

Expanded text

3.4 Browser Compatibility and Webpage Responsibility and Security

Every web page should display appropriately on the most number of the web browser. If you want to be sure of work of your website, you must test how it works on the browsers you want.

So what is a web browser and how it works? A web browser is an application that renders HTML, CSS, and JavaScript files according to a set of rules built into the program. Although web browser manufacturers use the recommended rules of the World Wide Web Consortium's specifications for HTML and CSS, they can interpret these guidelines as required for their own purposes. Browser manufacturers can also add their own principles to the specifications to add some specific features to their applications that are not available in others.



But are web pages required to display in the same way in all browsers? The answer this question depends on you should find a balance between time or budget considerations and technical considerations. You have to determine whether you are able to achieve your goal of making a web page look the same. For example, the earliest browsers, such as Internet Explorer 3 or Netscape 3, don't support cascading style sheets. For these browsers, you couldn't apply the CSS layout techniques you got to know during the previous topic. In the case of time/budget considerations, you should determine whether the solution is worth it because you might find technical solutions to make your pages look the same, but it probably takes you more time than you have assigned to identify and fix the problem.



Before you start testing the browsers, you should check the level of browser use. For example, the level of browser use partially accounts for your decision to support it. For example, you can check that no more than 0.5 per cent of all global browsers is Netscape Navigator 3, so you, in this case, should decide not to spend much time designing for this web browser. This process is called choosing the level of the web browser.

After you selected browser to support, you should view how they work with your web page. But you might not have access to the web browser, which is an often problem during testing for cross-browser compatibility. For example, different Windows operating systems might not allow multiple versions of Internet Explorer to be installed on the same system. A common solution is to have access to the other computer with an appropriate web browser installed. Many web designers invest in an inexpensive computer mainly used for testing. But more efficient and easier to debugging process is to use a software virtualization environment. For example, if you work on MacOS you can install Apple Bootcamp and have virtual Windows OS on it. On the other hand, you are able to use the web browser typical for MacOS or Linux, when you work on Windows OS. You only need to install VirtualBox or VMWare. To better testing process, you should use software such as AdobeBrowserLab or Microsoft SuperPreview. These applications allow you to preview your websites on many different web browsers.



As we mentioned in the first topic, nowadays you should design responsive web pages which are optimized for mobile devices. Until recently, the way a website displayed on a mobile phone's browser was only a marginal concern for most web designers. However,

mobile browsing is growing at an astonishing rate. Some estimates put the growth rate at 25 to 30 per cent each year.

First, you need to consider screen orientation: for computer monitors, the default orientation is horizontal; for mobile phones, it's vertical. Particularly older mobile phones can only display web pages vertically, but newer smartphones can rotate the screen from portrait to landscape orientation.

Second keep on mind, that many mobile devices have limited processing power, memory and speed of internet connection, which may result in incomplete or delayed page rendering. Features such as copy and paste may either be limited or completely missing.

An often problem in web design is the discrepancy between how something should work and how it really works. Different web browsers render the exact same page differently depending on various factors. This is particularly the case with mobile web browsers. A solution to this problem was proposed in 1999 when the original specifications for CSS were developed. Using this solution, the web browser defaults to the screen type when there is no other designation for the kind of style sheet to use. Other media types are available for use: screen, which is the standard for desktop monitors; projection; print; handheld; etc. For example you can use the handheld media type by adding the following link to target handheld devices.

Sometimes you can create an additional style sheet and attach it to your pages so that some handheld devices will use this style sheet properly. But remember that mobile web browsers have not usually done a good job with these style sheets, and sometimes, will ignore or interpret them in various ways. An even greater issue today is that some of the most popular and high-profile mobile web browsers are not recognized as handheld devices at all, so a line of code such as the one shown above would not work.

In some cases, media types don't work. Then you can use media queries in CSS3 to identify devices that are visiting your website. Rather than looking for a device that declares itself as a handheld, a media query analyze the capability of the device and then allows you to send it styles based on certain values. For example, the media query might contain look for the device width and height, the width and height of the web browser window, the device screen orientation (landscape or portrait), and the resolution, among other things. If the user uses a mobile browser that supports media queries, you can create CSS specifically for certain situations, for example, to discover whether the user has a small device such as a smartphone

If you want your webpage to be successful, you have to understand how search engines work. Search engines work better if web page content is organized and well-labeled because it is easier for search engines to evaluate the content and relevance of content on the page. So keep on mind your web page should contain clear and logically named sections, both within the code and also within page content. If you would like to use external links on your website you should enter a full address of the external webpage.

Placing your company on Google Maps is a good idea. You are able to add it at web page available on address <https://www.google.com/business/>. Google Maps provides its own

Application Programming Interface (API) to allow you to place an interesting fragment of the map on your website.

You may find that your business doesn't appear for relevant searches in your area. To maximize how often your customers see your business in local search results, you should remember to enter complete data, verify your location, keep your opening hours accurate, manage and respond to reviews, add photos. The webpage must have prominence. Prominence refers to how well-known a company is. Some places are more visible in the offline world, and search results try to reflect this in local ranking. For example, famous restaurants, landmark museums, or well-known store brands that are familiar to many people are also likely to be visible in local search results. Keep on mind that prominence is also based on information that Google has about a company from across the web (like articles, links and directories). Google review count and score are factored into local search ranking: more opinions and positive ratings will probably improve a business's local ranking. Your position in web results is also a factor, so SEO best practices also apply to local search optimization. There's no way to pay or request for a better local ranking on Google. Due to Google company do their best to keep the details of the search algorithm confidential to make the ranking system is possible fair and justice for everyone.



To track and reports traffic on your website you may use Google Analytics service. Google Analytics offers an easy and free way to track and analyze visitors on your website. You could have thousands or even millions of visitors every month, but those visitors are actually meaningless if you don't know anything about them. With its robust web analytics and reporting tools, Google Analytics allows you to make the most out of visitors and potentially turn them into customers. In addition to tracking the number of visitors, Google Analytics supplies key insights into how your website is performing and what you can do to meet your goals. You can follow everything from how much traffic your website is getting to where that traffic is coming from and how visitors are behaving. You can even control social media activities, track mobile app traffic, identify trends and integrate other data sources to help you make well-informed business decisions.



Contemporary web pages use web cookies. A web cookie is a small piece of data sent from a website and stored on the user's device by the user's web browser while the user is browsing. Cookies were designed to be a reliable mechanism for websites to remember stated information (such as items added in the shopping cart in an online store) or to record the user's browsing activity (including logging in, clicking particular buttons, or recording which pages were visited in the past). They can also be used to remember arbitrary pieces of information that the user previously fill into form fields such as names, addresses, email, passwords, and credit card numbers. Cookies are a limited technology and not particularly easy for designers to use.



Additionally, with the usage of the cookies related are law limitations. Although cookies are mentioned only once in the EU General Data Protection Regulation (GDPR), the repercussions are significant for any organization that uses them to track users' browsing activity. The GDPR states: "Natural persons may be associated with online identifiers [...] such as internet protocol addresses, cookie identifiers or other identifiers [...]. This may leave traces which, in particular when combined with unique identifiers and other information received by the servers, may be used to create profiles of the natural persons and identify them." In short: when cookies can identify an individual via their device, it is considered personal data. This supports Recital 26, which says that any data that can be used to identify an individual either directly or indirectly (whether on its own or in conjunction with other information) is personal data.

But not all cookies are used in a way that could identify users, but the majority are and will be subject to the GDPR. This includes cookies for advertising, analytics and functional services, such as survey and chat tools.

To be in harmony with EU law, organizations will need to either stop collecting the offending cookies or find a lawful ground to collect and process that data. Most organizations rely on consent (either implied or opt-out), but the GDPR's strengthened requirements mean it will be much harder to obtain legal consent.

Implied consent is no longer good enough. Consent must be given through a clear affirmative action, such as clicking an opt-in box or selecting settings or preferences on a settings menu. Simply visiting a site doesn't count as consent also. 'By using this site, you accept cookies' messages are also not sufficient for the same reasons. If there is no genuine and free choice, then there is no valid consent. You must make it possible to both accept and/or reject cookies.

Sites will need to provide an opt-out option. Even after getting valid consent, sites must give people the choice to change their mind. If you ask for consent through opt-in boxes in a settings menu, users must always can to return to that menu to adjust their preferences.

In January 2017, the European Commission proposed a new ePR (Regulation on Privacy and Electronic Communications) as part of its digital single market strategy. The ePR has the same territorial scope as the EU's GDPR (General Data Protection Regulation), carries an identical penalty regime for non-compliance and was also intended to come into effect on 25 May 2018. However, there have been delays and it is likely to come into force in 2019. As this Regulation is still in draft form, there are no products or services for it yet.