



Personal Project Statement

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 Product: www.WebDevTutorials.net

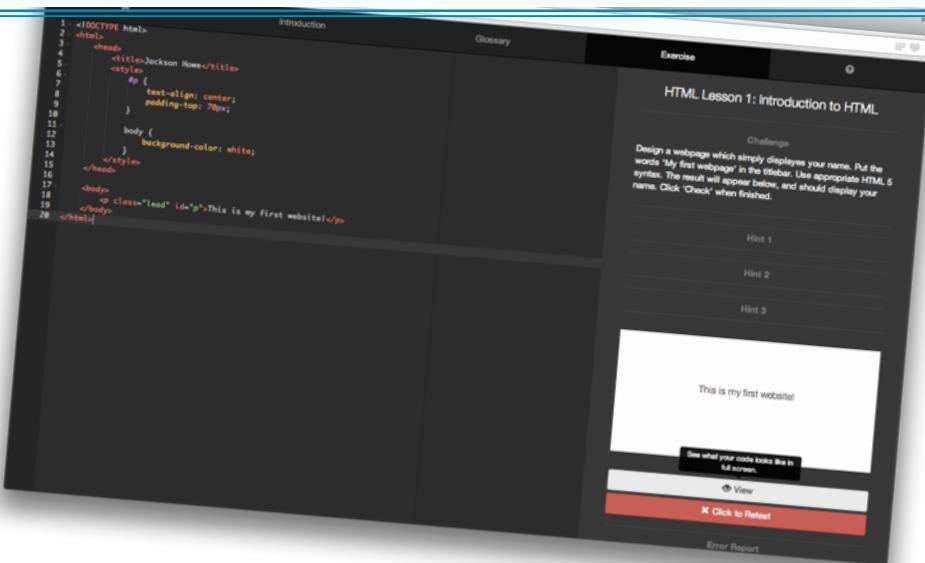


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The Goal

Several years ago, I discovered the joy in building a website using Google Sites, an online publishing tool. I was elated to learn that through a language called HTML, I could create my own websites from scratch, liberated from the chains holding me back when using Google Sites. I also came to know that the internet can be a very powerful tool, both for good and for evil. For example, foundations such as Coursera are using the internet as a platform for continuing education for people in developing countries. Everyday people can use the internet to look up information about a particular business, research and explore new ideas, or communicate with friends across the globe. These concepts kindled a fire inside me, and as I assimilated knowledge and skill in web technologies such as HTML, CSS, PHP, and Javascript, the desire to share the joy and power found in the internet has inspired me since the very beginning of the personal project. I wanted to help other students like me learn to make websites to spread information and innovate the future.

Because I taught myself everything about web development, I know how to seek and apply information in a very personal way. But to teach *other people* about web development, I would first have to learn how to express myself in a way in which other people can understand. Therefore, my area of interaction focus for this project is the approaches to learning (ATL). By focusing on the ATLs, I could effectively convey the knowledge and experience which I have to other people in a manner suited to their individual learning style. I also wanted to increase my own ability in interpersonal communication and teaching style, both of which could be achieved through focusing on the ATLs.

My goal for this project is to create a website, from scratch, which would teach students (aged 10 and up) to program in HTML and PHP, the two main languages of the web. This would enable them to create websites of their own. My website would need to contain a collection of interactive tutorials—a mixture of videos, glossaries, tasks, and programming exercises—designed to teach people how to program. The question which I designed to guide me through the project was: “Through what learning approaches and online systems can a student (age 10 and above) become proficient at programming in HTML and PHP?”

I designed the following specifications to test the website at the end of the project:

PRODUCT SPECIFICATIONS

- A. The website should teach people HTML and PHP to the level expected at the end of each unit demonstrated by the site's internal records.
- B. The product must be suited for ages 10+.
- C. It must be suitable for different types of learners.
- D. The product must be presented as a website in a professional manner.
- E. The product must contain at least 5 lessons (containing a variety of supports such as videos, glossaries, tasks, and programming exercises).

Selection of Sources

Even though I have experience in web development technologies, I definitely wanted to ensure that my knowledge in these areas was adequate to appropriately present my knowledge in a professional manner. I also needed to research how different people learn so that my website is accessible by all types of learners. I then decided to use a combination of different sources to guarantee the authenticity of the information presented.

Personal Interviews

To further my knowledge in how people learn, I consulted with Karina Hockley, a learning support specialist at the International School of Geneva. Over 3 sessions, we explored the different learning styles (Hockley, 18 Oct 2013, 24 Oct 2013), what activities are best suited to each learning style, and how long people can focus for (Hockley, 31 Oct 2013). I found this source extremely reliable.¹ The information was presented first-hand by a trusted professional. I was provided with high quality information which contained the correct amount of information to assist me in my project. Any questions I had about the information could be addressed immediately.

Official Online Documentations

For certain aspects of my website, namely security and video hosting, I consulted the official online documentation for the feature. For example, I used a service known as *Recaptcha* (ReCAPTCHA, 2013), which forces users to verify that they are human before signing up for my website by typing some obscured characters in an image. In the *Recaptcha* documentation (Google Developers, 2013) the developers explain exactly how and why to implement it. I also referenced the PHP documentation (PHP, 2013), a very detailed collection of information explaining exactly how to call certain functions or execute scripts.² Sources like these are also highly reliable³ as they originate from the people who made the languages, are edited and proofread by hundreds of reputable people, and are organized in a highly professional way. Because they are internet sources, the documentations are easy to update and contain the most up-to-date information.

¹ See Appendix A, Figure G, Source 1 to see the reliability score of this source.

² See Appendix A, Figure A for an example function from the PHP documentation.

³ See Appendix A, Figure G, Sources 2-3 to see the reliability score of these sources.

Modern Programming Books

To learn about template systems in PHP, I obtained a book called *PHP, MySQL, JavaScript & HTML5 All-in-one for Dummies* (Suehring, Valade, 2013)⁴. Using this resource, I was able to create a class which would later prove to save hours of work. This book was written by 2 highly knowledgeable people who have each written countless other technical books. This book was published in 2013, making it a modern book which is consistent with the programming methods today. The book contains an appropriate amount of information presented in both textual and pictorial formats.

Practical Trials of New Concepts

There were some concepts that were very new to me when considering my project. For example, I had never put a video onto a website, nor had I ever implemented a form in which the user types HTML and is output as a website. To develop my skills in these areas, I created some small-scale test pages to see what works best.⁵ These pages were all created and tested first-hand, making them dependable sources.

Discarded Unreliable Sources

Because my product was designed to teach other people, it was very important to ensure that I was teaching reliable information. During my research, I came across several unreliable sources which I had to discard. For example, I found several programming forums online whose contents may have been outdated, not applicable, or even incorrect. There was no way to verify the author of a post and I could not cross-reference the source⁶.

⁴ See Appendix A, Figure G, Source 4 to see the reliability score of this source.

⁵ See Appendix A, Figure B for an example test-page which I created to test a security feature.

⁶ See Appendix A, Figure G, Source 7 to see the reliability score of this eliminated source.

Application of Information

At the conclusion of my research, I began planning and creating my actual product. I used the new information from my research in several ways to further improve my product. Here are a few examples:

Making a Tutorial Accessible to All

One of the most important decisions I had to make was how to actually present the tutorials. I knew that I had to make the tutorials accessible to every type of learner, and reflecting on my discussions with Mrs. Hockley, I knew that this is only possible by teaching in different styles. Through my interviews with her, I learned that the 3 main types of learners are *visual learners*, *auditory learners*, and *kinesthetic learners*. Visual learners like to have organized, structured, and color-coded information. They also like diagrams and pictures. Auditory learners learn best by listening to lectures, watching videos, or discussing concepts with other people. Kinesthetic learners like hands-on, interactive activities. They learn best through experimenting and applying information (Hockley, 18 Oct 2013, 24 Oct 2013). I also learned that the maximum time for one tutorial should be no more than 30 minutes (Hockley, 31 Oct 2013). This applies generally to all age groups and represents the optimal time during which the brain can focus on one task.

Using all of this information, I created a plan for a 3-part tutorial system.⁷ When users first load a tutorial, they are presented with a video. This video introduces the lesson and combines the spoken word with code examples and diagrams pictured on screen. This activity is suited to visual and auditory learners. After the video, users may opt to answer 3 questions to ensure that they have understood the material. This review applies to all learning types, as it is a quick check to make sure that they understand, however it is especially suited to kinesthetic learners. The second section contains a written explanation and glossary, primarily intended for the benefit of visual learners. This page re-iterates in writing what was covered in the video, and provides an opportunity to print any key syntax or code words. The final part of the tutorial is called the exercise. In this stage, users are presented with a programming challenge in which they type their code answer directly into an editor on the site. The editor color-codes and numbers lines of syntax. Upon completion of the challenge, users can view the webpage that they have produced and check that their code is correct. Users have the opportunity to rectify any errors,

⁷ See Appendix A, Figure C to see this 3-part tutorial system as implemented on WebDevTutorials.

reported and explained by the checker. There are also three hints available during the exercise which users may view if needed; this allows differentiation. The final part of the tutorial system is designed specifically for kinesthetic users, as they can use their knowledge to construct something useable. This integration of activities should create an experience that everyone can connect to.

Securing My Website from Hackers

It would be a shame if a hacker decided to crash my finished website. One of the many weapons in a hackers arsenal is called a distributed denial of service attack. This means that the hacker creates bots, or programs, that pretend to be a person and sign up for a website millions of times. This rapid influx of users would crash the database storing the real user accounts. Preventing a DDoS attack is a simple concept: prevent bots from creating accounts. I would need to learn how to distinguish a bot from a human. Many professional websites do this by asking users to enter some letters from a word box. Bots can't read these word boxes, but humans can. I researched this and found the official Google documentation for implementing a *Captcha* (one of these obscured word systems). Google provided an explanation of why to use *Captcha*, how to use it, and even listed the code needed for its implementation. In less than 5 minutes, I had the service setup and preventing DDoS attacks.

Preventing Repetitive Code

When programming, you definitely don't want to write the same lines of code over and over again. Not only does doing this make the code more susceptible to bugs, its also harder to read later and is very time consuming to do. Because I was planning on writing several tutorials, each of which has a similar structure and layout, it was imperative to have a system which generically creates the layout of the tutorial (such as the navigation bar and fonts) and then inserts the tutorial-specific details (such as the title, video link, explanation, etc) without re-writing the generic data for every tutorial. This is a programming principle known as *data abstraction*. In my research, I read about a concept in PHP by which developers can do this: I have 3 main HTML files which represent the generic layout of the tutorial (3 sections as described above). These files tell the browser about the structure, color, position, font, size, and buttons. Then, for every tutorial that I make, a new file with some variables is added. The variables represent the actual name of the tutorial, the specific video, the words to use in the glossary, and the challenge for the exercise. When the user requests a specific tutorial, the generic files and the tutorial file are

sent to the user, combined into one webpage, and shown on the screen. Learning how to do this saved countless hours of writing repetitive information and makes it more efficient to change generic aspects of the tutorials.

Achieving the Goal

Before I began work on my website, I developed 5 specifications to assess it's quality upon completion (see *The Goal*). I then created www.webdevtutorials.net, an interactive learning website for students, and released it a few days later. Specifications A through E were used to evaluate the quality of the product. See appendix A, figure D for the specification assessment. It was concluded that my product met all of it's specifications on 11 February 2014.

Reflection on Learning

Throughout the entire duration personal project, I have extended my knowledge and developed as a learner in many different ways. Of course, by making a website, I developed my technical skills in web technologies. I also learned a lot through exploring how other people learn. I knew very little about learning styles before this project. Finally, I developed as a learner simply by nature of undertaking such a large-scale project.

Extension of Technical Knowledge

By nature of the ever-changing process, creating this website taught me technical knowledge in areas that I had never before explored. For example, I had to learn about how to make an authentication system to log users in. None of my previous websites required having this feature. I also learned about new security techniques such as the captcha to prevent a DDoS attack. This was another new challenge which I needed to research a solution to, develop, and implement for the first time. Throughout the course of the project, I constantly considered my design choices and accessibility guidelines⁸ for every page and feature on the site. I needed to ensure that the format of the site would be accessible and professional. While actually writing code, questions concerning syntax or procedure would arise. I was able to address most of these using research that I had gathered, or by visiting the official HTML / PHP documentation.

I also developed my problem-solving skills during the personal project. Some of the more complicated algorithms which I needed to write were particularly challenging problems. One example of a situation in which I needed to develop an efficient solution manifested itself when creating the exercise pages. At the end of any HTML tutorial, the user can type HTML code into their browser and see the webpage which they are creating appear live before their eyes. My original plan was to read and render the code that the user had input *after every single change to the input field*. This solution worked until I tested it on a less-powerful browser. I realized that on some computers, this solution would not work because the computer was too slow to process the vast amounts of input *on every change*. This presented a problem, however there were multiple ways which I could have gone about solving it. To better process my thoughts, I created a list of the possible solutions, analyzed the individual pros and cons of each possible solution, and eventually made a

⁸ A set of guidelines set by the W3C which govern the way websites should function.

decision. In the end, I created an algorithm which either reloads the data once per second or only reloads the changes based off of a number of factors including computer speed and length of input code.

Extension of Knowledge of the Approaches to Learning

Before I began my research, I had no idea what a learning style was, nor did I think that different people learned in different ways. What I did know is that some people had a unique ability of being able to teach me in a very applicable way, and I wanted to be able to teach others so powerfully. After a series of interviews with Mrs. Karina Hockley of the learning support department, I was able to identify and explain the main types of learners, the most effective ways to teach those learning styles, and learned more about memory recall. I also learned that a teacher teaches in the style in which they learn themselves. For example, a visual learner most effectively teaches other visual students. This was the key that I was looking for. To be able to convey my knowledge about web development, I would have to learn to accept the other learning styles. With this knowledge, I was able to design and construct my website teaching model. I will also be able to use this knowledge to aid my own learning in the future. By developing myself as a learner in the different categories, I can increase my own learning efficiency.

Development as Learner

My knowledge and abilities as a learner myself increased throughout the course of the personal project in three core areas: managing a large-scale project, organization of information, and evaluation of sources.

The personal project was the largest school project that I have ever undertaken. It began with research and planning, led to creating a website and 13 tutorials, and ended with this reflection. Over the course of the project, I improved my time management skills. I learned to set myself goals and deadlines and then make plans to accomplish them. I also learned that it is important to consider the long-term in a project like this. Making a bad decision early on can lead to undesired consequences later. Finally, I learned the value of communication. Sharing ideas with other people and getting feedback is essential to ensure that the project is understandable by other people.

WebDevTutorials was also the largest website that I had ever created.⁹ A website of this size requires a sophisticated file system to prevent any files from becoming lost. In previous websites, I kept most of the files in one large folder and recall experiencing anger and frustration sorting through them at a later date. Before I began work on WebDevTutorials, I planned a filesystem which later allowed me to rapidly find and use certain files.

Finally, I learned how to better evaluate research sources. I learned that it is often best to spend more time finding a reliable source at the beginning of a project than sorting and discarding many unreliable sources later. There are many useful sources besides the internet. The interviews which I had taught me much about learning styles, and the books that I used taught me how to create a PHP class. Of course, the internet is also a valuable asset, however I always need to consider the author, origin, objectivity, quality, and quantity of the source which I wish to use. I learned that following these steps will safeguard me against incorrect information and prevent my spending too much time looking for information in one source.

My personal area of interaction goal for this project was to focus on the approaches to learning. I researched about how different people learned, designed a website model which would suit all of those learning styles, and created my website in accordance with the design. Given more time to work on this project, I would have liked to create a system which understands how different users learn and presents them with the most appropriate content. I would also have liked to expand the base of tutorials which I already have to increase the users web development capabilities. However, reflecting on the process as a whole, I think my personal project was a success and I significantly developed as a learner myself.

⁹ WebDevTutorials is made up of 274 HTML, CSS, Javascript, PHP, image, video, and font files.

Works Cited

Interviews

Hockley, Karina. "How Do People Learn?" Personal interview. 18 Oct. 2013.¹⁰

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Suehring, Steve, and Janet Valade. PHP, MySQL, JavaScript & HTML5 All-in-one for Dummies. Hoboken, NJ: John Wiley & Sons, 2013. Print.¹⁶

¹⁰ See Appendix A, Figure G, Source 1 to see the reliability score of this source.

¹¹ See Appendix A, Figure G, Source 3 to see the reliability score of this source.

¹² See Appendix A, Figure G, Source 3 to see the reliability score of this source.

¹³ See Appendix A, Figure G, Source 2 to see the reliability score of this source.

¹⁴ See Appendix A, Figure G, Source 5 to see the reliability score of this source.

¹⁵ See Appendix A, Figure G, Source 6 to see the reliability score of this source.

¹⁶ See Appendix A, Figure G, Source 4 to see the reliability score of this source.

Appendices

Appendix A: Reference Figures

The screenshot shows the PHP documentation for the `header()` function. The left sidebar lists various network functions, and the main content area is titled "header". It includes a description of the function, its usage, parameters, and examples. The code example shows a script that outputs an HTTP header before any other content.

```
void header ( string $string [, bool $replace = true [, int $http_response_code ]] )
```

`header()` is used to send a raw HTTP header. See the » [HTTP/1.1 specification](#) for more information on HTTP headers. Remember that `header()` must be called before any actual output is sent, either by normal HTML tags, blank lines in a file, or from PHP. It is a very common error to read code with `include`, or `require`, functions, or another file access function, and have spaces or empty lines that are output before `header()` is called. The same problem exists when using a single PHP/HTML file.

```
<html>
<?php
/* This will give an error. Note the output
 * above, which is before the header() call */
header('Location: http://www.example.com/');
exit;
?>
```

Parameters

string
The header string.
There are two special-case header calls. The first is a header that starts with the string "HTTP/ " (case is not

Figure A: Example function from PHP documentation

The screenshot shows a browser window with a CAPTCHA challenge. The page contains a form with a text input field for the CAPTCHA text and a "Submit" button. Below the browser window is the source code for the page, which includes a script to handle the CAPTCHA submission.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Test Page - Captcha client</title>
    <link href="assets/bootstrap/bootstrap.min.css" rel="stylesheet">
    <script src="assets/bootstrap/jquery.js"></script>
  </head>
  <body>
    <script type="text/javascript">
      var RecaptchaOptions = {
        theme : 'white' //red, white, blackglass, clean
      };
    </script>
    <div class="container">
      <br/><br/>
      <div class="col-lg-6 col-lg-offset-3">
        <form class="form-signin" action="assets/captcha.resp.php" method="post">
          <div class="form-group">
            <script type="text/javascript">
              document.getElementById('recaptcha').src = 'http://www.google.com/recaptcha/api/challenge?k=6Le-xeg5AAAAAHlwmc3bvP2UyMetUd_uUICwtr';
            </script>
          <noscript>
            <iframe src="http://www.google.com/recaptcha/api/recaptcha/?k=6Le-xeg5AAAAAHlwmc3bvP2UyMetUd_uUICwtr" height="300" width="500" frameborder="0"></iframe>
            <textarea name="recaptcha_challenge_field" rows="3" cols="40"></textarea>
            <input type="hidden" name="recaptcha_response_field" value="manual_challenge"/>
          </noscript>
          <div class="form-group">
            <button type="submit" class="btn">Submit</button>
          </div>
        </form>
      </div>
    </div>
  </body>
</html>
```

Figure B: A simple test-page (with it's associated code below) which I created to investigate a security feature known as Captcha

The figure consists of three vertically stacked screenshots of a web-based HTML tutorial.

- Top Screenshot:** A video player interface. The title bar says "WebDevTutorials - HTML Lesson 1". The main content area displays the title "WebDevTutorials" in large black font, followed by "HTML Lesson 1: Introduction to HTML" and the website "www.WebDevTutorials.net". Below the title is a video frame showing a slide with text and a progress bar at 0:00 / 5:06.
- Middle Screenshot:** A question and answer interface. The question is "What language do web browsers read to format a web page?". Three options are listed: "Javascript" (radio button), "HTML" (radio button, selected), and "Chinese" (radio button). A "Check" button is present. Below the question is a snippet of HTML code:


```
<!DOCTYPE html>
<html>
  <head>
    <title>Hello world</title>
  </head>

  <body>
    <p>Hello world</p>
  </body>
</html>
```

 A callout box points to the first line "<!DOCTYPE html>" with the text: "This is always the first line of every HTML file. It tells the browser what version of HTML we are going to use." Another callout points to the closing tag "</html>" with the text: "This tag surrounds an html head and body. The closing </html> tag is the last line in a file." A third callout points to the title tag "<title>Hello world</title>" with the text: "The head of an HTML file contains metadata to make the site function. The head can include a title, links to CSS files, and information about the site." A fourth callout points to the paragraph tag "<p>Hello world</p>" with the text: "The body tag surrounds everything that makes up the content of a page." A fifth callout points to the link tag "Google" with the text: "The a tag creates a link which points to the link in the href attribute."
- Bottom Screenshot:** A challenge section titled "HTML Lesson 1: Introduction to HTML". It includes a "Challenge" section with instructions: "Design a webpage which simply displays your name. Put the words 'My first webpage' in the titlebar. Use appropriate HTML 5 syntax. The result will appear below, and should display your name. Click 'Check' when finished." Below this are three "Hint" buttons labeled "Hint 1", "Hint 2", and "Hint 3". To the right is a preview window showing a white page with the text "This is my first website!". At the bottom are buttons for "View", "Click to Revert", and "Error Report".

Figure C: HTML tutorial #1 as seen on my website. Note the 3-part system

Figure D: Achieving the Goal

Specification	Explanation
A: The website should teach people HTML and PHP to the level expected at the end of each unit demonstrated by the site's internal records.	<p>This specification establishes a purpose for the website. At the end of each tutorial, users are presented with a programming challenge. This challenge tests what was learnt throughout the tutorial. Completing the challenge successfully demonstrates the knowledge and ability to use HTML and / or PHP to a level expected at the appropriate phase in time. The exercise is automatically graded by a parser which will ensure that the code functions as described in the challenge. It is marked as pass or fail. The grade is recorded in a secure database. To test this specification, I will note the ratio of passed exercises to attempted exercises for active users.</p>
	<p>8 users are considered active, as they attempted the first exercise. Of these 8 users, 35 exercises were begun, 32 of which were completed. This represents a 91% success rate.</p>
B: The product must be suited for ages 10+.	<p>This specification sets a target market for the website. While I personally believe that anyone with the ability to use a computer can learn by using webdevtutorials, I also tested the product with a range of users starting at age 10. To test whether the product is 'suited' for the individual, I recorded whether the individual successfully completed an exercise at the end of the tutorial.</p>
	<p>The first test subject is a 10 year old cousin of mine. He is very technologically inclined, but he has never programmed before. After showing him my website, he willingly and wholeheartedly completed 11 tutorials, finishing the exercises on 10 of them. He later commented, "I like your website. It's so cool!"</p>
	<p>The second user, a 12 year old girl, comes from a family where the use of internet is very limited. Nevertheless, she was able to use the website without any issues and completed both of the tutorials that she attempted.</p>
	<p>The third and fourth users are 16 year old students at the International School of Geneva. The third started and finished 2 tutorials, and the fourth started and finished all but one. He later went on to create a real website.</p>
	<p>The final subject, aged 39, finished both tutorials attempted.</p> <p>This range of users, all of which finished at least 2 tutorials, proves that the product is accessible by all users aged 10 and up.</p>

Specification	Explanation
C: It must be suitable for different types of learners.	<p>Not only is this specification important as an indicator of how well my site teaches people, it also demonstrates the fulfillment of my ATL goal. To evaluate this specification, I asked the users who had successfully completed a minimum of 2 tutorials to determine their learning style using a questionnaire about various learning preferences.</p> <p>The results were split evenly among the 3 recognized learning styles. 29% reported that they were visual learners, 29% auditory, and 42% kinesthetic. This represents that any of the learning styles can learn from, and successfully complete exercises on my website.</p>
D: The product must be presented as a website in a professional manner.	<p>This specification sets an aesthetic goal for the website. While the first part of this specification is manifestly fulfilled, I needed to evaluate whether it truly was presented in a professional manner. To do this, I evaluated the site against a checklist developed by a 3rd party in accordance with the W3C Standards for Website Design.</p> <p>I found that my website was in accordance with 21 of the 24 applicable guidelines. See appendix A, figure E to see the associated comments and justification. This represents a relatively professional design.</p>
E: The product must contain at least 5 lessons (containing a variety of supports such as videos, glossaries, tasks, and programming exercises).	<p>The first part of this specification was included to ensure a solid foundation of lessons on which students can learn. Webdevtutorials contains seven lessons exploring HTML, five lessons on PHP, and one special lesson covering the logistics behind actually creating a live website. This amounts to a total of 13 tutorials (see Appendix A, figure F for the listing of tutorials as seen on the website).</p> <p>The second part of this specification requires a variety of media in which the information is presented. Each regular HTML and PHP lesson contains an introductory video, a review task, a written explanation, a glossary, and a programming challenge (exercise).</p>

Figure E: W3C Best-Practices Evaluation

	Guideline	Comment		Pass/Fail
1	Site load-time is reasonable <i>Load time: the time it takes for the site to load</i>	WebDevTutorials clocks in at 110ms for load time. While this doesn't meet Google's Performance Best-Practices, it does beat big sites like Amazon (134ms) and FOX News (391ms).		Fail
2	Adequate text-to-background contrast	The site does fairly well in this area. The font is white where the background is dark and vice-versa.		Pass

	Guideline	Comment	Pass/Fail
3	Font size/spacing is easy to read	100% of the test users reported no difficulties in reading the font.	Pass
4	Flash & add-ons are used sparingly <i>Add-ons: Additional content which supports the website but takes longer to load</i>	No flash used. Some essential Javascript add-ons have been included, but these have been minified to reduce page load time.	Pass
5	Images have appropriate ALT tags <i>Alt tag: A description of the image for people with disabilities</i>	Every image has a descriptive alt tag which meets Google's Performance Best-Practices.	Pass
6	Site has custom not-found/404 page <i>404 page: A page which the site loads in case of error.</i>	There are 5 error pages handling different errors. The 404 error page can be viewed at http://webdevtutorials.net/resources/errors/404 .	Pass
7	Company logo is prominently placed	No company logo.	Fail
8	Tagline makes company's purpose clear	The first text to appear is, "WebDevTutorials is an online, interactive learning resource for students who want to learn the basics of web development in an innovative way." This defines the websites goal.	Pass
9	Home-page is digestible in 5 seconds	On load, one sees a small paragraph of text with 2 buttons below it. 3 more buttons make up a toolbar. This structure should be digestible.	Pass
10	Clear path to company information	The help button provides a link here.	Pass
11	Clear path to contact information	The help button provides a link here.	Pass
12	Main navigation is easily identifiable	The navigation is visible on the top of the page.	Pass
13	Navigation labels are clear & concise	Navigation labels are 1 word, located inside the button.	Pass
14	Number of buttons/links is reasonable	3 buttons in navigation.	Pass
15	Company logo is linked to home-page	No logo.	n/a
16	Links are consistent & easy to identify	Main links on account page are large green buttons. The links within tutorials are located in a navigation bar at the top of the page.	Pass
17	Site search is easy to access	No site-search feature.	Fail
18	Major headings are clear & descriptive	Main headings on homepage are in a large font in the center of the page.	Pass

	Guideline	Comment	Pass/Fail
19	Critical content is above the “fold” <i>Fold: the information which can be seen without scrolling</i>	The homepage is designed in a way that eliminates a fold. The content shifts automatically every 10 seconds.	Pass
20	Styles & colors are consistent	As explained under <i>Application of Information</i> , WebDevTutorials uses a class system which keeps the style/structure of every tutorial consistent.	Pass
21	Emphasis (bold, etc.) is used sparingly	Emphasis used on only 3 words on the homepage.	Pass
22	Ads & pop-ups are unobtrusive	No ads. The only popups appear on the top of the screen and automatically disappear after a delay.	Pass
23	Main copy is concise & explanatory	See guideline 8.	Pass
24	URLs are meaningful & user-friendly <i>URL: the address that appears in the address bar</i>	Most URLs are limited to one path, such as /about, /help, or /account. These also explain the purpose of the page in one word.	Pass
25	HTML page titles are explanatory <i>HTML title: the descriptive phrase that appears in the menu bar of your browser when visiting a website</i>	The HTML title for the site is “WebDevTutorials - Interactive Online Web Development Tutorials.” This explains the site in one phrase.	Pass

Pass: 21 Fail: 3 Not Applicable: 1

The screenshot shows a user interface for a learning platform. At the top, there are navigation links: 'Help ▾' (with a question mark icon), 'Blank Editor', and 'Log Out' (in a red button). Below this, a welcome message says 'Welcome back, **Jackson!**'. A green button labeled 'Continue Track →' is prominently displayed. To the right, there are several links: 'Continue Track →', 'Select Tutorial', 'Account Settings', and 'Help & Support'. A horizontal line separates this from the main content area. The main content area has a grid-like layout with three columns. The first column contains a section titled 'Recommended Track' with a 'Continue Track →' button. The second column contains a section titled 'HTML Track' listing seven lessons: 'Lesson 1: Introduction to HTML →', 'Lesson 2: Styling Text →', 'Lesson 3: Organizing the Page →', 'Lesson 4: Images, Videos, & Icons →', 'Lesson 5: Forms →', 'Lesson 6: Tables →', and 'Lesson 7: Navigation →'. The third column contains a section titled 'PHP Track' listing five lessons: 'Lesson 1: Introduction to PHP →', 'Lesson 2: Variables, Math →', 'Lesson 3: The If Statement →', 'Lesson 4: The For Loop →', and 'Lesson 5: Functions →'. Below the PHP section is another section titled 'Specialized Tutorials' with a single item: 'New | Setting up a real website →'.

Figure F: Complete tutorial listing as seen on website

Figure G: Reliability of Resources Grid

Source	A - Author	B - Origin	C - Objectivity	D - Quality	E - Quantity	Total
1: Interviews with Mrs. Hockley	3 - Mrs. Hockley is very experienced in her career and is supported by the International School of Geneva	3 - The interviews that we had were held first-hand. The information did not pass through anyone else, and I could address any questions immediately. This source was not published professionally however, so a wide audience could not approve the information.	3 - As the interviews were purely for educational purposes, and the topic is not political or controversial, there was not a lot of opportunity for bias.	3 - The information I received was useful, delivered in a clear manner, and I was provided with other resources to use at the conclusion of the interviews.	2 - An adequate amount of information was given to me to fulfill my research requirements.	14 - Excellent
2: Official Online PHP documentation	4 - This source was created by the organization who made the PHP language. The source is written and maintained by multiple experts and is published on the official PHP website.	3 - This source was published on the official PHP website.	3 - There is no opinion involved with this source. It is purely an informational reference for the language.	3 - The website is organized, easy to interact with, and presented logically. Every reference page is divided between code snippets, explanations, examples, and common errors.	2 - While the website as a whole is quite large, the amount of information presented on an individual page is appropriate.	15 - Excellent
3: Official Online CAPTCHA documentation	4 - This source was created by the organization who made the ReCAPTCHA. The source is written and maintained by multiple experts and is published on the official website.	3 - This source was published on Google Developers, the creators of the ReCAPTCHA system. Google is one of the biggest and most well-known technological companies in the world.	3 - There is no opinion involved with this source. It is purely an informational reference for the program.	3 - The website is organized and contains a high quality mixture of downloads, examples, and explanations.	1 - There is a large amount of information presented on one page which can be overwhelming and take time to read through.	14 - Excellent

Source	A - Author	B - Origin	C - Objectivity	D - Quality	E - Quantity	Total
4: PHP, MySQL, JavaScript & HTML5 by Steve Suehring and Janet Valade	3 - This source is written by 2 professional programmers who have created several books previously.	2 - It is published as a book, sponsored by the 'for dummies' group, who publish guides regularly.	3 - There is no opinion involved with this source. It is purely an informational reference on various web development topics.	2 - Most of the information is useful. I was able to easily locate the sections needed and the information found was valuable.	1 - The book is a very large information source, often with excessive details or side facts.	11 - Good
5: W3C HTML5 Reference	4 - This source was created by the W3C, the organization which creates regulates the worldwide web standards. They created this reference for the purpose of educating people about HTML5 specs.	3 - Multiple experts published this source on the official W3C site.	3 - There is no opinion involved with this source. It is purely an informational reference.	3 - The list is logically organized and contains links to further reference material.	2 - There is a brief overview about each topic, plus further in-depth explanations for each topic.	15 - Excellent
6: x10 Hosting Website	3 - This source was created by the x10 hosting company to provide information about their hosting plans. Because they talk about their own services, the knowledge presented is reliable.	3 - Published professionally by the popular hosting company itself.	1 - This source is a company trying to earn money. The very best points about their service are highlighted and they try to hide any weak points.	1 - This source provides brief information about the x10 services. The list is not comprehensive and their are not any detailed explanations.	2 - The amount of information communicated what services x10 provides without overwhelming the user.	10 - Acceptable
7: Stack Overflow - Programming Forum (Rejected Source)	1 - The post on this forum was written under a pseudo name, however this is not reliable nor verified.	1 - Anybody can edit this source, so it is not very reliable.	2 - This post describes a way that the author likes to solve a problem, however this isn't necessarily the recognized approach.	1 - The explanation was limited and was not professional in any way.	1 - Not enough information to express the idea.	6 - Below Average, Eliminated

A score between 13-15 is considered excellent. Sources with a score below 7 are usually eliminated.

Appendix B: Process Journal Extracts

ORGANIZATIONAL SKILLS THROUGH TIME AND SELF-MANAGEMENT

9 October 2013

Today I created this timeline to help me organize my time throughout the project. I am aware that it may change over the course of the project, and will make any necessary changes in later entries. I also intend to use it as a checklist for short-term tasks.

Date	Task	Steps
10 October - 20 October	Investigate	<ul style="list-style-type: none"> • Learn how people learn best? • Learn how long people can focus for? • Prove that x10 Hosting is better for my project and not another host? • Verify my method of programming is the universally recognized method. • Learn how to implement fullscreen carousels. • Find a good video hosting solution. • Learn how to implement a captcha.
20 October - 27 October	Plan	<ul style="list-style-type: none"> • Make multiple design plans for each page of the site. • Analyze each plan & justify. • Finalize timeline.
27 October - 16 December	Create	<ul style="list-style-type: none"> • Preliminary setup • Create homepage • Create login/signup forms • Make the tutorial index page • Make the class files • Make the rest of the tutorials
by 28 October	Preliminary setup	<ul style="list-style-type: none"> • Register email account • Buy domain name • Open an x10 Hosting account • Setup domain emails, FTP, and database • Create local folder- setup img, bootstrap, errors, functions files, favicon, and analytics
by 2 November	Create home page	<ul style="list-style-type: none"> • Make 3 images. • Make a fullscreen carousel with the 3 images. • Make a navbar with the different pages. • Record & publish intro video.
by 5 November	Create login/signup forms	<ul style="list-style-type: none"> • Create database for users. • Make login form. • Make signup form. • Verify that they function correctly.
by 8 November	Make the tutorial index page	<ul style="list-style-type: none"> • Make a list of all the tutorials needed. • Create a page for the tutorial index. • For each link, use an image, title, and description.
by 20 November	Make the class files	<ul style="list-style-type: none"> • Create a 'class' file. • Setup the code for the class session - header HTML, code editor body, preview, lesson, and videos • Test with arbitrary variables.

Date	Task	Steps
by 5 December	Make the rest of the tutorials	<ul style="list-style-type: none"> • Make a video (if applicable to the lesson) • Create the variables for the lesson - title, description, explanation, video location, steps • Make the page and link the index to it. • Test.
	Present	
by 31 January	Outline of report	
11 January	Project exhibition and oral exam	<ul style="list-style-type: none"> • Prepare for oral. • Prepare for exhibition.
by 7 March	1st draft of report	
by 14 March	2nd draft of report	
by 28 March	Final copy of report	

COOPERATION AND COLLABORATION WITH THE SUPERVISOR

3 September 2013 (Email)

Hello Mrs. Shaw,

I am looking forward to discussing my personal project ideas with you. Is there a time that we could meet this week that works for you?

I have lunch at 1:15 on Monday, Tuesday, and Friday, and at 12:30 on Wednesday and Thursday.

I have recorded some ideas which can be found here: <https://www.evernote.com/pub/jacksonhowe/personalproject>

Thank you very much!

- Jackson Howe

13 September 2013

Today I met with my new personal project supervisor, Mrs. Shaw. We discussed my ideas. She mentioned that I need to make sure that my ideas will do something useful in a way that hasn't already been done. I formed these conclusions:

- My first idea (second option) creating a personal organizer/homework website is probably not the best idea because at this stage, everybody in the school uses ManageBac to effectively keep track of homework, and there are already many well-made apps on the market. The existing options work great today and could only be improved though a matter of personal preference (which is not feasible for large scale implementation).
- My idea to make a website that teaches students how to program is a good idea. I love web development, the final result would help other people learn a skill which is essential in the technological era, and there are few existing

products. Most of these are geared towards adults and not students my age or cost money to use. I would like to make a free product, accessible by people my age or even younger. To improve existing modules, I want to make an extremely interactive application with guided videos, short tasks, and real-time execution of code with error reports and suggestions for improvement.

- I am not keen on creating a CSS library. I don't know much of the language and it is kind of boring to make these 8,000+ line libraries.
- The data security idea is not in the scale of the personal project. While data security is an essential part of today (especially with the recent NSA leaks and reports on the news), what I have in mind would involve violating other people's privacy and is not acceptable.
- Finally, building a robot and programming it to do cool things would be a fun and educational project, however I would definitely have to decide how it could help people or be a use. It is a vague idea.

20 September 2013

I had another meeting with my supervisor today. We've decided to meet each week at 1:15 on Friday. I decided to finalize the idea of teaching people how to make a website. We talked about the Area of Interactions; I mentioned ATL's as an area of interaction and how I could use the ATLs to explore how people learn. This would require me to do some research on the different types of learners (visual, auditory, etc) and how those types learn best. I could also put my project in the concept of community and service as teaching people how to do something supports the community in our school, and globally as a website. We also discussed the product specifications. The rough ideas are outlined below:

- The product must be presented as a website in a professional manner.
- The product must be suited for ages 10+.
 - How long can people focus for?
- It must be suitable for different types of learners.
- The product must teach people to a certain level demonstrated by the site's internal records.
 - The product must contain at least 10 lessons.
- The website should teach people HTML and PHP.
 - Maybe Javascript?
 - I decided not to teach CSS because it is the most boring of the languages, does not contribute to the logic of a website, and can easily be replaced with a pre-built library to help people get started more quickly.

I also need to research the following:

- How do people learn best?
- Why use x10 Hosting and not another host?

INFORMATION LITERACY

1 October 2013

Now that I have finalized which idea I will use for my personal project, I need to put together a list of things to research. I made a list of research questions:

- Learn how people learn best? - I need to answer this as part of my AOI goal of the approaches to learning. Learning how other people learn best will ensure that my website teaches them effectively.
- Learn how long people can focus for? - I don't want to make my lessons too short or too long. There must be an optimal time to make the tutorials for the target market.
- Learn about template systems in PHP. - I imagine that the layout of most of the tutorials will be the same. To avoid repetitive code, I should learn about making a template system in PHP.
- Prove that x10 Hosting is better for my project and not another host? - I have used x10 hosting in the past to host my websites. Is this really the best host to use for my personal project? I need to find out.
- Learn how to host video. - I have never put any videos onto a website before, but for my site, I will probably have video tutorials as part of it. How do I put a video online?
- Learn how to implement a captcha. - A captcha is a system designed to stop certain hacks like DDoS attacks. Since I will probably be letting users login to my site, I need to learn how to implement this system.

To research, I might use the following resources:

- Internet
 - Online documentations.
 - Programming guides.
 - Youtube videos - although I will need to be careful that the source is reliable.
- Books - There are many programming books out there; I will need to find one that is modern enough as programming concepts change so often.
- People - My supervisor suggested that I could talk to the learning support teacher at our school. I think I will arrange an appointment soon.

28 October 2013

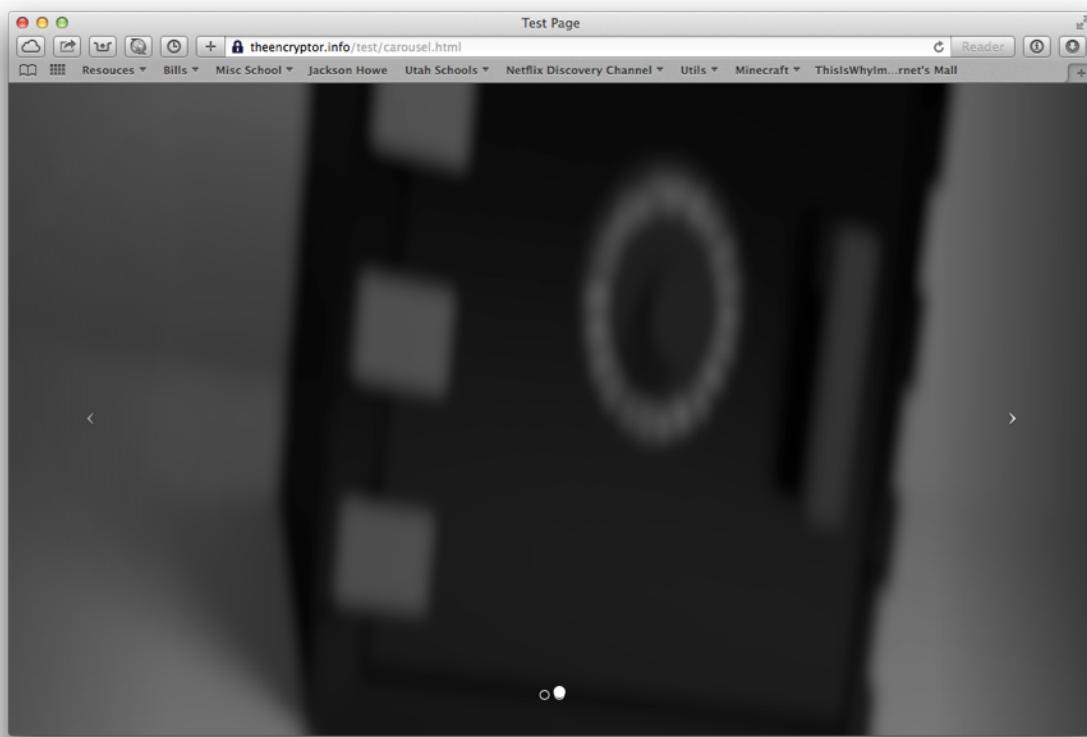
I realized today that part of my plan requires that I make a full screen carousel on the home page. I don't know how to do this, however I have made smaller carousels in the past. To test this, I will consult the CSS documentation (and check which selector increases the dimensions to 100%), and then implement it on a test page.

It is actually very simple to change the size of an existing carousel to fullscreen. This CSS does it all:

```
<!-- Add to global style tag -->
html,body{height:100%;}
.carousel,.item,.active{height:100%;}
.carousel-inner{height:100%;
```

```
<!-- Add to image style tag -->
style="height: 100%;"
```

Here is a screenshot of the test page that I created (the test website is available at <http://theencryptor.info/test/carousel.html>. TheEncryptor is an old website of mine). The screen cycles between 3 different images every 6 seconds. On my actual website, I would have some information about the site and some buttons allowing users to login and get help information.



NOTES FROM RESEARCH

10 October 2013

When you make a website, you have to have a place to store all the files that make up the website. This can't be done on an individual computer because, usually, a person's laptop isn't always turned on for data requests. So, a web host is a hard drive located somewhere else in the world that is always open to web traffic.

There are lots of free web hosts available today, but only some suit my needs. I have used x10 Hosting in the past and I like it a lot, but I need to verify that they really are the best. Here is a table which shows the features that I need:

	No ads	Good uptime	Free subdomain	DNS control settings	SMTP email access	MySQL database	FTP access	PHP 5.4	Unlimited disk space
x10 Hosting	✓	✓	✓	✓	✓	✓	✓	✓	✓
000webhost	✓	✓	✓	✗	✓	✓	✓	✗	✗
Free Web Hosting Area	✗	✗	✓	✗	✗	✓	✓	✓	✗
FreeHostia	✓	✓	✓	✗	✗	✓	✓	✓	✗
BIZ.NF	✓	✗	✓	✓	✓	✓	✓	✓	✗

All the above are free hosting solutions. There are always some limitations to free solutions however, such as SSL certificates, shell access, unlimited database space, and unlimited domains. The most valuable of these would be an SSL cert. Without HTTPS, anyone with enough intelligence could compromise a login system. If I decide to pay for premium, I would use x10 Premium because they offer all the features of x10 Free plus the upgraded features at a great price (\$140 for 3 years).

"X10Hosting - Free Web Hosting for the Masses." X10Hosting. N.p., n.d. Web. 13 Oct. 2013. <<https://x10hosting.com/free-hosting-comparison>>.

"Free Web Hosting with PHP, MySQL and CPanel, No Ads." 000webhost. N.p., n.d. Web. 13 Oct. 2013. <<http://www.000webhost.com/>>.

"Free Web Hosting Area - PHP 5.4, MySQL 5.5, FTP, Autoinstaller." Free Web Hosting Area. N.p., n.d. Web. 13 Oct. 2013. <<http://www.freewebhostingarea.com/>>.

"Totally Free Hosting." Hostia. N.p., n.d. Web. 13 Oct. 2013. <<http://www.freehostia.com/index2.html>>.

"Plans · X10Premium Premium Shared Hosting." X10Premium. N.p., n.d. Web. 13 Oct. 2013. <<http://x10premium.com/plans>>.

13 October 2013



There are some people in this world with malicious intents or other stupid ideas who try to destroy people's online profiles or crash websites. One specific way people do this is by creating a bot (a computer program which pretends to be a human) and signing up for a website millions of times in a couple seconds. This is a problem for the server because that much traffic at one time is too much to handle. It is also a problem for databases that have limited storage. If a bot keeps signing up for new accounts, a database could quickly run out of space and then real humans wouldn't be able to sign up. To prevent this from happening, developers can use something called a captcha. A captcha is an image of characters (see image above) which bots can't read but humans can. Then, only real people get the image correct and bots won't be able to make the account. Major sites today like Google and Apple have captchas when signing up for accounts.

To use a captcha on a website, a developer must implement code server side and client side.

Client-side:

```
require_once('recaptchalib.php');
$publickey = "your_public_key";
echo recaptcha_get_html($publickey);
```

To get a public key I will need to sign up on the re-captcha website. I will also need to download the *recaptchalib.php* library from that site.

Server-side:

```
<?php
require_once('recaptchalib.php');
$privatekey = "your_private_key";
$resp = recaptcha_check_answer ($privatekey,
                                $_SERVER["REMOTE_ADDR"],
                                $_POST["recaptcha_challenge_field"],
                                $_POST["recaptcha_response_field"]);

if(!$resp->is_valid){
    // What happens when the CAPTCHA was entered incorrectly
    die("The reCAPTCHA wasn't entered correctly. Go back and try it again.".
        "(reCAPTCHA said: ". $resp->error .")");
} else{
    // Your code here to handle a successful verification
}
?>
```

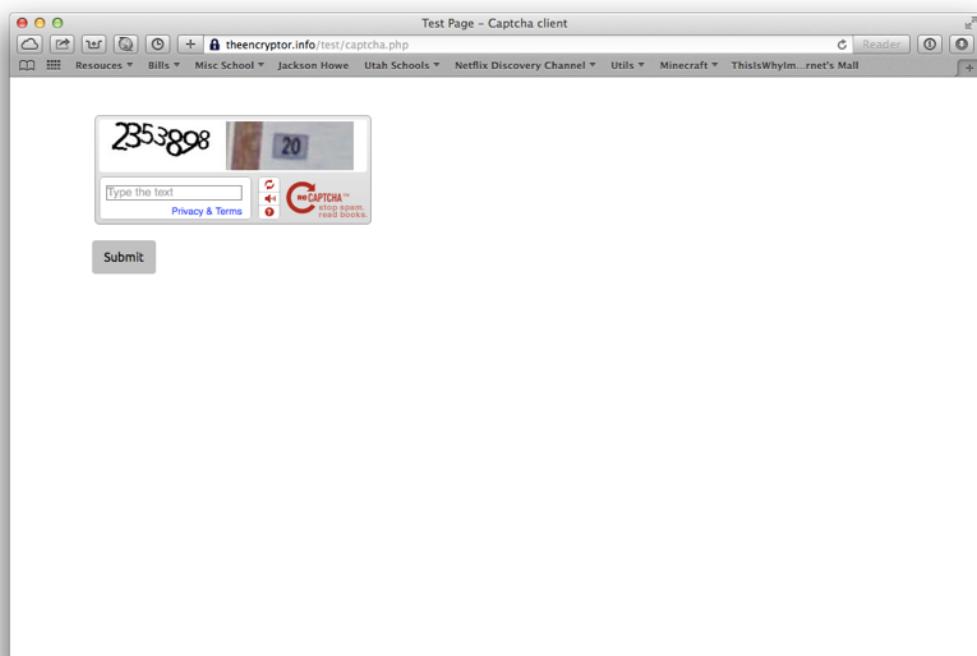
To use a custom theme:

```
<script type="text/javascript">

varRecaptchaOptions={
    theme : 'theme_name' //red, white, blackglass, clean
};

</script>
```

I tried this out myself and built a very simple demo @ <http://theencryptor.info/test/captcha.php>. Screenshot:



"ReCAPTCHA: Stop Spam, Read Books." ReCAPTCHA: Stop Spam, Read Books. Google, Inc., n.d. Web. 13 Oct. 2013. <<http://www.google.com/recaptcha>>.
"Developer's Guide - ReCAPTCHA." Google Developers. Google, Inc., 20 Mar. 2012. Web. 13 Oct. 2013. <<https://developers.google.com/recaptcha/intro?csw=1>>.

19 October 2013

I met with our schools Learning Support specialist, Karina Hockley on 18 October. We talked about:

- The different types of learners and multiple intelligences
- What teaching styles are best for different learners
- Left brain vs. right brain
- How these learning types work and process information
- Characteristics of learning types
- How to improve memory
- How dyslexia affects learning

The full documentation is listed below. Summarized:

- Different people learn in different ways. Certain styles of teaching are more effective for certain learners.
- There are 3 main types of learners: visual, auditory, and kinesthetic.
 - **Visual learners** like to take organized notes with structure, color-codes, highlighting, or diagrammed information.
 - **Auditory learners** learn best reading notes aloud, discussing concepts with other people, and listening to books or lectures.
 - **Kinesthetic learners** are hands-on learners. They learn best by writing and drawing, doing interactive activities, and handling equipment.
- The brain has 2 halves- the left (logical) half, and the right (creative) half. In most cases, one-half usually dominates the other.
 - The **logical** half is rational, structured, and analytical. They like to work task by task and follow clear instructions.
 - The **creative** side is artistic and intuitive. They like to work on open-ended tasks, take risks, and need interaction to stay focused.
- Teachers generally teach students who have the same learning style as them most effectively.

For my project, I will need to either:

- Include activities for every learning type.
- Have new users take a test to determine their style, then give that user custom tasks.

I, personally, will need to be aware of all the learning styles so I can teach through all of them effectively.

Hockley, Karina. "How Do People Learn?" Personal interview. 18 Oct. 2013.

2 November 2013

Knowing how long my audience can be expected to focus for, and some information about memory recall is essential to my site. I talked to Mrs. Karina Hockley of

the learning support department who told me that for people above the age of 8 years old can generally focus on 1 intensive task for about 30 minutes. Obviously different people might not be able focus for exactly 30 minutes, but 30 minutes is the optimal learning time for most types of activities that I intend to put on my site.

Hockley, Karina. "For How Long Can People Focus?" Personal interview. 31 Oct. 2013.

THINKING

29 August 2013

I've decided to come up with some ideas for my personal project before the school year begins. Here they are:

1. Website & Mobile App

Design and implement a functioning website and iOS application to share knowledge effectively or to improve personal skills in some way.

Option 1: A personal organizer app, most notably for homework and project collaboration for people our age. It would help students organize their time and get work done more efficiently.

Option 2: A website/app combination to teach people how to create websites using HTML, CSS, JavaScript, and PHP, OR how to develop apps for iOS, OR how to write programs in PYTHON and C. This would provide an effective way to teach people necessary skills for the upcoming technological era.

2. Increased Awareness for Data Security

Using non-intrusive techniques, research and collect a data proving that many websites and modules that access the internet are insecure which can lead to identity theft, data theft, fraud, and unwanted online interactions.

Method: Visit a variety of public locations (cafés, airports, etc) with open network connections and connect to the internet using the public WLAN. Sniff the network for unencrypted session variables and cookies, and collect appropriate data.

Presentation: Could be presented through a website, article, or statistics explaining why we need to protect ourselves against online predators and how. This would increase awareness about online safety and general safe practices.

3. Design a CSS Library

From scratch, design and formulate an open-source CSS (Cascading Style Sheets) library for use in web development.

CSS is the language in which websites are given their style and appearance. I would create a custom library for open-source use in websites. This would help improve other developer's products and greatly increase my own creativity and knowledge in the language.

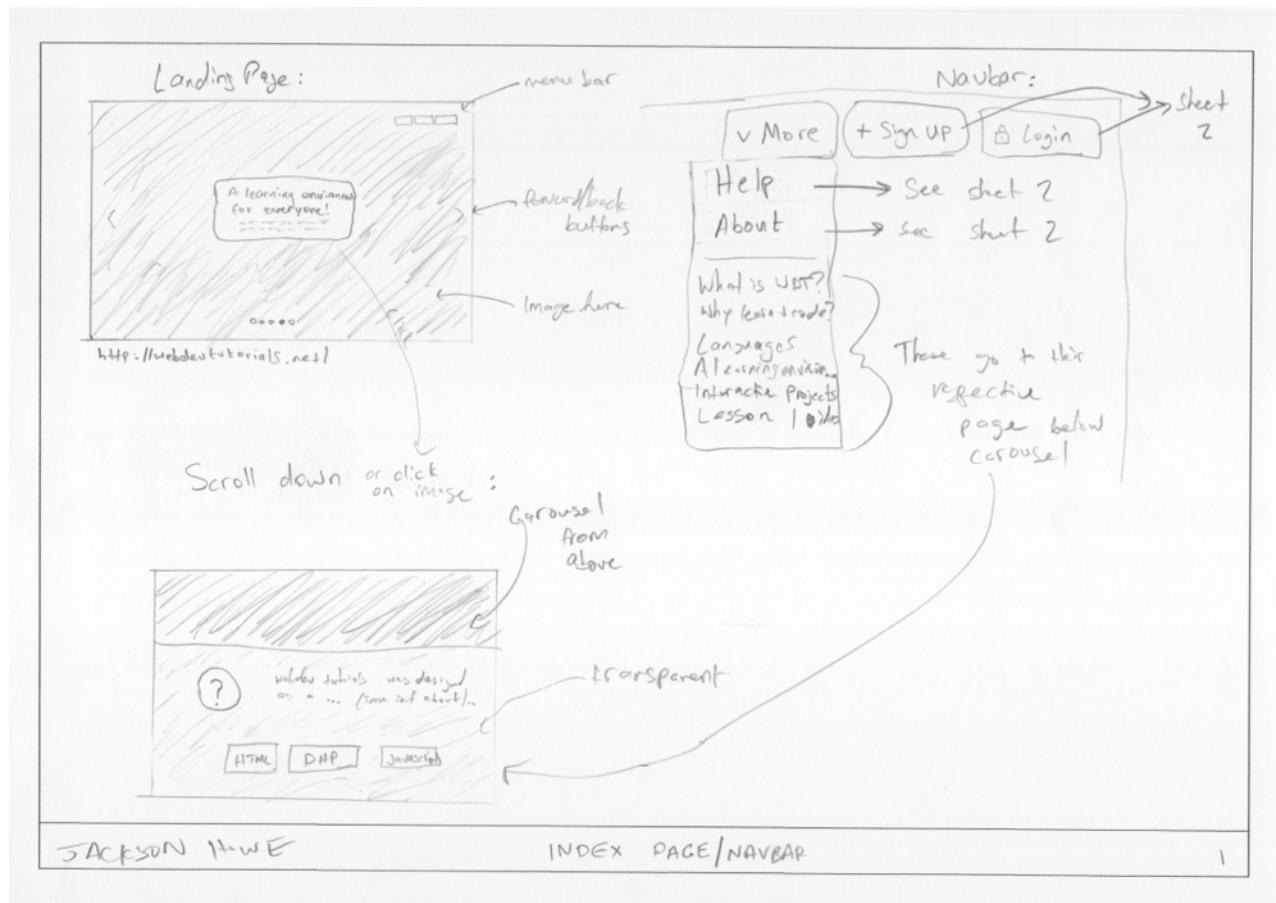
4. Build and Program a Robot

Dash is the robot at the forefront of a new DIY robotics campaign. He is a small but fast device that you build and control from an iPhone. The campaign also offers the ability to program the robot to do new things such as using various detectors to look for or follow obstacles.

More information about the Dragon Innovation project can be found here: <http://www.dragoninnovation.com/projects/16-dash-the-diy-robot>

24 October 2013

After several initial designs and evaluations, I created this final plan for my website which incorporates the major pros from each design and attempts to eliminate any issues in the initial designs. I will justify it in a future entry.



Login Form:

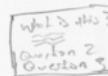


Background

Help Page:

will include:

- FAQ



click
on
question
+ reveal
answer

- Contact info



write
message

Signup Form:



Passwords
Confirmation
(will turn green
if passwords
match)

captcha free research)

About Page:

will include:

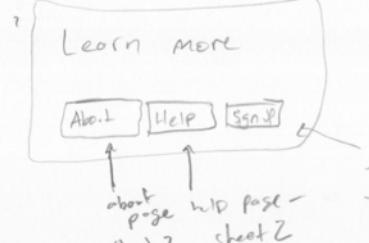
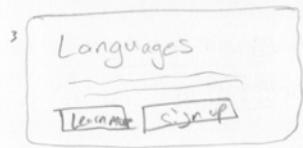
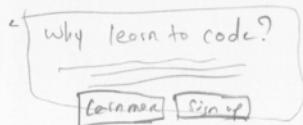
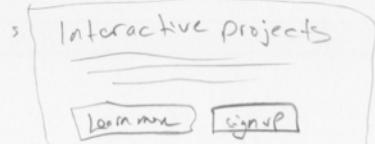
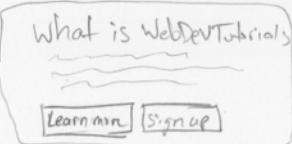
- Description of site history

- TOS / privacy policy

JACKSON HOWE

INDEX PAGE / LOGIN FORM / REGISTER / HELP / ABOUT

2



These 7 boxes represent
the 'jumbotron' or the text
displayed on the landing
page (see pg 1). The
learn more buttons on each
jumbotron correspond to the
more detailed info below—
See page 4.

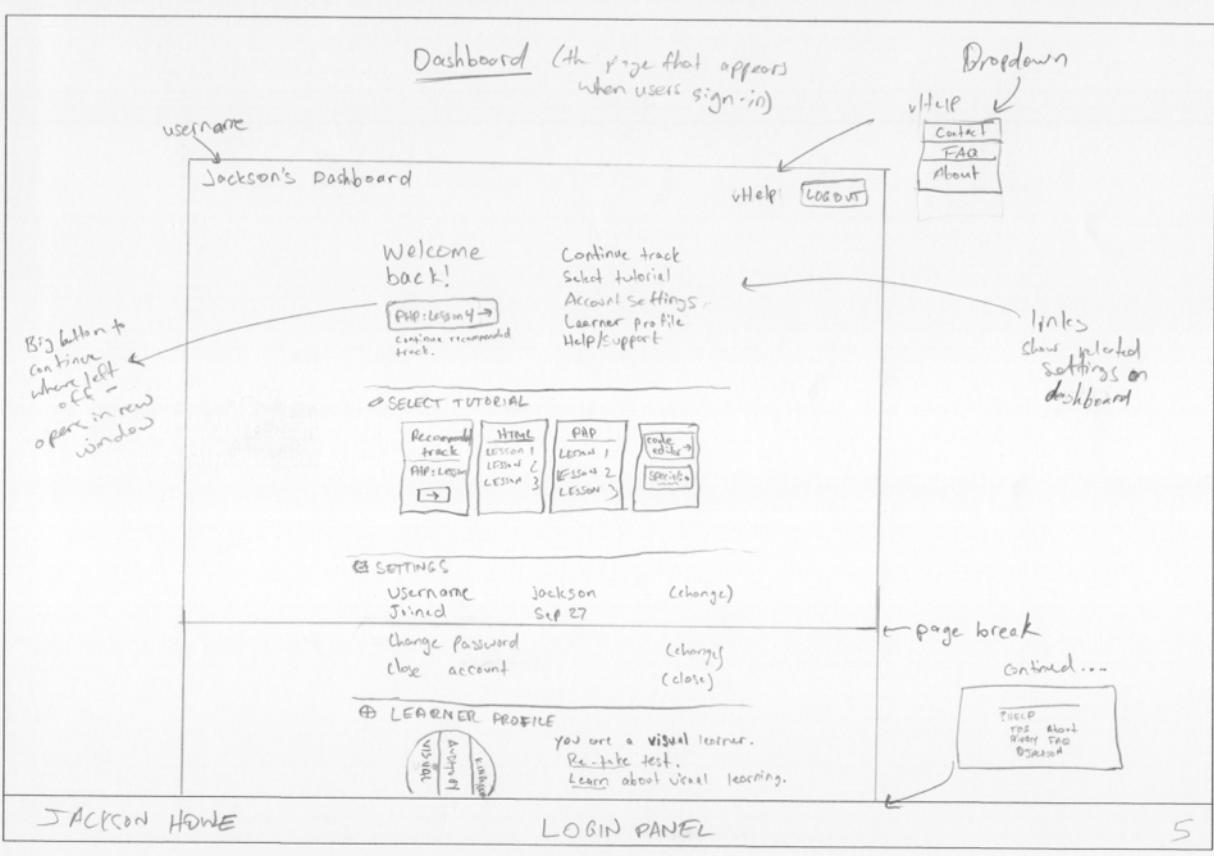
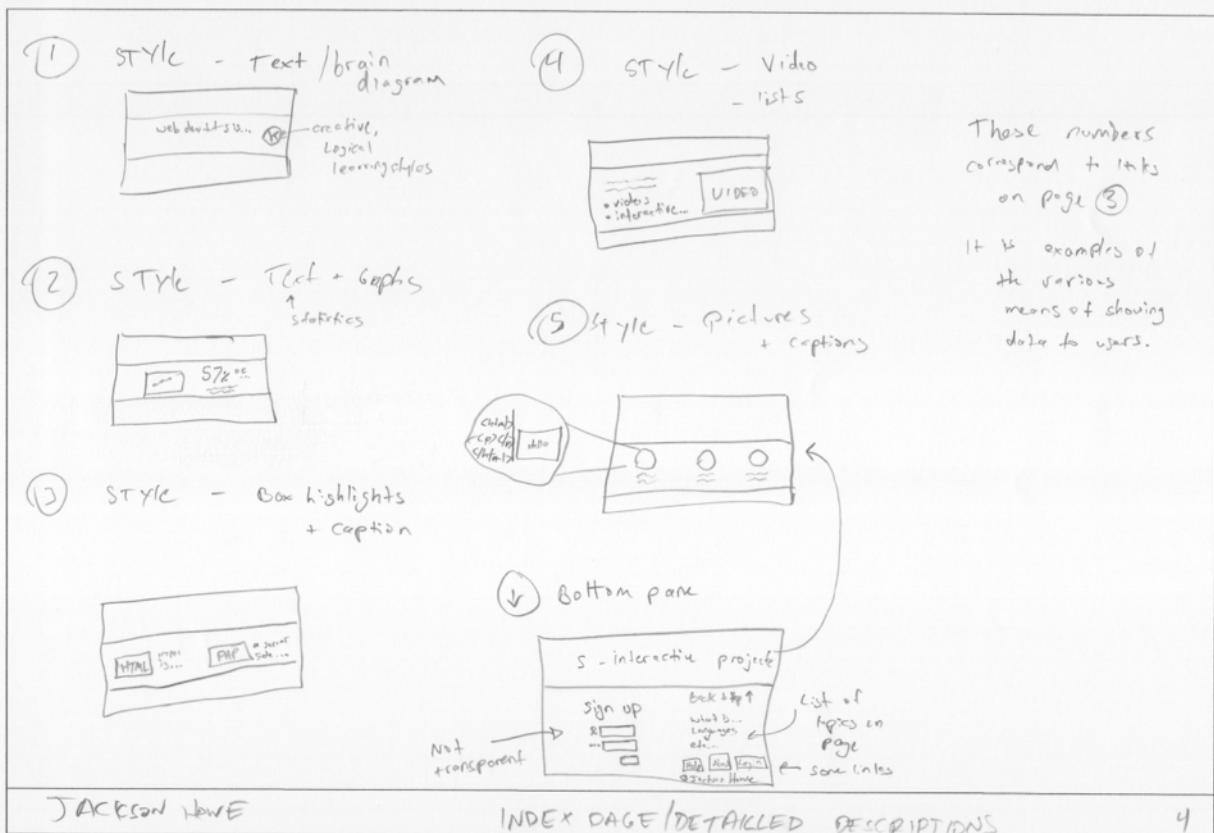
→ NO
jumbotron
here —
just a video

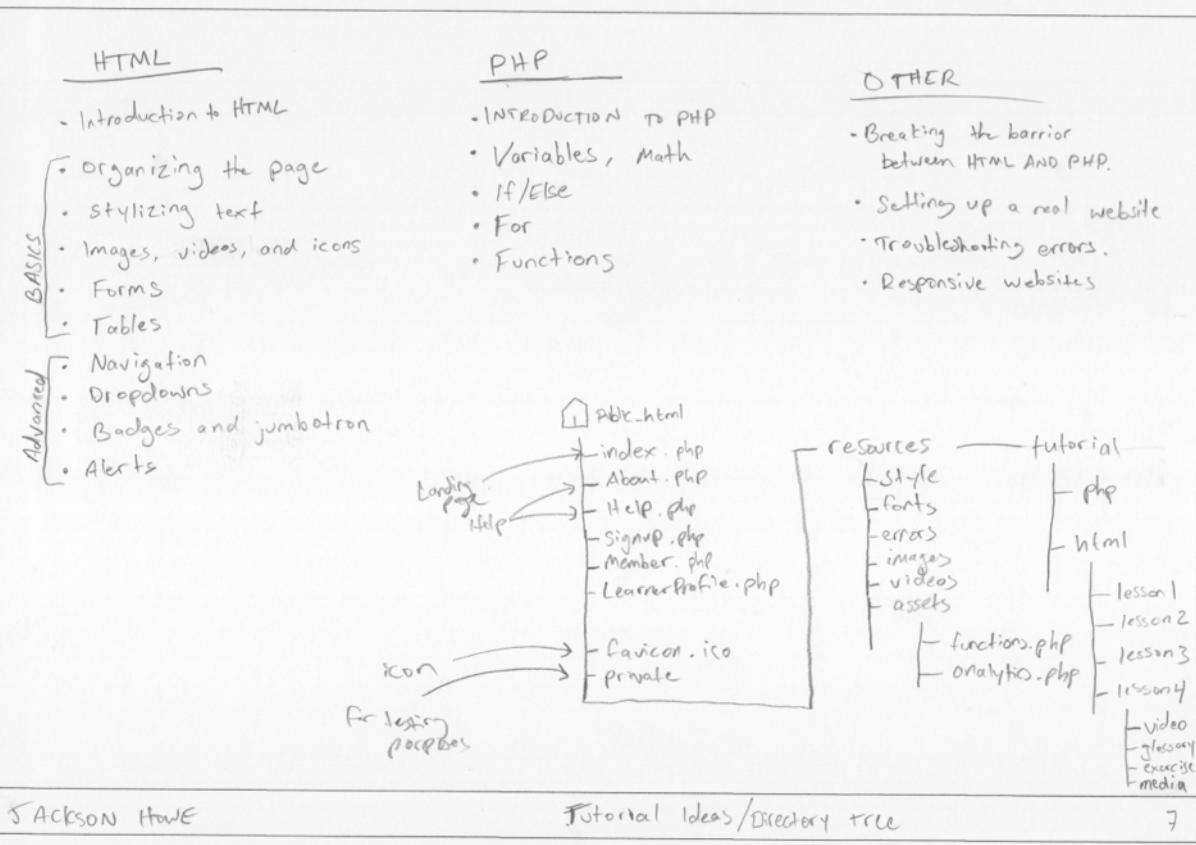
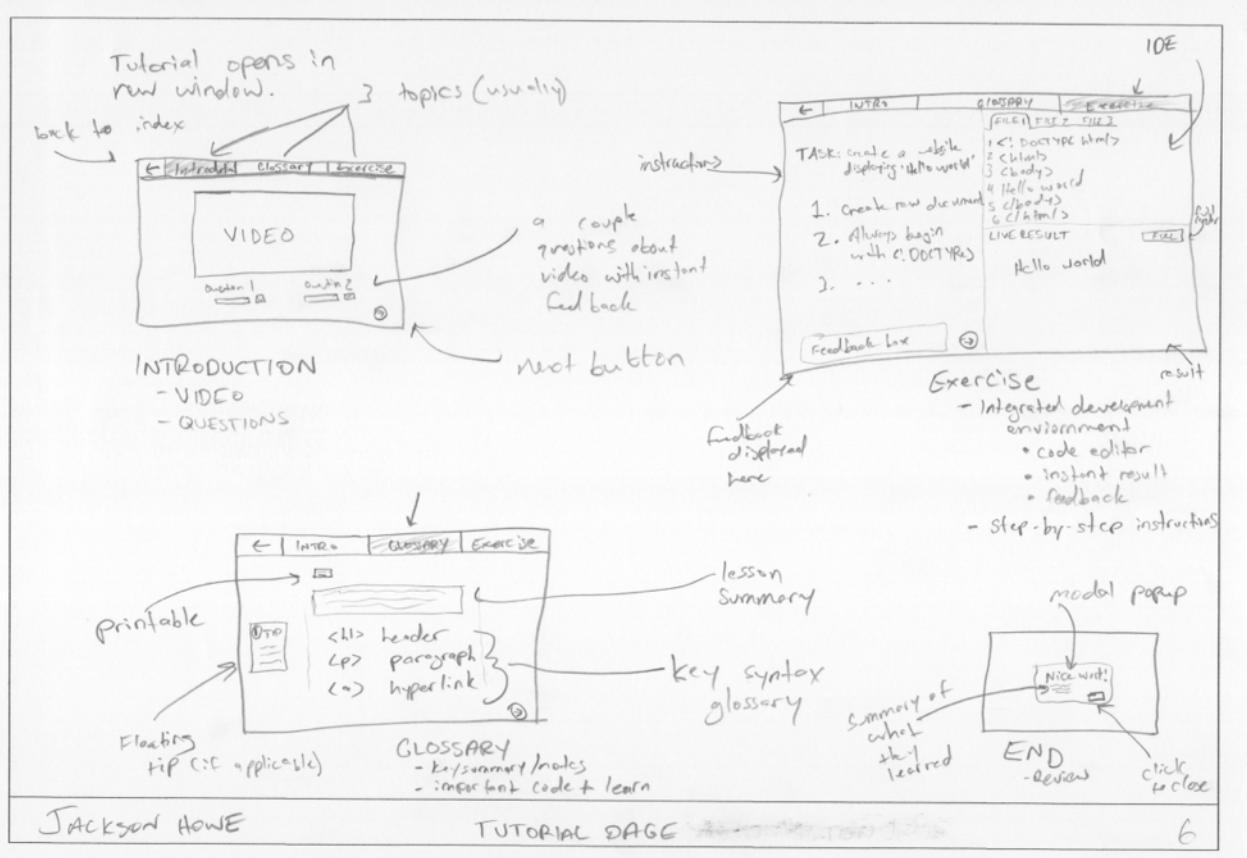
explaining HTML
→ Could be first feature
video
→ or separate vid
explaining how the site
works

JACKSON HOWE

INDEX PAGE / DETAILED DESCRIPTIONS

3





29 October 2013

I need to pick a domain name for my website. A domain name is the address people type into their browser to access my site, such as <http://google.com> or <http://theencryptor.info>. Domain names greatly vary in quality. It should be concise and explain the website, and should also use common TLDs (or endings). The most commonly (and commercially) available TLDs are .COM, .NET, and .ORG. I will use the table below to brainstorm some ideas, then check their availability and indicate some notable ones.

Brainstorm Ideas	Available TLD (< \$25)	Notable Names (1-OK, 3-Excellent)
learntocode	.biz .mobi .tk	
learn2code	.mobi .ca .tk	
learntoprogram	.co .us .info .mobi .tk	
learn2program	.org .net .co .tk	1
learntoprogramnow	.org .net .info .tk	1
learn2programnow	.com .net .org .info .tk	1
learnhtml	.co .tk	
learnhtmlnow	.net .org .info .co .tk	2
learnpHP	.cc .mobi .tk	
htmltutor	.co .info .us .tk	
phptutor	.co .tk	
webdev	.tk	
webdevtutorials	.net .org .co .info .tk [.com auction]	3
internetdev	.co .tk	
onlinedev	.org .us .co .tk	2
websitedev	.co .tk	
networkdev	.org .co .us .tk	2
websitedevtutorials	.com .net .org .info .tk	3
htmldevtutorials	.com .net .org .info .tk	3
htmltutorials	.co .tk	
codehall	.co .info .us .tk	
htmlhall	.com .net .org .co .tk	2
htmlmaster	.co .tk	
codemaster	.tk	
webdevmaster	.co .us .info .tk	
htmlstudy	.co .tk	
htmlinstructor	.com .net .org .co .tk	3
htmlcollege	.com .net .org .info .tk	2
htmlschool	.us .info .co .tk	
htmluniversity	.net .org .info .co .tk	2
programmingschool	.org .co .tk	1

Brainstorm Ideas	Available TLD (< \$25)	Notable Names (1-OK, 3-Excellent)
programmingcollege	.com .net .org .info .tk	2
codeuniversity	.co .us .info .tk	
codeccollege	.us .me .tk	
programmingassistant	.org .net .info .co .tk	1
codeadvisor	.org .info .co .tk	1
codetrainer	.org .net .info .tk	1
htmltrainer	.org .net .co .tk	1
htmlguide	.info .co .tk	
codeguide	.info .co .us .tk	
htmlcoach	.org .net .info .tk	1
codeschool	.info .us .tk	
learnwebdev	.tk	
htmldeveloper	.net .co .tk	3
webtrainer	.org .co .tk	1
codetrainer	.org .net .info .co .tk	1
codeteach	.org .net .co .tk	1
html	-	
php	-	
html-php	.com .org .co .tk	1
htmltutorials	.co .tk	
htmldev	.co .us .tk	

Through this brainstorm, I have narrowed my selection to 2 options:

WebDevTutorials.net and HTMLDevTutorials.com. I will use WebDevTutorials.net because .NET is a widely known TLD (often used in other programming applications) and the name explains the purpose concisely. HTMLDevTutorials.com also limits the possible tutorials to HTML, and I want to also include other languages like HTML.

REFLECTION

26 October 2013

After creating my final plan, I will justify it using the specifications which I created earlier.

Justification for Plan based off Specs:

- The website should teach people HTML and PHP to the level expected at the end of each unit demonstrated by the site's internal records. - Using a combination of learning techniques, the plan will teach both HTML and PHP including the topics listed on page 7.
- The product must be suited for ages 10+. - This website should be accessible by anyone who can click and read. According to my research, people above the age of 10 can defiantly concentrate for the proposed time.

- It must be suitable for different types of learners. - The proposal includes methods for every learner style to access the content. According to my research:
 - Visual - The videos will contain structures and examples suitable for visual learners. In addition, visual learners have the ability to print glossary references with color-coded notes and explanations of concepts.
 - Auditory - Auditory learners can listen to the video at the beginning of the tutorial, which explains a programming concept concisely.
 - Kinesthetic - A few questions immediately following the video allow the kinesthetic learner to apply the new knowledge. The step-by-step exercises offer a hands on experience for a new programming concept.
- The product must be presented as a website in a professional manner. - The website will include different presentation styles which professionals around the world use. It will not contain any unprofessional material.
- The product must contain at least 5 lessons (containing a variety of supports such as videos, glossaries, tasks, and programming exercises). - The proposal includes more than 5 lessons. Most lessons will include videos, glossaries, tasks, and programming exercises.

Possible Improvements:

- On the tutorial/exercise page, switch the right pane with the left page - then the next button is in the same position as on the other tabs.
- Do not open tutorials in new windows - some browsers interpret this as a popup and is not as professional.
- Use YouTube to host the videos - not my host. YouTube servers are faster and offer unlimited space.

8 November 2013

I have begun working on the create phase. Today the domain name which I had purchased finally finished propagating, so I was only able to start today. I finished everything in the preliminary setup as planned- my email 'support@webdevtutorials.net' is setup, I have a hosting account setup, and the basic file structure is as planned. I also finished the homepage, but decided to change one small aspect. Instead of using an introduction video on the homepage, I will use the video from lesson 1 because it offers a more realistic example of what the lessons are like. The sign-up and login forms are running on the site (with the captcha working) and have been tested against validation, XSS, and SQL-injection attacks.

29 November 2013

I finished making the class files. Now it is very easy to simply create one small file of variables for each individual tutorial. I have an introduction page with a video and questions, a glossary page with tags and attributes, and an exercise page. I really like the way the exercise page turned out- on the left is a code editor with line numbering and syntax highlighting, and on the right is the challenge and hints. You can click a button to see how the page you are working on looks and you can also click a check button to see if your code is right. This check function took longer than planned; I had not initially considered doing such advanced code checking, but in the long run,

users will now be able to identify and solve problems more easily. The only changes made to the plan for the glossary page is that I added a code example window so users can have the code written out from in the video. This should be a help for visual learners.

4 December 2013

The first 5 tutorials are done. Here is a summary of the changes made to the plan:

- On the tutorial index page, I made a tooltip appear when the user hovers over a tutorial listing. This tooltip gives a brief description of the content of the lesson, and should help people glancing at the tutorial see what they will learn easier.
- I also added some more backgrounds to the tutorial index and introduction page. This should provide a nice change between tutorials while not distracting the student.

Unfortunately, I had to redo the first 4 introduction videos because I did not like the video's background. There was a pack of cigarettes on the background, and I decided that it did not look professional or clean, as my specifications require. This took a lot of time away from my plan, but I should be able to catch up quickly. I also built a 'safety-net' of 1 week into my timeline in case something like this happened.

Appendix C: Final Student Self-Assessment

Name: Jackson Howe

Homeroom: 11o

Supervisor: Sandrine Shaw

Guiding Question: Through what learning approaches and online systems can a student (age 10 and above) become proficient at programming in HTML and PHP?

Product: An interactive website containing a mix of videos, glossaries, tasks, and programming exercises designed to teach people how to program in HTML and PHP.

ATL Skills	Rarely	Occasionally	Usually	Always
Met supervisor on regular basis		I met my supervisor on a weekly basis, however I missed a meeting one or two times.		
Worked independently			As this was the <i>personal</i> project, I made every effort to work on my website independently.	
Organized time effectively			I organized my time throughout the personal project using my timeline (see appendix B). If something unexpected happened, I adjusted the timeline to reflect the current state of affairs.	
Met deadlines			I finished my work at or before the deadline.	
Demonstrated good effort			I believe that I demonstrated good throughout the entire project; I enjoyed this project so much because I picked a topic which I really do enjoy.	

To complete the summative assessment below, use the Personal Project Assessment Criteria on pages 54-63. Please write in comments that justify your score for each criterion.

MYP Criteria	Level (Score)	Comments
Criterion A: Using the Process Journal (4)		
Criterion B: Define the Goal (4)		
Criterion C: Select Sources (4)		
Criterion D: Apply the Information (4)		
Criterion E: Achieve the Goal (4)		
Criterion F: Reflect on Learning (4)		
Criterion G: Report the Project (4)		