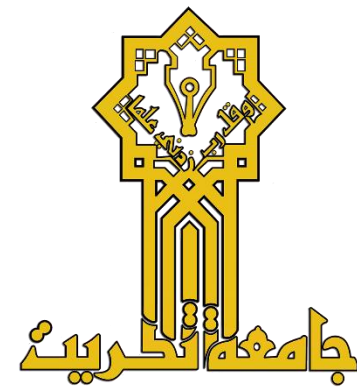




WEB PROGRAMMING



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Lecture - 12

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Static vs Dynamic Website

When embarking on the creation of a new website, one of the initial choices web designers confront is whether to choose for a static or dynamic website.

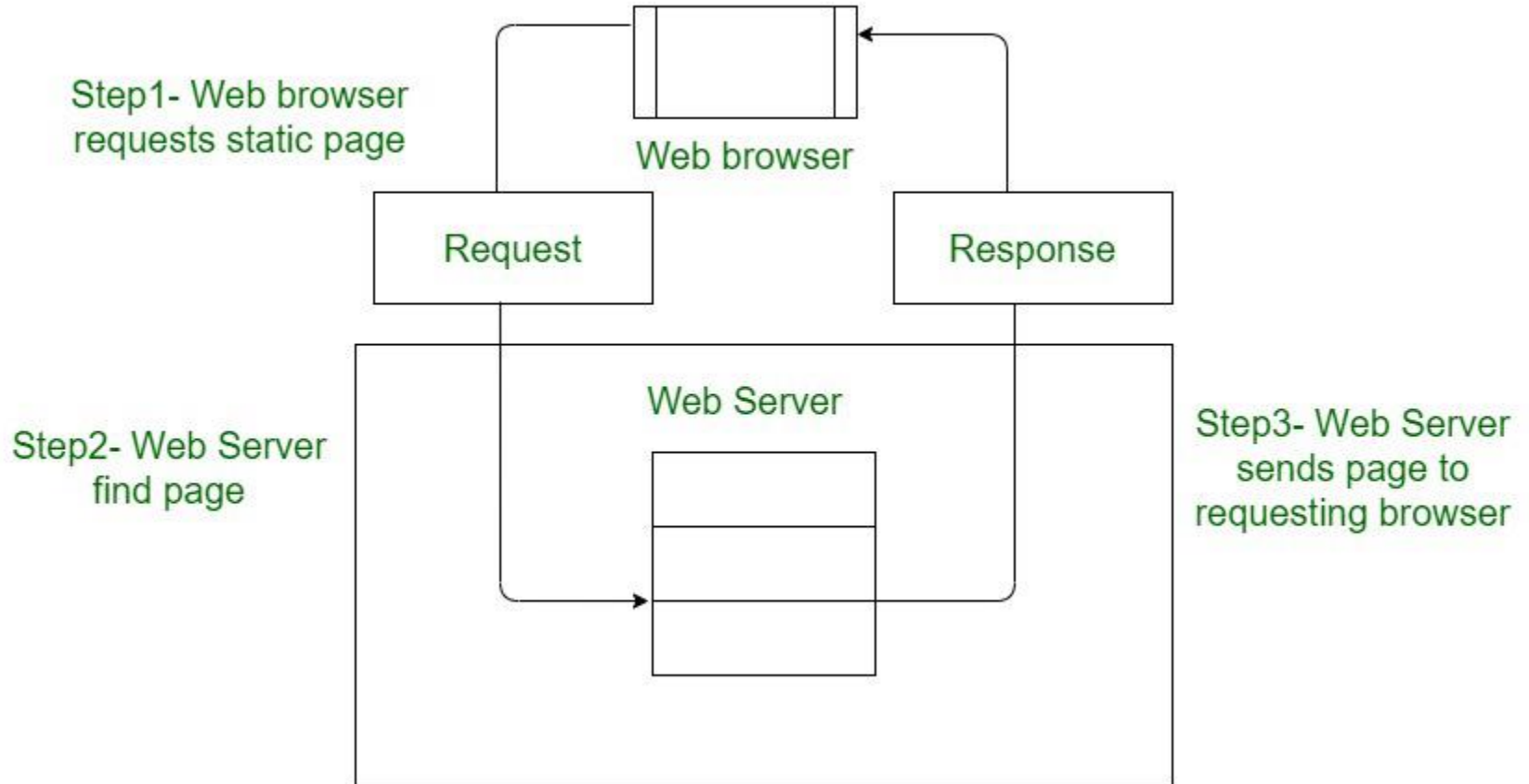
In the realm of web design, static and dynamic websites diverge in their content delivery methods.

The static website is the earliest and the most basic type of website it is the easiest to create since it doesn't require any type of database or custom coding, it displays the same content to every user who visits the site, on the other hand, a dynamic website is more complex and the pages on a dynamic website is retrieved from the database and it is able to display different content using the same source code to every user who visits the site.

What is a static website?

Static websites consist primarily of HTML, CSS, and JavaScript, though not necessarily all three; a static site can function solely on HTML. Despite being termed "static," these websites may encompass basic interactivity, such as interaction with hyperlinks, images, or graphics. The designation "static" arises from the absence of server-side scripting. The HTML, CSS, and JavaScript code remains static, authored manually by a web developer and hosted on the server exactly as received by the user. Any alterations to the site necessitate direct modifications to the source code, involving separate edits to each page.

What is a static website?



Advantages of static websites

Static websites offer several advantages due to their simplicity:

- **Ease of creation:** Building a static website is straightforward as it doesn't involve creating complex logic for content retrieval from a database. With the availability of online website builders, virtually anyone can create a static website without extensive technical expertise.
- **Good performance:** Static websites boast excellent performance because they require minimal backend processing. Since all content is predetermined and served as-is, optimization strategies like caching can be implemented effectively. This ensures swift content delivery without delays, enhancing user experience.

Advantages of static websites

- **Better security:** Static websites generally exhibit a higher level of security compared to dynamic counterparts. Their simplicity means they rely on fewer technical components, reducing the attack surface for potential security threats. Consequently, static websites are less susceptible to security vulnerabilities and breaches.

Disadvantages of static websites

static websites also come with several drawbacks:

- **Time-consuming** content management: Managing content on static websites can be laborious. Content and design are tightly coupled, requiring manual modification of source code for any content updates. Implementing site-wide changes necessitates editing each individual page separately, which can be time-consuming and prone to errors.
- **Poor scalability:** Static websites face challenges in scalability. Adding new pages to the website entails manual creation of each page, resulting in a labor-intensive process, especially as the website expands. Managing a rapidly growing website becomes increasingly difficult, leading to potential inefficiencies and management complexities.

Disadvantages of static websites

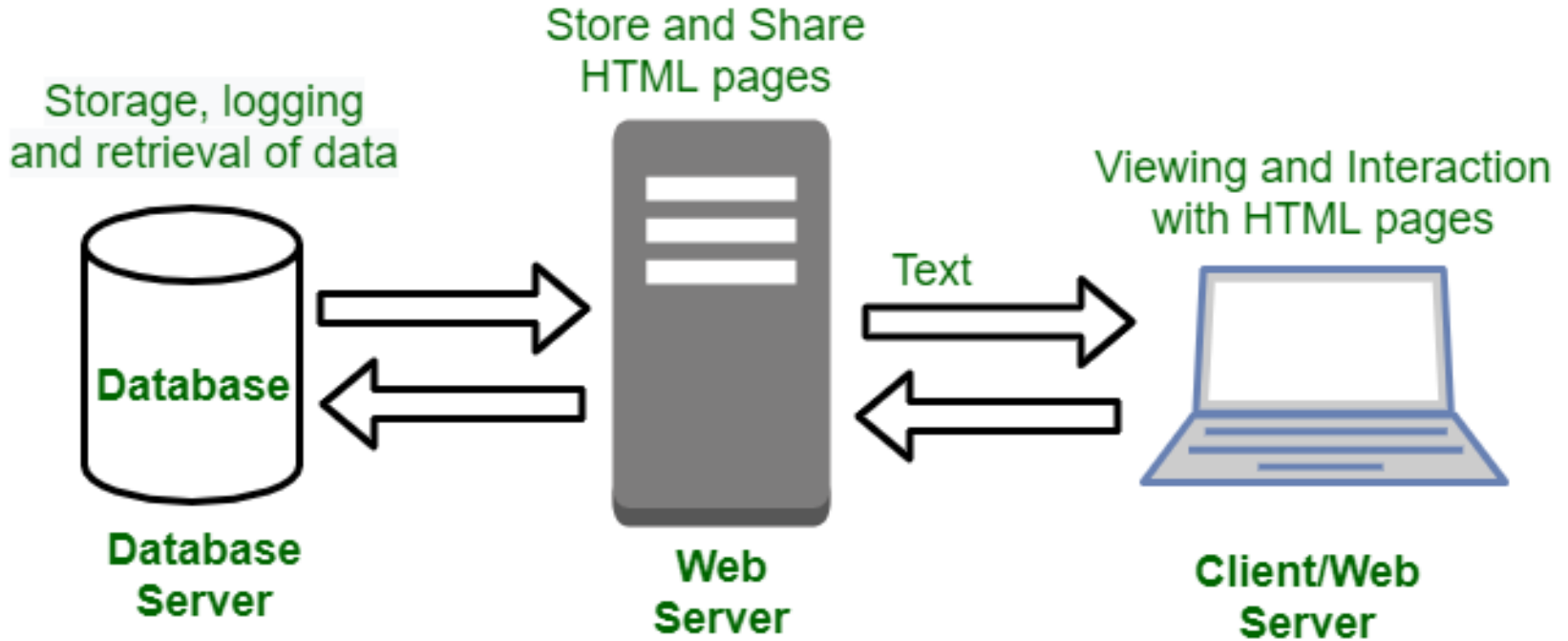
- **Limited personalization:** Static websites offer limited or no capacity for personalized user experiences. Customizing content in real-time based on user behavior is challenging or impossible. Consequently, static websites may not be suitable for dynamic functionalities, such as eCommerce sites, where tailored shopping experiences are essential for customer engagement and conversion.

What is a Dynamic website?

A dynamic website is defined by its fluid content, capable of adapting to various user parameters such as preferences, demographics, location, language settings, and time of day. Unlike static counterparts, dynamic websites constantly evolve their content presentation to suit individual users.

These websites are highly functional and interactive, leveraging scripting languages both on the client-side and server-side to imbue them with dynamic features. This enables real-time customization and interactivity, offering users a more personalized and engaging browsing experience.

What is a Dynamic website?



Advantages of dynamic website

Dynamic websites offer several advantages:

- **Ease of content management:** Managing content on dynamic websites is streamlined and efficient. Changes can be made in one central location and applied uniformly across all pages. For instance, updates to company contact information can be made once and automatically reflected throughout the entire website, ensuring consistency and accuracy.
- **Easy updates to visual design:** Dynamic websites separate content from design, making it simple to implement changes to a page's layout or visual appearance. Utilizing a content management system (CMS) enables easy switching of visual themes, allowing website owners to stay up-to-date with the latest design trends without significant effort.

Advantages of dynamic website

- **Enhanced visitor experience:** Dynamic websites facilitate personalized experiences for visitors through mechanisms such as user location and cookies. By leveraging visitor data, dynamic websites can tailor content and offerings to match individual preferences and demographics. For example, a property booking website can utilize a visitor's location to display relevant listings in their area, enhancing user engagement and satisfaction.

Disadvantages of dynamic website

Dynamic websites come with several disadvantages due to their complexity:

- **More complex web design process:** Creating a dynamic website involves investing time in developing intricate business logic. This includes defining rules for content organization within a database (content structure) and determining how content will be accessed and displayed to visitors. The complexity of this process can require significant planning and technical expertise.

Disadvantages of dynamic website

- **Higher cost of creation:** Dynamic websites typically entail a higher cost of creation compared to static counterparts. This is partly due to their increased hardware requirements, such as database infrastructure, and the need for technical expertise. Building and maintaining dynamic websites often necessitates skilled professionals proficient in content management systems (CMS) or coding, contributing to elevated development costs.

Disadvantages of dynamic website

- **Performance and security concerns:** Dynamic websites are susceptible to various performance and security issues. With more technical components involved, each element presents a potential point of failure or vulnerability. Performance may suffer due to the increased complexity of dynamic content generation, while security risks arise from the additional layers of software and potential vulnerabilities in server-side scripting. Maintaining optimal performance and robust security measures requires ongoing attention and resources.

Static vs Dynamic Website

Aspect	Static Website	Dynamic Website
Content Change	Cannot be changed at runtime	Can be changed
Database Interaction	No interaction with databases	Interaction with databases is possible
Loading Speed	Faster loading times	Slower loading times compared to static websites
Development Costs	Lower development costs	Higher development costs
Content Management	No built-in content management features	Incorporates features of Content Management Systems (CMS)
Development Tools	Primarily utilizes HTML, CSS, and JavaScript	Utilizes server-side languages such as PHP.
Content Consistency	Same content delivered every time the page is loaded	Content may vary each time the page is loaded

More References Used

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THANK YOU