

Major Areas of Web Technologies in Various Fields and its Appeal

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Abstract- *The sphere of web technologies performs an essential role in diverse fields. So many sectors are the use of net technology and web packages. The primary problem in web technologies is browser compatibility. Browser compatibility, regularly called move-browser compatibility, refers to whether or not or now not an internet site or internet utility features are meant in any unique browser version on unique gadgets. Web technologies are used in various fields like cloud computing, data security, databases, JavaScript, HTML, CSS, Artificial Intelligence, and many others... Those are numerous topics in engineering research and these are more correctly used in various sectors like government sectors and company sectors like that. In those topics, every concern has its idea and gives its utilization related to internet technology. In this paper, we are providing several sectors like Cloud computing, data security, and databases that use web technologies what's the position of the internet era in these fields and what are the blessings its miles providing also are provided right here. Various papers primarily based on web technology and web programs have been studied and we discover the use of web technology in numerous areas like cloud computing, data security, and databases and an outline has been proposed right here.*

Index Terms - *Web technologies, Browser Compatibility, HTML, CSS, and Artificial Intelligence.*

I. INTRODUCTION

What is Web technology?

Web technology refers to the numerous equipment and techniques that are utilized in the system of communication between different types of gadgets over the net. An internet browser is used to get the

right of entry to net pages. Web browsers may be defined as packages that display text, records, photos, animation, and video on the net. Hyperlinked resources on the sector's huge net may be accessed using software program interfaces supplied with the aid of web browsers.

Some Web components

Web – A web page is a document that can be displayed in an internet browser which includes Firefox, Google Chrome, Opera, Microsoft Net Explorer or Area, or Apple's Safari those also are often known as just "pages.

Website – a set of internet pages that are grouped together and typically linked together in diverse methods frequently known as a "net web page" or absolutely a "site."

Web Server – A unique excessive cease laptop that hosts a website on the internet. These days we've got Cloud offerings that act as internet servers.

II. ROLE OF WEB TECHNOLOGY

Web technologies in cloud computing

What is Cloud Computing and What does it refer to?
Cloud computing utilizes the services over the internet. Those services are data storage, servers, databases, networking, and software. The information is kept on real servers that are managed by a cloud service provider. In cloud computing, computer system resources as said above need computing power, without the user's involvement to manage them.

In a web-based manner, Cloud computing consists of shared resources, software, and information over the Internet to computers and other devices like smart phones.

Cloud computing is the result of the increasing use of virtualization, Service-oriented architecture, and utility computing. Details are abstracted from consumers, who no longer need expertise in, or control over, the technology infrastructure "in the cloud" that supports them.

What does Cloud Computing involve?

Cloud computing involves so many services and services are utilized. What are those services means data storage, servers, networking, hardware, and software through the internet. The physical layer keeps that information is managed by a cloud service provider. In cloud computing, computer system resources like data storage and processing power are accessible as needed, without the user having to directly handle them.

Cloud computing is a method of online processing where resources, software, and data are shared and accessed through the Internet by computers and devices like smartphones.

Cloud computing is a result of the increasing use of virtualization, Service-oriented architecture, and utility computing. Consumers no longer require knowledge or control of the technology infrastructure in the cloud, as details are now abstracted from them. Cloud computing is a modern way of providing IT services over the Internet, offering dynamically scalable and often virtualized resources. It is a result and outcome of the convenience of reaching remote computing sites offered by the Internet. This often manifests as online tools or apps that users can utilize via a web browser, mimicking the experience of using a program installed directly on their computer.

NIST offers a slightly more impartial and precise description in this context. The concept of the "cloud" represents the Internet, originating from the use of cloud symbols to represent the telephone network and later the Internet in computer diagrams, as an abstraction of the underlying infrastructure. Commonly, cloud computing providers offer standard business applications accessible online through another Web service or software, such as a Web browser, with the software and data being stored on servers.

Data Security in Web Technologies

Data security means it safeguards digitalized data from unauthorized person's access, manipulation, and stealth at all stages of existence.

What does Web Security entail?

Nowadays providing online security is very challenging in a current digital environment. Different aspects of authentication, authorization, data protection, encryption, and network security are surrounded by web security. So companies can reduce the burden by paying attention to these important factors like unauthorized access, data leakage, and other harmful activities online. Web security has so many advantages for both business people and individuals.

Below are a few of the significant advantages:

Cyber-attack protection: Web security measures are implemented and safe guards various cyber-attacks, including SQL injection, cross-site scripting, and phishing attacks.

Preserve Brand Image: Without providing security it harms the company's reputation, so it leads to decrease customer confidence, satisfaction and profits. Implementing security measures on the web can stop breaches and protect a company's reputation. Adherence to regulations is necessary across various industries to ensure the safeguarding of consumer data. Implementing web security measures can help companies fulfill these requirements.

Private data safety can be ensured: To protect sensitive information it is necessary to provide security measures such as financial data, login credentials, personal information that can be protected from unauthorized access, fraud identity stealth, and cybercrime. By utilizing internet security protocols, people and groups can avoid such occurrences.

Enhances User Confidence: Users are more inclined to trust a website and provide sensitive information when they are aware of its security measures, leading to potential return visits. This could assist in creating a favorable image for the website and boosting user interaction.

Sustains Business Operations: Implementing strong web security measures can support continuity.

What are the steps to take to put web security measures in place?

Applying measures to enhance web security and understanding ways to enhance web security is crucial in safeguarding your website and users against threats. Here are a few methods to improve web security:

Here are a few methods to put web security measures into practice:

Utilize HTTPS surely: To provide encryption HTTPS are used to protect communication between a user's browser and web browser. So this type of encryption guarantees the confidentiality of data and unauthorized interception while being transmitted. Dealing with HTTPS is very crucial, specifically at the time of handling sensitive data such as information of credit card or personal details.

Make sure to regularly update your operating system, web server software, and all website applications to guarantee your software is always up to date. Outdated software is vulnerable to being attacked by potential hackers.

Set up Passwords: We can use strong passwords to secure and difficult to guess other ones. Try to avoid same password for multiple accounts. If we forgot password then password manager helps to solve this problem.

Two-Factor Authentication (2FA) Utilization: To provide security of your web site. Users have to provide extra form of authentication, and then code is sent to their phone along with password.

We can back up data regularly to safeguard against security leakages. It is very important to back up your web site data like files, Db's and configurations.

By setting security plugins to your web site it can blocks malware, attempts of hacking, and unauthorized access. Characteristics like enhancing the login page, safeguarding the database, offering firewall functions, and more are commonly

integrated. Adding security plugins can improve a website's security and safeguard sensitive information for website owners.

Web technologies in Database

Database plays a critical role in web app development. It is one of the most important aspects of building an application. You must have a piece of good knowledge of databases before using them in your application. Database design plays a key role in the operation of your website and provides you with information regarding transactions, data integrity, and security issues.

What is a Database?

A database is a collection of information or data that should be organized in a structured manner and stored in a computer device or system. Generally, a database is stored in database management system.

Databases have the potential to vary greatly in size, ranging from millions of records to just a few or even just one record. They could be saved on hard drives or alternative storage devices, or they might only be present in the memory. In the beginning of computing, databases were saved on tape drives or punch cards. Today, they are using hard drives, flash memory cards, and different other forms of media for saving.

Database creation intention is to hold information that information must be structured form and it is easily accessible. A DBMS is utilized for the management and establishment of a database.

Importance of Database in Web Application

Agencies, developers, and designers in web application development utilize databases to store and manage the data required by their applications. Databases have become more important in the development of web applications as time has gone on. As a result, several developers create applications that use databases. You can't fully understand web application development without understanding the role of databases. A database is nothing but an organized collection of data that helps us, whether creating or modifying any program.

Databases play a crucial role in web applications. The online platform communicates with the database to save information and access information stored in it. The database is utilized for storing all the necessary information for the user to keep. If you are creating a shopping cart website, it will have product details, customer details, order details, and more. So, you must save this information in a database.

Advantages are provided by databases in web applications.

Web applications are on the rise in popularity as they enable users to retrieve information simultaneously from various devices. Advantages provided by a web application database include:

Safety and protection:

A web application database includes security measures like encryption and password protection. If a user misplaces or exposes their password, others will not be able to gain entry to the database's stored information.

Ease of access:

Nowadays users have their own devices such as smartphones, tablets, and desktop computers. so they can retrieve their own data through the internet. So it indicates that User data is safe even it is stored on different devices.

Dependability and expansiveness:

Web apps typically have multiple users accessing them at the same time, as opposed to desktop apps which are usually used by one person at a time, requiring web apps to handle more simultaneous requests than desktop apps. Web application databases utilize distributed architecture with multiple servers to rapidly increase capacity during high demand, enabling them to manage numerous simultaneous requests without performance degradation or crashes.

Simplicity of upkeep for IT personnel: Web application databases utilize distributed architecture, enabling rapid isolation and resolution of problems, resulting in decreased downtime for end users and cost savings for IT staff. Additionally, utilizing database automation tools can simplify and enhance the safety of database tasks.

III. APPLICATIONS

Web Applications

There are 9 types of core web applications including static, dynamic, single page apps, and progressive web apps. Every type of web application is designed for various sectors and provides unique advantages, like quicker loading speeds, better user interaction, or heightened security features.

Knowing the different kinds of web applications is crucial for making well-informed choices about which solution suits your project or business – be it a content management system, e-commerce platform, or portal web app.

9 Different Types of Web Applications

Here are 9 types of web applications along with their features and suitable industries. Select the one that suits your business requirements the most from the categories of web applications.

Type	Best For Industries	Benefits
Static Web Apps	Book publishing company	Works really well in offline mode No need to install 3rd party software to access the web app
Dynamic Web Apps	Social media IT Industry Healthcare Retail & E-commerce Transportation & logistics On-demand	Manage the website directly to change and update the information Easy user management to protect your server and manage all the users on the website
Single Page Apps	Email service Communic	Allow s optimized routing and

	ation industry	navigation experience Helps to keep the consistent visual structure of the web application using presentation logic
Multiple Page Apps	Enterprise industries E-commerce industries	Allows optimizing each page for search engines Lets users access different pages with the click of their mouse
Animated Web Apps	Animation Education Game	Hold people's attention for a long time because of its unique design and attractive approach Aspect ratios, portrait, and landscape orientations, as well as different pixel densities and viewing distances, are considered
Content Management System	Blogging Platforms Marketing and Sales Platform News Portals	Organizes the website content easily Offers user and group functionality Get the group and

		user functionalities Easy language integration and support
E-commerce Apps	E-commerce businesses	Allows businesses to sell goods using a single platform Expand your business globally by reaching maximum audience
Portal Web Apps	Student or faculty portal Government portals	All the documents and information is centralized Easily search and authorize the permission according to your preference Manage your courses and other educational materials from your portal account
Progressive Web Apps	On-demand Retail & E-commerce Transportation & logistics Social media Healthcare IT industry	Responsive and allow browser compatibility Easy to work in online and offline mode Update itself without any user interaction

CONCLUSION

The main aim of this paper is to explore the role of Web Technology in Computer science field. Web technology plays a crucial role to develop any web application. An overview is presented especially to project the idea of web technologies in various fields and its applications. Researchers may get some information about web technology their role and its applications in computer science field like cloud computing, data security, databases and can get some ideas related to their field of research.

ACKNOWLEDGMENT

We would like to acknowledge the support provided by Research Gate, UNECA, and York University for their comprehensive documents and lecture notes, which have greatly enhanced our research.

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