UNIT 7 WEBSITE DEVELOPMENT

Structure

7.0 OBJECTIVES

After studying this unit, you should be able to:

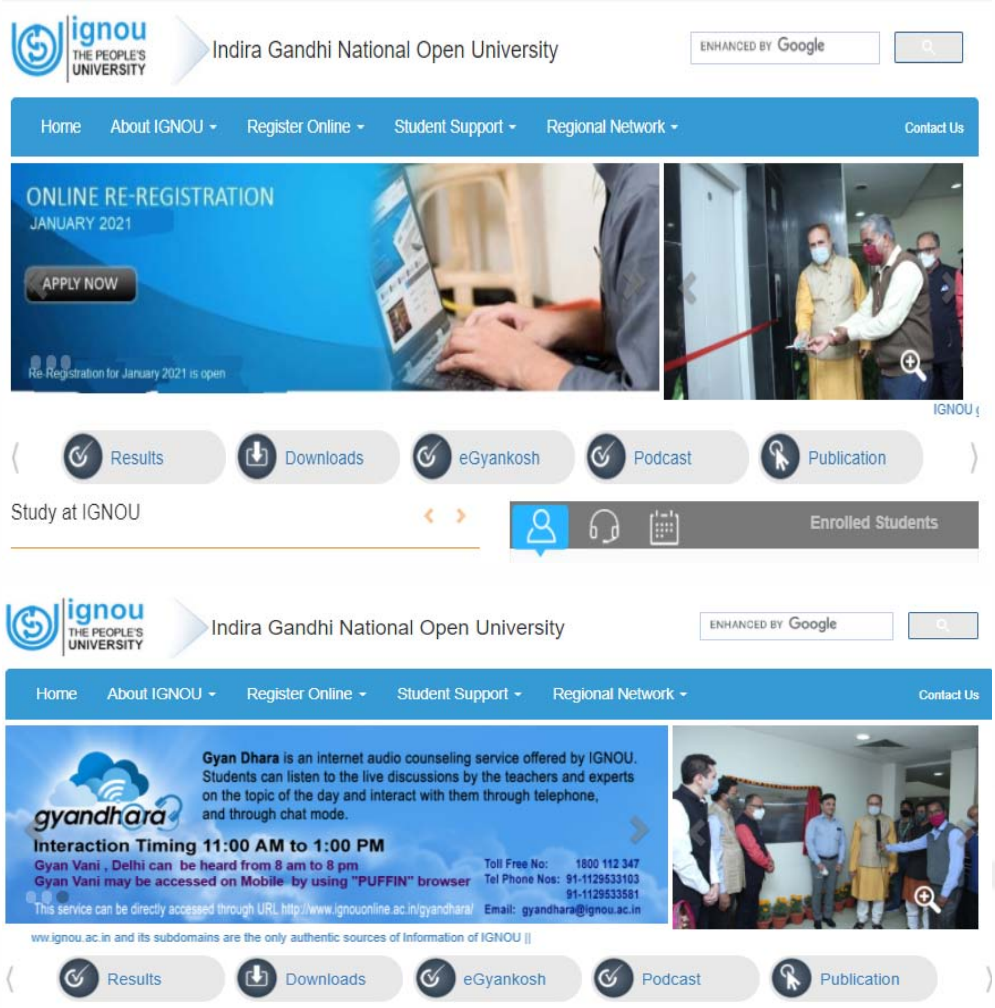
- understand the origination of websites;
- describe website usages;
- explain HTTP and HTTPs Protocols;
- explain the various types of websites;
- describe the process of development of websites over time;
- explain the various ingredients required for website development; and
- explain the concept and various types of web hosting;

7.1 INTRODUCTION

Websites are typically dedicated to a particular topic or purpose, such as news, education, commerce, entertainment, or social networking. Hyper linking between web pages guides the navigation of the site, which often starts with a home page. Users can access websites on a range of devices, including desktops, laptops, tablets, and smart phones. The software application used on these devices is called a web browser. Web development is the building and maintenance of websites. It is basically the work happening behind the scenes to make a website look great, work fast and perform well with a seamless user experience. Website development is done by the web developers by using a variety of coding languages which depends on the type of tasks they are performing and the platforms on which they are working. This unit explains the meaning, origination, usages of websites along with the process and ingredients required for website development.

7.2 MEANING OF WEBSITE

A website is a compilation of web pages and associated content that is acknowledged by a general domain name and published on at least one web server. A website (also known as web site) is a collection of web pages and related content that is identified by a common domain name and published on at least one web server. Notable examples are wikipedia.org, google.com, amazon.com and www.ignou.ac.in. The software application used on these devices is called a web browser. Basically, for a layman a website is a set of data and information about a particular subject which is available on the Internet. Websites can be used in various ways for a number of purposes such as a personal website for someone's own business or profession, a corporate website for a company, a government website for any government organization or any other organizational website, etc. Websites can be the work of an individual, a business or other organization, and are typically dedicated to a particular topic or purpose. Any website can contain a hyperlink to any other website, so the distinction between individual sites, as perceived by the user, can be blurred. For an example below is a snapshot of IGNOU University portal.



Source: www.ignou.ac.in

Fig 7.1: Website of IGNOU

The above snapshot depicts that IGNOU is an abbreviation of Indira Gandhi National Open University which is a National Resource Centre for Open and Distance Learning (ODL), with international recognition and presence. It aims to provide seamless access to sustainable and learner-centric quality education, skill up gradation and training to all using innovative technologies. The University is committed to quality teaching, research, training and extension activities, and acts as a national resource centre for expertise and infrastructure in the ODL system. Emphasis is now being laid on developing interactive multimedia and online learning, and adding value to the traditional distance education delivery mode with modern technology-enabled education within the framework of integrated distance and online learning.

7.3 ORIGINATION OF WEBSITE

The development of the World Wide Web (WWW) began in 1989 by Tim Berners-Lee and his colleagues at CERN, an International scientific organization based in Geneva, Switzerland. They created a protocol, Hypertext Transfer Protocol (HTTP), which standardized communication

between servers and clients. Their text-based Web browser was made available for general release in January 1992. CERN announced that the World Wide Web would be free to use by anyone. Before the introduction of the Hypertext Transfer Protocol (HTTP), other protocols such as File Transfer Protocol and the Gopher Protocol were used to retrieve individual files from a server. We will discuss the HTTP and HTTPs in more elaborative manner in later section

Fig 7.2: World Wide Web (WWW)

7.3.1 Rapid Growth and Expansion of WWW with Browsers

The WWW gained rapid acceptance with the creation of a Web browser called Mosaic, which was developed in the United States by Marc Andreessen and others and was released in September 1993. Mosaic allowed people using the Web to use the same sort of "point-and-click" graphical manipulations that was possible in personal computers also. In April 1994, Andreessen co founded Netscape Communications Corporation, whose Netscape Navigator became the dominant Web browser soon after its release in December 1994. By the mid-1990s the World Wide Web had millions of active users.

Table 7.1: Various Software Support Internet Applications

Year of Origin	Internet Application	Logo & Parent Company	Product Mandate
1994	The company's first product was the web browser, called *Mosaic Netscape 0.9,* released on October 13, 1994. Within four months of its release, it had already taken three-quarters of the browser market	Netscape Communications Corporation	Netscape web browser was once dominant but lost to Internet Explorer and other competitors in the so-called first browser war, with its market share falling from more than 90 percent in the mid-1990s. Netscape advertised that "the web is for everyone" and stated one of its goals was to "level the playing field" among operating systems by providing a consistent web browsing experience across them.

1995 **1996**	Internet Explorer (IE), in 1995 as an add-on to the Windows 95 operating system. IE soon became the most popular Web browser	 Microsoft Corporation	Internet Explorer is a series of graphical web browsers developed by Microsoft and included in the Microsoft Windows line of operating systems, starting since 1995. It was first released as part of the add-on package Plus! for Windows 95 that year. IE was integrated into the Windows operating system in 1996 and came "bundled" ready-to-use within the operating system of personal computers.
2002	Mozilla Firefox, or simply Firefox, is a free and open-source web browser developed by the Mozilla Foundation and its subsidiary, the Mozilla Corporation. Firefox uses the Gecko layout engine to render web pages, which implements current and anticipated web standards	 Mozilla Organization.	Firefox Browser for Android is automatically private and incredibly fast.
2003 **2005** **2007**	Apple's Safari is the default browser on Macintosh personal computers and later on iPhones (2007) and iPads (2010) Safari 2.0 was the first browser with a privacy mode.	 Apple.	Safari is a graphical web browser developed by Apple, based on the WebKit engine. First released on desktop in 2003 with Mac OS X Panther, a mobile version has been bundled with iOS devices since the iPhone's introduction in 2007.
2008	Google launched Chrome, the first browser with isolated tabs, which meant that when one tab is crashed, other tabs and the whole browser would still function	 Alphabet Inc.	By 2013 Chrome had become the dominant browser, surpassing IE and Firefox in popularity
2015	Microsoft discontinued Internet Explorer and replaced it with Edge.	 Microsoft	Microsoft Edge is a cross-platform web browser developed by Microsoft. It was first released for Windows 10 and Xbox One in 2015, then for Android and iOS in 2017, for macOS in 2019, and as a preview for Linux in October 2020. Edge includes integration with Cortana and has extensions hosted on the Microsoft Store.

Source: Google

For more details about web browsers refer to the unit-3 of BCOS-183: Computer Application in Business which is a 3rd semester course of B.Com (G). In the early 21st century, smart phones became more computer-like, and more-advanced services, such as Internet access, became possible. Web usage on Smartphone steadily increased, and in 2016 it accounted for more than half of Web browsing.

7.4 WEBSITE USAGES

The proliferation of mobile phones has given birth to new categories of web users and expanded the target audience for the businesses, and this all has become possible with the easy access to the internet. Despite the availability of mobile apps, mobile friendly responsive web is gaining popularity and is preferred among the audience. A website provides a quick and easy way of communicating information between buyers and sellers. Websites are useful not only for the customers but also for buyers in many ways. Websites can be tailored according to the hosts requirements. A website can provide much information such as opening hours, contact information, images of location or products and also the AI enabled contact forms to facilitate enquiries from potential customers or to obtain feedback from existing ones. Various usages of websites are explained in detail below:

1. **Online Presence 24/7:** Website enables customers to contact the service provider anytime, anywhere. Even outside of business hours, website continues to find and secure new customers. 24/7 presence offers the user convenience as the information needed by them can be accessed in their comfortable zones be it either their own home or workplace with no added pressure to buy.

2. **Information Exchange:** Through a website a seller can provide as much information as he wants and requires for the customers. Websites provide the easiest way of information exchange between the buyer and sellers, which really helps the businesses to engage the customer and sell in an effective and cost-efficient way.

3. **Credibility:** Having an online presence is imperative on the part of any sort of business these days. It makes them get ahead of their competitors in one way or another. Most of the reputed businesses have their presence in virtual places, which helps in building reputation and improved credibility of the businesses in the eyes of customers. A website can be used for answering all what's and why's of potential customers. Moreover, having a good quality, easy-to-use website makes them believe that they will get the same positive experience in all areas of the business.

4. **Market Expansion:** Online presence helps in the expansion of the target market, as it can be accessible to anyone all over the world. Anyone, from any country, can easily find the company and as such becomes a potential customer. Online presence actually helps the companies to increase their market share and capitalize by a great extent which otherwise is not possible.

5. **Consumer Insights:** These days various customers analytic tools such as artificial intelligence, big data help in identifying typical customers, their preferences, demand and behavior towards certain products. The diverse

range of data available also offers hands to the businesses to better understand their potential customers and thus offer them products as per their needs.

6. **Advertising:** Tools like Google Ad Words or advertising on Facebook gives the power to reach customers with much more accuracy and reliability than with traditional offline advertising methods. SEO and online advertising are a great way to help build up awareness and increasing traffic in no time.

7. **Competitors Online:** If any business player do not have a website it is highly likely that their competitors will have. This can lead to missing out on gaining new customers and opportunities to be at the forefront. It is crucial that no opportunity is missed and every prospect is gained by competition. Therefore, to stay ahead of the competition and have a greater market presence it is required by every business to have online presence.

8. **Customer Service Online:** Websites provide an easier and effective way to handle customer service. AI enabled chat boxes can address all the queries immediately which also helps the companies to save the costs of customer representatives. Timely responses to the customer queries help in improving their relationships with the service provider.

9. **Growth Opportunity:** Websites, in general, are great ways to provide a place that potential investors can be referred to. It shows what the company is about, what it has achieved and what it can achieve in the future. Thus, having a website incredibly provides various growth opportunities.

7.5 HTTP & HTTPS PROTOCOL

Every URL link that begins with HTTP uses a basic type of "hypertext transfer protocol". Which was developed in early 19909's by Tim Berners-Lee. This network protocol enables web browsers and servers to communicate through the exchange of data. Hyper Text Transfer Protocol Secure (HTTPS) is the secure version of HTTP, the protocol over which data is sent between your browser and the website that you are connected to. The 'S' at the end of HTTPS stands for 'Secure'. It means all communications between browser and the website are encrypted. For more details we will study both the terms separately:

7.5.1 HTTP

HTTP is a protocol which allows the fetching of resources, such as HTML documents. It is the foundation of any data exchange on the Web and it is a client-server protocol, which means requests are initiated by the recipient, usually the Web browser. A complete document is reconstructed from the

different sub-documents fetched, for instance text, layout description, images, videos, scripts, and more. It is an application-level protocol for distributed, collaborative, hypermedia information systems.

7.5.2 HTTPs

Hypertext Transfer Protocol Secure is an extension of the Hypertext Transfer Protocol. It is used for secure communication over a computer network, and is widely used on the Internet. In HTTPS, the communication protocol is encrypted using Transport Layer Security or, formerly, Secure Sockets Layer.

7.5.3 Difference between HTTP and HTTPs

HTTP is a protocol using which hypertext is relocated over the Web. Due to its ease, HTTP has been the most commonly used protocol for data transfer over the Web but the data (i.e. hypertext) exchanged using HTTP is not as secure as we would like it to subsist. In precise, by using both the HTTP/HTTPS the information of a particular website is exchanged between Web Server and Web Browser. But what's difference between these two is extra 's' present in HTTPS, Which that makes it secure! The below mentioned table would meticulously provide concise difference between HTTP and HTTPS.

Table 7.3: Difference between HTTP and HTTPs

Basis	HTTP	HTTPs
Definition	It stands for Hyper Text Transfer Protocol	It stands for Hyper Text Transfer Protocol Secure
Encryption	It does not encrypt the text	It encrypt the text so that no one can access it
Usage of SSL	They don't require Secure Socket Layer at Transport layer	They use Secure Socket Layer to encrypt the code
Type	It is a default protocol	It is not a default protocol
Beginning	URL begins with http://	URL begins with https://
Security	It is an unsecure protocol	It is a safe transfer protocol
Validation	It does not require any validation	It requires validation like domain verification
Address bar	It has simple address bar	It has green colored address bar that shows it is secure
Hacking	It can be easily hacked	It cannot be hacked easily

7.6 TYPES OF WEBSITES

As we know that Web hosting is a service that allows organizations and individuals to post a website or web page onto the Internet. Websites are hosted, or stored, on special computers called servers. When Internet users desire to sight the website, all they need to do is to type the website address

or domain name in the browser. The choice of the type of websites depends on the requirement of the seller. Websites can mainly be categorized into four broad categories namely authority website, lead generation website, sales website and utility website explained in detail later. By knowing, what kind of website is needed before making any design or marketing decision, one can save oneself from a world of hurt and waste money and that also helps in attracting the audience they want.

1. **Authority Website**: An authority website is a trusted, reliable source of information. The authority website serves as an online presence for the business. This is the place potential customers can go to see what the company has done and how to get in contact with someone about services and leads are generated offline. People visiting the website already know about the company and reach there to gather more information. Here the website serves as an online placeholder, giving more legitimacy to the business in the eyes of customers. For example: Healthambition.com is a great Authority site in the health sector which has dozens of review articles that compares different products and makes it easy for viewers to buy the recommended products from the affiliate links as shown in the Fig. 7.3 below:

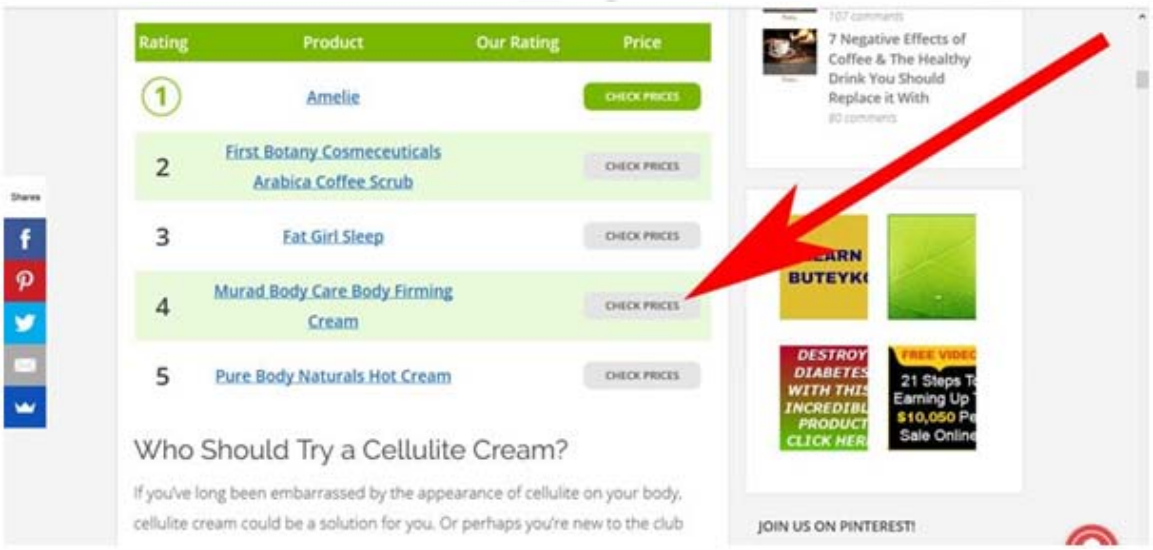


Fig 7.3: Example of Authority Websites

2. **Lead-Generation Website:** As its name suggests, this site is focused on generating leads through its online presence. SEO and targeted marketing strategies play a huge role in bringing in new customers. Sales, however, still occurs offline. These websites are found online by people who have buyer's intent. This means that the prospective customer is basically ready to spend their money and they just need to be convinced that the business is the perfect place to do this spending. For example, Live Chat is online customer service software with online chat, help desk software, and web analytics capabilities which can be used as a tool for lead generation.

Fig 7.4: Examples of Lead-Generation Websites

3. **Sales Website:** These are the sites that sell products or services through e-commerce. If a site has a cart function, then it falls into the sales website category. This site is especially popular, as both leads and sales are all done completely online. A company's website can still fall into the sales category if that business utilizes online scheduling and payment, but provides the service in-person. For example, Amazon.com, flipkart.com, myntra.com are the sales websites, here customers can buy products and services online as per their needs.

Fig 7.5: Examples of Sales Websites

4. **Utility Website:** A utility website functions more like a tool than a standard website. These are the companies whose business and website are one and the same. Air BNB and Facebook are examples of utility websites. They don't necessarily generate leads or sales online. They just exist in the online space and are accessible to anyone that chooses to use them.

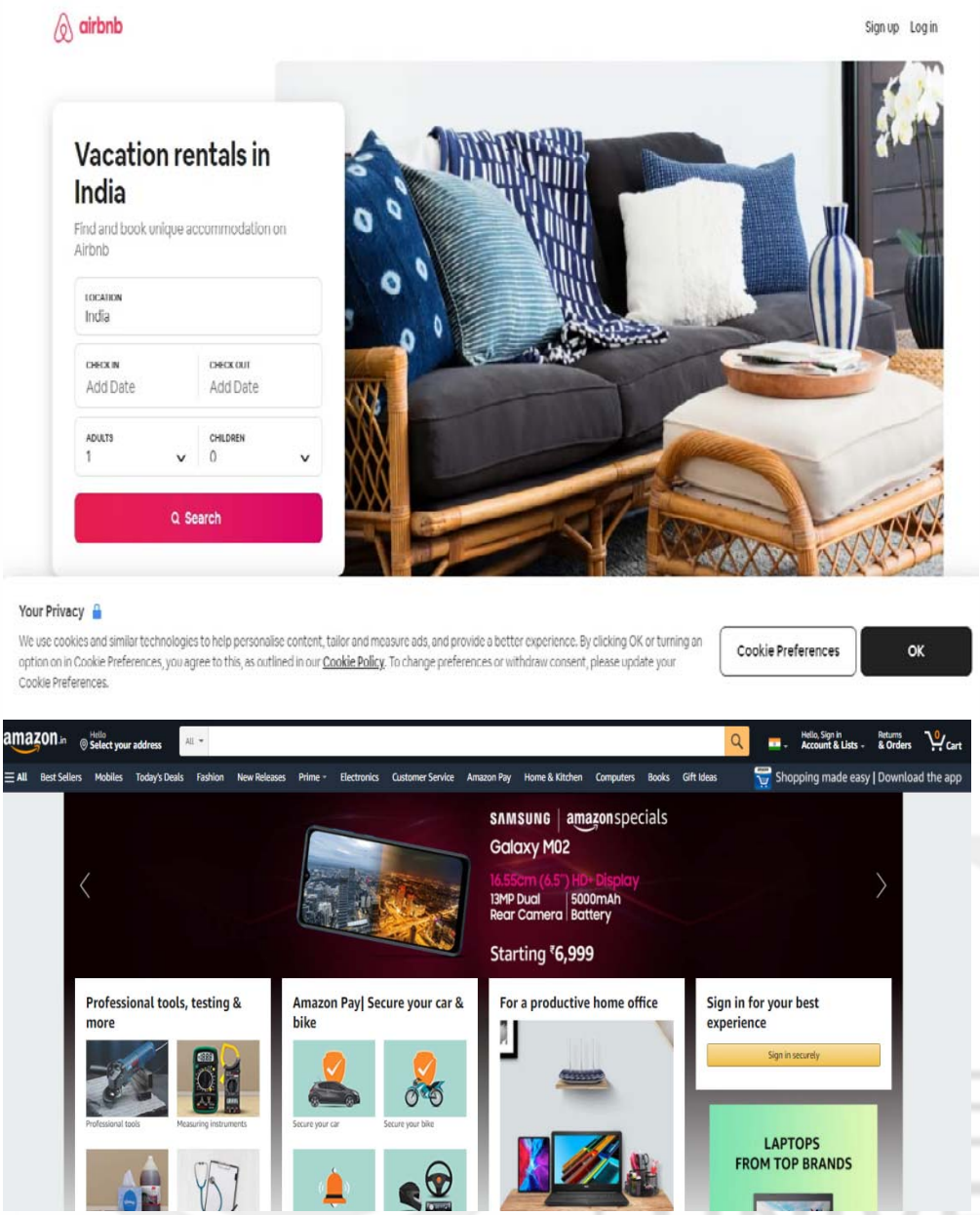


Fig 7.6: Examples of Utility Websites

7.7 DEVELOPMENT OF WEBSITE

Website development is the effort involved in developing a website for the Internet or an intranet. Web development can vary from developing a simple single static page of plain text to complex Web-based Internet applications, electronic businesses, and social network services. Web development is the maintenance and development of a website, basically it is the effort that happens in the backdrop to make a website look enormous, work speedy and perform sound with flawless user knowledge. Website development is a comprehensive process which is carried by the Web developers by using a diversity of coding languages. Various steps of web development process are explained in detail below:

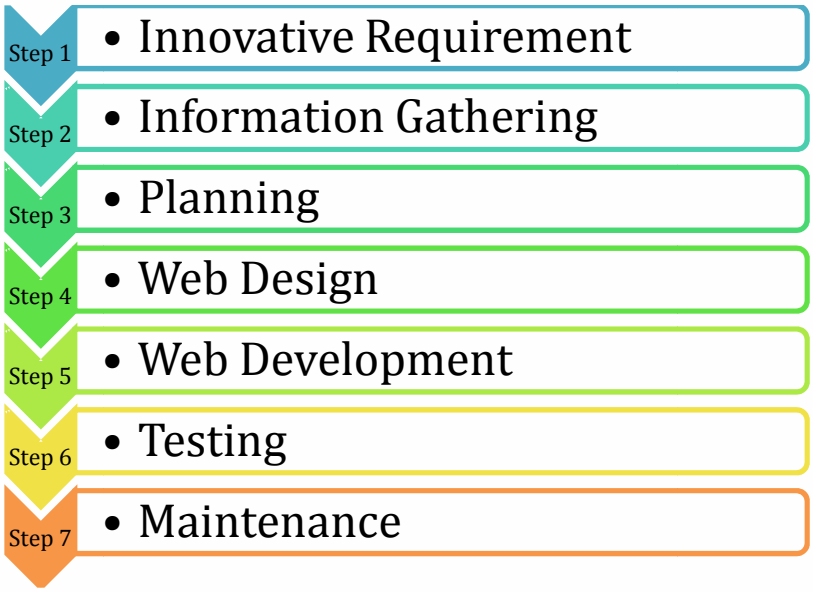


Fig 7.7: Steps of Website Development Process

Step-1: Innovative Requirement: Innovative requirement is the first and foremost requirement of the web development process. This is basically a discussion oriented step in which the client shares his ideas, needs and requirements with the web developers and on the basis of their demands the developers provide them innovative suggestions best suiting their requirements. Various inputs and outputs of innovative requirement are stated below:

Table 7.4: Various inputs and outputs of innovative requirement

Input	Output
• Potential interview with the client, initial emails, proposals and supporting docs by the client, discussion notes. • Recorded telephone conversations and Skype Chat • Estimated Budget Portfolio Showcase	• Development process • Estimated cost • Team requirements (No of designers, developers, BA, QA, SEO etc.) • Hardware-software requirements • Report documents • Final client approval for the project.

Step-2: Information Gathering: Information gathering stage is also known as discovery phase. In this phase, the designer portrays the client's vision into the paper and is most important phase of website design & development process. In this step, it is important to understand the purpose of creating a website, target audience as well as the content they look for. These factors are very crucial to determine in the fundamental phase of website design. Various inputs and outputs of information gathering are stated below:

Table 7.5: Various inputs and outputs of information gathering

Input	Output
● Reports from clients and documentations from Business Analyst	● Complete final project documentation with requirement specifications and individual work described to the designers as well as developers.

Step-3: Planning: Good website is the result of good planning. After the information gathering planning is important. Planning is nothing but prioritizing tasks for website completion. In this step, the sitemap of the website is developed in which menu, contents, navigational system etc. of the websites is developed. Various inputs and outputs of planning are stated below:

Table 7.6: Various inputs and outputs of planning

Input	Output
● Final project documentation	● clickable prototype and sitemap containing all WebPages

Step-4: Web Design: Web design is the website that supports good look, feel and makes it different from others. This is the creative phase of website design. This is the phase where designers put their efforts to make the website look good and different from others. The designer needs to understand each and every aspect of the client's expectation and try to sketch it. In this step logo design, templates etc. are discovered. Various inputs and outputs of web design are stated below:

Table 7.7: Various inputs and outputs of web design

Input	Output
● Wireframes	● Site design with layout templates and images

Step-5: Web Development: After designing, there is a development phase also known as 'implementing phase'. Now, this is the phase where the actual website starts its implementation. The development phase is also a very crucial phase for the website design. In this phase, all the information gathered from the initial phase is integrated like creating a database, logic & actual programming to name. Various inputs and outputs of web development are stated below:

Table 7.8: Various inputs and outputs of web development

Input	Output
● Website with forms and complete requirement specifications	● Website with database driven functions, Coding docs

Tools: Dreamweaver CS6, Bootstrap, Jquery, AngularJS, CoIgnitor, PHP, CSS3, HTML5, Javascript

Step-6: Testing: After the Development phase, there is a Testing & Discovery Phase. The testing in this phase are done by Quality Assurance (QA), also responsible for preparing the test cases. The various types of website testing are. Content Testing, Functional Testing**,** Design Testing etc. Various inputs and outputs of testing are stated below:

Table 7.9: Various inputs and outputs of testing

Input	Output
● The site, Requirement specifications, supporting documents, technical specifications, and technical documents.	● Complete website testing and error logs reports, frequent interaction with the developers and designers.

Tools: GTmatrix, Google Page speed tool, W3c Validation, Screaming Frog

Step-7: Maintenance: The last phase is Maintenance, in this stage, the maintenance of the website is done for a limited time period only. Maintenance means updating the contents & design of the website. The maintenance facility is provided for limited time by the company but if the user wants to extend the service, they are charged extra for it. Various inputs and outputs of maintenance are stated below:

Table 7.10: Various inputs and outputs of maintenance

Input	Output
● Live Website, Analysis reports.	● Updated Website, Maintenance reports

Check Your Progress A:

1. Name the various phases of website development.

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2. How does a website help in market expansion?

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3. Distinguish between the sales websites and utility websites.

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4. What is the significance of websites in information exchange?

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7.8 INGREDIENTS REQUIRED FOR WEBSITE DEVELOPMENT

These days, the web is approximately unrecognizable from the early days of white pages with lists of blue links. Now, sites are premeditated with multifaceted layouts, exceptional fonts, and customized color schemes. For staying ahead of the competition, the interactivity of websites is a must and adding some of these types of capabilities requires a stronger programming language. Web design is actually how a site works and the feelings it invokes with its users. With this expanded perspective, below explained are ingredients that are critical for an optimal website:

1. **Clean navigation:** Navigation is the first thing people notice about the site. Top-notch navigation allows the users to move from page to page, and finding everything they want without wasting a fraction of a second. For example, in the figure 7.8, navigation is properly given through which the visitors can easily locate what they are looking for.
2. **Beautiful typography:** Typography is a really big deal. A website that looks great always has beautiful typography. Typography starts with font choices, but goes far beyond into color, sizing, line height, paragraph margins and padding. For example, in the figure 7.8, content is very well designed and put to make it understandable for the visitors.
3. **White space:** Proper spacing is critical for a great site. In fact, it may be the most important element. A message's impact depends on the element of space just as much as that message's content. Without white space, a site will turn into visual garbage quickly. For example, the figure 7.8 given below, proper space is provided between all the major and sub heads.

4. **Logical layout:** Logical Layout is somewhat vague, but a site must be connected in a way that makes sense. A great design will take a prospect through a journey, yet allow them to skip around at will. This is about presenting the right thing at the right time in the right way.

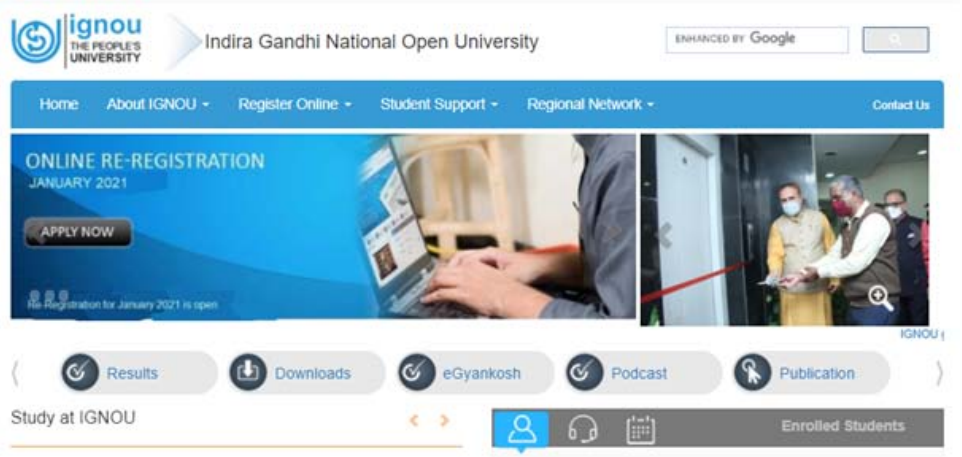

Fig 7.8: IGNOU Website

5. **Design with a purpose:** The best design is as little design as possible. This is a core foundational concept for beautifully designed sites. Everything within a great website should pack a punch; it should all accomplish something without getting in the way of itself. For example, IGNOU website is designed keeping in mind the motive to provide all necessary and mandatory information about the results, admission process, and assignments submission by the learners.

6. **Speed:** Speed wins over the internet. Customers do not like to wait much for their needs and they want to find what they need as soon as possible. Making the desired customers wait is more or less equivalent to losing forever. The speed of the website must be taken into proper consideration, the pages must download quickly and the orders must be processed quickly.

7. **Detail:** The website must provide the details the customers can look for such as product information, service information, customer service information etc. The details provided must be easy to access and sufficient enough to address the queries potential customers may have. For example, the IGNOU website in fig. 7.8 also provides various details about its locations, study centres, headquarter, contact information etc.

8. **Multiple feedback channels:** The website must provide the multiple communication and feedback options to the visitors such as phone number, an email, a live chat link, a discussion board or social media tools so that they can contact the concern authority in no time. In short, the website should be great, but it should also showcase other channels that allow the user to contact easily.

7.9 WEBSITE HOSTING

A web hosting service is a type of Internet hosting service that allows individuals and organizations to make their website accessible via World Wide Web. Web hosts are companies that rent out their services and technologies to host websites on the internet.

A space on a web server is allocated to store the files by the hosting provider. Web hosting makes the files available for viewing online. Web hosting provides services and infrastructure to develop, store, and deploy globally available websites and web apps in the cloud so startups can focus on applications and users.

Once the hosting company hosts the website, users can access it by typing in the web address (domain name) in their web browser. When they do this, their computer connects to the server on which the website is hosted. Web hosts can also provide data center space and connectivity to the Internet for other servers located in their data center, called Co-location. All websites on the internet, need web hosting. When someone enters the domain name in a browser, the domain name is translated into the IP address of the web hosting company's computer. This computer contains website's files, and it sends those files back to the users' browsers.

7.9.1 Types of Website Hosting

Various types of web hosting services are explained in detail below:

1. **Shared hosting:** Shared hosting is perfect for entry-level website hosting. With a shared hosting plan, all domains share the same server resources, such as RAM (Random Access Memory) and CPU (Central Processing Unit). However, because all resources are shared, the costs of shared hosting plans are relatively low, making them an excellent option for website owners in their beginning stages. Although shared hosting provides website owners with a more simplistic approach to the web. This means that surges in usage can ultimately affect the website's user experience. Shared hosting plans are ideal for website owners that do not receive a large amount of web traffic.

2. **Virtual private server (VPS) hosting:** A VPS hosting plan is the ultimate middle ground between a shared server and a dedicated server. It is ideal for website owners, who need more control, but do not necessarily need a dedicated server. VPS hosting is unique because each website is hosted within its own space on the server, though it still shares a physical server with other users. VPS hosting provides website owners with more customization and storage space. Typically, VPS hosting is used by website owners who want dedicated hosting but do not have the technical knowledge needed.

3. **Dedicated server hosting:** Dedicated hosting gives website owners the most control over the server on which their website is hosted. Dedicated servers' cost is one of the most expensive web hosting options. They are mostly used by website owners with high levels of website traffic, and those who are in need of complete control of their servers. In addition, a high level of technical expertise is required for the installation and ongoing management of the server. The user has full administrative access to the server, which means the client is responsible for the security and maintenance of his own dedicated server.

4. **Cloud hosting:** Cloud hosting is the current buzzword of the technology industry. In Web hosting, it means many computers working together, running applications using combined computing resources. This allows users to employ as many resources as they need without having to build and maintain their own computing infrastructure. The resources that are being used are spread across several servers, reducing the chance of any downtime due to a server malfunction. Cloud-based hosting is scalable, meaning that site can grow over time, using as many resources as it requires and while the website owner only pays for what they need.

5. **Managed hosting:** The user gets his or her own Web server but is not allowed full control over it (user is denied root access for Linux/administrator access for Windows); however, they are allowed to manage their data via FTP or other remote management tools. The user is disallowed full control so that the provider can guarantee quality of service by not allowing the user to modify the server or potentially create configuration problems. The user typically does not own the server. The server is leased to the client.

6. **Co-location web hosting service:** Co-location web hosting service is similar to the dedicated web hosting service, but the user owns the co-server; the hosting company provides physical space that the server takes up and takes care of the server. This is the most powerful and expensive type of web hosting service. In most cases, the co-location provider may provide little to no support directly for their client's machine, providing only the electrical, Internet access, and storage facilities for the server

7. **Clustered hosting:** Cluster hosting allows multiple servers hosting the same content for better resource utilization. Clustered servers are a perfect solution for high-availability dedicated hosting, or creating a scalable web hosting solution. A cluster may separate web serving from database hosting capability. Usually, web hosts use clustered hosting for their shared hosting plans, as there are multiple benefits to the mass managing of clients.

8. **Grid hosting:** Grid hosting is a service that provides grid computing Capabilities to its clients This form of distributed hosting is adopted

when a server cluster acts like a grid and is composed of multiple nodes. Much like cluster hosting, grid hosting makes it less likely that a spike in resource needs will take site offline

7.9.2 Web Hosting Alternatives

Websites are an important component of business these days. Hosting of websites may not be feasible due to technology, budget, infrastructure, and continuous updating. Web hosting is referred to as storage of contents on the web server (host) of the hosting service provider. The host can be anywhere in the world but it has power, internet connections and dedicated IP addresses. Data Centre has all necessary hardware and software that provide the connections through the Internet, Intranet, and Extranet. In a Co-location (also spelled Co-location) service, the service provider rents a physical space to the client to install its own server hardware. These features make your site available 24×7×365.

The service provider is responsible for maintaining the Web server hardware and software, and provides the connection to the Internet through its routers and other network hardware. Since the whole world is moving from brick & Mortar system to click & Mortar system and due the usage of Smartphone the app based business restricts to mobile hence the app is taken as a replacement to websites.

Check Your Progress B

1. Differentiate between HTTP and HTML.

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2. What is a URL? Give an example of URL.

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3. What do you understand by web hosting?

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4. Distinguish between cloud hosting and cluster hosting.

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7.10 LET US SUM UP

A website (also in black and white as a web site) is a compilation of web pages and associated content that is acknowledged by a general domain name and published on at least one web server. Various examples of websites are wikipedia.org, google.com, and amazon.com and www.ignou.ac.in etc. Basically, for a layman a website is a set of data and information about a particular subject which is available on the Internet. Websites can be used in various ways for a number of purposes such as a personal website for someone's own business or profession, a corporate website for a company, a government website for any government organization or any other organizational website, etc.

Every URL link that begins with HTTP uses a basic type of "hypertext transfer protocol". Which was developed in early 19909's by Tim Berners-Lee. This network protocol enables web browsers and servers to communicate through the exchange of data. Hyper Text Transfer Protocol Secure (HTTPS) is the secure version of HTTP, the protocol over which data is sent between your browser and the website that you are connected to. The 'S' at the end of HTTPS stands for 'Secure'. It means all communications between browser and the website are encrypted.

The choice of the type of websites depends on the requirement of the seller. Websites can mainly be categorized into four broad categories namely authority website, lead generation website, sales website and utility website explained in detail below respectively. By knowing the requirements of website in advance, one can save unnecessary wastage of time, money and opportunity cost.

Website development is the effort involved in developing a website for the Internet or an intranet. Web development can vary from developing a simple single static page of plain text to complex Web-based Internet applications, electronic businesses, and social network services. Web development is the maintenance and development of a website. Basically, it is the effort that happens in the backdrop to make a website look informative, speedy

processing and provide exact information. Process of website development includes various steps such as, innovative requirement, information gathering, planning, web design, web development, testing & maintenance.

These days the web is approximately unrecognizable from the early days of white pages with lists of blue links. Now, sites are premeditated with multifaceted layouts, exceptional fonts, and customized color schemes. For staying ahead of the competition, the interactivity of websites is a must and adding some of these types of capabilities requires a stronger programming language. Web design is actually how a site works and user friendliness. Expanded perspective ingredients critical for an optimal website are clear navigation, beautiful typography, white space, logical layout, synergy between message and design, design with a purpose, speed ,detail, multiple feedback channels etc.

A web hosting service is a type of Internet hosting service that allows individuals and organizations to make their website accessible via World Wide Web. Web hosts are companies that rent out their services and technologies to host websites on the internet. Once the hosting company hosts the website, users can access it by typing in the web address (domain name) in their web browser. When they do this, their computer connects to the server your website is hosted on. Various types of web hosting are Shared hosting, Virtual private server (VPS) hosting, Dedicated server hosting, Cloud hosting, Managed hosting, Co-location web hosting service, Clustered hosting, Grid hosting etc.

7.11 KEY WORDS

HTML: Hyper Text Markup Language (HTML) is the set of markup symbols or codes inserted into a file intended for display on the Internet. The markup tells web browsers how to display a web page's words and images.

HTTP: Hypertext Transfer Protocol (HTTP) is a connectionless text-based protocol. Clients (web browsers) send requests to web servers for web elements such as web pages and images. After the request is serviced by a server, the connection between client and server across the Internet is disconnected.

Search Engine: Search engine is a web service that helps in finding other web pages, such as Google, Bing, Yahoo etc. are normally accessed through a web browser or through a web page.

URL: URL stands for Uniform Resource Locator. A URL is nothing more than the address of a given unique resource on the Web.

Web Browser: A web browser is an application used to access and view websites. Examples of most commonly used web browsers are Microsoft

Edge, Internet Explorer, Google Chrome, Mozilla Firefox, and Apple Safari etc.

Web Hosting: Web hosting is an online service that enables the publishing of a website or web application on the Internet. When one signs up for a web hosting service, they basically rent some space on a physical server.

Web Page: Web pages are also called just pages. Basically, a web browser is a document which can be displayed in a web browser.

Web Server: A server is a computer that provides data to other computers. The data may be served to a system either on a local area network (LAN) or on a wide area network (WAN) over the Internet.

Website: A website is a collection of related web pages, including multimedia content, typically identified with a common domain name, and published on at least one web server.

7.12 TERMINAL QUESTION

1) What is a website?
2) Briefly explain the origin of the website.
3) What are the various types of websites?
4) State the usages of websites.
5) State the differences between HTTP and HTTPs.
6) State the various phases of the website development process.
7) What are the various ingredients required for making a website?
8) What is web hosting? What are the various types of web hosting?

Note	These questions are helpful to understand this unit. Do efforts for writing the answer of these questions but do not send your answer to university. It is only for your practice.