

Scope and Career Opportunities of Web Technology Subject of BICTE Program

Rajesh K. Choudhary

Department of BICTE, Triyuga Janata Multiple Campus

Abstract

Web technology refers to the various tools and techniques used in the process of communication between different types of devices used on the Internet. This research paper explores the importance of web technology and opportunities related to web technology in Information Communication Technology and Education (BICTE) program. This article provides Importance of subject matter related to web technology to the students completing this degree and explores the career prospects after completing this degree. This article also highlights the evolving state of web technologies and their relevance in shaping the modern information technology industry.

Keywords: www, web technology, BICTE, career opportunities, IT industry

Introduction

In today's technology-friendly era, Web Technology is playing an important role in transforming industries and businesses Worldwide. Bachelor in Information Communication & Technology Education (BICTE) program has included a wide range of topics in Web Technology to provide students with the necessary skills and knowledge for employment opportunities in the Web Technology sector. The research aims to clarify the educational and career possibilities for BICTE graduates within the field of Web Technology.

World Wide Web (The Web)

Tim Berners-Lee is responsible for one of this century's most important advancements the World Wide Web in 1989. He reveals the Web's origins and the creation of the now ubiquitous http and www acronyms and shares his views on such critical issues as censorship, privacy, the increasing power of software companies, and the need to find the ideal balance

between commercial and social forces. He offers insights into the true nature of the Web, showing readers how to use it to its fullest advantage. And, he presents his own plan for the Web's future, calling for the active support and participation of programmers, computer manufacturers, and social organizations to manage and maintain this valuable resource so that it can remain a powerful force for social change and an outlet for individual creativity. (Weaving the Web: The Original Design and Ultimate Destiny of the World Wide Web Paperback – November 7, 2000)

Web Technology

Web technology is defined as the use of mark-up language and multimedia packets to communicate between computers. It makes it easier for us to engage with online material such as web pages (Bhardwaj, 2021).

Web Browser

A browser, often known as a web browser, is an application software programme that is used to access the World Wide Web. In simple words, a browser is a piece of software that responds to a user's request. When a user requests a web page, the web browser retrieves the necessary information and displays it on the user's screen. A user must, however, have a web browser installed in order to connect to a website's server and view its web pages (Ibid).

Web Server

Web server is a program which processes the network requests of the users and serves them with files that create web pages. This exchange takes place using Hypertext Transfer Protocol (HTTP) (GeeksforGeeks, 2024).

HTML

HTML stands for Hyper Text Markup Language which first created by Tim Berners-Lee, Robert Cailliau and others in 1989. Most websites are written in HTML. For the creating and functioning of the web pages HTML used. Hypertext means that the document contains

links that allow the reader to move from one place to other place in the document or completely different document. A markup language is a way of writing layout information within a document (Moraes, n.d.).

CSS

Håkon Wium Lie is known for developing Cascading Style Sheets (CSS) while working with Tim Berners-Lee and Robert Cailliau at CERN in 1994 (Prasad, 2023). Cascading Style Sheets (CSS) is a style sheet language used for specifying the presentation and styling of a document written in a markup language such as HTML. CSS specifies additional properties on html tags such as paragraph, font, heading, background, table, form etc. to make dynamic effects on webpage. It can control the layout of multiple web pages all at once. CSS plays an important role in modern web design & development by providing the tools necessary to create visually appealing, accessible, and responsive websites.

JavaScript

JavaScript was invented by Brendan Eich in 1995. JavaScript is a programming language and core technology of the Web, alongside HTML and CSS. It is often abbreviated as JS. Approximately 99% of websites use JavaScript on the client side for webpage behavior. It is a scripting language that enables us to create dynamically and updating content, control multimedia, animate images (MDN Web Docs, n.d.).

PHP

PHP was first created by Rasmus Lerdorf in 1995. It is now developed and improved by a large team of people. Its name at first stood for Personal Home Page, but it was later changed to PHP: Hypertext Preprocessor. It is an open source programming language for the web. In other words, PHP is a server side scripting language that can be embedded into HTML code, then parsed and processed when the page is requested by a client. It is so

popular because it is an open source programming language and it is easy to use. PHP is much easier to learn and code when compared to other programming languages. It is fast and flexible programming language. The goal of the language is to allow web developers to write dynamically generated pages quickly and efficiently.”

It is capable of generating dynamic HTML pages and hence it can output HTML pages which serves as a presentation layer and in the back-end, on the server. It continues process all requests made by the client. These requests could be processing of a web form, handling cookies, uploading images, files, generating dynamic HTML by querying a database etc.

MySQL

MySQL is very popular open-source Relational Database Management System (RDBMS) software which was first released in 1995. It is suitable for both small and large applications. It is very fast, reliable, scalable, and easy to use Software. It was owned and sponsored by the Swedish company MySQL AB, which was bought by Sun Microsystems (now Oracle Corporation) in 2010. Now MySQL is developed, distributed, and supported by Oracle Corporation. It is used in conjunction with PHP scripts to create powerful and dynamic server-side web applications.

Objectives of the study

The objectives of the study are as follows:

- To introduce types of web technology briefly.
- To highlight the significance of web technology in career opportunities.

Methods of the Study

The data are collected based upon the secondary data through online source as well as printed books. Thus, research is based on qualitative research paradigm. The descriptive and explorative research design are used to analyse the data.

Literature Review

Web Technology Subject of BICTE Program

The Web Technology Subject of BICTE program offers a strong curriculum covering and focusing on various aspects of Web Technology. The course covers basic and advanced knowledge of Markup Language (HTML), Stylesheet (CSS), Database Server (MYSQL) and Programming Languages such as JavaScript and PHP. Advanced topics include Web Development Frameworks, Database Designing and Integration, Responsive Web Design principles, and Web security protocols.

After studying this Subject, students gain experience through practical projects and internships, this enables them to develop static and dynamic websites, web applications, news portals and e-commerce websites. The Subject is designed to align with industry standards and emerging trends in Web Development, thereby preparing students to meet the challenges of the digital economy.

Web Technology Subject and Industry's Opportunities

The BICTE program highlights the attainment of both technical and soft communication skills essential for a successful career in Web Technology. In this Subject Students learn problem-solving techniques, critical thinking to complete the real time project, they learn project management skills along with mastering programming languages and frameworks. This program fosters innovation and creativity, encouraging students to design and develop user-friendly web solutions.

The skills which are used during the BICTE program are extremely preferred by various industries including IT and e-commerce companies, Digital Marketing Agencies, Tour and Travel Agencies, online News Agencies, NGO/INGO, Education Sector, Hotel/ Restaurant and Banking Sector etc. Proficiency and expertness in Web Technology opens doors to diverse career opportunities in Web Development, UX (User Experience) / UI (User

Interface) design, Front-end and Back-end developmental engineering, and Cloud Computing.

Result and Discussion

BICTE graduates specializing in Web Technology enjoy a multitude of career paths.

Their roles can be such as:

Web Developer

Responsible for designing, coding, and modifying new/Existing websites and web applications according to client specifications/Requirements.

Front-End Developer

According to client's requirements create visually appealing and user-friendly interfaces using HTML, CSS, and JavaScript.

Back-End Developer

The backend developer is responsible for creating, maintaining, testing and debugging the entire backend of the application. It includes behind-the-scenes processes like databases, data and application integration, APIs, etc.

UI / UX Designer

Understanding user needs, conducting research, design attractive and agreeable interfaces to enhance user experience (Lamprecht, 2023).

Freelancer

Website/Web Application Design and Development can be done as an independent contractor for domestic or international clients and earn a lot of money. This job requires the freedom to work from home, and a flexible work environment and schedule.

Conclusion and Future of Web Industry

In conclusion, Web Technology is a demandable and career-oriented subject of the BICTE program, offering students a pathway to lucrative and fulfilling careers in the IT / Web-

Tech Industry. The curriculum's emphasis on practical skills and industry relevance equips graduates with a competitive edge in the job market. As technology continues to evolve, BICTE graduates specializing in Web Technology are able to drive innovation and shape the future of digital transformation.

The demand for skilled, talented and trained Web Designers / Developers and Technologists is increasing due to the expansion of online businesses and digital services. BICTE graduates specializing in Web Technologies are well positioned to seize these opportunities, create jobs and contribute to Nepal's growing technology ecosystem.

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