference-between-the-internet-and-the-web-2483335>

A website or web site is a collection of related network web resources, such as web pages, multimedia content, which are typically identified with a common domain name, and published on at least one web server. Notable examples are wikipedia.org, google.com, and amazon.com.

Websites can be accessed via a public Internet Protocol (IP) network, such as the Internet, or a private local area network (LAN), by a uniform resource locator (URL) that identifies the site.

Websites can have many functions and can be used in various fashions; a website can be a personal website, a corporate website for a company, a government website, an organization website, etc. Websites are typically dedicated to a particular topic or purpose, ranging from entertainment and social networking to providing news and education. All publicly accessible websites collectively constitute the World Wide Web, while private websites, such as a company's website for its employees, are typically part of an intranet.

Web pages, which are the building blocks of websites, are documents, typically composed in plain text interspersed with formatting instructions of Hypertext Markup Language (HTML, XHTML). They may incorporate elements from other websites with suitable markup anchors. Web pages are accessed and transported with the Hypertext Transfer Protocol (HTTP), which may optionally employ encryption (HTTP Secure, HTTPS) to provide security and privacy for the user. The user's application, often a web browser, renders the page content according to its HTML markup instructions onto a display terminal.

Hyperlinking between web pages conveys to the reader the site structure and guides the navigation of the site, which often starts with a home page containing a directory of the site web content. Some websites require user registration or subscription to access content. Examples of subscription websites include many business sites, news websites, academic journal websites, gaming websites, file-sharing websites, message boards, web-based email, social networking websites, websites providing real-time stock market data, as well as sites providing various other services. End users can access websites on a range of devices, including desktop and laptop computers, tablet computers, smartphones and smart TVs.

Here are the top 10 importance of having a Website:

- 1. Cost-Effective:** Online advertisement is cost-effective compared to print advertisement and enables you to make on-the-fly changes, given that you are using a CMS.
- 2. Wider Demographic Reach:** Unlike having a local brick and mortar establishment, a business Website transmits your business profile around the world, permitting for enhanced exposure and sales, due to a wider demographic reach.
- 3. Business Credibility:** If you have a professional looking and user-friendly Website, consumers will likely have a greater chance of considering your business credible over companies who either do not have a Web presence, or have a poor Website presence.
- 4. Around-The-Clock Availability:** Having a Website provides your consumers with around-the-clock availability in terms of access to products, information etc. This type of 24 hours a day, seven days a week service definitely generates more profits than that of a traditional storefront.
- 5. Consumer Convenience:** In branching off from the above noted benefit, being available to meet the needs of consumers at any time day or night provides added convenience, giving them access to products and information whenever they need.
- 6. Increased Sales:** When owning a business exposure is key to attracting customers. An effective Website with great content increases the probability for increased sales.
- 7. Fosters Customer Rapport:** An online presence helps in terms of building and fostering a rapport among your customers. Providing special offers to loyal customers on your Website lets them know you appreciate their business.
- 8. Competitive Opportunity:** Chances are your competitors have a Website and they're using it to their fullest advantage. In order to keep up or surpass the competition, having a Website is a must.
- 9. Build Customer Base:** Consumer communication via your Website can help you build your customer base. Populating a list of consumer contacts is gold to any company.
- 10. Targeted Marketing:** A strategically planned Website can effectively attract the targeted audience you seek. Now that you have known why having a website is important to your business, contact an expert.

Types of websites: There are many varieties of websites, each specializing in a particular type of content or use, and they may be arbitrarily classified in any number of ways. A few such classifications might include:

- Classified
- Community site
- Corporate website
- Government website
- Personal website
- eCommerce
- Social media

Some websites may be included in one or more of these categories. For example, a business website may promote the business's products, but may also host informative documents, such as white papers.

A **static website** is one that has web pages stored on the server in the format that is sent to a client web browser. It is primarily coded in Hypertext Markup Language (HTML); Cascading Style Sheets (CSS) are used to control appearance beyond basic HTML. Images are commonly used to effect the desired appearance and as part of the main content. Audio or video might also be considered "static" content if it plays automatically or is generally non-interactive. This type of website usually displays the same information to all visitors. Similar to handing out a printed brochure to customers or clients, a static website will generally provide consistent, standard information for an extended period of time. Although the website owner may make updates periodically, it is a manual process to edit the text, photos and other content and may require basic website design skills and software. Simple forms or marketing examples of websites, such as classic website, a five-page website or a brochure website are often static websites, because they present pre-defined, static information to the user. This may include information about a company and its products and services through text, photos, animations, audio/video, and navigation menus.

A **dynamic website** is one that changes or customizes itself frequently and automatically. Server-side dynamic pages are generated "on the fly" by computer code that produces the HTML (CSS are responsible for appearance and thus, are static files). There are a wide range of software systems, such as CGI, Java Servlets and Java Server Pages (JSP), Active Server Pages and ColdFusion (CFML) that are available to generate dynamic web systems and dynamic sites. Various web application frameworks and web template systems are available for general-use programming languages like Perl, PHP, Python and Ruby to make it faster and easier to create complex dynamic websites.

A site can display the current state of a dialogue between users, monitor a changing situation, or provide information in some way personalized to the requirements of the individual user. For example, when the front page of a news site is requested, the code running on the web server might combine stored HTML fragments with news stories retrieved from a database or another website via RSS to produce a page that includes the latest information. Dynamic sites can be interactive by using HTML forms, storing and reading back browser cookies, or by creating a series of pages that reflect the previous history of clicks. Another example of dynamic content is when a retail website with a database of media products allows a user to input a search request, e.g. for the keyword Beatles. In response, the content of the web page will spontaneously change the way it looked before, and will then display a list of Beatles products like CDs, DVDs and books. Dynamic HTML uses JavaScript code to instruct the web browser how to interactively modify the page contents. One-way to simulate a certain type of dynamic website while avoiding the performance loss of initiating the dynamic engine on a per-user or per-connection basis, is to periodically automatically regenerate a large series of static pages.

Early websites had only text, and soon after, images. Web browser plug ins were then used to add audio, video, and interactivity (such as for a rich Internet application that mirrors the complexity of a desktop application like a word processor). Examples of such plug-ins are Microsoft Silverlight, Adobe Flash, Adobe Shockwave, and applets written in Java. HTML 5 includes provisions for audio and video without plugins. JavaScript is also built into most modern web browsers, and allows for website creators to send code to the web browser that instructs it how to interactively modify page content and communicate with the web server if needed. The browser's internal representation of the content is known as the Document Object Model (DOM) and the technique is known as Dynamic HTML.

WebGL (Web Graphics Library) is a modern JavaScript API for rendering interactive 3D graphics without the use of plug-ins. It allows interactive content such as 3D animations, visualizations and video explainers to presented users in the most intuitive way.

A 2010-era trend in websites called "responsive design" has given the best of viewing experience as it provides with a device based layout for users. These websites change their layout according to the device or mobile platform thus giving a rich user experience.

Read: Find more about website type:

<https://www.expertmarket.co.uk/web-design/different-types-of-websites>

Watch: Different type of website: <https://youtu.be/M6j7RLekNI>

9 Things You Need To Start a Website

- Domain Name
- Business Email Address
- Website Building Software
- Website Hosting
- Website Template Design
- Logo Design
- High-Quality Images for Website
- Image Editors
- Google Analytics

Web programming refers to the writing, markup and coding involved in Web development, which includes Web content, Web client and server scripting and network security. The most common languages used for Web programming are XML, HTML, JavaScript, Perl 5 and PHP. Web programming is different from just programming, which requires interdisciplinary knowledge on the application area, client and server scripting, and database technology.

7.3.2.3 Self-Assessment

- i. Define website?
- ii. What is web programming?
- iii. Explain briefly importance of website?
- iv. What are requirements of website?
- v. What are types of website?
- vi. **Case situation:** You are asked by a women SACCO to prepare their website. What information do you need from your client? How you will help them share the details with you?
- vii. Which one of the following is an example of a web browser?
 - A. Google
 - B. Frontpage
 - C. Internet Explorer
- viii. What is a CMS in web design?
 - A. Content Management System
 - B. Creative Management System
 - C. Content Mixing System
 - D. Creatives Managerial System
- ix. To make your website mobile friendly, you can make your website
 - A. Responsive
 - B. Reactive
 - C. Fast Loading
 - D. Light
- x. What does CSS stand for?
 - A. Current Style Sheets
 - B. Current Sheets Style
 - C. Cascading Style Sheets
 - D. Cascading Sheets Style

7.3.2.4 Tools, Equipment, Supplies and Materials

Text editor, Computer, PHP compiler like xampp, wamp, Mobirise Website Builder, Browser

7.3.2.5 References

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- https://en.wikipedia.org/wiki/Web_design
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- The Principles of Beautiful Web Design Second Edition (2nd edition), authored by Jason Beard published by SitePoint

7.3.3 Learning Outcome 2: Determine website design tool

7.3.3.1 Learning Activities

The following are the performance criteria:

- Identify and consider appropriate website authoring software suite
- Installation and configuration of adopted web authoring software or desired scripting language is done

Trainees to demonstrate knowledge in relation to:

- Types of website authoring tools
- Criteria of choosing website authoring tools
- Installation and configuration of website authoring tools
- Use of website authoring tools

7.3.3.2 Information Sheet

Web authoring tools are used to create web content, and cover a wide range of software programs you can download to your computer or access online.

List of website authoring tools include - Word Processors, HTML Editors, Plain Text Editors, Photoshop, Dreamweaver, Firefox developer. Word processors like Microsoft Word, WordPerfect or OpenOffice Writer are some of the most popular web authoring tools available. Users can create a Web page just as they would a printable document and then save it in HTML format, creating a quick and easy web page. Because users are usually familiar with the word processor on their computers, creating HTML pages with the same program represents a low learning curve. These usually present content in a what you see is what you get format, or WYSIWYG, meaning how the page appears on the screen is how it will appear when it's online.

Desktop publishing programs, like Adobe InDesign and Scribus are designed for producing material like newspapers, magazines, books and Web pages. Like word processors, desktop publishing programs provide a WYSIWYG interface. Their advanced Web authoring options, such as page layout and style elements, give users more control over the page's appearance. These programs also support multimedia objects, like images, graphics or audio files. Completed pages can be converted to both HTML and CSS files.

Website hosting sites usually offer their customers many web-authoring tool options to create and maintain their web pages online. Tools can include Web page builders, shopping systems, audio/visual editors and domain options. The builders incorporate many web authoring tools, including word processing, graphic editing, templates and layout schemes. Webpage builders have two main editing options: HTML or a non-HTML interface. Users who have limited HTML knowledge can use the non-HTML interface to drop and drag items to create layouts and use the text option to type in content.

HTML editing programs like Adobe Dreamweaver are some of the most powerful web authoring tools available. They are generally used by professional Web designers to create commercial websites. Most HTML editors are similar to web-page builders in offering users HTML or non-HTML interfaces. The non-HTML interface allows the user to see how the web page will look when it is uploaded to the Internet. HTML editors are used to type raw code, much as one would in a plain text document like a word processor, including HTML, CSS, JavaScript or XML. Most of the work is performed using a built-in text editor. HTML editors feature HTML validation checkers that will run through a webpage and check for markup errors and accessibility validation issues.

Basic text editors like Notepad are also a useful Web authoring tool for those familiar with the code. Unlike word processors or desktop publishing programs, plain text editors do not apply additional code to what appears in the document. Plain text editors are also useful for quickly making edits to completed pages that require updates.

Criteria of choosing website authoring tools:

- User-Friendly Interface
- Support Services
- Online Multimedia Assets
- Responsive Design Features
- Price

Web authoring is the practice of creating web documents using modern web authoring software and tools. Web authoring software is a type of desktop publishing tool that allows users to navigate the tricky environment of HTML and webcoding by offering a different kind of graphical user interface.

Case study: Developing an e-commerce webpage

There are many ecommerce tools and technologies required to build an e-commerce store and operate a successful online business. Both software and hardware technologies must be included in the e-business plan.

Web Server: A web server is used to host an e-commerce website. All the Html, JavaScript, PHP files, databases, media files that make up the entire website are stored on this server. The web server runs on Windows or Linux operating system. Managing a web server is a very specific job. The website development companies host the site on their own web server or pay a hosting company to provide space on a secure web server.

Server Software: When a user visits any website on a web browser, the web server knows the client is requesting some specific information. So it processes that request and serves the correct files to the client. The web browser then displays these files to the user.

There are many types of server software available including application software, database server, file server software, and cloud computing software. The popular web server software includes Apache and Windows IIS. Server software can either use on a physical server or on a virtual / cloud server.

Web Tools: A web authoring tool is used to create the front end of an e-commerce website. They range from basic HTML text editors (like Notepad++) to more complex graphic authoring tools and CMS (content management system) with built-in frameworks and debugging tools. Html files are created by Dreamweaver along with the CSS (cascading style sheet) which enhance the visual appearance of the site. Another web authoring tool would be Visual Studio .net that can be used to make the sites which have integrated databases in it. Graphic design packages are also web authoring tools which design the skin for a user interface.

Database System: A database is an integral part of an e-commerce website. The database is used to store information about the products and services of the website such as pricing, description, image, details, and sales. In addition to this, the customer details are also stored in the database like what they ordered, their payment details, shipping details, and contact information. It is necessary to program the website to connect securely to the database so that all the orders are processed correctly and your business runs smoothly. Technologies like PHP and MySQL are the communication route between the website and the DBMS (database management system).

Networking: TCP (transfer control protocol) and IP (internet protocol) defines as how computers should connect with each other through the internet and how they share information. Common TCP/IP protocols are HTTPS, HTTP, and FTP. We use these protocols to access the website without even realizing it. FTP (file transfer protocol) used to download files from a browser. HTTPS (where the “S” stands for security) responsible for the secure communication between a server and a browser like an account information or personal information. For an e-commerce website or online store, it is considered essential to provide a secure connection. SSL (secure sockets layer) and TLS (transport layer security) are the protocols associated with trust and security of any e-commerce website.

Browser Compatibility: A web browser is a software application that is used to locate, receive and display content received from the web servers. Popular web browsers include Mozilla Firefox, Google Chrome, Internet Explorer and Safari. Web developers and Web development agencies test the website see how it displays on multiple browsers across multiple devices and screen sizes before launching the website.

The Tip: To analyze website traffics, use tools like Google Analytics to get an idea as what browsers people are using and which one is the most popular.

Ports: Ports allow one device to connect with the other through a different and unique IP address. A device can have more than one port.

Port 25 (SMTP) is usually reserved for email. It is used to transmit data from remote email servers. If that port is blocked no emails can be sent. Some other common port numbers are 80(HTTP), 443 (HTTPS), 21 (FTP), 22 (SSH). Firewalls can often block a port to tighten the security.

Domain Names: Domain names link to a company or a brand. Successful e-commerce companies have recognizable domain names. If you have any smaller business then it is best to select the domain name as per your business name. This would help to rank highly in search engines. If a business becomes successful online, it is important to protect the brand by doing multiple registrations of domain names such as .com, .net, .uk, .org, .co Doing this ensures that no one can steal your business by copying your business model.

Here is a quick recap that will help you put everything into place.

- 1: **Front End:** HTML, CSS, JavaScript, Ajax, JQuery
- 2: **Server Side Scripting:** PHP, ASP
- 3: **CMS:** WordPress + Woo commerce, Magento, OpenCart, PrestaShop
- 4: **Database:** MySQL, MSSQL

7.3.3.3 Self-Assessment

- i. What is web authoring?
- ii. Shortlist website authoring tools for preparing a webpage.
- iii. Which of the following software is used for web designing?
 - A. MS Word
 - B. Frontpage
 - C. Powerpoint
- iv. What is the Homepage called in FrontPage when you design a website?
 - A. Content.htm
 - B. Index.htm
 - C. Glossary.htm

7.3.3.4 Tools, Equipment, Supplies and Materials

Computer, text editor, graphics editor, web browsers, version control system, An FTP program

7.3.3.5 References

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- <https://www.arpattech.com/blog/technologies-required-for-ecommerce-store/>

7.3.4 Learning Outcome 3: Develop functional website

7.3.4.1 Learning Activities

The following are the performance criteria:

- Development of web pages is done as per user requirements
- Adding interactivity to the website is done as per the user requirements.
- Website testing is done to check Interactivity of the website.
- Linkage of website to the database is done based on the user requirements.

Trainees to demonstrate knowledge in relation to:

- HTML coding: Formatting Tags, Hyperlinks Tag, Tables Tags, Frames Tags, Forms Tags, List Tags
- Scripting: Functions Of Scripting Languages, Types Of Scripting Languages
- Java scripting: JS Statements, JS Variables, JS Operators, JS Data Types, JS Functions, JS Objects, JS Events, JS Strings, JS Numbers, JS Arrays
- PHP: Importance Of PHP, PHP Syntax, PHP Variables, PHP Data Types, PHP Operators, PHP control structures, PHP Functions, PHP Arrays, PHP Forms
- Database creation
- Database Linkage

7.3.4.2 Information Sheet

Hypertext Markup Language, a standardized system for tagging text files to achieve font, colour, graphic, and hyperlink effects on World Wide Web pages.

HTML Formatting is a process of formatting text for better look and feel. HTML provides us ability to format text without using CSS. There are many formatting tags in HTML. These tags are used to make text bold `Bold Text`, italicized `<i>Italic Text</i>` , or underlined `<u>Underline Text</u>`..

The `<a>` tag defines a hyperlink, which is used to link from one page to another. The most important attribute of the `<a>` element is the href attribute, which indicates the link's destination. By default, links will appear as follows in all browsers: An unvisited link is underlined and blue.

A table is defined using the `<table>` element, and contains a number of table cells (`<td>`, for “table data”) which are organized into table rows (`<tr>`).

`<Frame>` Tag. HTML Frames are used to divide the web browser window into multiple sections where each section can be loaded separately. A frameset tag is the collection of frames in the browser window.

Creating Frames: Instead of using body tag, use frameset tag in HTML to use frames in web browser.

The **HTML <form>** tag is used for creating a form for user input.

An unordered **list** is a collection of related items that have no special order or sequence. Using HTML `` tag creates this list. Each item in the **list** is marked with a bullet.

A **scripting** or **script language** is a programming language for a special run-time environment that automates the execution of tasks; the tasks could alternatively be executed one-by-one by a human operator. Scripting languages are often interpreted (rather than compiled). **Script language examples:** AppleScript, awk, JCL, Lua., m4.Perl., Unix Shell scripts (ksh, csh, bash, sh and others), VBScript

JavaScript statements are composed of: Values, Operators, Expressions, Keywords, and Comments. **JavaScript variables** are loosely typed which means it does not require a data type to be declared. You can assign any type of literal values to a **variable** e.g. string, integer, float, Boolean etc.

JavaScript operators are used to assign values, compare values, perform arithmetic operations, and more.

In **JavaScript (JS)** there are two different kinds of **data**: primitives, and objects. A primitive is simply a **data type** that is not an object, and has no methods. In **JS**, there are six primitive **data types**: Boolean, Number, String, Null, Undefined, Symbol.

A **JavaScript function** is a block of code designed to perform a particular task. A JavaScript function is executed when "something" invokes it (calls it) **JavaScript** is designed on a simple **object-based** paradigm. An **object** is a collection of properties, and a property is an association between a name (or key) and a value.

Often, when **events** happen, you may want to do something. **JavaScript** lets you execute code when **events** are detected. HTML allows **event handler** attributes, with **JavaScript** code, to be added to HTML elements.

The **String()** function converts the value of an object to a **string**. Note: The **String()** function returns the same value as to `String()` of the individual objects.

JavaScript Numbers are always 64-bit floating point. Unlike many other programming languages, **JavaScript** does not **define** different types of **numbers**, like integers, short, long, floating-point etc. The **Array in JavaScript** is a global object, which contains a list of items.

PHP Programming the Languages mostly commonly used for Website and Web Application Development. **PHP** is a general purpose, server-side scripting language run a web server that's designed to make dynamic pages and applications.

The **PHP syntax** and semantics are the format and the related meanings of the text and

symbols in the PHP programming language. They form a set of rules that define how a PHP program can be written and interpreted.

Variables are used to store data, like string of text, numbers, etc. Variable values can change over the course of a script. Here're some important things to know about variables:

- In PHP, a variable does not need to be declared before adding a value to it. PHP automatically converts the variable to the correct data type, depending on its value.
- After declaring a variable it can be reused throughout the code.
- The assignment operator (=) used to assign value to a variable.

In PHP variable can be declared as: \$var_name = value,

```
1 <?php
2 $str_isset = "";
3 $bol_isset = isset($str_isset);
4
5 If ($bol_isset){
6     echo "The variable is set";
7 }
8 else {
9     echo "The variable is not set";
10 }
11 ?>
12
```

Source: www.jquery-az.com

Figure 69: PHP variable code

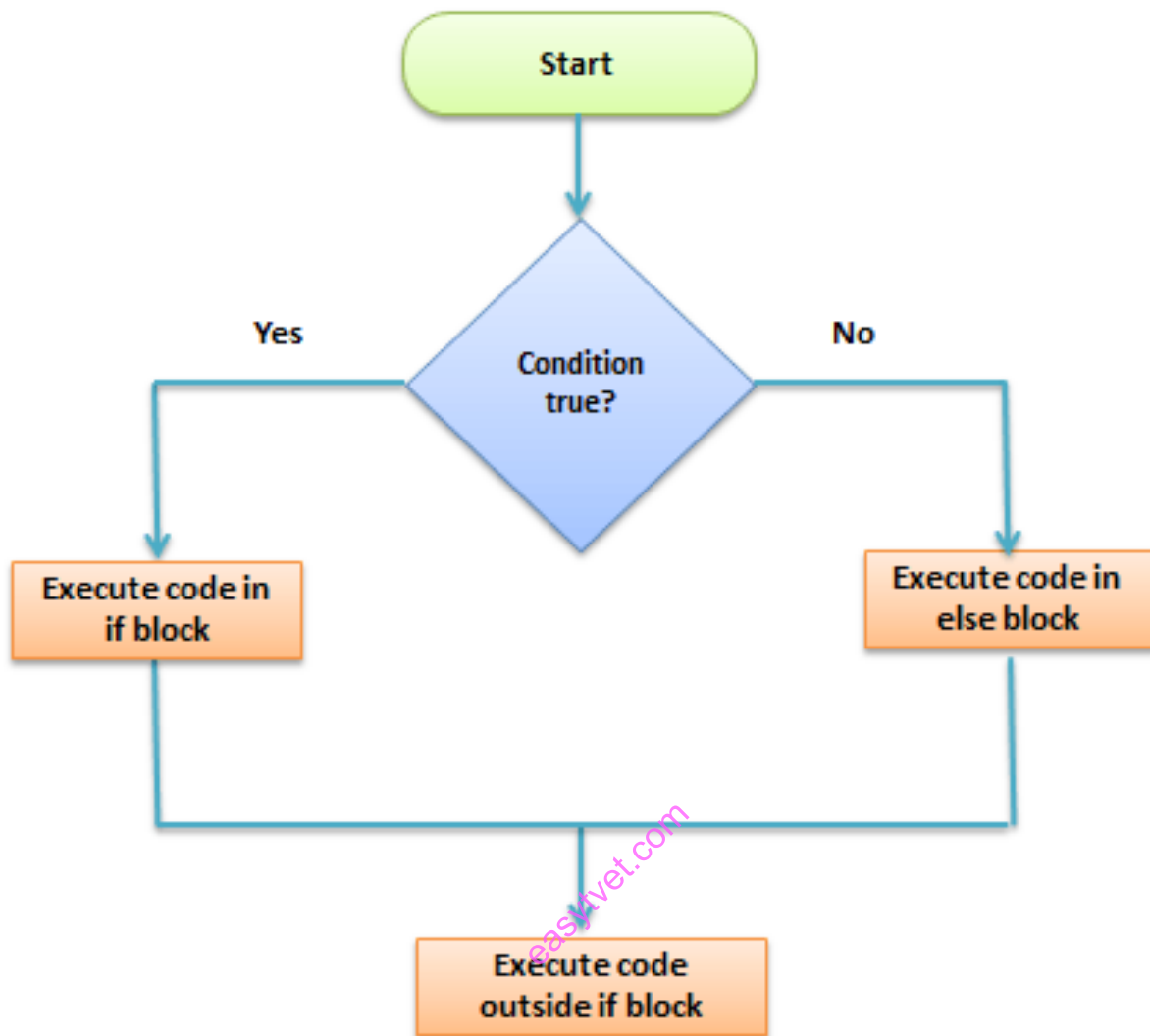
Data Types defines the type of data a variable can store. **PHP** allows eight different types of **data types**. These include - String, Integer, Float (floating point numbers - also called double), Boolean, Array, Object, Null, Resource

Operators are used to perform operations on variables and values.

PHP divides the operators in the following groups:

Arithmetic operators, Assignment operators, Comparison operators, Increment/Decrement operators, Logical operators, String operators, Array operators

A **control structure** is a block of code that decides the execution path of a program depending on the value of the set condition. Let's now look at some of the **control structures** that **PHP** supports.



Source: www.guru99.com

Figure 70: Control structure

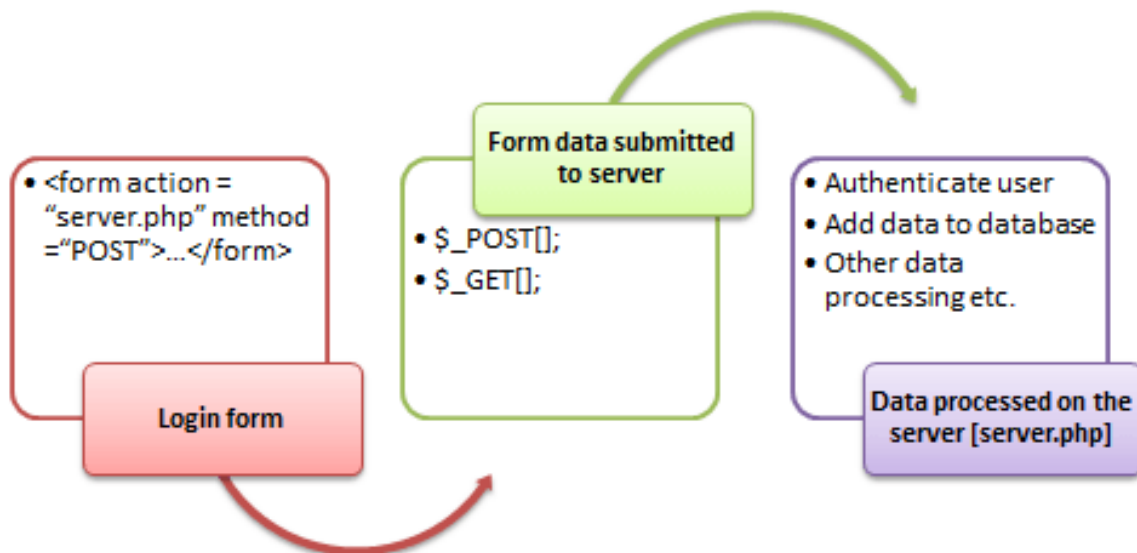
What is a **Function**?

A **function** is a reusable piece or block of code that performs a specific action. **Functions** can either return values when called or can simply perform an operation without returning any value. **PHP** has over 700 **functions** built in that perform different tasks.

The **array()** function is used to create an **array**. In **PHP**, there are three types of **arrays**: Indexed **arrays** - **Arrays** with numeric index. Associative **arrays** - **Arrays** with named keys.

When you login into a website or into your mailbox, you are interacting with a form. Forms are used to get input from the user and submit it to the web server for processing.

The diagram below illustrates the form handling process.



Source: www.guru99.com

Figure 71: HTML handling process

A form, is an HTML tag that contains graphical user interface items such as - input box, check boxes radio buttons etc. The form is defined using the `<form>...</form>` tags and GUI items are defined using form elements such as input.

With database management systems, many tasks can be done either via programmatically or a user interface. Creating databases is no exception. Example of creating database in SQL `CREATE DATABASE databasename;`

Watch: How to create database: <https://youtu.be/FAXhXI2Gxdc>

Database Linking is available for researchers and data repositories as one method to ensure that data can be easily discovered and accessed, this is done by creating bidirectional links between data repositories and online articles such as - Science Direct. Readers on Science Direct have one-click access to relevant, trusted data that may help to validate research or drive further investigations.

Watch: Table linking: <https://youtu.be/s4knkwJ6NZw>

Watch: Creating simple shopping cart: <https://youtu.be/0wYSviHeRbs>

7.3.4.3 Self-Assessment

- i. HTML is a
 - A. Programming Language
 - B. Database software
 - C. Markup Language with Tags
 - D. Operating system
- ii. What is the file extension used for HTML files
 - A. .htm or .html

- B. ppt
- C. .exe
- D. .jpg
- iii. What are tags?
- iv. What is formatting in HTML? How to create a hyperlink in HTML?
- v. What is the use of an iframe tag?
- vi. How do you execute a PHP script from the command line?
- vii. How can PHP and HTML interact?
- viii. What are some of the common lists that can be used when designing a page?
- ix. Write an HTML table tag sequence that outputs the following:
 - A. 50 pcs 100 500
 - B. 10 pcs 5 50
- x. What Javascript numbering?
- xi. Explain how can you set an image as a background on web pages
- xii. Create a simple webpage-using HTML.
 - a) Use frames to include images and videos.
 - b) Add a Cascading Style sheet for designing the web page
 - c) Design a dynamic web page with validation using JavaScript
 - d) Design a catalogue in ASP
 - e) Simple application to demonstrate servlets
 - f) Design a simple online test web page in PHP.
- xiii. Discuss the relationship between HTML 4.01, XHTML 1.0, SGML and XML. (max. 200 words)
- xiv. Choose the correct HTML tag for the largest heading
 - A. the H6 tag
 - B. The h1 tag
 - C. The h4 tag
 - D. The largest tag
- xv. Which is the correct HTML code for a vertical frameset with 3 frames:
 - A. The tag - frameset cols= "500,250,250"
 - B. The tag - frames = "50%, 25%, 25%"
 - C. The tag - frameset cols=50%,25%,25%
 - D. The tag - frameset rows="50%,25%,25%"

7.3.4.4 Tools, Equipment, Supplies and Materials

Text editor, Web browser, Xampp or wamp, Computer, Graphical editor, Hosting Server

7.3.4.5 References

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- The Principles of Beautiful Web Design Second Edition, authored by Jason Beard published by SitePoint; Second edition 2010
- HTML and CSS: Design and Build Websites 1st Edition authored by Jon Duckett published by John Wiley & Sons; 1st edition 2011

7.3.5 Learning Outcome 4: Host website developed

7.3.5.1 Learning Activities

The following are the performance criteria:

- Legal and regulatory requirements are determined based on the existing ICT laws
- Assigning of the domain name is done based on the existing laws
- Website security measures are implemented as per the existing ICT laws

Trainees to demonstrate knowledge in relation to:

- Website hosting process, Factors to consider when selecting a host, Legal and regulatory requirements, Domain name, Uploading web site, Security measures

7.3.5.2 Information Sheet

Web hosts are companies that rent out their services and technologies to host websites on the Internet. Once the hosting company hosts your website, users can access it by typing in your web address (domain name) in their web browser. When they do this, their computer connects to the server your website is hosted on.

At the same time, you should note that different hosting service providers are differently suited to host varied types of sites. However, there are some common yet highly essential factors you must consider before committing to a service provider.

Here are eight:

- Server reliability, uptime scores and security
- Customer service
- Availability of site backups
- Registration and maintenance costs
- Ability to add domains
- Account limitations
- E-commerce and email options

Regulatory compliance is an organization's adherence to laws, regulations, guidelines and specifications relevant to its business processes. Violations of **regulatory compliance regulations** often result in legal punishment including fines.

Domain name is simply a human readable form of an IP address. In function it is the destination that you type into a web browser in order to visit a website, such a www.google.com

Uploading website files is one of the very first steps users have to take in order to publish their creation on the Internet.

In short, to upload a website you can follow these 6 simple steps:

- Step 1: Pick a reliable website host
- Step 2: Choose your website upload method
- Step 3: Upload the site archive and extract it
- Step 4: Make sure all files are in public_html
- Step 5: Import the MySQL database
- Step 6: Check if the website works

Watch: Uploading website: <https://youtu.be/LcJzBG911fA>

Here are eight essential things that you can do to safeguard your website right now.

- Keep your software up-to-date.
- Enforce a strong password policy
- Encrypt your login pages
- Use a **secure** host
- Backup your data
- Scan your **website** for vulnerabilities

easyvet.com

7.3.5.3 Self-Assessment

- i. What is domain name?
- ii. How to secure your website?
- iii. Name essential factor you must consider to commit service provider?
- iv. Define web hosts?
- v. The website for a company is hosted on a:
 - A. Web client
 - B. Web server
 - C. Web infrastructure
 - D. Web page
- vi. A URL specifies the following:
 - A. Protocol Used
 - B. Domain Name Of Server Hosting Web Page
 - C. Name Of Folder With Required Information
 - D. Name Of Document Formatted Using Html
 - E. The Name Of Isp
- vii. A search engine is a program to search
 - A. For information
 - B. Web pages

- C. Web pages for specified index terms
- D. Web pages for information using specified search terms
- viii. Desirable properties of a website are
 - A. A meaningful address
 - B. Help and search facilities
 - C. Links to related sites
 - D. Features to allow users to give feedback
 - E. Hosting on a mainframe

7.3.5.4 Tools, Equipment, Supplies and Materials

Hosting server, Computer

7.3.5.5 References

- <https://www.forbes.com/sites/theyec/2018/02/09/seven-factors-to-consider-when-choosing-a-reliable-web-hosting-company/#71aa193b4cab>
- Web Design For Dummies, 3rd edition, authored by Lisa Lopuck, published by Wiley
- The Principles of Beautiful Web Design Second Edition, authored by Jason Beard published by SitePoint
- HTML and CSS: Design and Build Websites 1st edition authored by Jon Duckett published by John Wiley & Sons

7.3.6 Learning Outcome 5: Perform website routine maintenance

7.3.6.1 Learning Activities

The following are the performance criteria:

- Links of the website are tested, and corrections are done
- Website pages are tested according to the user requirements and necessary changes are done
- Verification of output data is done to ensure it conforms to the user requirements
- Website version is upgraded to meet the current standards
- Continuous creation, update and archiving of content is done
- Generate maintenance report as per the internal policy

Trainees to demonstrate knowledge in relation to:

- Importance of website testing
- Components of the website functionalities
- Creation, update and archiving of contents
- Generate maintenance report as per internal policy

7.3.6.2 Information Sheet

Website usability refers to the ease with which the average person can interact with any given website. One of the main reasons website usability testing is so important is because of the amount of websites offering the same services and products.

Components of the website functionalities

- Reliable Web Hosting Service
- A Content Management System (CMS)
- SEO Basics
- Analytics Tools
- Inventory Management
- Mobile friendly template and theme
- Sections that visitors expect
- Media
- Social Media Links and integration
- Shopping Cart and Payment Tools

There are several reasons why website maintenance is considered so important for the growth of your business. For one, it helps with the updating of codes/software of your website which keeps the site's data as well as your visitors' info safe and secure.

Updating the site also helps with eliminating the chances of any broken links or links that redirect to any unrelated pages. This, in turn, keeps customers engrossed and prevent them from getting frustrated and switching over to the competition with their better-maintained websites. Outdated content that is no longer being maintained, but which needs to be available to the public for reference or to provide historic context should be archived

7.3.6.3 Self-Assessment

- i. Define importance of web testing?
- ii. Explain components of the website functionality?
- iii. **Case situation:** One of you clients sells jewelry online. She wants you to help her with her website maintenance. What are your suggestions?
- iv. **Case situation:** A clients want to update their website. What are the steps will you consider for updating their website. List out your suggestion and approach.
- v. Identify various SEO tools that are useful for helping website have new visitors?
- vi. Prepare a mobile friendly website for selling paintings for a local artist.
- vii. Maintenance consist of the following action(s)
 - A. Replace of component
 - B. Repair of component
 - C. Service of component
 - D. All of the above
- viii. Total website productive maintenance aims at
 - A. Less idle time

- B. Increase in productivity
 - C. Zero down time
 - D. None of the above
- ix. A portable chunk of code that can be embedded in Web pages to give extra functionality is known as a
- A. Folksonomy
 - B. Widget
 - C. Curator
 - D. Wiki
 - E. Listserv

7.3.6.4 Tools, Equipment, Supplies and Materials

Computer, Server

7.3.6.5 References

- <https://www.hostgator.com/blog/essential-components-successful-website/>
- Web Design For Dummies. authored by Lisa Lopuck, published by Wiley; 3rd edition
- The Principles of Beautiful Web Design Second Edition, authored by Jason Beard published by SitePoint; Second edition
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