

Comparative Study of Web-Browsers

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Abstract: Internet is the basic need for business, education and for global communication, researchers are continuously enhancing usability and features of web technology, But still certain restrictions and specific applicability are there for the use of internet like web-browsers or www(world wide web) is the only tool, software package design for accessing internet, without web-browser no-body could access internet and their features, every web-browser has their own accessing features and security features. In the propose paper several web-browsers are compared with their significance and applicability.

Introduction:

Internet is the most popular and flexible source for business, education and communication. Almost internet has covered broad areas of human perception, may be because of independence and usability of services available on internet. But for communication on internet certain rules, principles, protocols and design architecture [2] must be followed. Several web-browsers are available for communication and for internet application usage like Google chrome, I.E, Mozilla, Maxthon, OmniWeb, Arora, Chromium, Dooble, Web, Flock, Google Chrome, Midori, Origyn Web Browser, Safari, Shiira, Explorer, Internet, Slim Browser, Opera, Mobile, Netscape, Konqueror, Mozilla[1], Lynx, Mosaic, w3m etc, each having their own platform architecture, security issues, design, pattern, plug-ins supportability, some web browsers are freely available and some requires authentication form O.S. providers. Web browser is a software application made up of

languages, algorithms and with continuously enhancing techniques. Internet is only accessed by web-browser none other applications are there to provide or generate applicability for internet mechanism. Web-browser could works at both the ends, that is, at client end and at server end, which converts information required by network to generalized form, web-browser has its own features, which stores session states[3] by several methods, web-browser have their own accessing intensity for software's and web-sites. The format or specification of web browser is that only www is supported by its design architecture. In the propose work several web-browsers with different [4, 5] dimensions has been presented and compared to provide generalize design patterns.

Related Work:

Internet Explorer

Internet Explorer (IE) is a product from software giant Microsoft. This is the most commonly used browser in the universe. This was introduced in 1995 along with Windows 95 launch and it has passed Netscape popularity in 1998.

Safari

Safari is a web browser developed by Apple Inc. and included in Mac OS X. It was first released as a public beta in January 2003. Safari has very good support for latest technologies like XHTML, CSS2 etc.

Google Chrome

This web browser was developed by Google. Its beta and commercial versions were released in September 2008 for Microsoft Windows. It has soon become the fourth-most widely used web browser with a market share of 1.23%. The browser versions for Mac OS X are under development. The browser options are very similar to that of Safari, the settings locations are similar to Internet Explorer 7, and the window design is based on Windows Vista.

Firefox

Firefox is a new browser derived from Mozilla. It was released in 2004 and has grown to be the second most popular browser on the Internet.

Netscape

Netscape is one of the original Web browsers. This is what Microsoft designed Internet Explorer to compete against. Netscape and IE comprise the major portion of the browser market. Netscape was introduced in 1994

Opera

Opera is smaller and faster than most other browsers, yet it is full- featured. Fast, user-friendly, with keyboard interface, multiple windows zoom functions, and more. Java and non Java-enabled versions available. Ideal for newcomers to the Internet, school children, handicap and as a front-end for CD-Rom and kiosks

Lynx

Lynx is a fully-featured World Wide Web browser for users on UNIX, VMS, and other platforms running cursor-addressable, character-cell terminals or emulators.

Konqueror

Konqueror is an Open Source web browser with HTML 4.01 compliance, supporting Java applets, JavaScript, CSS 1, CSS 2.1, as well as Netscape plug-in. This works as a file manager as well ,It supports basic file management on local UNIX file systems, from simple cut/copy and paste operations to advanced remote and local network file browsing.

Internet Explorer:

Pros:

- Could be easily used
- Freely available
- Supports flexible helping features.
- Have good speed and functionalities or features

Cons:

- Not applicable for every platform.
- Susceptible to web attacks
- Does not supports active controls

Safari:

Pros:

- Provides compatible speed for applications
- Flexible speed and operability
- Have moderate page load time
- Removes unnecessary links

Cons:

- Problems and dependency on built in features
- Difficulties in optimization and in cookies arrangements

Google Chrome:

Pros:

- Built in extra features supportabilities
- Fast speed and page load time easy to use and have comparable security
- Freely available
- Have good searching mechanism

Cons:

- Problems with graphical extensions
- Incompatible behavior with minor sites

Firefox:

Pros:

- Freely available and have good speed
- Supports good optimization
- Good security features.

Cons:

- Takes much portion of system memory for execution

Propose Approach:

In the propose work different web-browsers are compared by several parameters, each web browsers has their own criteria for performance evaluation as shown below in table.

Comparative table for time taken by web-browser performance

Web Browser Time	Internet Explorer 8.0	Firefox 3.5	Safari 4.0	Google Chrome 3.0	Opera 10.0
Java script speed(ms)	5896.8	1197.6	799.3	551.8	4100.2
CPU Usage under stress (%)	11.99	8.01	5.01	2.99	10.03
DOM Selection Speed (ms)	141	69	31	41	31
CSS Rendering Speed (ms)	801	365	123	89	261
Page Load Time (s)	1.601	1.402	1.633	1.535	1.412
Browser Cache Performance (s)	0.934	0.753	0.869	0.699	0.801

Conclusion: The propose paper presented a ideal specification for designing, tested and evaluated browser using different parameters and pattern metrics,each provides clear representation to interrelating techniques and processes.

References:

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[4] [http:// wiki.answers.com /Q/ Different_types_of_web_browsers](http://wiki.answers.com/Q/Different_types_of_web_browsers)

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