# INTERNSHIP REPORT

On

# RESPONSIVE THEME DEVELOPMENT IN WORDPRESS

At

FREASTAL TECHNOLOGIES

**Under the Supervision** 

of

MR. NIRAV J DESAI

FOUNDER, FREASTAL TECHNOLOGIES, KOCHI

# Submitted by

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Sub.: Certificate of Experience

This is to certify that Mr. Tanmoy Purkait has successfully completed two-month internship with Freastal Technologies as an Intern-Developer from 1<sup>st</sup> June 2018 to 31<sup>st</sup> July 2018.

During the internship he was found hard working and dedicated.

For Freastal Technologies

Nirav J Desai

Founder

# **ACKNOWLEDGEMENT**

I am glad to take this opportunity to express my sincere gratitude to supervisor of this internship program Mr. Nirav J Desai of **Freastal Technologies** for his guidance, support and valuable suggestions and coordination during the tenure of my internship. I express my sincere gratitude to him for believing in me and giving me the chance to complete this internship and helping me in the time of uncertainty. It was indeed a great learning experience.

I owe my deep sense of gratitude to Mr. Khyati Parekh, senior web developer of Freastal Technologies for encouraging me and helping me learning pristine topics and implementing them in my work.

I would also like to thank INTERNSHALA, an internship and online training platform, for helping me find this internship at Freastal Technologies.

With gratitude,

Tanmoy Purkait.

# **ASTRACT**

One of the most common misconception about WordPress is that it is just a blogging platform. It is not. While WordPress started as a blogging tool, it has evolved throughout the years into a powerful website builder and a robust content management system (CMS). The best part about WordPress is that it's easy to use and flexible enough to make different types of websites. That's the main reason why WordPress has grown so much in popularity. According to a recent survey, WordPress powers 32.3% of all websites on the internet.

The project assigned was to relocate a JSP website of a wholesale company, PSI Stationery Trading LLC, Dubai, UAE to a Content-Management System (WordPress). For the same, I was instructed to create a custom responsive WordPress theme from the scratch that catered to the needs of fulfilling the design and functionalities of the website.

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# INTRODUCTION

CMS became a buzz word in the web development industry because of its benefits.

The definition of a CMS is an application (more likely web-based), that provides capabilities for multiple users with different permission levels to manage (all or a section of) content, data or information of a website project, or internet / intranet application.

Managing content refers to creating, editing, archiving, publishing, collaborating on, reporting, distributing website content, data and information.

An example of a CMS application is a Web Application that provides the following administration, control panel or website management functionalities:

- Create, Edit, Publish, Archive web pages
- Create, Edit, Publish, Archive articles
- Create, Edit, Publish, Archive press releases
- · Create, Edit, Publish, Archive blogs
- Add / Edit events into an Event Calendar
- Add / Edit Inventory (products), description, product specifications, prices, photos, etc.
- Enter, Edit, or View orders and print packing slips and invoices
- View reports and statistics site data
- Create and Edit system users which have different permission levels to different section(s) of the above administration

The main purpose of a Content Management System (relating to web) is to provide the capability for multiple users with different permission levels to manage a website or a section of the content.

For example, you can take a website which has Articles, Blogs, Press Releases, Store, Events and assign each section or a part of a section to user(s) to create, edit, and archive.

# **OBJECTIVE**

The objectives of the project were as follows:

- To develop a custom WordPress theme from scratch
- To develop an efficient Content Management System for administrator where one can add, edit and delete the products that need to be showcased on the website.
- To make the WordPress theme responsive so that it must be compatible across all devices, i.e. mobile, tablets, laptops etc.
- To make sure that the design and functionalities of the existing website in JSP doesn't change whatsoever.

# HARDWARE SPECIFICATION

Processor Intel®core™i5-5200U CPU@2.20GHZ

Hard Disk 1 TB

RAM 16 GB

SSD 256 GB

# **SOFTWARE SPECIFICATION**

Software Used Brackets, XAMPP, WordPress,

MySQL, PHP, PhpMyAdmin,

FileZilla FTP Server

Web Server Apache HTTP Server

Operating system Windows 10 Pro

**Documentation** MS Word 2016

# **USING XAMPP & WORDPRESS**

Download and install the XAMPP software.

To install XAMPP and WordPress properly, two modules need to be running:

- Apache
- MySQL

Once they are launched, their status turns to green.

And now we should be able to test that our local server is working by going to http://localhost/ in the web browser of our choice.

Then we navigate to wordpress.org and download the latest version of WordPress.

Then, in Windows, we navigate to the folder where we installed XAMPP. In that folder, we find the **htdocs** subfolder.

In **htdocs**, we create a new folder for your site. This folder name will become the sub-name used to access our site. For example, we made the folder "psi", we access the site by going to http://localhost/psi.

WordPress is also installed in this directory after creating a database using PhpMyAdmin. All WordPress contents reside in this database.

# THEME DEVELOPMENT

A custom theme called PSI is being created in order to cater to the design and functionality needs of the website.

WordPress themes are being used for the following main purposes:

- To create a unique look for your WordPress site.
- To take advantage of templates, template tags, and the WordPress Loop to generate different website results and looks.
- To provide alternative templates for specific site features, such as category pages and search result pages.
- To quickly switch between two site layouts, or to take advantage of a Theme or style switcher to allow site owners to change the look of your site.

A WordPress Theme has many benefits, too.

- It separates the presentation styles and template files from the system files so the site will upgrade without drastic changes to the visual presentation of the site.
- It allows for customization of the site functionality unique to that Theme.
- It allows for quick changes of the visual design and layout of a WordPress site.
- It removes the need for a typical WordPress site owner to have to learn CSS, HTML, and PHP in order to have a greatlooking website.

# **ANATOMY OF A THEME**

WordPress Themes live in subdirectories of the WordPress themes directory (wp-content/themes/ by default) which cannot be directly moved using the wp-config.phpfile. The Theme's subdirectory holds all of the Theme's stylesheet files, template files, and optional functions file (functions.php), JavaScript files, and images. For example, a Theme named "test" would reside in the directory wp-content/themes/test/. Avoid using numbers for the theme name, as this prevents it from being displayed in the available themes list.

WordPress Themes typically consist of three main types of files, in addition to images and JavaScript files.

- 1. The stylesheet called *style.css*, which controls the presentation (visual design and layout) of the website pages.
- 2. WordPress template files which control the way the site pages generate the information from your WordPress database to be displayed on the site.
- 3. The optional functions file (*functions.php*) as part of the WordPress Theme files.

# STYLESHEET GUIDELINES

- Follow CSS coding standards when authoring your CSS.
- Use valid CSS when possible. As an exception, use vendor-specific prefixes to take advantage of CSS3 features.
- Minimize CSS hacks. The obvious exception is browsers-specific support, usually versions of IE. If possible, separate CSS hacks into separate sections or separate files.
- All possible HTML elements should be styled by your theme (unless it is a child theme),
   both in post/page content and in comment content.
  - Tables, captions, images, lists, block quotes, et cetera.
- Adding print-friendly styles is highly recommended.
  - You can include a print stylesheet with media="print" or add in a print media block in your main stylesheet.

### **FUNCTIONS FILE**

A theme can optionally use a functions file, which resides in the theme subdirectory and is named *functions.php*. This file basically acts like a plugin, and if it is present in the theme you are using, it is automatically loaded during WordPress initialization (both for admin pages and external pages). Suggested uses for this file:

- Enqueue theme stylesheets and scripts. See wp enqueue scripts.
- Enable Theme Features such as Sidebars, Navigation Menus, Post Thumbnails, Post Formats, Custom Headers, Custom Backgrounds and others.
- Define functions used in several template files of your theme.
- Set up an options menu, giving site owners options for colors, styles, and other aspects of your theme.

### **TEMPLATE FILES**

Templates are PHP source files used to generate the pages requested by visitors, and are output as HTML. Template files are made up of HTML, PHP, and WordPress Template Tags. WordPress allows you to define separate templates for the various aspects of your site. It is not essential, however, to have all these different template files for your site to fully function. Templates are chosen and generated based upon the Template Hierarchy, depending upon what templates are available in a particular Theme.

As a Theme developer, you can choose the amount of customization you want to implement using templates. For example, as an extreme case, you can use only one template file, called *index.php* as the template for *all* pages generated and displayed by the site. A more common use is to have different template files generate different results, to allow maximum customization.

# **TEMPLATE FILES LIST**

Here is the list of the Theme files recognized by WordPress. Of course, your Theme can contain any other stylesheets, images, or files.

#### style.css

The main stylesheet. This **must** be included with your Theme, and it must contain the information header for your Theme.

#### rtl.css

The rtl stylesheet. This will be included **automatically** if the website's text direction is right-to-left. This can be generated using the RTLer plugin.

#### index.php

The main template. If your Theme provides its own templates, *index.php* must be present.

#### comments.php

The comments template.

#### front-page.php

The front page template.

#### home.php

The home page template, which is the front page by default. If you use a static front page this is the template for the page with the latest posts.

#### single.php

The single post template. Used when a single post is queried. For this and all other query templates, *index.php* is used if the query template is not present.

#### single-{post-type}.php

The single post template used when a single post from a custom post type is queried. For example, *single-book.php* would be used for displaying single posts from the custom post type named "book". *index.php* is used if the query template for the custom post type is not present.

#### page.php

The page template. Used when an individual Page is queried.

#### category.php

The category template. Used when a category is queried.

#### tag.php

The tag template. Used when a tag is queried.

#### taxonomy.php

The term template. Used when a term in a custom taxonomy is queried.

#### author.php

The author template. Used when an author is queried.

#### date.php

The date/time template. Used when a date or time is queried. Year, month, day, hour, minute, second.

#### archive.php

The archive template. Used when a category, author, or date is queried. Note that this template will be overridden by *category.php*, *author.php*, and *date.php* for their respective query types.

#### search.php

The search results template. Used when a search is performed.

#### attachment.php

Attachment template. Used when viewing a single attachment.

#### image.php

Image attachment template. Used when viewing a single image attachment. If not present, attachment.php will be used.

#### 404.php

The 404 Not Found template. Used when WordPress cannot find a post or page that matches the query.

### **INDEX.PHP**

The *index.php* template file is very flexible. It can be used to include all references to the header, sidebar, footer, content, categories, archives, search, error, and any other page created in WordPress.

Or, it can be divided into modular template files, each one taking on part of the workload. If you do not provide other template files, WordPress may have default files or functions to perform their jobs. For example, if you do not provide a *searchform.php* template file, WordPress has a default function to display the search form.

Typical template files include:

- comments.php
- comments-popup.php
- footer.php
- header.php
- sidebar.php

Using these template files you can put template tags within the *index.php* master file to include these other files where you want them to appear in the final generated page.

- To include the header, use get header().
- To include the sidebar, use get sidebar().
- To include the footer, use get\_footer().
- To include the search form, use get search form().

# **Custom Page Templates**

The files defining each page template are found in your Themes directory. To create a new custom page template for a page you must create a file.

```
<?php
/*
Template Name: Custom
*/
?>
```

# **TEMPLATE FILE CHECKLIST**

### **Document Head (header.php)**

- Use the proper DOCTYPE.
- The <meta> charset element should be placed before everything else, including the <title> element.
- Use bloginfo() to set the <meta> charset and description elements.
- Use wp title() to set the <title> element. See why.
- Use Automatic Feed Links to add feed links.
- Add a call to wp\_head() before the closing </head> tag. Plugins use this action hook to add their own scripts, stylesheets, and other functionality.
- Do not link the theme stylesheets in the Header template. Use the wp\_enqueue\_scripts action hook in a theme function instead.

# **Navigation Menus (header.php)**

- The Theme's main navigation should support a custom menu with wp nav menu().
  - Menus should support long link titles and a large amount of list items. These items should not break the design or layout.
  - Submenu items should display correctly. If possible, support dropdown menu styles for submenu items. Drop-downs allowing showing menu depth instead of just showing the top level.

### Widgets (sidebar.php)

- The Theme should be widgetized as fully as possible. Any area in the layout that works like a widget (tag cloud, blogroll, list of categories) or could accept widgets (sidebar) should allow widgets.
- Content that appears in widgetized areas by default (hard-coded into the sidebar, for example) should disappear when widgets are enabled from Appearance > Widgets.

### Footer (footer.php)

Use the wp\_footer() call, to appear just before closing body tag.

```
<?php wp_footer(); ?>
</body>
</html>
```

### Index (index.php)

- Display a list of posts in excerpt or full-length form. Choose one or the other as appropriate.
- Include wp link pages() to support navigation links within posts.

### **Archive (archive.php)**

- Display archive title (tag, category, date-based, or author archives).
- Display a list of posts in excerpt or full-length form. Choose one or the other as appropriate.
- Include wp\_link\_pages() to support navigation links within posts.

### Pages (page.php)

- Display page title and page content.
- Display comment list and comment form (unless comments are off).
- Include wp\_link\_pages() to support navigation links within a page.
- Metadata such as tags, categories, date and author should not be displayed.
- Display an "Edit" link for logged-in users with edit permissions.

### **Single Post (single.php)**

- Include wp\_link\_pages() to support navigation links within a post.
- Display post title and post content.
  - The title should be plain text instead of a link pointing to itself.
- Display the post date.
  - Respect the date and time format settings unless it's important to the design. (User settings for date and time format are in Administration Panels > Settings > General).
  - For output based on the user setting, use the\_time( get\_option( 'date\_format')).

- Display the author name (if appropriate).
- Display post categories and post tags.
- Display an "Edit" link for logged-in users with edit permissions.
- Display comment list and comment form.
- Show navigation links to next and previous post using previous\_post\_link() and next\_post\_link().

# **Comments (comments.php)**

- Author comment should be highlighted differently.
- Display gravatars (user avatars) if appropriate.
- Support threaded comments.
- Display trackbacks/pingbacks.
- This file shouldn't contain function definitions unless in the function\_exist() check to avoid redeclaration errors. Ideally all functions should be in *functions.php*.

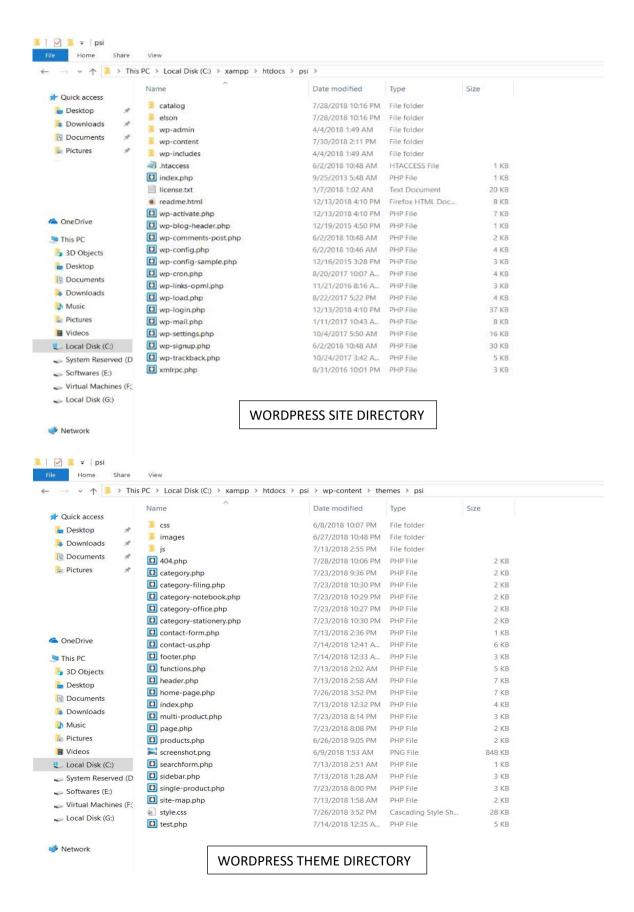
### **Search Results (search.php)**

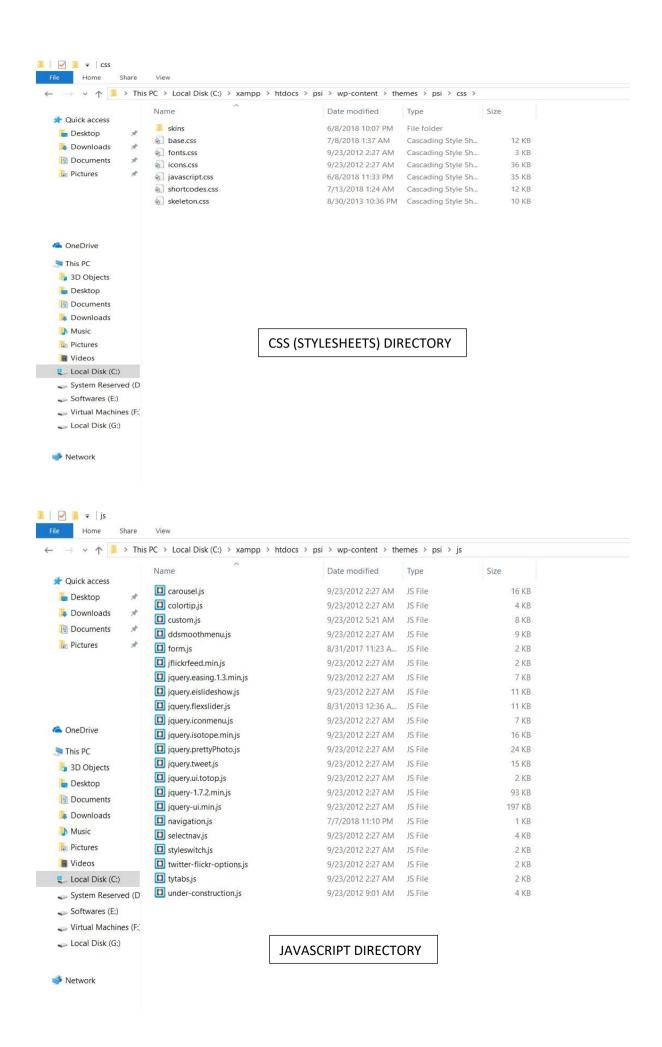
- Display a list of posts in excerpt or full-length form. Choose one or the other as appropriate.
- The search results page shows the search term which generated the results. It's a simple but useful way to remind someone what they just searched for -- especially in the case of zero results. Use the\_search\_query() or get\_search\_query() (display or return the value, respectively). For example:

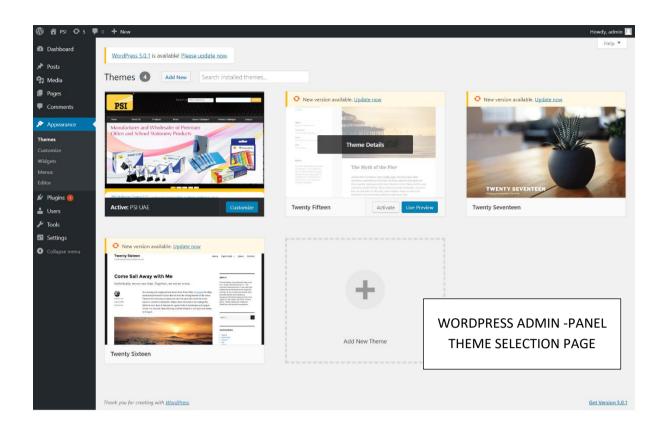
```
<h2><?php printf( __( 'Search Results for: %s' ), '<span>' . get_search_query() . '</span>'); ?></h2>
```

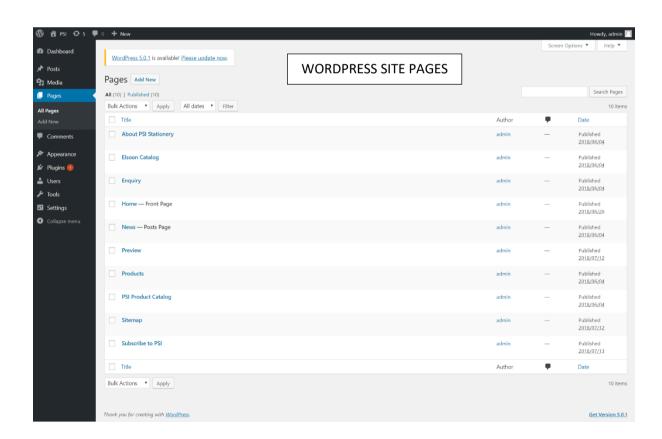
• It's a good practice to include the search form again on the results page. Include it with: get search form().

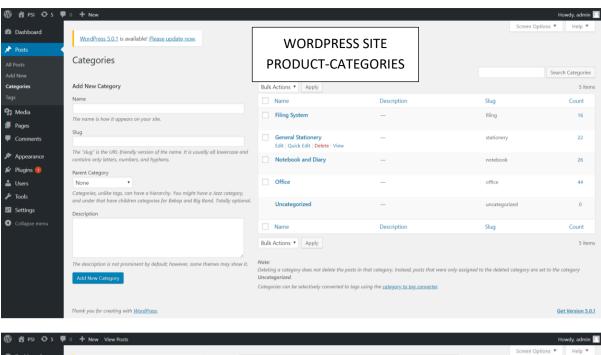
# **SCREENSHOTS**

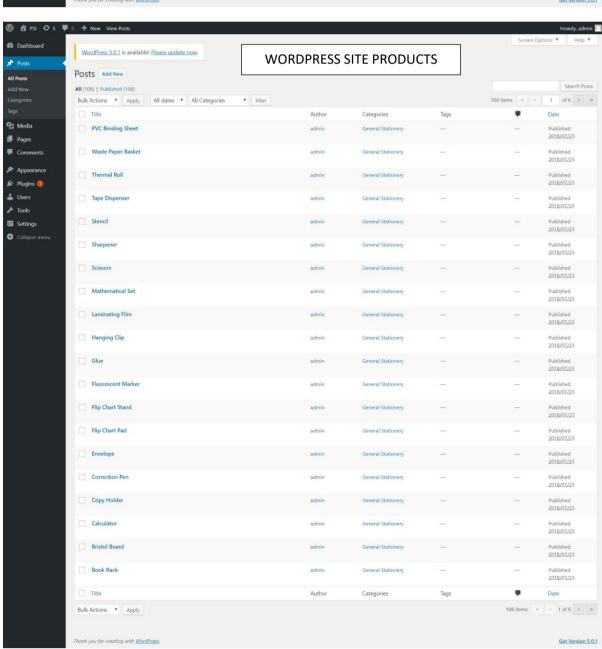


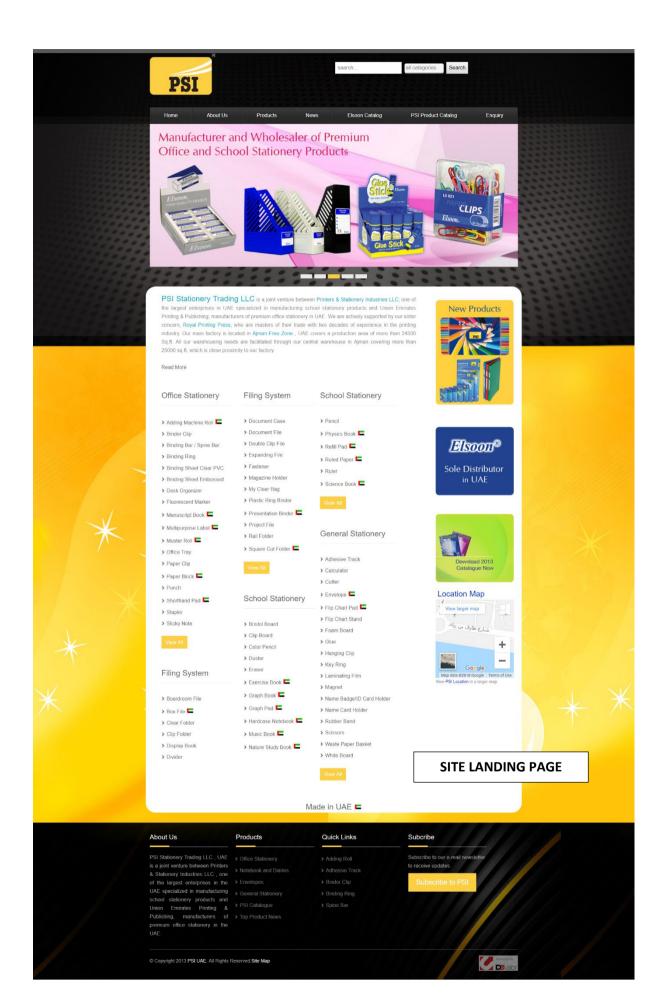


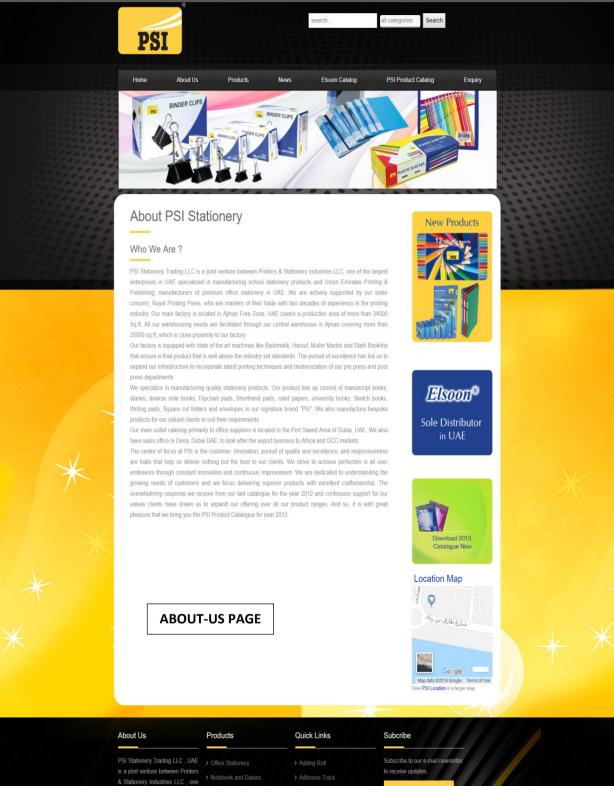




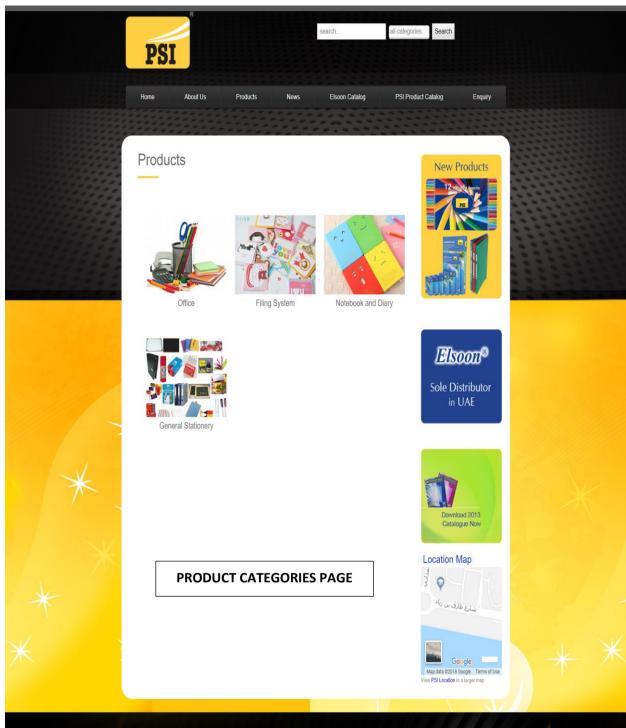


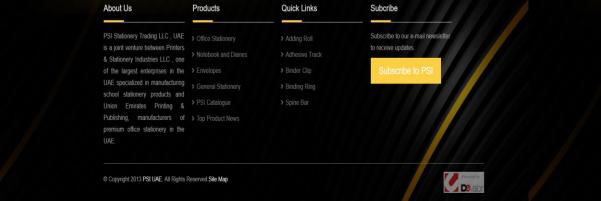


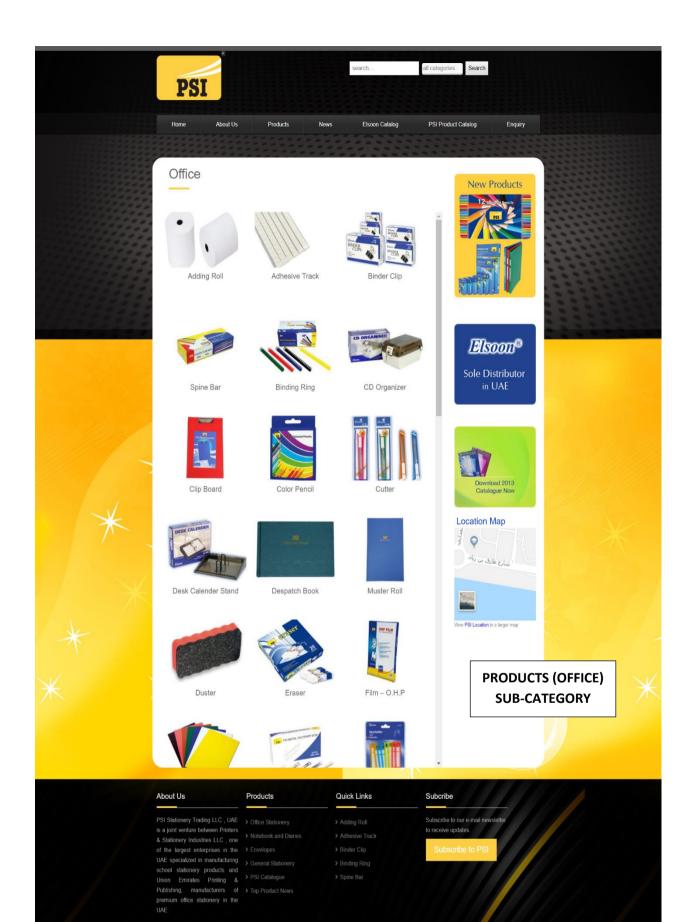






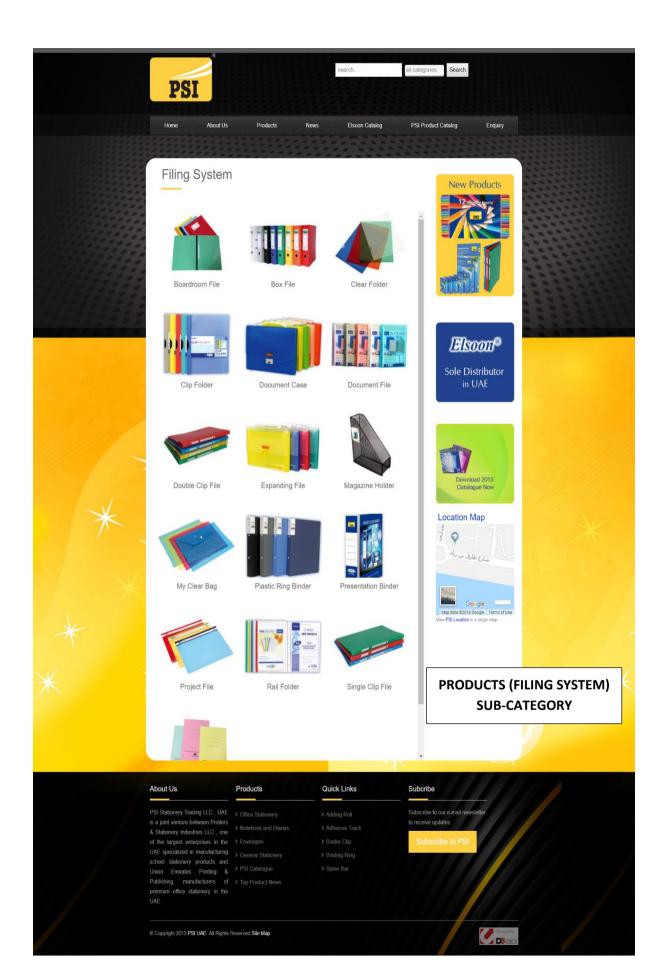


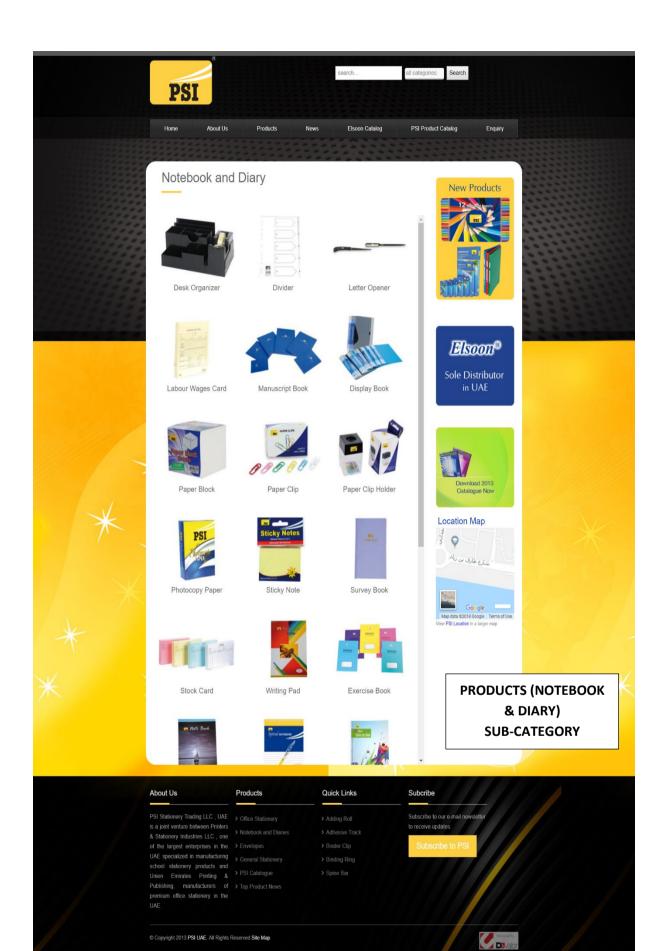


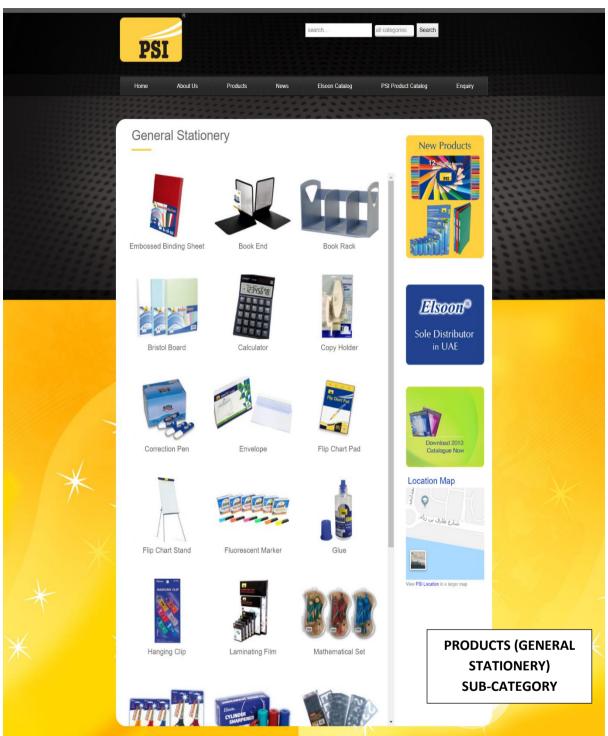


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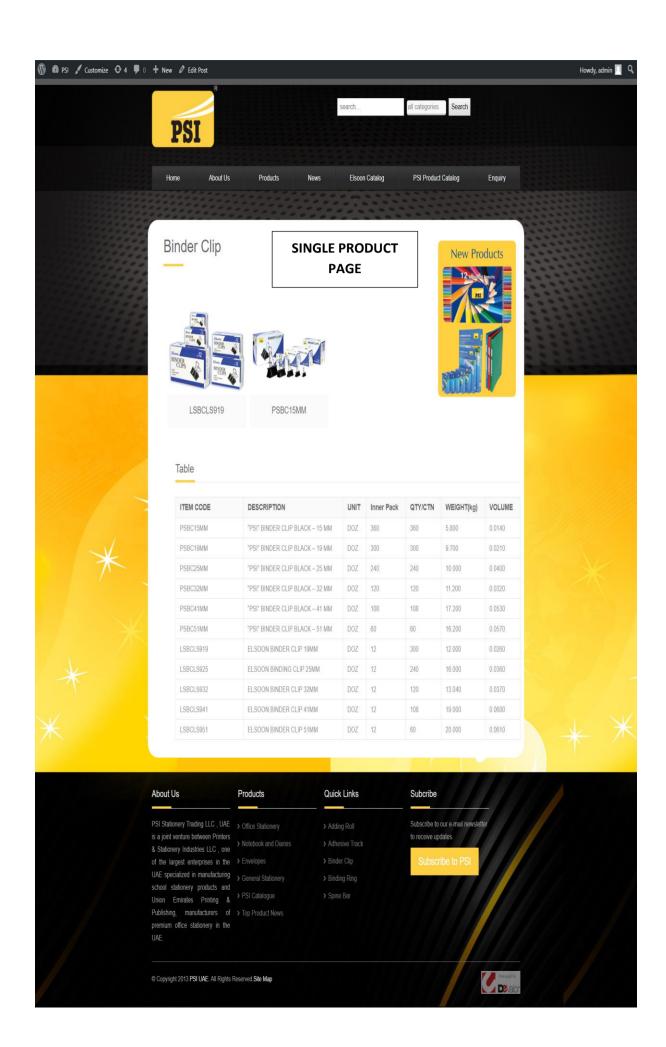
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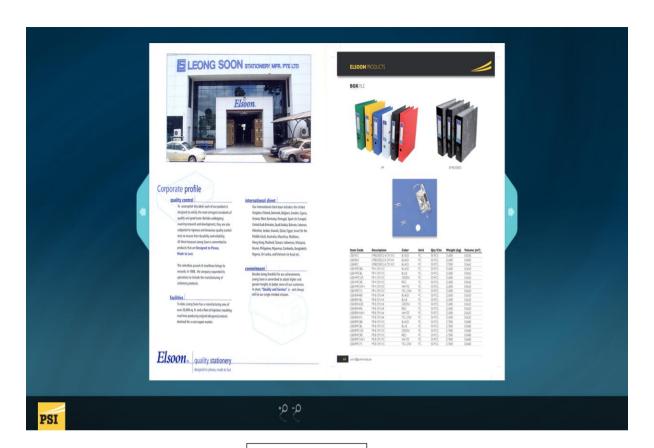
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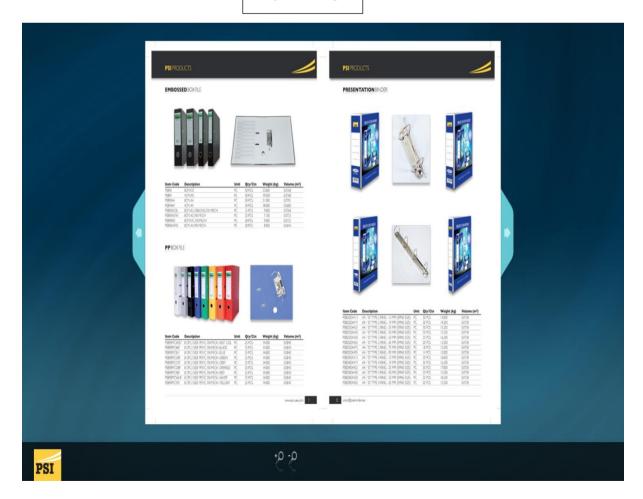
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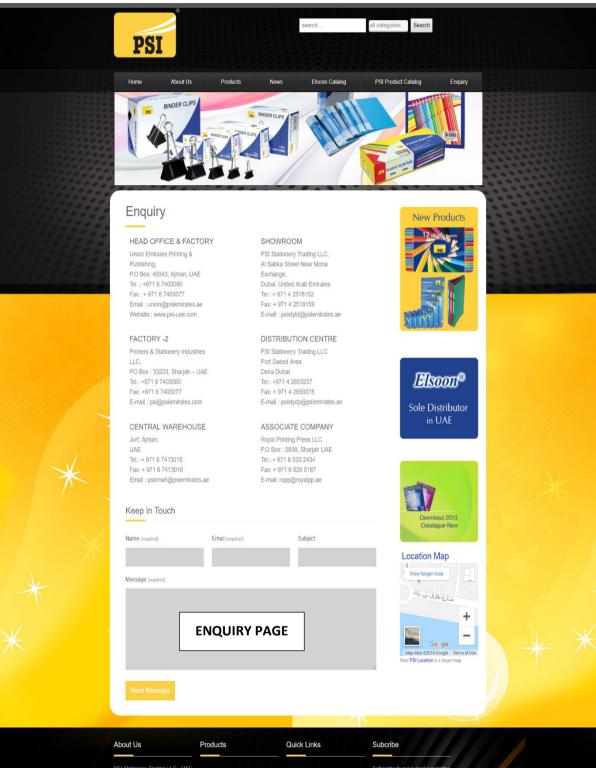
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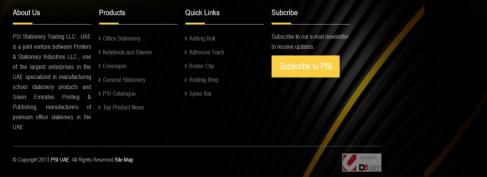


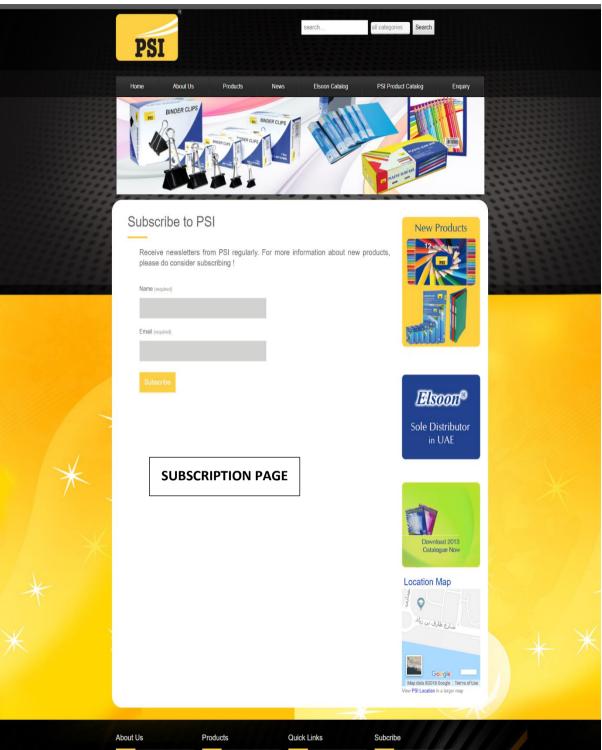


#### CATALOGUE DISPLAY PAGE











# **TESTING**

A system must be implemented for its use. The system was developed mainly through writing codes but some of the components were taken from pre-existing systems. Specially, WordPress was chosen as the programming language as per the requirements of the client. MySQL was used as the database for the system also as per the specification of the organization.

#### **SYSTEM TESTING**

System testing of software or hardware is testing conducted on a complete, integrated system to evaluate the system's compliance with its specified requirements.

#### **UNIT TESTING:**

Each module is considered independently. It focuses on each unit of software as implemented in the source code. It is white box testing.

#### **MODULE TESTING**

Though each of the components developed may give positive result but when integrate with other components of the system new properties may emerge through interfacing. Each of the UI elements like the Grids, Menus, and Pagination are developed as module. For instance, the Grids in isolation may work perfectly fine but when working with the other components in a page may behave abnormally.

### **INTEGRATION TESTING:**

Integration testing aims at constructing the program structure while at the same constructing tests to uncover errors associated with interfacing the modules. Modules are integrated by using the top down approach.

# **USER TESTING AND DISCUSSION**

The codes were regularly sent to the Quality Assurance Team for testing each prototype being developed and regular discussions were held to access the situation and have any changes incorporated in the system immediately.

### **ALPHA TESTING**

Alpha test takes place at the developer's site. Developers observe the users and note problems. It is testing of an application when development is about to complete. Minor design changes can still be made as a result of alpha testing.

### **BETA TESTING**

Beta testing is also known as field testing. It takes place at customer's site. It sends the system to users who install it and use it under real-world working conditions. A beta test is the second phase of software testing in which a sampling of the intended audience tries the product out.

# **CRITICAL ANALYSIS**

Rigorous research was done in order to fulfill the requirements of user since this theme includes all the information regarding commercial sites. On the basis of research various requirements of the system were extracted, analyzed and finalized. The finalized requirements were used to develop a website that flows the information. The development was carried out systematically through various diagrams and designs including architectural, modular, procedural, data and interface design. Different development tools were used to develop the application. For those of us who want to build powerful websites without having to worry about all the coding, and technical aspects of it, there are three main options. WordPress, Joomla and Drupal have established themselves as the leaders for online content management systems. To be honest, they are all incredible systems, and can make creating a website guick and easy, no matter how little one knows about computers and technology. Even, better – they are all open-source with means they are all FREE to use. Choosing which system to use can be difficult, but it is an important choice to make. For most people, once they've started with one, they won't want to change, so let's take a few minutes to review each of these three content management systems to see which one is right for you.

Operations like removing a date field require some understanding of PHP language. It is the case for most of such modifications. Although there are plenty templates available on the homepage, most of them are very alike. To create a unique look, you need to know CSS and HTML. To compete with Joomla! or Drupal, WordPress needs plenty of plugins to be installed. Unfortunately, these plugins influence the script's efficiency and not in a good way. Another problem arises when you need to choose a plugin for a specific functionality. Among all the thousands of plugins, most of them have their clones. It means, that any given functionality can be added by several different plugins created by different authors. Sometimes choosing the right one may take quite some time. The script is not protected as well as other applications. It all depends on how sensitive is the additional content of your page. Modifying tables or graphics format can be more complicated than in other applications like Quick.Cms or Joomla. Queries can be complex since all additional non-standard fields that make WordPress a CMS, require additional syntax. WordPress is a very good script to create a simple website. It is one of the simplest to use (definitely not simpler than Quick.Cms though) of all solutions available on the internet. It's very good choosing for a beginner's. Advanced users with advanced needs would have to install many plugins to have what is a standard for Joomla or Drupal.

# **CONCLUSION**

I got great opportunity to get enrolled in the development of system which was solely aim to manage different components and tasks efficiently and effectively. The system has been successfully developed successfully in its first phase and the second stage development is underway. It was indeed a great opportunity to get an industrial exposure at an organization like Freastal Technologies. The organization has been continuously working to promote the use and development of localized software. The very prospect of working along with teams that have produced products for International clients. Moreover, it presented an opportunity to work in a development platform – PHP that I have always adored. For the first two weeks, I was overwhelmed by the depth in the programming language required to carry out the system development work. Although I had a workable knowledge of core PHP, the building of custom components, coding standards... and above all new environment to work at; all of which I had to get familiar and that to put to work very soon! I got the chance to get acquainted with profession world where I had gained much knowledge and skill to disentangle the real-world problem. But as the days progressed things got easier and everyday were a learning experience. I still remember the difficulty that I had building my first custom component —which took me nearly about a week. But once it was through there was no looking back and one of the most memorable moments was when I was able to get a complete module working all on my own. Another important thing that I learnt was writing Stored Procedures and Package files. The basic things which should be kept in mind while making database for real world project and other stuffs regarding the efficient optimization query were learned through this internship project.

The major achievement of the internship program for me is the:

- Learning and exploration of PHP
- Learning and exploration of PHP Component Design and Module Development
- I have gained the knowledge of the practical environment of the organization that I have been the part of.
- I have learnt the organizational discipline and time management.
- The exposure to the practical environment has increased experience and confidence to deal with various organizational communications with customer.

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