PURPOSE AND GOALS

These are the words of the client:

"I run a business in the photography field primarily for wedding events and secondarily for other celebrated occasions like graduations, birthday parties, funerals and some personal portraits. I ran into issues where I missed communications and not being able to promptly reply back to my customers. I didn't have a way to effectively manage the business. That has caused some income loss, which added up over time. My issue was partly because I ran by business on social media, and my attention was divided across five (5) of them. It was also due to the fact that I get carried away having friends and family on the same media and as such loose and delay connection to clients. I also wanted to limit the reach of my personal life to business thereby concentrating more on delivering quality service to my clients. I'm also looking for a way to share my photographic work samples, share my thoughts and experiences while doing the work I love so much, and also having people share their stories of what lead to celebrated event"

From the requirements of the clients, the purpose of the project is to design a photography website that will act as a central hub to provide for good management, and prompt effective communication without necessarily encroaching into personal life. The primary audience should be for wedding events/couples, and secondarily for all other celebrated events.

Translating such requirements into technical specifications will require the use of the knowledge gained in the course to me the following goals:

- Planning out an entire small-scale website (< 10 pages) and to implement the home page and two secondary pages (i.e., three markup documents).
- Navigation system should function to show the user where they are and where they can go. It is required that the navigation to other parts of the site are shown, even if the links are not active.
- One of these pages should contain a "function" component -- either in terms of JavaScript, or a form that utilizes a server-side CGI script.
- Markup should validate with the **W3C's Validator**. If they do not, there should be a legitimate reason and explanation
- CSS should validate with the W3C CSS Validation Service (warnings are OK; errors are not). Again, if the CSS does not validate, there should be a legitimate reason and explanation.
- Pages produced should be complete and production-ready. Website should be done well, with attention to details that will set your site apart from the hastily-produced site.

Things that will be considered are:

- Well-organized file structure and re-use of CSS, JS, and images
- Consistency throughout pages (perhaps use of PHP include or SSI to guarantee consistency)
- Well-chosen titles that stand on their own
- "meta" keywords and description appropriate for each page
- Print CSS rules
- Custom error documents
- Appropriate caching directives and favicon.ico

PLANNING AND IMPLEMENTATION

PLANNING

The planning phase of the project involved meeting with the client, gathering all requirements expected for the project, setting goals, identifying all required resources for the projects, setting project timeline, establishing project progress report communication mode with the client, choosing an implementation approach, and project re-evaluation. With all these handy, the planning process was divided into five (5) steps.

1. Gathering requirements
2. Extensive research about the project
3. Choosing the ideal Implementation approach
4. Identifying all resources to accomplish tasks.
5. Documentation, evaluation and reporting.

Gathering Requirements

In this stage of planning, I met with the client to determine the purpose of the website. This was like a bed side approach wanting to know the "whys", the "what" for "whom", and all other information that will assist in making necessary judgment as to the best way to implement the project. Client wanted a simple photography websites that can act as a central management hub for all her contacts on social media. Client also wanted to limit her personal life from encroaching into it, but still be able to promptly communicate with her clients. Some of the questions asked to determine best approach for the project are:

- What is the purpose of the website?
- Who are the primary audience?
- Who are the secondary audience?
- Is the business location specific?
- What social media do you want included on the website?
- What content do you want on the page?
- What is the best way to communicate project progress?

Extensive research about the project

With the requirements handy, I started doing extensive research as to how to meet such requirements, at the same time paying attention to providing effective usability and optimization of the website. The also allows to estimate timeline of the project and assess amount of work to be done and potential pitfalls.

Most photography websites that I visited had one thing in common. Picture galore! What is a photography website without a picture, right? Most used some form of sliding picture player, with Adobe Flash Player predominant. I research the pros and cons of such players, and deciding settling for a basic JavaScript Player to improve response time of browsers and reduce resources used on a computer. I also read some articles, one of which talked about capturing the attention of visitors using the 10 seconds rule. That is, if you can keep someone on a website for 10 seconds, then you have a winner. I researched well known turn offs for visitors. Looked into the pros and cons of having media players and auto pop-ups on a website, but did away with those for now for optimization reasons. I also researched element positioning on the webpage to make for a better experience, which I talked more on in Implementation phase of the project.

Choosing the ideal Implementation approach

The Implementation approach used was a hybrid of the Waterfall and the Scrum Methodology. I started with Waterfall to get a foundation and switched to Scrum to make improvement. That means I create a functional baseline with a timeline, and constantly build and deliver small units of functionality, while revisiting and refining with each cycle after proper research and evaluation with my client.

Identifying all resources to accomplish tasks

Unlike projects in companies where teams are built and necessary personnel and resources are sourced to execute a project; this is all on me with some inputs from my clients. Client will be provided sample pictures of her photographic works; she will also need drafting a compelling "About Me Page" with a personal portrait picture. I'm offering suggestions for that, which can be tweaked with time. For the project, the Morpheus Apache server was used for the server end, and Internet Explorer and Google Chrome Web Browsers where used for the client side. Picture editing was done using Adobe Photoshop. All these working on my i7, 64-bit, 16GB RAM Windows 8 Machine. Aside from that, it's all me. I am the Project Manager, the Web Developer, the Accountant, the Researcher and the QA Analyst. It is also

Documentation, evaluation and reporting.

My client and I agreed that I will share the work on weekly basis in my Dropbox cloud folder for evaluation. That way we can see what works and what won't in relation to the requirements, making changes on the fly. Progress of work will be documented using Google Docs with client having a copy. We also agreed to communicate by phone and email if need be.

DESIGN & IMPLEMENTATION

The resources used in the implementation of the project are:

A desktop PC machine with a connection to the Internet having two HTTP clients' with information:

- Name of Client: Google Chrome
  Version: 33.0.1750.117 m
  Operating System: Windows 8.1
  User-Agent String: Mozilla/5.0 (Windows NT 6.3; WOW64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/33.0.1750.117 Safari/537.36

- Name of Client: Internet Explorer
  Version: 11.0.9600.16518
  Operating System: Windows 8.1
  User-Agent String: Mozilla/5.0 (Windows NT 6.3; WOW64; Trident/7.0; rv:11.0) like Gecko

On the server side, I made use of the Apache 2.0 Web Server with the hostname: morpheus.dce.harvard.edu. This is necessary because PHP includes was used to provide consistency on all webpages, and that requires some form of server side processing of the request from the HTTP client, with PHP being a server side programming language. Another option is to have Apache installed on your local machine to allow for testing locally.

Custom error document & cache directives.

Morpheus already allows access to configure custom error pages, so all I did was to setup and configure the .htaccess file in the root directory of the project work to affect all files and folder on the website. The file itself is hidden by default. To make it visible, the filename was saved in double quotes (“”). Aside from setting up the Custom 404 Error Page, I specified the caching directives for the Expiration headers on the pages to be set to 1 day set so that CSS, JavaScript and image files are cached for 1 day before a revisit or refresh. To improve optimization of the browser, reduce bandwidth and use of resources, and reduce latency; I specified the output filter to compress HTML, XHTML, JavaScript and CSS files before they are sent to the browser. The following commands were used to configure the .htaccess file.

```
#My custom error document response for HTTP response status of 404 (“Not Found”).
ErrorDocument 404 /~aogah/finalproject/php/apache_htaccess/error/status404.php

#Expiration headers set so that CSS, Javascript and image files are cached for 1 day.
ExpiresActive On
ExpiresByType Image/jpg "access 1 day"
ExpiresByType Image/gif "access 1 day"
ExpiresByType Image/png "access 1 day"
ExpiresByType text/css "access 1 day"
ExpiresByType text/javascript "access 1 day"

#Output filter to compress HTML, XHTML, JavaScript and CSS files before they are sent to the browser.
AddOutputFilterByType DEFLATE text/plain
AddOutputFilterByType DEFLATE text/html
AddOutputFilterByType DEFLATE text/xml
AddOutputFilterByType DEFLATE text/css
AddOutputFilterByType DEFLATE application/xml
AddOutputFilterByType DEFLATE application/xhtml+xml
AddOutputFilterByType DEFLATE application/rss+xml
AddOutputFilterByType DEFLATE application/javascript
AddOutputFilterByType DEFLATE application/x-javascript
```

After the configuration of the .htaccess file, I created an HTML5 markup file for the custom error page with the following code:

```
<!DOCTYPE html>
    <html>
      <head>
        <title>Osas Photography 404 Error Page</title>
        <link rel="icon" type="image/png" href="/~aogah/finalproject/php/images/favicon.png">


        <style>
            #image_header {
                text-align: center;
              }


            #footer {
             margin-top: 300px;
             text-align: center;
             color: gold;
             }


            body {
               background-image: url(/~aogah/finalproject/php/apache_htaccess/error/custom_error.jpg);
               background-repeat:no-repeat;
               background-size: cover;
             }

            a {
              font-style: italic;
            }

            a:link {
                  color: black;
                  text-decoration:none;
                }

            a:visited {
                  color: green;
                  }

            a:hover {
                  color: purple;
                  text-decoration: none;
                  }

            a:active {
                  color: yellow;
                 }

            #bodytext {
                  font-size: large;
                  font-family: Univers, Calibri, Tahoma, Geneva, Helvetica, Arial, sans-serif;
                  color: #990000                ;
                  margin-left:60px;
                  margin-top: 60px;
                 }
        </style>

      </head>


      <body>
        <div id="image_header">
            <a href="http://morpheus.dce.harvard.edu/~aogah/finalproject/php/index.php"><img title="Osas Photography Logo Header"
src="/~aogah/finalproject/php/images/header.png" alt="Osas Photography Logo" width="500" height="100" /></a>
        </div>
```

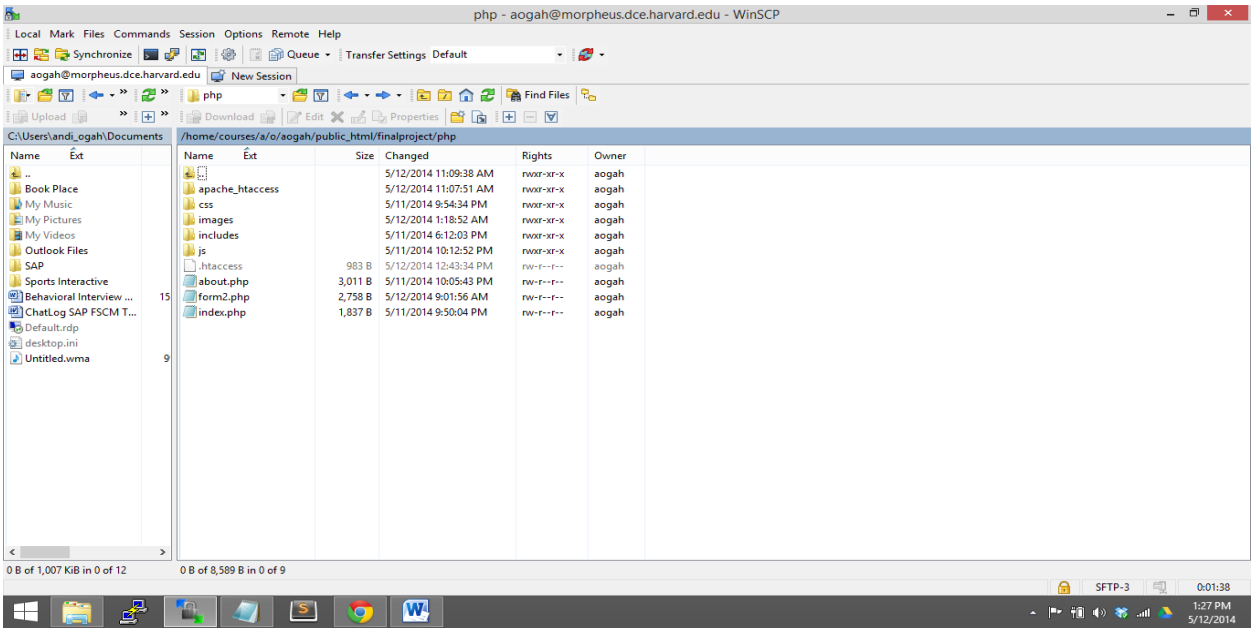
```
        <div id="bodytext">
          <h1>Oops, someone is lost!!!</h1>
          <p>Don't worry, I've got you covered. The page you are trying to view may have moved or does not exist.<br /> Try checking the URL
for errors, or return to
            the <a href="http://morpheus.dce.harvard.edu/~aogah/finalproject/php/index.php">Homepage</a> and retry.</p>

          <p>I may need to send you a compass and a boat.</p>
        </div>

        <div id="footer">
          Copyright &copy; 2014 Osas Photography. Website designed by Andrew Ogah.
          <?php ECHO 'The host server:' .$_SERVER['SERVER_NAME'];
          ECHO 'The document was modified on:' .DATE("F d Y H:s", getlastmod());
          ?>
        </div>
      </body>
</html>
```

Website Implementation

The website was made of three pages; the Homepage, the About page and the Contact page. All pages were design using HTML5 markup for structure, CSS for presentation and JavaScript for functional behavior of some of the elements of the Homepage and validation of a form. For each of the three pages, and other subsequent pages; I made use PHP includes for consistency throughout and to save time making changes to elements that are the same on all pages. To allow for well-organized file structure and re-use of CSS, JS, and images, I created separate folders for page items that are the same across the webpages as shown below. That way, files can be shared and changes made from a central location. It also helps make debugging quicker.



Well-organized file structure allowing for re-use of CSS, JS and Images

The URL for the three pages are:

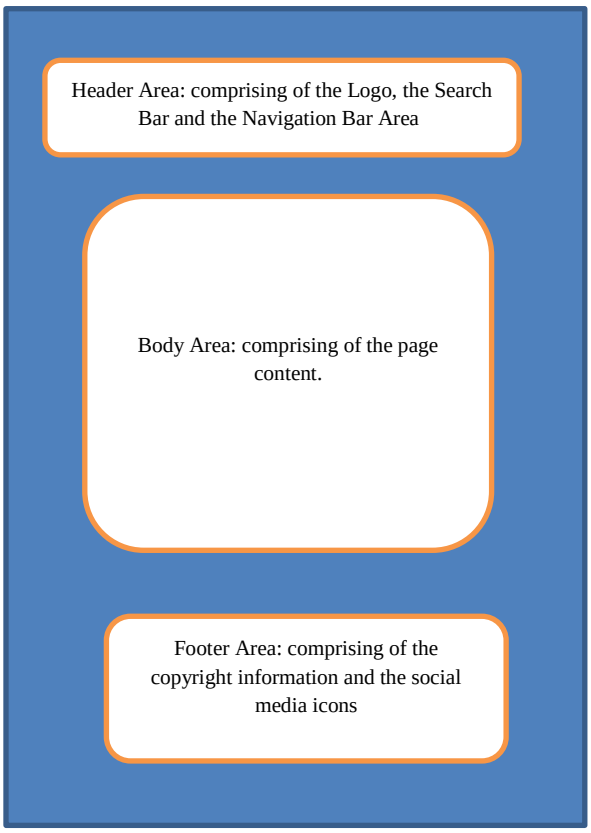
- **Homepage: http://morpheus.dce.harvard.edu/~aogah/finalproject/php/index.php**
- **About Page: http://morpheus.dce.harvard.edu/~aogah/finalproject/php/about.php**
- **Contact Page: http://morpheus.dce.harvard.edu/~aogah/finalproject/php/form2.php**

The design and implementation of the webpages was divided into 3 parts, namely:

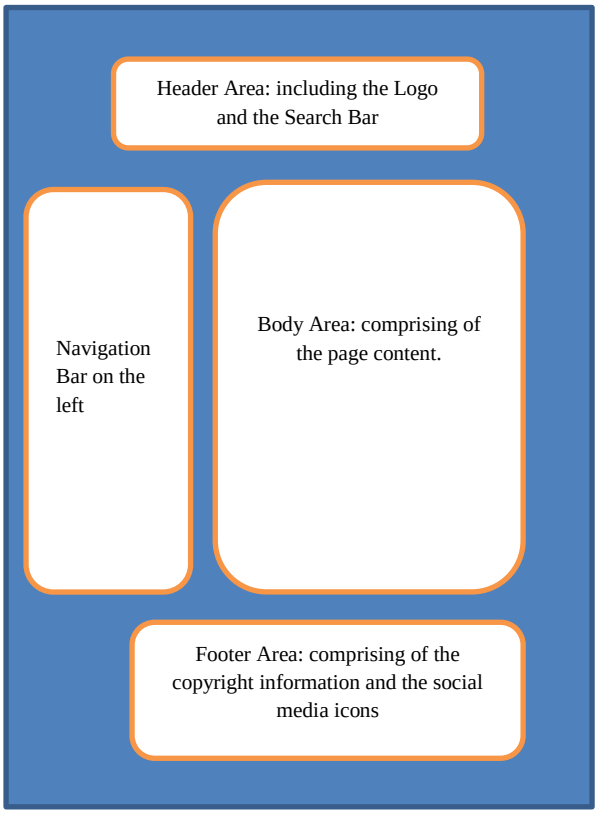
- The structural side
- The presentation side
- The functional side

The Structural Side

The structure of the website was consistent on all pages with the use of the PHP Includes and the HTML5 Markup. Before implementing the pages, I started off with two websites design plans. The preferred plan was to have the navigation bar at the top, website content in the middle and the footer at the bottom for all pages. This was to allow for scalability, and also follow the predominant format for photography website. The plan B was to have the navigation menu as a side menu creating enough room to work with at the top for the website logo and other prospective changes. The diagram below shows a sketch of the positioning of the elements and items on the pages of the website.



PLAN B



PLAN B

While implementing the PLAN A, I had some positioning issues with the Navigation Bar at the top and had to switch to PLAN B for the purpose of meeting the due date of the Final Project. Changes will be revisited after the project. The markup of the Homepage was designed with the following HTML5 code as shown below:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Osas Photography</title>
  <meta charset="utf-8">
  <meta name="description" content="Osas Photography: About, Wedding Catalog, Other Catalog, Tell your story, Blog Contact," />
  <meta name="google-site-verification" content="google98f04fbb461baea9.html" />
  <meta name="revisit-after" content="1 day" />
  <meta name="keywords" content="Osas Photography, About, Wedding Catalog, Other Catalog, Tell your story, Blog Contact," />
  <meta name="author" content="Andrew Ogah">
  <link rel="icon" type="image/png" href="/~aogah/finalproject/php/images/favicon.png">
  <!--PHP include for the header-->
  <?php include("includes/header.php"); ?>
</head>


<body id="content1">
  <!--PHP include for the Imagehead-->
  <?php include("includes/imagehead.php"); ?>

   <div id="container">
   <!--PHP include for the Navigation-->
   <?php include("includes/navigation.php"); ?>

   <!--PHP include for the Search Box-->
   <?php include("includes/content1.php"); ?>


    <hr class="clear"/>

    <!-- Slideshow -->
    <div id="slider_wrapper">
       <ul class="rslides" id="slider1">
            <li><img src="images/slide1.jpg" alt=""></li>
            <li><img src="images/slide2.jpg" alt=""></li>
            <li><img src="images/slide3.jpg" alt=""></li>
            <li><img src="images/slide4.jpg" alt=""></li>
            <li><img src="images/slide5.jpg" alt=""></li>
            <li><img src="images/slide6.jpg" alt=""></li>
            <li><img src="images/slide7.jpg" alt=""></li>
       </ul>
    </div>

    <!--PHP include for the Social Media-->
    <?php include("includes/content2.php"); ?>

    <!--PHP include for the footer with the echo command-->
    <?php include("includes/footer.php"); ?>
  </div>
</body>
</html>
```

The markup on all pages shows consistency using PHP Includes, with only few content changes on each. Contents that changes are page specific like the **Meta Tags** and others like the form, picture slideshow and text of the About page. The links to all the include files are as shown below:

http://morpheus.dce.harvard.edu/~aogah/finalproject/php/includes/navigation.php

http://morpheus.dce.harvard.edu/~aogah/finalproject/php/includes/imagehead.php

http://morpheus.dce.harvard.edu/~aogah/finalproject/php/includes/header.php

http://morpheus.dce.harvard.edu/~aogah/finalproject/php/includes/footer.php

http://morpheus.dce.harvard.edu/~aogah/finalproject/php/includes/content1.php

http://morpheus.dce.harvard.edu/~aogah/finalproject/php/includes/content2.php

The Functional Side

The functional side was implemented with JavaScript and jQuery Plug-Ins for behavior. Out of the three (3) pages implemented, two (2) of them had a JavaScript Implementation. First was the Homepage with the timed picture slideshow. The other was the Form Validation technique on the contact page. These were some the distinct content on the pages I referred to in the Structural Side of the Implementation.

The picture slideshow on the Homepage uses a jQuery plugin working on top of a responsive slide minified JavaScript library to create a responsive slider using elements inside of a container. The elements in the container passed into the algorithm are the JPEG image files. Images are displayed for about 3 seconds before being faded out, and replaced with another image in the cycle. That slider also has a manual control option as an alternate preference. My links to the JavaScript Codes are:

http://morpheus.dce.harvard.edu/~aogah/finalproject/php/js/responsiveslides.min.js

http://morpheus.dce.harvard.edu/~aogah/finalproject/php/js/responsiveslides.js

http://morpheus.dce.harvard.edu/~aogah/finalproject/php/js/custom_slider.js

The form validation implemented on the About page uses jQuery validation function and custom error messages to validate when a user leaves required fields empty. It also has custom add-on to validate that name entered is at least 2 letters, email addresses follow the format “username@domain” and phone numbers are verified against the US phone number standard. form on the client side. All these happen before the data are passed to the server side. The Links for the codes is:

http://morpheus.dce.harvard.edu/~aogah/finalproject/php/js/form_validation.js

The Presentation Side

The presentation side of the implementation was to make the page look pretty and to implement the “You are here” links on all the pages. The “You are here” links were implemented in the Navigation Bar on the left of the pages and in the Breadcrumb Navigation at the top. What it basically does is allows visitors know where they are on a webpage and website by highlighting the links. This was achieved by hardcoding the distinct tag container for each page to the tag element for the specified links with CSS, causing a drilldown effect on the links from the container tags on the page. Links to that is found here:

http://morpheus.dce.harvard.edu/~aogah/finalproject/php/css/custom.css

The timed slideshow player also included some CSS files that came with the library, which are found at the following links:

http://morpheus.dce.harvard.edu/~aogah/finalproject/php/css/responsiveslides.css

http://morpheus.dce.harvard.edu/~aogah/finalproject/php/css/slider.css

The requirement of the project also suggested inclusion for a CSS for a print media. This I did and the link is at:

http://morpheus.dce.harvard.edu/~aogah/finalproject/php/css/print.css

Future Directions: A brief discussion of the future directions of the site. Since this is only the beginning of the site, briefly mention ideas you have for future work and/or expansion.

From the requirements gathered from the client, the website was designed with 7 pages in mind, three of which are already in the works to meet the requirement of the final project. The baseline foundation has already been laid out, with the Homepage, About Page and the Contact Page. Although those pages still need some tweaking to arrive at a satisfactory design for the website, additional work still need done to complete all other proposed pages and make the website fully fledged. Future work and thought out expansion include:

Creating a page to allow clients tell their stories of how they met their spouses, the challenges they had while dating, their advice for prospective couples, how they went about planning for the wedding, and all other key information that lead to the celebrated event. This page will be conversational, like an interview. And, information the page can be in the form of print, recorded audio or video presentation.

Second, another page will allow the client share educational information about photographic art, trends and what goes into capturing imagination and memories using photography. This page could be in the form of a blog, where the client narrates personal experiences while going through a project. It could also be some information either in print, audio or video that could be helpful for aspiring photographers, or information that helps prospective clients make educated decisions of what to expect from photographic artist and how to go about selected one for your event.

There is also a requirement from the client to display samples of her work for her primary and secondary audience. This will take up a page on the website linked from the Homepage with pictures taken in the past. This will be in the form of a catalog. It may also provide a way for clients to select or bookmark scenes and style of interest form the catalog, so as to allow for a starting point of discussion before meeting, and offer some ideas to help make a decision. There is also the Other Catalog section that allows other people to display photographic works and may provide a way for photography community to critique such works.

To meet the requirement of integrating social media, I will look at ways to allow customers follow clients on 5 social media at the click of a button on every page. I am also looking at having live twitter feeds running somewhere as a side bar on the right of the Homepage. And, also having social media notification pops on the website, so that the client will have opportunity to respond to clients through her website. I am also thinking of having a way to

search the website by including a search bar, so that visitors can quickly search for what they want without wasting unnecessary time.

Reflect on lessons you learned. What worked well? What parts of the project are you particularly pleased with, and why? What parts of the project need additional work? If you were to approach this project again, what will you do the same? What would you do differently?

This is my first website design project, and looking back, I would say there are couple things that were gratifying, and others very frustrating. First, I learnt like any other projects I have undertaken in the past to always have a backup alternate plan. So, if original plan fails, one can revert to something that would still work pending the fix to the original. My blueprint for the website was to have the navigational menu at the top to create room for other prospective content on the page. However, I ran into issue with the JS Slideshow Player on the Homepage blocking the Dropdown menu that I created. Researching that on the internet showed that I needed to change the z-index to a larger value and setting position of the slider to relative in the JS Slideshow scripts. I knew it had to do with the positioning of the slider with respect to the menu and I needed more time to check the codes, so reverted to plan B to meet project requirement. If I had none of such, then it would have been a real issue.

Second was to always know where you are coming from especially when coding the JavaScript, so that when you get stuck, you revert back to what worked. This applies to everything. I cannot count the number of times I got excited, feeling jolly and made changes to some codes, and could not remember how I got there, talk less of reverting back to what worked. What didn't help much was my little knowledge of JavaScript. However, I was able to weather the debugging storm over some cups of coffee. It would have saved me so much time having numerous copies of the same code so I just copy and paste and get back to where I was.

I had some issues with the PHP includes not pulling up the header and footer like I had in the other pages on my custom error page. That was why I hardcoded the codes in the markup to meet the due date of final project submission. This problem also made me not create a separate folder for the CSS because of time and not wanting to run into same issues as I had with the PHP includes. I will revisit that if time permits.

I also had issues with the favicon on the About page and Contact Form Page. When I included the favicon.ico as a separate folder using the file structure setup, it worked alright, but keep throwing off JavaScript codes all over the webpages. I figured I may have gotten the file path wrong, and will revisit after the project. That is the reason for hardcoding favicon in the HTML5 markup pages.

I had some issues implementing "You Are Here" in the Navigational Side Menu. I remember reaching out to my grader for that. I believe the issue I had was because of some anxiety and me just recuperating from some sickness. I figured that out after much troubleshooting and debugging. I also had another plan of using JavaScript to implement same should CSS refuse to work for that.

Lastly, is to never underestimate the work ahead. It is always good to give oneself so much leeway should in case something goes wrong. Alright, I was thinking the project would have been done by Friday, the weekend before submission of the project, but then got sick from some seafood. Weird! This is where the project planning phase of extensive research, identifying and making room for potential risks should have helped had I strictly followed the plan. I paid a big price for that still typing Project Report on the due date of submission.

What worked well for me was the freedom of being able to brainstorm to create and also try new ideas out of the knowledge gained in the class using the scrum development approach. I like the idea of starting out a project with a

baseline and tweaking it after multiple evaluations. I may have started the design after watching some movie on TV and use a black background for some of the pages, then realize that that won't work after a day or two after much thought and consideration of requirement and audience feedback. This is my suggestion to David P. Heitmeyer for the next class sessions: If it is possible to have the project assignment preferable before the mid-term break so students can have enough time to try different ideas. May also be much earlier in the term, so student can immediately translate what learnt in some project ideas.

I was so pleased that I figured out how to tweak and create custom addMethod in jQuery, in a very short time with very meager knowledge in JavaScript. My form validation worked. The name field of the form validates with at least 2 letters. The email address validates with the format username@domain. Although the phone number validates with any 10digit number like we have in the US, there is no specific detailed format to validate against. So, it will let you in if each of the 10 digits entered are the same. This is security vulnerability, and I am working to fix that. I still also need to specify some rules for the message area to validate against. I am thinking of having a minimum and maximum number of characters allowed in there.

The CSS also needs some working. I am thinking of reverting back to the original plan of having the navigation menu at the top after fixing the issue with the positioning relative to the picture slideshow. I am also thinking of creating a logo that best reflect the purpose of the website and changing colors around, especially the background color. I am not a big fan of dark background. I just tried it out to see if that works. The website also needs some beefing up in terms of more contents, and some tweaking of the positioning of elements.

If I was to approach the project again from start, all planning and implementation approach will be the same. I will use a hybrid of the Waterfall and the Scrum Methodology. It works well for me. There is one thing to have a plan and another to stick with it. Many times during the project, I wondered off the plan, got stuck and had to go back to same plan. That is where Quality Assurance comes in, to ensure deliverables meet expected standard. That should be in the project plan too, under Evaluation Phase.

One of the things I will do differently is to use more of front end development framework like the Bootstrap. I rarely used that in this project. I was trying to exercise a lot control by writing some of the codes myself. However, with control comes a lot of debugging stress. That is a big tradeoff. It would have been a lot easier for me, and make coding faster creating room for other ideas with time saved. I will also incorporate more of JavaScript codes after much reading of it to reduce the number of CSS and markup codes.