DQ2: Enhancement

Top of Form

Discuss critically the concept of progressive enhancement in Web development. Provide examples and demonstrate their practical relevance.

1. Introduction
   1. Progressive enhancement
      1. Wikipedia
         1. Progressive enhancement is a strategy for web design that emphasizes accessibility, semantic HTML markup, and external stylesheet and scripting technologies. Progressive enhancement uses web technologies in a layered fashion that allows everyone to access the basic content and functionality of a web page, using any browser or Internet connection, while also providing an enhanced version of the page to those with more advanced browser software or greater bandwidth.Bottom of Form
      2. Dwyer, 2009
         1. Progressive Enhancement is a powerful methodology that allows Web developers to concentrate on building the best possible websites while balancing the issues inherent in those websites being accessed by multiple unknown user-agents. Progressive Enhancement (PE) is the principle of starting with a rock-solid foundation and then adding enhancements to it if you know certain visiting user-agents can handle the improved experience.
      3. Wells, 2007
         1. Progressive Enhancement is a modern approach for developing web documents that are accessible across any browser or device that has access to the Internet. Based on the idea of separating a document’s content, presentation, and behaviour, progressive enhancement embraces accessibility, semantics, forward- compatibility and usability.
      4. Desruelle, H., Blomme, D. & Gielen, F. 2011
         1. Progressive enhancement (PE), on the other hand, reverses the graceful degradation approach and aims at maximizing accessibility over browsers with different capabilities [13]. Progressive enhancement tries to achieve this goal by forcing developers to take the less capable devices into account from the very start of the development process. First, a basic markup document is created, providing an optimal experience for devices with the lowest common denominator (LCD) of available capabilities. Incrementally and unobtrusively, one or more layers of structural, presentational, and behavioral enhancements are added in function of the browser’s specific capabilities.
      5. Youtube
         1. As the web has evolved over the years, browsers have come and gone. New technologies have emerged to enhance user experience and a multitude of devices have gained the ability to connect to online content. As you can imagine, this amount of change over a relatively short period of time has made the web a volatile place for web designers.
         2. Sites designed for specific browsers would often fail or degrade poorly in older browsers or even not work at all depending on the device. Now this frustrating design experience and the continually changing nature of the web led designers and browser developers to push for stricter web standards and to create strategies for making content as accessible as possible.
         3. At first designers went with a strategy called graceful degradation. Graceful degradation is the practice of designing for the most current browsers capabilities, but ensuring that the site will have the best experience possible for older browsers by using filters or hacks to deal with their inconsistencies and support. While this approach does embrace the model of separating style from structure and content, it doesn’t adequately deal with the ever-changing number of additional user agents that are consuming content, and it is focused too heavily on specific browser differences.
         4. Progressive enhancement, on the other hand, turns focus away from the browser, and puts it squarely back on the content itself. Put simply, progressive enhancement says that at the heart of your design should be solid, well-formed content accessible to anyone. Past that, all enhancement, CSS for presentations, javascript for functionality, and other content such as flash, video, and other interactive plugins should be introduced as external assets in a series of enhancements that allow for the fact that not all user-agents will be able to support or even see those features. This approach makes it easier to provide content for multiple users and content. Ensuring that the content within valid HTML markup means that any device able to access web content will be able to read and consume your online content. Your site becomes automatically accessible to mobile devices, screen readers, and search-engine bots. Other devices that support such technologies as javascript and flash will offer a richer user experience, and one that probably better reflects your design perspective, but they don’t get in the way or obstruct your content at all.
2. Layer 1
   1. Dwyer, S. (2009)
      1. The first layer is clean, semantic HTML. This allows text-based, speech-based, antiquated and robotic user-agents to navigate the content of your website properly.
   2. Boudreaux, R. (2012)
      1. the center is the content layer of rich semantic markup;
      2. Semantic HTML markup ensures that tags are applied to convey meaning and content structure, which ties into the evolving HTML5 standards for web design. Examples of good semantic markup incorporate HTML5's list of new elements and attributes such as <nav>, <footer>, <article>, and <aside>, which replace the common generic block <div> and inline <span>, or the new <audio> and <video>, which replace the generic <object>.
3. Layer 2
   1. Dwyer, 2009
      1. The second layer is CSS. This allows visual-based user-agents to display or alter the visual representation of your website’s content.
   2. Boudreaux, R. (2012)
      1. presentation layer, which is the CSS and styling
      2. Along with the semantic markup found in HTML5, the evolving CSS3 standards mesh well together, and allows your web design to jump off the screen with colors, images, backgrounds, gradients, shadowing, text effects, and more. Any why just stick to one stylesheet? In many web site implementations it becomes necessary to utilize several which help to separate specific styles such as type, color, and layout, or define distinct media types such as screen, print, or mobile.
4. Layer 3
   1. Dwyer, 2009
      1. The third layer is JavaScript. This allows user-agents that are capable of using it to provide your users with enhanced usability.
   2. Boudreaux, R. (2012)
      1. client-side scripting layer, otherwise known as JavaScript or jQuery.
      2. The last layer ties it all together with unobtrusive JavaScript or jQuery, delivering beneficial performance to your web design. Incorporating modest scripts improves robust features while maintaining them as a separate module. It should also allow all content to be available without all or any of the scripts running successfully; it should not reduce the accessibility of the content, but should augment and enrich the availability of the content for all users.
5. Youtube example:
   1. If we remove the JavaScript and CSS, we can see that the HTML page consists of a series of tables, featuring their products and information. While this isn’t particularly attractive or easy to use, it does allow the content to be accessed and viewed by everyone. The CSS is added through an external link with a media attribute that limits its use to devices that support the screen media type. The CSS itself by written to give consistent styling across multiple browsers and alternate stylesheets may be passed through conditional statements to older browsers.
   2. The JavaScript is added in an unobtrusive way is just another way of saying that the scripting is all done in the external document, and not added to the html directly.
   3. The flash is also controlled through JavaScript, which checks the browsers for the necessary flash plugins, and the displays the content when appropriate.
   4. The basic structure is pretty straightforward. Start with basic, well-structured html content, add styling through CSS, and then add any additional functionality or interactivity through unobtrusive JavaScript.
6. Practical relevance
7. Conclusion
   1. Youtube
      1. Working this way naturally creates sites that are widely accessible, have a high degree of search engine optimization, and offer the best distribution of content among multiple devices.
   2. Boudreaux, R. (2012)
      1. While progressive enhancement has its critics, as a web design approach and as a business model blueprint for design houses it makes the case of addressing the growing need to build websites which are accessible to all gadgets, especially with the explosion of Internet enabled mobile devices.

References:

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