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**WEBSITE CONSTRUCTION FOR SMALL COSMETICS  
ENTERPRISES**

**Thesis**

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## ABSTRACT

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<p>The aim of this thesis is about to creating a dynamic website for a virtual cosmetic company called “Purus”. Although Purus is a virtual company, but it represents most of small business in the world. The website should enable the company to get their business in the right way.</p> <p>The thesis focused on two things: the first part is to collect the research about creating the website: for example, the tools and technologies, the process of building, the type of the website and the background information about the market. The second part is about creating the website. This is also divided into two parts: the front end development and back end development. The front end is the website interface development which gives the user a visible interface. And the back end development allows the users to communicate with the server through the browser.</p> <p>As a result of the thesis, the website is an example of small business website. But it could be an example of small business on how to create the website step by step.</p>		

<p><b>Key words</b> Website, HTML, CSS, PHP, JavaScript, XAMPP, MySQL, JQuery, SEO, Web-hotels, Domain names</p>
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## 1 INTRODUCTION

Nowadays, internet is not a fresh technology to enterprises in the world. Many of the enterprises have their own websites. Not only the large-scale enterprises need websites to launch the e-commerce, but also small enterprises need their own websites to achieve goals such as propaganda and integrated social media parts of the websites that traditional media cannot complete. Because of small enterprises only need basic security of the database, it needs low skills of website development, but the main core of it is always the same. Many small enterprises want to publish their products and open markets through creating the websites. Due to these reasons, it is necessary for a company to have its own official website, no matter how large the company is and what type the company is. It is all about the company's future.

The thesis is about how to create the website. Including theoretical background, website development, the website project, promote and publish the websites, the results and conclusions. In the theoretical background part, the authors will discuss the reason why the company should build the website, the web development tools or frameworks and social media parts. This chapter is mainly about the theoretical background, it explains how important website it is, how to choose right tools to build and how to use social media on the website to help the company attract users. And the third chapter is about website development, it mainly explains the website development process. Because everything needs a plan, the website development process is a plan for creating the website. Without a plan, no one knows how to create the website for the company. So the plan should include the information needed, the design of the website interface, the constructions, testing the website and maintenance that keep the website running. The fourth part is our own project, it includes brief information of the company, the requirements, plan and design of the website, the front end and back end development. The fifth part is about promoting and publishing the website, mainly explain about the domain names, ISP, web hotels and SEO. Because after the complication of the constructing of the website, the company should publish the website and choose a specific method to promote it so that everyone knows the company to open the markets and attract more potential customers. The sixth part is part of screen shot examples of the website to enable the reader has main overview of the website if the reader are not able to open it. And the last part is conclusions and discussions,

conclusions are what the authors has learnt from the project of thesis, which part of constructing the website should be improved next time creating the website for small-scale company.



## **2 THEORETICAL BACKGROUND**

Before starting to create the website, the authors should find specific theoretical background information about the reason why the company needs to build a website and if it wants to increase brand values or open new market and the tools or platforms that help building the website. Only knowing which kinds of tools are available, the company can start to think about their website, such as the kinds of functions, social media parts like Facebook and Twitter. These social media tools can help the company to achieve their goals. Chapter 2 starts with the importance of building a website for the company. And it mainly about finding the reason helps the company to build the website more effectively.

### **2.1 The importance of building a website**

High technology grows fast in recent years, many industries and companies use different kinds of technology to manufacture their products, market promotion, job recruitment and increase brand values. With different kinds of technologies, the company can use high technology tools to achieve their goals. And the website is the window of the company, the customer can know the type of the company, product and general information. There are 4 main reasons why companies need a professional website nowadays and these four reasons can also be applied to other companies in the same situation. Every company should consider these four reasons when building the website. (Kazdesignworks, 2014.)

#### **2.1.1 Gaining credibility**

Nowadays if a customer wants to search the information about the product or the services of a specific company, the first step he or she will do is to open the browser and search it through different kinds of search engines. If the company has its own official website, it will gain credibility. But if the company do not have a website, the potential customer will turn to the company competitors' pages, and buy their products or services, even though the products or services of the company are better than its competitors. The company still loses its potential customers only because it does not have the website. If the company has its official website, but the quality of the website is not so good compare to similar

company's website. The company needs to construct a new website by a professional website build company or company itself. It Assume that the readers are the customers, a professional website not only reflects the quality of the website, but it can gives a professional feeling of the company to the customers, enhance the brand value and open the markets. (Kazdesignworks, 2014.)

### **2.1.2 Saving money and time**

Many leaders of small companies may think building a professional website will cost too much money and the company will not be able to afford it. But just to think further, once the company's website has been established and successful operated, the average cost of the website is (including web server rent and maintenance costs) 100\$ per month. Comparing the long-term development of the company, the profit in the future and royal customers, the website cost is inexpensive. Compared with other promoting methods, such as advertising in the newspaper and magazines, building the website is a very worthwhile way and a way which has lower costs and long profit effect. (Kazdesignworks, 2014.)

### **2.1.3 Keeping customer informed**

Traditional company's magazine will show their new products or their new offers every month. Nowadays, propagating the magazine is not an efficient way for small companies because it will cost vast of resources. If the company has its official website, it can be considered as an online magazine. In this magazine, customer can not only browse all the product information, but also know the latest news about the company, such as latest offers, new arrivals and address change of the company. If the website has the RSS function (Rich Site Summary), customer can subscribe the latest information by mail or by mobile phone immediately. (Kazdesignworks, 2014.)

#### **2.1.4 Always accessible**

The company is not open 7/24/365. If the customers want to ask information about the services or products, they can turn to the company website and look for information, especially if the company has F&Q function (Frequent questions and answered), this will help customers solving the problem and gain credibility of the company and intimacy. In today's business life, it is a great selling point when the customer wants to make decision about the product or services. They do not have to go to the local shop to find the solution about the product or services. (Kazdesignworks, 2014.)

In this chapter, the authors will discuss the tools or programming languages which are going to be used to construct the website, the reason why the company needs to construct the website, the development of the website construction and the usage of social media parts in the website construction. Nowadays, the internet is not a newly built to most of the business companies and it is used every day. People using internet to do everything they want, things such as chatting, gaming, texting messages, and browses the website. Many companies have their own website. Information and technology are important in today's business life.

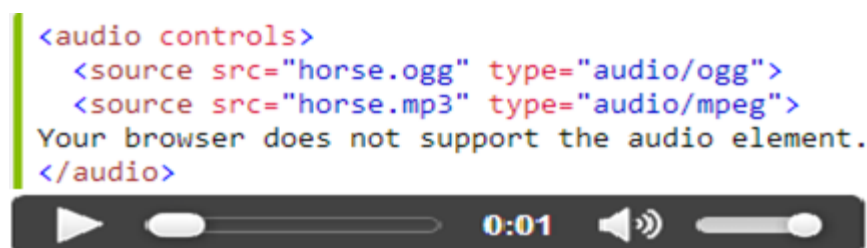
## **2.2 Web development tools and technologies**

High technology is developing rapidly. People are used to typing codes to build operating system, program, and applications. So the developers need to have a good command of IT skills. But high technology makes everything easy. Those who have high IT skills build different kinds of tools to let common people build programs and application as technical staff operate. Technologies are making everything easy and make everything more common. The same as building the website. There are two different ways for people or companies to build a website. One is the traditional way. It is built by the basic web programming languages. It takes a long time and needs a team to solve it. One person is not possible to complete the project alone. Using traditional way to build the website requires strong skills of using web programming language and working experiences. The second one is based on different web development platform. On these platforms, everyone

can create their website online and publish it immediately. If the user do not know how to do it, these platforms offer different kinds of templates for user to choose. The user can add or delete text, images, videos and even plugs to make the website personal. Through this way to create the website does not require the user needs to have a strong ability of coding and the important part is if the user only wants to use the basic functions, most the platforms are free. In other words, if the users have very strong creativity, he or she can create it without using any money. He or she only needs time and creativity. (CREATIVYBLOG, 2012).

### 2.2.1 HTML/HTML5/XHTML

HTML5 is based on the language HTML, it is formerly called Web Application 1.0. It was published by WHATWG, and in 2007 was recognized by W3C. It also established a new HTML working team. WHATWG is the abbreviation of Web Hypertext Application Technology Working Group. Founded by Opera, Mozilla foundation, Apple Inc. and other third part browser vendors. W3C is the abbreviation of World Wide Web Consortium, it developed a standard of create the website. Compares to HTML, HTML5 has several new elements such as audio, DOCTYPE declaration, number, date, time, calendar, and range. These new elements create the HTML language. (w3school, 2014.)



GRAPH 1. HTML5 example of <audio> codes and example (w3school, 2014).

Graph 1 shows the code and examples of HTML5 audio functions. Use audio element the web pages can directly have an audio embedded in the website. The audio can be the background music, audio tutorials and other functions that make website more interesting. To sum up, HTML5 can better promote the user to interact with the situation between sites. Multimedia website can achieve more improvements, especially in the mobile platforms. Using HTML5 can provide more high-quality video and audio streams. (w3school, 2014)

## 2.2.2 JavaScript

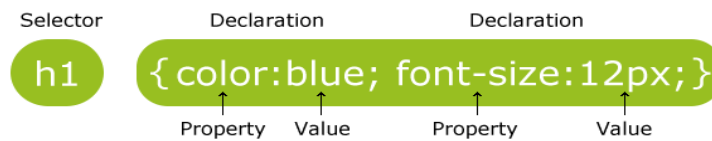


GRAPH 2. JavaScript effect: Mouse over table menu (Lumene Oy, 2014).

Graph 2 shows one of the animation effect on the Lumene website. The programming language is JavaScript. JavaScript is a literal scripting language, a part of the browser, to enable dynamic effects on the website. All modern websites are using JavaScript. JavaScript can change HTML elements, attributes, styles and it can also be used to validate the data. (w3school, 2014.)

Mouse over table menu means move the mouse over designated links, and additional sub menu contents appear in a separate DIV below it. Mouse over table menu effect is that when the user puts the mouse on one of the menus and there will be a new menu under the mouse over table menu. Users do not need to click it and jump to a new page. It not only can save time, but also make the user more convenient to browses other information from the website. (w3school, 2014.)

### 2.2.3 CSS3



GRAPH 3. CSS Syntax (w3schools, 2014)

Graph 3 shows the CSS syntax which consists of selector and declaration. CSS is the abbreviations of Cascading Style Sheets. CSS is a language that designs the website layout. CSS3 is the latest standard for CSS. Styles define how to display the elements of the website and it had been added to HTML4.0 to solve a problem. CSS3 rules consist of two main parts: selector and declaration. Selector points the elements of HTML file you want to style and declaration is the attribute of the element. It can be divided by semicolons. Declaration must contain the attribute names and values. It was separated by colon. CSS file can not only be written in the HTML file, but also it can saved as a separate file, and other file attached to it. (w3school.com, 2014.)

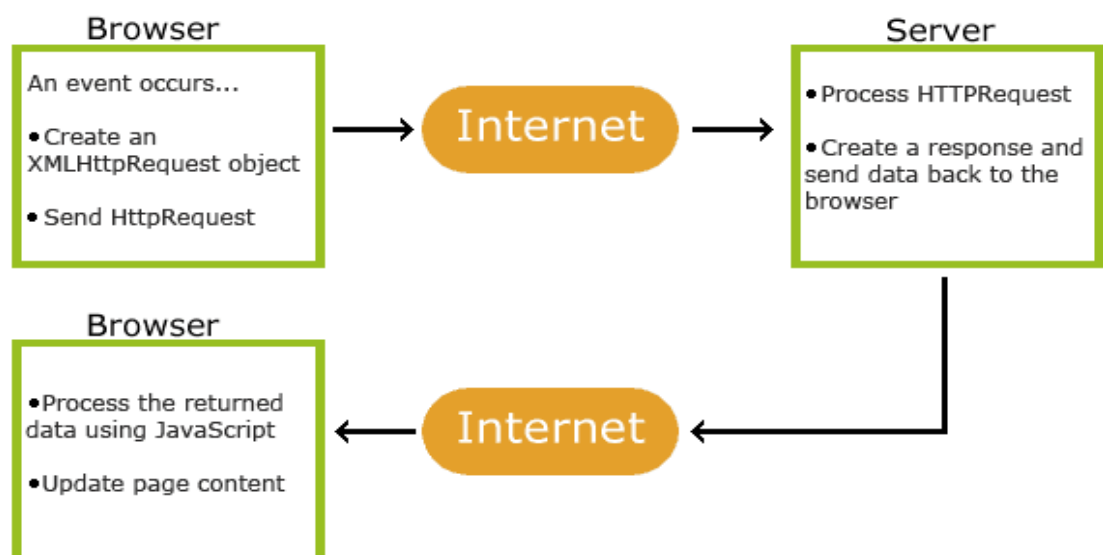
### 2.2.4 PHP

PHP is a server scripting language. Many dynamic website is established by PHP. PHP is the abbreviation of PHP: Hypertext Preprocessor. The style of PHP is very similar to HTML, and when the website using PHP, the third part tool is needed, such as Putty and Filezilla because PHP script can only be executed through the server. When the web developer write PHP in HTML, the website can be a dynamic website, because PHP can make dynamic content, manage the file from the server, adds data from the database, control user access and also encrypt data. PHP also is a tool to connect with the phpmyadmin to insert data from the input text to the database and tables. (w3school, 2014.)

### 2.2.5 MySQL

SQL is a basic language of managing the database system. SQL is the abbreviation of Structured Query Language. In fact, at the beginning SQL was not a common tool use for building the website. But with the advent of the era of Big Data, more and more data will be stored in the website, and many website constructors are eager to find a tool to manage the data from the market. At that time SQL became a member of the website-construction families. By using SQL the company can store different kinds of data into the database and select specific information to be displayed on the web page. Delete additional information from the database table.(w3school, 2014.)

### 2.2.6 Ajax



GRAPH 4. How AJAX works (w3schools.com, Ajax, 2014).

Graph 4 shows how AJAX works. Ajax always comes with the PHP. Ajax is the abbreviation of Asynchronous JavaScript and XML. The main usage of Ajax is to update parts of the web pages. It does not need to reload the whole website, only the part of the web page. If the website do not use Ajax, it need to refresh the whole page. When an event occurs, the browser carry out 2 steps: create an XML-Http-Request object and send Http-Request to the server. Then the browser bales and sends the data to the server through internet. When server receives the data, it processes the HTTP-Request and create a

response and send data back to the browser also through internet. At the end of the process the browser process the returned data by using JavaScript and update page content. This is the whole process of Ajax. (w3school, 2014.)

### **2.2.7 Adobe Dreamweaver**

Adobe Dreamweaver is published by Adobe Inc. It is an easy web development tool for building the website. It does not require the constructor know many languages of building website, Dreamweaver helps the constructor building the website in a simple, visual way. Dreamweaver is also a helper for entry developed constructors, Dreamweaver support almost all kinds of programming language to build the website, constructor can add one's own idea by only editing the code of it, not overwriting it. Dreamweaver can also connect with website's database. Using Dreamweaver can give the web developer a new idea on building the website. (Adobe Inc. 2014.)

### **2.2.8 WIX**

WIX is an online web development tool. It was founded in 2006 by 3 founders: Avishai Abrahami, Nadav Abrahami, and Giora Kaplan. WIX has 6 locations in the world and Wix.com is a leading cloud-based web development platform with millions of users worldwide. Wix creates a simple way for everyone to create a beautiful, professional web presence. There are no creative limits and no coding skills needed to get your business online. (WIX, 2014.)

## **2.3 Web development frameworks**

Web development frameworks are created to help the web developer improve their performance and efficiency of the website development task. A normal web development framework offers the user a fairly template of the website, and also basic functions of the



website. Of course, the web development frameworks also allow the user to see the code of the website to help the web developer to edit their website personally. (designmodo, 2011.)

### **2.3.1 WordPress**

WordPress is a free and open source blogging tool started in 2003 and it also is a content management system based on PHP and MySQL. WordPress is an open source project which everyone can work on. WordPress is more professional compares with other web development platforms. WordPress is suitable for small-sized company website. (WordPress, 2014)

### **2.3.2 Joomla**

Joomla is an award-winning content management system (CMS), which enables the company to build Web sites and powerful online applications. Many aspects, including its ease-of-use and extensibility, have made Joomla the most popular Web site software available. Joomla is an open source solution that is freely available to everyone. (Joomla, 2014.)

### **2.3.3 Drupal**

Drupal is the hardest, but also the most powerful CMS (Customer Management System). It was released in 2001 by Dries Buyaert and it has 15 million downloads. Drupal is free so many famous sites are using this platform such as Linux, Warner Bros and the White House. Drupal has more than 1800 free themes and at least 24000 free plugins. And the same as WordPress and Joomla, Drupal can also be installed by one click. Because Drupal is the largest CMS, the manual installation time is 10 minutes, a bit longer than WordPress. It also has a high level of ease of moderation and needs professional skills. Drupal is the best for one-size fits all. (Drupal, 2014.)

## 2.4 Social Media Parts

There is no doubt that social media has attracted different types and sizes of company's attention. Every day, every month, lots of people take their electronic devices connecting with the high speed internet, to chat with their friends, to share their opinions, to browse the website, and to search the information they need. This uncommon combination of such monumental numbers of customers engaging in such new ways with companies. (Wollan et al. 2010)

A common view shows that small companies should spend time on using Facebook or Twitter to conduct social media marketing, many small enterprises upload news related to their products and interesting pictures to increase "Likes", and introduce company brand to new and potential customers. But in fact not every customer likes a survey report. An online marketing company called Vertical Response shows that almost 1/3 of small enterprises did not spend so much time on social media and most of small enterprises did not use social media in the correct way. Here are reasons why they failed in social media market. (Wollan et al. 2010.)

The time they spend on the social media did not improve the core business. For example, if company's social media only attracts attention by uploading a funny picture or shares a funny movie that are not related to your products, it means nothing to the customers and do not create the values to the brand. Social media is not the whole part. Big companies spend their time on discovering how to improve products. Apple Inc. is a large-scale company, but even such kind of company, Apple does not have social media parts of the website, and they focus on how to improve their products. The product experience is the main issues. If the resources of promoting are limited, social media is important. But on the other side, the product is the main part. (Wollan et al.2010, ix.)

Internet has the ability to identify the truth. A common view showed that having a social media account can correct the errors of others accuse your brand. But Internet as a breeding hotbed of rumors and wrong at the same time, it will appear the readers and consumers act as the police, so it is no need to correct the error and deliberately open an account. There are different ways to help the company to achieve their goals. Social media

is one of these ways. Correctly using it benefits both the customer and the company.  
(Wollan et al. 2010.)

### **3 WEBSITE DEVELOPMENT**

Website development is all about the plan that should be completed before starting to design and build the websites. Website development is not only about the technology or tools of developing the websites, but also contains the preparations it should be done before creating the website. Without any preparation, the websites need to be edited again and again. It is a waste of time. In this chapter, first the authors each step will be shortly explained, then in the following part of the chapter, author will explain every step so that the company's website can follow the plan and start creating it. (Bowlby, 2008.)

#### **3.1 Website development process**

Before the website to be created, there are a few steps that need to be followed. Many websites list different steps of building the websites. Steps should include 5 steps. These steps enable the website normally and can make it helpful in the future. Each step should be done before constructing the website because it is important to do that. (Bowlby, 2008.)

##### **3.1.1 Information gathering**

Preparation needs information. Before starting to create the websites, the web developer should know what the purpose is (the goal), and other information about the website need to be considered. By gathering the information, one can easily find the difficulty for building the websites, what kind of informations does he/she needs to create the websites. (Bowlby, 2008.)

##### **3.1.2 Planning**

Planning step is to develop sitemap. With the information the web developer have completed in the first step, arrange the information and take the right information and delete the wrong one. Find which one is more suitable for company website. According to

the information have arranged, make a plan including setting the scene, the cost of development and wireframes of the website. (Diffily, 2006.)

### **3.1.3 Design**

Design is the process of originating and developing a plan for an aesthetic and functional object, which usually requires considerable research, thought, modelling and iterative adjustment. In the design step, the web developer will make draft of the website, it usually includes the overall program design, detail design and visual design. Each one designs has its purpose. (Diffily, 2006.)

### **3.1.4 Development and Construction**

There are two main steps in this process: confirm and refine functional plan and integrate the site. The first step is based on the project brief, site structure and visual design. To make sure everything fits the target. And the second step is starting to create the page by using different kinds of tools, web programming languages or web platforms based on the steps the company have completed to develop the website. (Diffily, 2006.)

### **3.1.5 Testing and delivery**

After finishing building the website, the web developer should check these steps before publishing it. Content, links functionality, validity, accessibility, browser/OS/resolution, connection speed, usability, search engine optimization, load testing and security. Once the check is done, The company can publish it online. The website with completed checked is professional and simple. (Diffily, 2006.)

### **3.1.6 Maintenance**

After the company publishing the website does not mean the job is done. If the company has new products or services to sell, the technical staff should update the information and display it on the website. That will let the customer get the latest information and make profits. Many companies choose CMS (Content Management System) such as Wordpress. It can be implemented to company's website. (Diffily, 2006.)

## **3.2 Information gathering**

Before creating the website, gathering information is necessary. Many factors should be considered before starting to create the website. The first step is the most important one. Without gathering the information, the company will have no idea on how the website will process and give up immediately. By making a client survey interview, the company can gather the information of the customers. Throughout the interview, the company can determine the purpose of building the website, the target audiences, the branding goals and content sources, initial technical specs and communication strategy. (Shane Diffily, 2006)

There are several factors need to be considered in this step. First is the purpose. Purpose is the reason the company needs to create the website, to sell products or services or open new markets. The second is goals. By building the website, the goals of the company. The company can not only have one goal, it can but also have two or three more goals. The company can make profit, share information, open new market, attract new customer by building the website. The third is the target audience. If the company wants to reach its goals, it should refer to specific audiences. These target audiences can help the company reach their goals. The company should gather information of these target audiences, for example, their ages, gender, job or interest. The company should gather detail information because enough target audience information will later help determine the best design style for your site. The forth is the content of the website, once make sure target audience of the company and gather the information of the customers, the company should analyze what kind of services or products these target audience needed, or which one is most suitable for the customers. If the company advertise the right information on their website, it will

achieve their goals quickly. The fifth is initial technical specifics. Initial technical means what kind of technologies will be used in building the website, for example, technologies like flash, Ajax, HTML, Dreamweave. and explain how these technologies can help enhance the user experience. And the last is the communication strategy. Communication strategy means the promotion strategy. The way the user finding the website. The difficulty of finding it. The triggers prompt a visit (referral links, incentives, and search engine terms). The way company currently distributes the URL within company's organization on and offline. (Diffily, 2006.)

### **3.3 Planning**

Website planning is a process to develop website's sitemap. After gathering the information in the first step, author need put the information together and analyze it. Besides the purposes, business goals, target audiences, content, initial technical specs and communication strategy. The company should also consider these factors at this stage. Setting the scene, the cost of development, setting smart goals, content outline, site diagram, page description and wireframe. (Diffily, 2006.)

#### **3.3.1 Setting the scene**

Setting the scene means the company should invite professional websites expert to tell them mainly three things: industry or market trends, technologies and online society culture. Industry or market trends refers to what the peer are doing. Technology means the new content and design options that are available, and online society culture means how audiences are behaving online. Setting the scene tells the company what kind of website they can build. It can help them to choose. (Diffily, 2006.)

### **3.3.2 The cost of development**

In website development the most important constraint is budget and time. Without money and time, the company cannot do anything. If the company is a small company, it do not have money to build a website. In this case, the company should choose the most important contents on the website. The main issue is how to use the limited money and time to develop the website. The website can help the company to achieve the goals and fit the customers' needs. (Diffily, 2006.)

### **3.3.3 Setting smart goals**

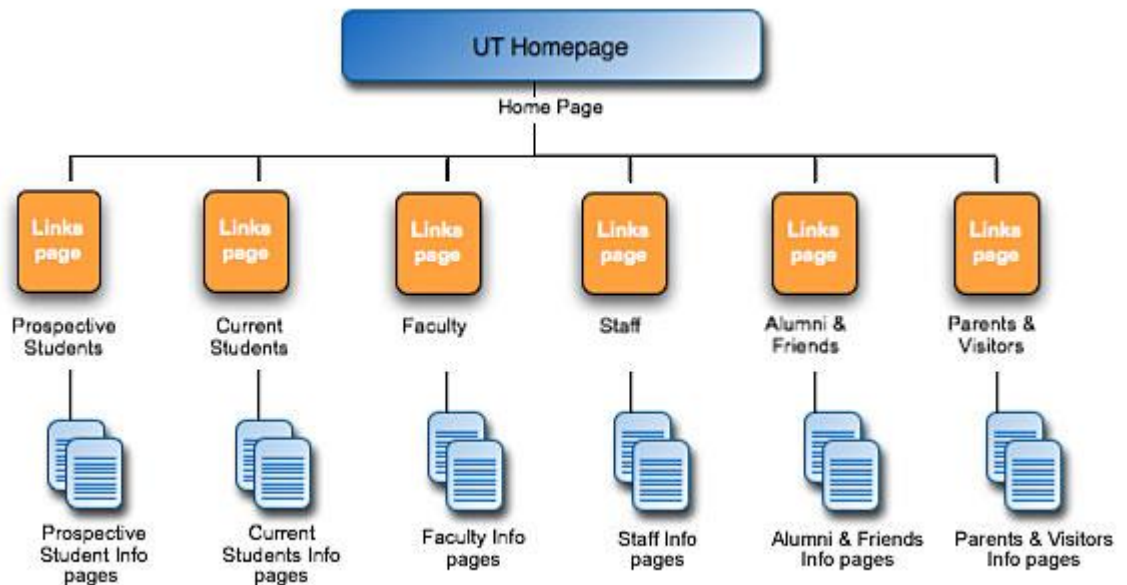
Smart goals are set based on the business goals. Having general business goals is not enough. Comparing with business goals, smart goals should be specific, measurable, achievable, realistic and timely. If the company sets the smart goals, the company's website could add more detailed information. A goal consists of several smart goals. The goal helps the company turn to success. Having smart goals will make the sites deliver real, tangible value. (Diffily, 2006.)

### **3.3.4 Content outline**

According to the information conducted at the first step. One person should arrange the information and check the correct information and the suitable goals for the company. And take time to think about future, how the content will grow in the future and leave the space for the content to grow. And group the content into categories. Once the content is categorized, the content outline is completed. (Diffily, 2006.)



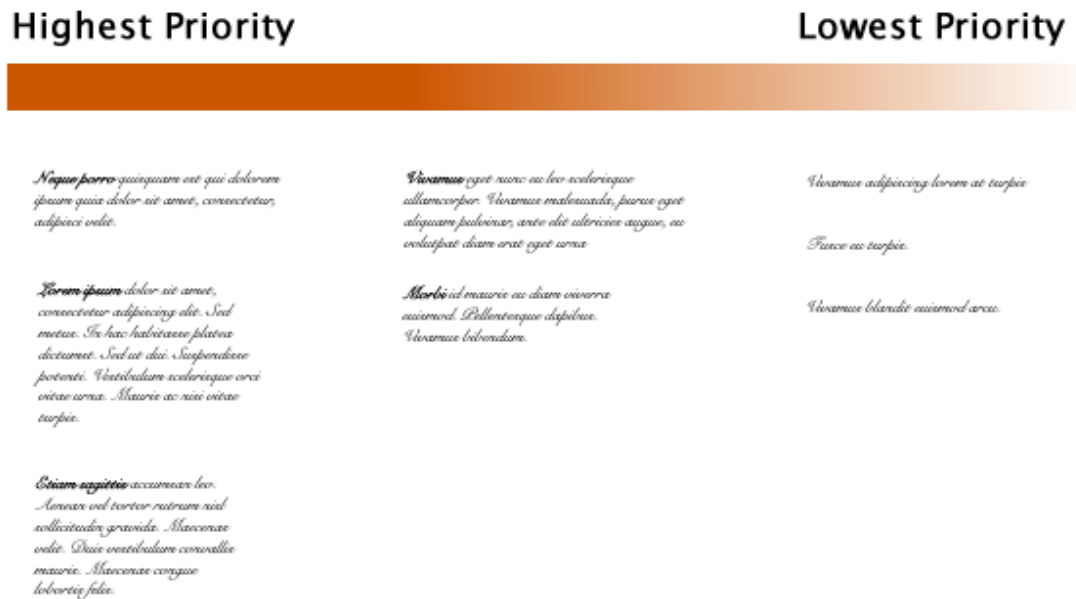
### 3.3.5 Site diagram



GRAPH 5. Site diagram example (UTEXAS, 2014).

Graph 5 shows website site diagram example. Site diagram is the final and the structure of the content outline. It can be drawn by EXCEL, StartUML or Microsoft Visio. Graph5 shows there is only one homepage of the website, and under the homepage there are first level page, and in the first level, the web page usually refers the company's product or service line or contact information. And under the first level, there are several second level webpage. It usually refer to the detail information of the product and other useful information. (Shane Diffily, 2006)

### 3.3.6 Page description diagram



GRAPH 6. Example of page description (UTEXAS, 2014).

Graph 6 shows the example of text priority. Page description diagram means the content need to be displayed on the pages. To solve the problem, two things should be considered. The belonging of the page and the priority of the content. People use horizontal access for priority. For example, on the page there are three columns, the left column is the high priority, the medium column is medium priority and the right one is low priority. The user find the information easier by using this way. (Diffily, 2006).

### 3.3.7 Wireframe



GRAPH 7. Example of wireframe (UTEXAS, 2014).

Graph 7 shows the example of website's wireframe. A wireframe is the main structure of the website main page. Above of the page is the heading, heading usually has the company's logo. Under the heading there will be heading 2. Heading 2 is links link to the company's products or services or contact information. In the middle is the website body, usually it has the company's latest information or latest offers. And at the bottom of the wireframe is the footer which usually contains copyright information. Wireframes include all the major elements of the page. (UTEXAS, 2014)

### 3.4 Design

Design has three parts: overall program design, detailed design and visual design. Overall program design means the external factors that affect the website. Detailed design is mainly about the website themes, including the color, the font, and website database structure design. Visual design is the process of all website design, it lets web developers

know which step he/she reached. Usually the developers start with the overall program design. (UTEXAS, 2014.)

### **3.4.1 The overall program design**

The overall program design is the first step of website construction. It contains three parts: overall directionality, operating environment design and development plan. Through the first step, the author will solve the problem such as the main purpose of the enterprise creating the website, the suitable software/hardware environment for the enterprise, the cost or way of website construction? Once the author solve these questions, the author can move forward to the detailed design.

Overall directionality means that the position of the website construction of the enterprise and which kind of results does the enterprise want to see. There are three main directions of website construction of the enterprise. Corporate propaganda type is to promote company's corporate image, to increase the effect of the company and establish the enterprise's brand. Market developing type targets the market, outstanding products and develop potential customers. And integrated Services are increase the quality of the service, complete the service structure and maintain the basement of the customers. (TNW, 2014.)

Operating environment design means the company, or the website constructor, who works for the company should choose a suitable operating environment to construct the website, it not only included the software, but also included the hardware. Operating software environment refers to the website operating system platform. It either can be Windows Server series, OS X, Linux, Unix and other operating systems. Development plan means the company have its own choice to make sure the method of website construct and budget. If the company has their own websites constructor, in this case the company can construct the websites by itself. Using this method will save a great amount of money compare with ask other professional experts to do it. But if the company did not have enough technical staff can construct the websites, in this situation, the company need to ask other people to do it, although this will cost a great amount of money, but the websites is professional. And compares to the profit in the future, the money can be regarded as an invest, this

invest will have its own values. And the development plan also includes the budget of constructing the websites, it should be showed to the company manager. (Diffily, 2006.)

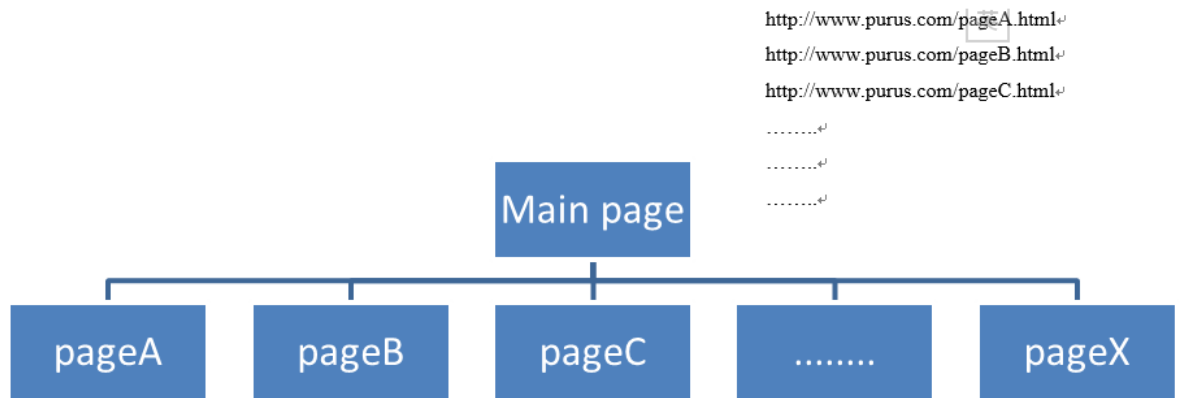
### **3.4.2 Detailed design**

Detailed design includes logical structure design and physical design. Logical structure design includes database structure design and website layout structure design. The main purpose of detailed design is to add details design of the website. For instance detail design includes the database structure, the website layout structure, the website root structure, the standard of the font and texts and color. After the detailed design is completed, it is time to develop the website. (Diffily, 2006)

The company can create a database according to its needs. Using this way, the website constructor can divide the website into several parts: design, layout, structure and content. If the company use this way can protect the information and update of website's layout. The design of database can be divided into these parts: data analysis, conceptual model design, logic design and physical design. The design should follow the principle of improving efficiency, it need to make sure combine with the other parts of the website. (Diffily, 2006)

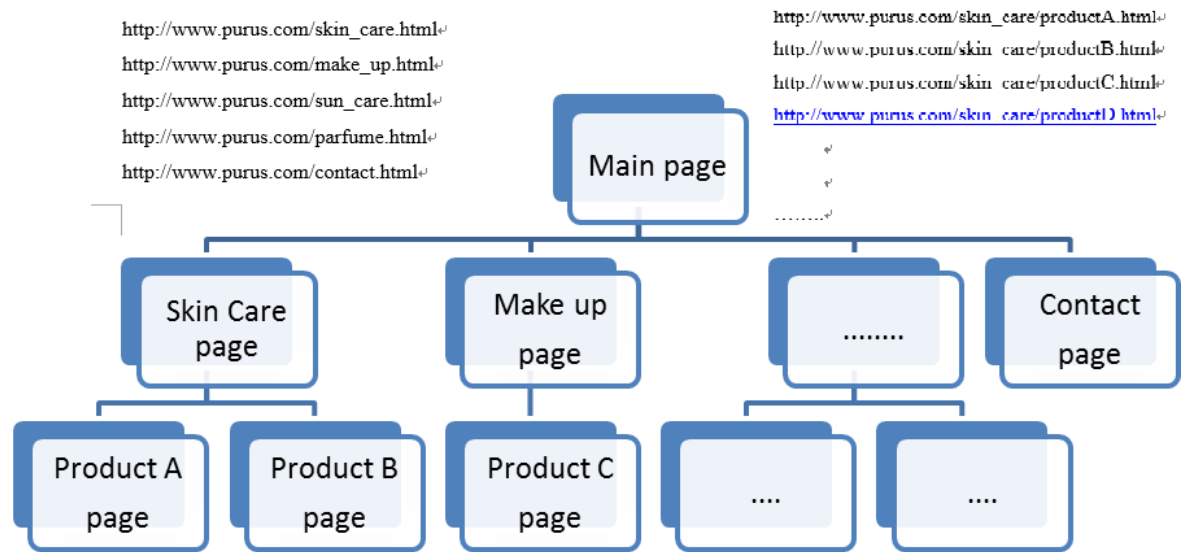
The organization of website content means the company should start from the customer's view to organize the content. Once the website position is established, the contents of the website should be designed according its position. The aim of the website construction should fit the goals of the company, which will achieve the goals more easily. (Diffily, 2006.)

Physical structure design means the structure of the real content of the websites and the location of file storage. There are two different physical structures for the web developers: flat structure and tree model structure. Different types of enterprise suitable for different physical structure. (Issi, Lazaro, Cohen&Joseph, 2004.)



GRAPH 8. The flat structure of website physical structure(Diffily,2006).

Graph 8 shows the flat structure of website physical structure. This structure means all of the webpages are stored in the websites' root directory. HTML such as pageA, pageB, pageC...pageX are all saved in the root directory to make a flat physical structure. This kind of structure is suitable for small enterprises because these companies normally do not have many products and services. The company wants to show the customer different products compared to big companies. And also this kind of structure is easy for the search engine to search, it helps the customer find the company's official website quickly. It also has disadvantages. It is not easy to manage the file if the website has too many files. In that case, this kind of structure is not suitable for large-scale companies. (Issi, Lazaro, Cohen&Joseph, 2004.)



GRAPH 9. Tree mode structure of websites physical structure (UTEXAS,2006).

Graph 9 shows the tree model structure of website physical structure: tree model structure means that under the main websites there are many categories, they mostly is the category of the company's products. Under the category there is another kind of category.

Based on the classification of the company's product, the HTML URL can have many different types. Tree model structure is suitable for the companies who have many products, or other word, has different kinds of information display on the website to show to the customer. Using this structure can not only help the web developer manage the HTML/JavaScript/CSS/PHP file easily, but also it enables the customer to type the website address more logically. Tree model structure also has disadvantages, sometimes too much categories are not easy to be searched by using search engine. (Issi, Lazaro, Cohen& Joseph, 2004.)

When the authors browse the websites, the authors usually find websites with blue or red color always attract attention, and the authors find most of them are very large or famous companies. Most of large-scale companies's websites choose blue as their theme color. There are reasons for that. (Frain&Ben, 2012.)

First is the psychological factors. Blue will give people a feeling of peace and tranquility, deep and polite. When authors first time saw the Lumene Oy website, a series of blue with

blue that feel serenity. Six thinking hats the theory says: Blue Hat Thinker is responsible for summaries, overviews and conclusions. From the number radix: There are statistics on color psychology. Blue is the favorite color of people, which is 40% of men and 36 percent of women's favorite color, and only 2% of men and 1 percent of women chose blue in the questionnaire as "least favorite color." (Frain&Ben, 2012.)

Red is the favorite color than the second largest number, each with 20 percent of the men and women regard red color as the favorite, only 2% of men and 3% of women said that red is "I do not like the color." To prove the theory above, the world-famous analysis company KISSmetrics made a survey called How to Use the Psychology of Color to Increase Website Conversions. (Frain&Ben, 2012.)



GRAPH 10. The reason why most web hyperlinks are blue (Frain&Ben, 2012.)

Graph 10 shows that the female users prefer blue, purple and green and hate orange, brown and gray. Male users prefer blue, green and black and hate brown, orange and purple. The result of the survey is very consistent with the statistical results of color psychology. And colors give information on people subconsciously. Yellow is more youth and optimism. Red is full of energy. Green is more relax. Black is more suitable for superior grade product. The authors also find blue can give people the feeling of safe and trust. It is a style of enterprise. (Frain&Ben, 2012.)





GRAPH 11. The powerful colors and its ranking (The Logo Company, 2014).

Graph 11 shows the blue is mainly correspond to “TRUST”. That is the reason why most of the information technology company like blue as their website theme color, it is definitely “the color of technology”. Most IT companies particularly love to use. From Windows, IBM and Facebook make people associate these successful companies in the IT fields, many IT companies use blue as their LOGO’s color, from the human subconscious guideline to success. Through the above cases, the author can find that people have to give color to the convention to a particular symbolic value, so a lot of time on corporate LOGO decision-making and program development, confidence and reliability are often the preferred choices of the column, the final will choose a safe blue color. (Frain&Ben, 2012.)

Font is the soul of the layout. Different types of fonts can give the customer different feelings. And a suitable font on the website enables the customer to read clearly and to know the product from the websites quickly. So choose a suitable font for the website benefit both of the customer and the enterprise. Most of the website are mainly consisting of the text sources. And fonts, as one of the most important elements of textual manifestations, play an important role in web page design. But the importance of the fonts did not get enough any attention. Many elementary web designers are still stuck on the concept of fonts in font-family: "Times New Roman", Arial, and Helvetica. Almost no one knows that Franklin Gothic Book is a Windows only font, it cannot be viewed effectively on the OS X platform, because the system of OS X couldn't even find this kind of fonts, so the system changed it to default fonts setting of OS X. Therefore, the style of the website becomes different from the original. It cannot even have the effect of the Franklin Gothic Book. Therefore, W3C put forward a concept of "font set"-----the system puts a series of similar-style of fonts in priority order up a list. The browser from the list of matching head start, it knows where to find the first available font and use the font for display. (George Plumley 2011, 60.)

There are two points to remember. First is the generic font family corresponds to which specific font is determined by the browser. In the example above the browser specify Arial for sans-serif font, but another browser entirely possible to specify Helvetica for its sans-serif font. Which specific font is the final application, is unpredictable. Second, the generic font family is just a font substitution program set in other fonts are invalid. So - the designer should be possible to give a complete font set, to cover all of the systems as much as possible, rather than rely on website generic font family. (George Plumley 2011, 60.)

### **3.4.3 Visual design**

Design includes the overall program design, detail design and visual design. The overall program design is the initial whole plan, it includes directionality, the operating environment and the develop plan. Detail design includes the logical structure design and physical structure design. Visual design is a critical step toward to effective presentation of content to company intended audience. Visual design should be edited again and again. Make a draft of visual designs for home page and one sub-page, the client provides

feedback on designs, conduct the second and third draft until the client approve the final design. From the sample, the author can find that the process of visual design is step by step, from whole to detail. First design the home page and one sub-page to make the right directionality. And then if it is right the process continues. Step by step, until the final visual design is completed, then the whole process is finished. (UTEXAS, 2014.)

### **3.5 Development/Construction**

Web development/construction is a process that converts the content into the web code. Or in another words, it makes the design become real. In this step, there are 2 steps needed to follow and 2 factors should be considered. The web developer should decide which kind of website the company wants to make, dynamic or static. Deciding the type of the website enables the company's website can have different functions.

#### **3.5.1 Dynamic websites**

Dynamic websites are based on database technology, so the websites' workload of the maintenance can be greatly reduced. With dynamic website technology, the company can realize more functions, such as users' registration, users' login, online surveys, users' management, order management and so on. In fact, dynamic websites' files do not exist on the server independently. And the server will return a full page only when the users send requests to the server. The special symbols, like '?', in the dynamic websites lead to problems when the search engines start finding the keywords which the users require. Generally, the search engines cannot search all the details from the database of a website. Or due to technical considerations, search engines cannot capture the URL behind these special symbols. If the companies choose to use dynamic websites, they still need to add the processing techniques which gives the search engines permission to the search work. (Diffily, 2006.)

### **3.5.2 Static websites**

Each page of Static websites has a stationary URL, and the URL of the page with a common form of HTML is the suffix which is not containing ‘?’. When the web content is published on the web server, the content of each static page is stored on the web server whether the user call or not. That means static websites are all stored on the web servers and each page is a separate file. Static websites are more stable, so search engines can retrieve them easily. Also static websites do not have the support of the databases, it will cause a larger workload in website design and maintenance. When the websites contain a large amount of information, it is not well to entirely rely on static web production methods. With poor interaction, the static websites have more restrictions. (Diffily, 2006.)

### **3.5.3 Two steps of the plan**

The first step is the technical/functional plan. The author can start this step by reviewing the report had been conducted in the first step. The author should make sure the information they collected and make the plan, the overall program design, detailed design and visual design support the whole project goals and meet the customer needs. And then, think of these things such as the target browsers, the display resolution, the connection speed and the page downloads size. And then confirm the functional specs. What kind of functions your website needs and what kind of technology it needs. The authors can use the W3C web standards to insure the websites pursues the goals of web for everyone and web on everything. Review the plan and make sure nothing is missed and make it into the project plan. (UTEXAS, 2014.)

The second step is building and integrate the site. According to the project plan and using web technologies to build the websites. First, it can be started with built templates by using web standard. The technology related to CSS, HTML, JavaScript, and Optimize programming language. And then create pages which included putting the content into the templates and establish the method for content contribution. At last, starting to write backend development which can achieve the function like search, login/register, and web analytics. Back end development which means technology related to PHP and MySQL programming language. (UTEXAS, 2014.)

### 3.5.2 Two factors

Windows Vista, XP, 2000, NT, ME, 98, 95	Apple	Other, i.e. Linux®, Sun®, Unix®.
Internet Explorer	Apple Safari™	Firefox
Netscape	Internet Explorer (discontinued)	Konqueror™
Firefox	Netscape	Mozilla
Opera	Firefox	Netscape
Mozilla™	Opera	Chimera™
AOL Browser		

GRAPH 12. The internet browser in different operating systems (Diffily, 2006).

Graph 12 shows different browsers in different operating systems. The first factor is the browser compatibility. Graph 12 shows the internet browsers from different operating systems. A browser is a software that can display the websites. Although nowadays most browsers are almost the same but it has a little difference. A good way to check which browser people use to view company website is by analyzing web traffic analytics. Using different browser to view the website can give the user different experience. (George Plumley 2011, 60.)

And the second factor is screen resolution. Screen resolution means the number of pixels that can be displayed on a computer monitor. The number has no limits. It is increasing all the time. The common computer monitor distributive is 1024 pixels wide and 768 pixels high. And for big monitors, it is 1920 pixels wide and 1080 pixels high. To check what kind of screen people use most to view website is to analyze the website traffic analytics. (Shane Diffily, 2006)

## 3.6 Testing and delivery

Website testing is to check the consistency between the websites and the guidelines. The websites should fit the guidelines. The purpose of testing is to make sure the websites meet

all the requirements and achieve the goals. Testing and delivery with the website is an important step. If the company do not test the website and publish it, the website will have many problems and it is a waste of time to edit the website after publishing it. (Diffily, 2006.)

TABLE 1. Websites Testing category (Diffily, 2006).

Test method	Description
Code	This tests that all languages conform to accepted code standards
Design	This tests that all pages conform to the website's preferred layout and design.
Spelling Testing	This tests that HTML and other code has been inserted in an optimal manner.
Hyperlink Testing	This tests that all links to all documents and assets resolve correctly.
Page Weight Testing	This ensures that all pages conform to the maximum allowed page weight.
Browser Testing	This tests that the website displays correctly across target browsers and operating systems
Usability Testing	This ensures that the website conforms to appropriate practice in the area of usability.
Accessibility Testing	This ensures that the website conforms to the stated level of accessibility outlined in the organisation's Web Accessibility Policy
Security Testing	This tests that the website operates with minimum risk in a secure environment.
Functional Testing	This tests that the website operates as expected under normal and error inducing conditions
Performance Testing	This tests the responsiveness of the website to user actions.

Table 1 shows the different types of testing the website. Website testing ranges from many areas. From simple to difficult, different kinds of testing have different purpose. Not all kinds of testing need to be completed. Choosing the one that fits the websites ensuring the veracity. Then the company can publish the websites. (Diffily, 2006.)

### **3.7 Maintenance**

After publishing the websites online, the web developers need to update the information on the websites according to the company's action. The maintenance period is based on how often the company will change, delete, and add pages to their websites. The easy way is using the CMS (Constumer Management System) like Wordpress. (Diffily, 2006.)

If the company wants to maintain its websites itself, with a few technical staff on website construction, the company should use CMS like Wordpress in the planning stage. CMS gives the person ability to edit the content of the web pages, even create or delete the pages. CMS give the user access to back-end administrative area, where the user can use an online editor to edit existed content. People have various choices with CMS. (Diffily, 2006.)

### **3.8 User experiences**

The user experience is also how easy the product is to use. Use experience are also called usability. Website usability can then be analogically defined as the extent to which a website can be used by specified visitors to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use. If the company wants the high user experience, the web developer should make the websites easier to use and to find. The website usability testing is not expensive and time-consuming. There are many open source website usability testing software available on the internet and many of them have excellent trial versions. The test would be completed in two weeks and it is not expensive. (Diffily, 2006)

## **4 WEBSITE PROJECT**

The website project is mainly about the process of author's project. It including the company information, the requirements, plan and design followed by chapter 3, construction concerns about front end and back end develop...started with the company brief information. Gathering the information is the first step, information should include company, customers and marketing information. The web developer can gather the information by themselves, or by the company.

### **4.1 Company and customers**

The general information and market information of the company should be known. And the company needs to know its position in the market. Once the company's type has been known, the company can view the same types of company's website, discover how their website looks, and take advantage of them, using the suitable elements on its own website.(Diffily, 2006.)

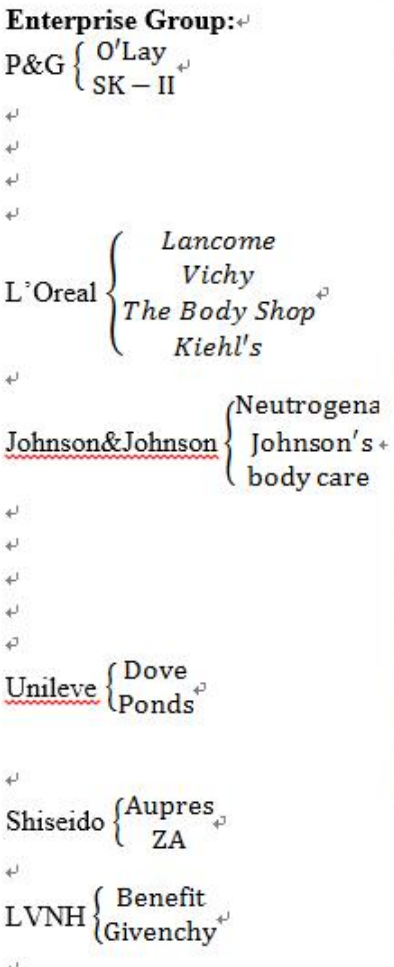
#### **4.1.1 Cosmetic company**

The website project made for is a small, virtual cosmetic enterprise. Its name is Purus so that the author can easily in the Thesis. Purus was founded in 1993 in Tampere. The enterprise's name Purus is originally from the Latin' word. It means pure in English, which shows Purus's products are all made from pure material without any impurities. Purus started the business by making skin-care products. The company was a partnership company started with five partners, and through decades of development, Purus now has 200 employees and the partner of the company has changed to two. And its product line is increased to four kinds of products: skincare, makeup, sun care, perfume and men. Due to the economic crisis in 2008 all over the world, Purus has faced different kinds of ups and downs in specific periods, and Purus was even faced bankruptcy under the hardest situation in 2008. However Purus survived the difficult situation and made tremendous progress in the year 2013.



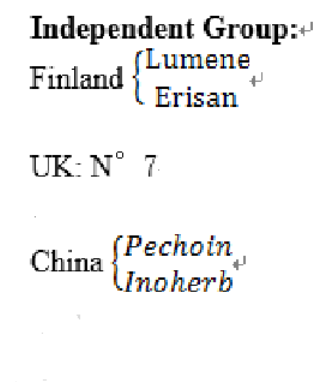
Purus used to have a website under the domain name www.purus.com, but because lack of maintenance and lack of technical staff, the developer seldom renews the website so that the domain names were expired and finally the website was all ineffective in recent years. The CEO of Purus was urgent to build a new website of the company, to make the company running as before and to enlarge the market to make more profits.

There are three kinds of cosmetic companies in the world. And the way how they run the business is not the same. Sometimes one can include the other two. Before starting to create the websites, Purus should know which kinds of cosmetic companies it is, and check their websites in order to find the examples of the websites. Taking the essence of their websites and trying to make the website more perfect.



GRAPH 13. Enterprise group and Lancome website and region category (Lancome, 2014).

Graph 13 shows the enterprise group. Most of the brands in this group have their own headquarter companies. There are at least two different brands belonging to the same company. The company would take a complete care of their brands' websites. Their own professional people to design and create the webpages that fit the brands. They have the IT department for updating and maintaining the websites. The department is responsible for deciding the most suitable structures for the brand. Due to the scale of the companies, it is obviously that most of brands are worldwide and there're clear countries' choices on the main page. And sometimes there are signal of online shopping beside the country's name. When page jumps to the main website and other pages, there are always contacts of customer service and the company.



GRAPH 14. Independent group website example (Lumene, 2014).

Graph 14 shows the independent group. Those kind of companies conduct everything alone. That means they do not have group of professional people to maintain their websites. Usually, they do not update the website until they have new products or they add new functions to the website. Their website can be described as simple and clear. Customers can find the necessary details but it may not be all what they want to know. It is common that they have their companies' e-mail address, telephone number and fax. These independent brands are most popular in the founded country, a few neighbouring countries or particular countries.

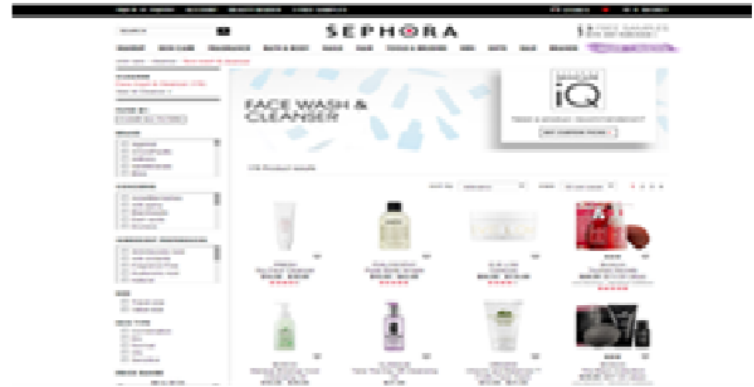
## Integrated Brand

### Integrated Brand:

Sokos(FI)

Watson(CN)

Sephora(FR)



GRAPH 15. Integrated brand website example (Sephora, 2014).

Graph 15 shows the integrated brand. These brands could be seen as a mixture. They have the legal rights to sell plentiful products from different brands. Their website is designed to sell products. So they have more details introducing the products and own advanced customer service system, like real-time services, feedback system and customer-comment system, during working time. They are also the most active group on social media such as Facebook. They upload the newest trends as soon as possible so that customers will see their activities for product sale.

Purus does not belong to any brand. It is an independent brand in Finland. Purus can take advantage of the independent brand, and correct the shortcomings of other independent brands. Simple is the best. The company's websites should be simple and clear so that the customer can browse at a glance. All the useful information can be found easily. And also more details about the product's information are added such as ingredients, price, produced country, production date or expire date. It helps the customer to read the products in detail. There is an online e-shop, so the customer can buy the product directly. And furthermore, the author also can add the retailers on the website so that the customer can find them locally. In the future, if Purus opens its market overseas, the websites should be made

locally due to translation is needed. Due to this situation, advantage of enterprise group of cosmetic company is added in advance, such as regional category.

To sum up, for Purus, would take the advantage from these three different styles. The author planned to make the most appropriate websites for the company with clean webpages, details for the products, basic online shopping mode and the basic customer service system. And this will make the company's website looks more professional and let the customer find out that Purus is professional in every field.

#### **4.1.2 Customers**

It is planned to welcome those customers who do not have high spending power and choose to use mid-range cosmetics. It is offered a platform through which they can easily find what they need. The website is built with a clean bright interface. It is more convenient for the customers to choose what to read and what they would like to buy. The authors will have details and clear description of the products of the company. Those customers might have a picky taste of the products they want to buy. Also, they hope the price would be reasonable so that they have the purchase ability and having the products. The authors hope they can satisfy these customers' requirements. The connection ways of customer services would be shown on the website in case there are any unknown questions customers want to figure out or they have problems with the products. They can choose any way that they thought is the most convenient to contact with the customer services. Purus wishes the best for the customers.

#### **4.2 Requirements**

Requirements are both for the web constructor and the company. These two requirements represent the depth and breadth of the website. Requirements for web constructor are mostly about the tools or web programming language they acknowledge. The more higher level of technology they master, the more perfect the company's website is. The requirements for the company are mostly about the website overall directionality includes the company's purpose, smart goals and target audience.

#### **4.2.1 For web constructor**

The basic website construction knowledge is needed. For example, a successful website can be divided into two parts: the front end of the website and the back end of the website. Front end means the design or layout of the website, such as color, graphic and something that the customers saw in their browsers. The developer must know the basic programming language such as HTML, CSS and JavaScript. HTML is for basic web programming, CSS is the layout of the websites (including text size, fonts and background color) and JavaScript is for creating dynamic websites such as navigation rollover effects. Back end means the forms, database, script and browser server interaction. In this part, the developer must know the programming language such as PHP, database, asp.net...etc. PHP and database can be used together to make a database of the company or the customer. With the technology of back end websites, the customer can have the additional service from the company's websites. The web developer also needs to know the company's goals. And always consider the goals while building the websites. If the web developer cannot understand the goals of the company, the websites he/she made cannot effect the company. Although the website is professional, it means nothing. (Addison, Doug, 2004, 165)

#### **4.2.2 For the company**

Many companies creates websites for many different kinds of reasons, such as expending markets, find potential customers, increase brand value. And successful company's website is related to its goals. For example, Christmas is coming the company wants to increase sales during the Christmas festival, so the company provides Christmas gifts package to sell, and the web developer of the company put the latest information on the website so that the customers will see the information and make a purchase decision. In that case, creating the website is equal to the goals. (Addison, Doug, 2004, 165.)

If the business and website benefits the customers. The company should know what kinds of information should be put on the website, and how this information benefits the customers. Information is always the main part of the website. Without information, the website has nothing to show to the customer. The information should be correct. Do not put false information on the website. This is not a win-win choice. In other words, if the

customer gain benefits from your website, then he/she will trust your brands and products, and tell families or friends about your company, and you will have potential customers.

### **4.3 Plan and design**

As the author discussed in chapter 3, plan and design is the preparation stage of building the website. In this stage, the author should consider the cost, company smart goals, website content, site diagram, wireframe and overall directionality. Each factor is important and need to be considered. After finishing all the preparation, then the author could start to build the website.

#### **4.3.1 Cost**

Purus is a small company. The company cannot support so much on the website and wants to have the websites within a short time. It need to use the limited money to reach the goals. So authors choose different kinds of web programming language as their web construction tools because basic tools on the internet is free, and using the templates of WIX can save time to meet the company's requirements (WIX,2014).

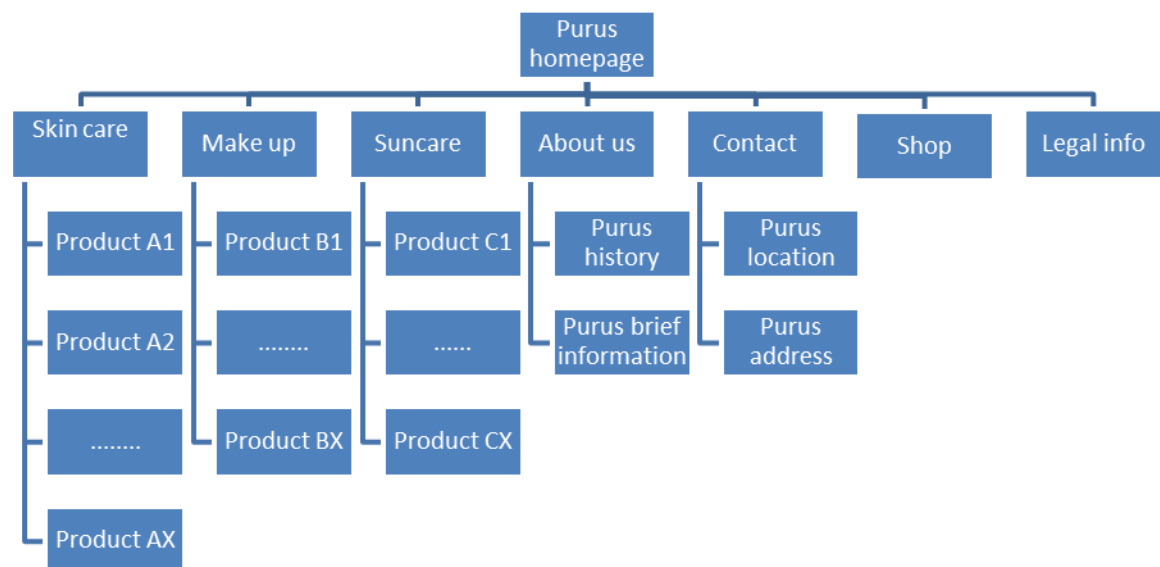
#### **4.3.2 Smart goals**

Purus's main goal of creating the website was to run as before and enlarge the market. To be smarter, the goal is set as to make a website better than the former one, add functions like online research, e-shop and social media parts. These functions that are modern in today's websites. And for enlarging the market, the company should put the online survey on the new websites to find new customers.

### 4.3.3 Content

Content includes text, images, music, video and map. Text is the main part of the content. Most of the information of the company is displayed by the text. And the text has priority, they needed to be sequenced by the priority, and then put the high priority next to the place where the user always can see, put the low priority text on a conspicuous place. The advantage of the information is high priority, the disadvantages are the low priority. Images including the Purus's brands, the product images, and the company's images. Video could be the introduction of the company and the main brief of the products. Map shows the location of the company and partner retailers' shop addresses.

### 4.3.4 Site diagram

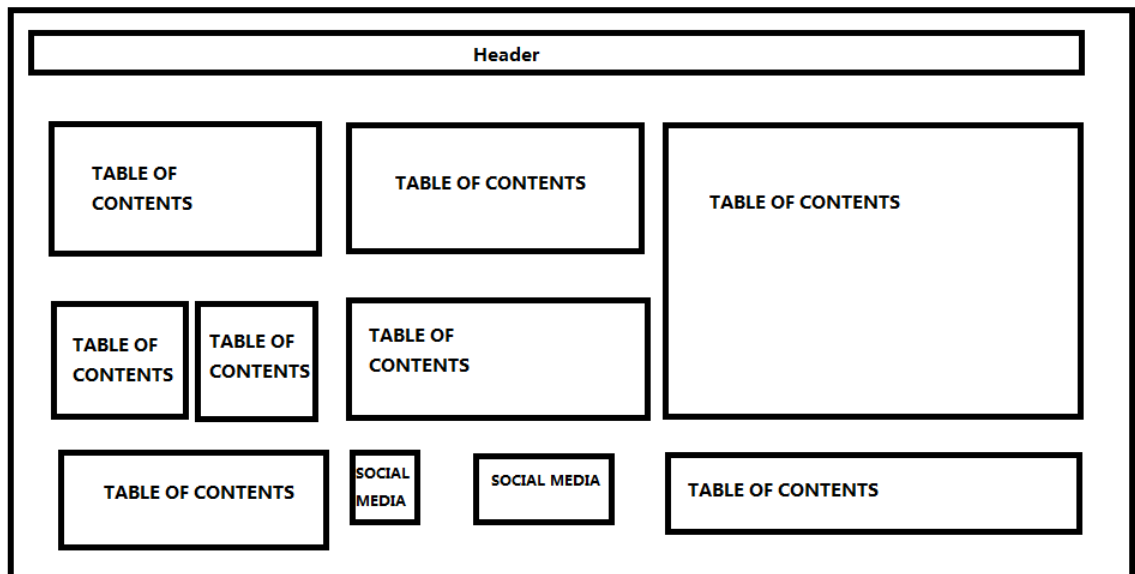


GRAPH 16. Purus websites diagram

Graph 16 shows Purus website diagram. Purus has three product lines: skin care, make-up and sun care. On the websites, these three main product lines should be at conspicuous locations. Purus uses tree model types to define website root directory, because tree model structures can help the web constructor manage the file easily and enable the customer type the website more logically. And for the beginning of promote the website, the website does

not need so many key words for the search engines to search. So in this case, the website's tree model is more suitable website diagram for Purus to choose.

#### 4.3.5 Wireframe



GRAPH 17. Purus websites' wireframe

Purus website's wireframe is very simple because simple is the best. The header is on the top and this part should be scrolling display to let the customer know the latest information and login or register or link to the online shop. Table of contents is common like other cosmetic website, including the company's information, the products, and the shop locations. In the middle of the website, there will be the information like the latest deals and popular products. It will let the new customer understand which product is the most famous. At the bottom of the website, other information is shown such as social media parts so that customer can contact us by Facebook, twitter or other social media. Keeping customers in touch is good for the company's development. Let the customer know how they pay the products. Otherwise customers will confuse about the payment because there are many different types of cards in the world.



#### **4.3.6 Overall directionality**

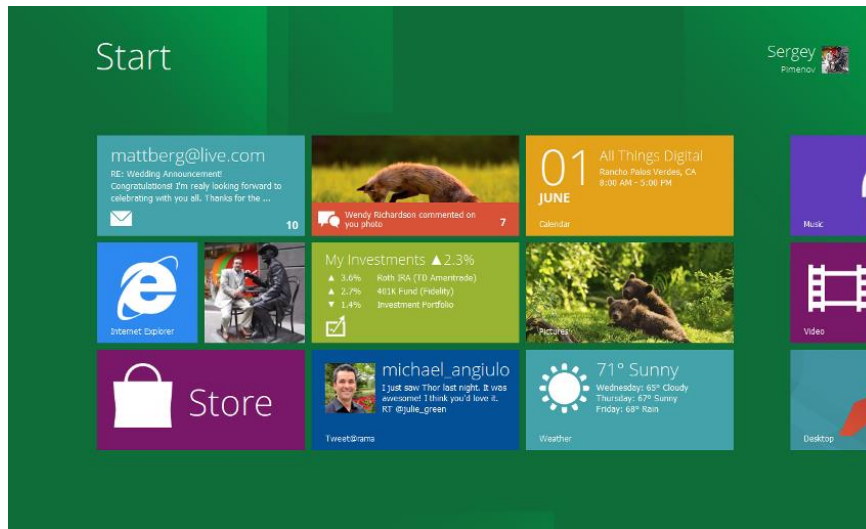
Purus is a small developing company. Compared to other known cosmetic companies such as Lumene Oy. Purus needs to increase the effect of the company and establish the enterprise's brand. As the description of Purus said before, Purus has five product lines and it is partly known by the people in Finland. Purus was a small company without a famous brand. If Purus wants the same position as Lumene Oy has. Purus must choose the first type, to successfully establish the brands in the cosmetics market.

#### **4.4 Construction**

Purus is not a top public company, so the authors do not have the financial foundation as well as complex web skills. Purus needs to take the advantages of static website and use them as the main web techniques. The first step to create the whole structures of static pages of the company's website. The authors would take the full use of static pages to show how the company works and bring a convenient experience for the customers.

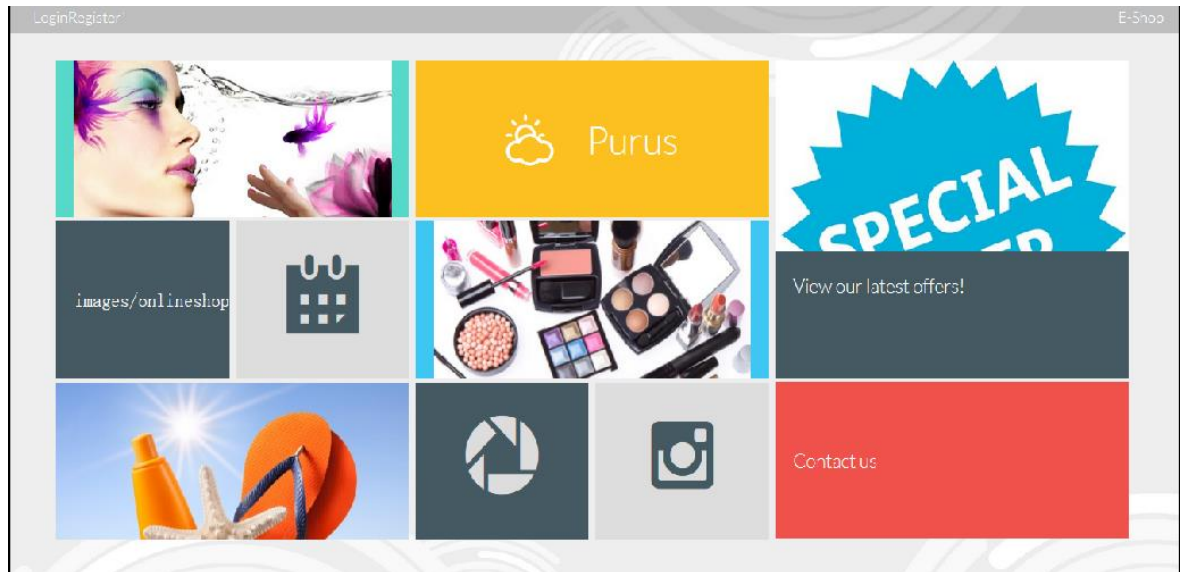
##### **4.4.1 Front end development**

Front end development is the mixing of website programming languages (mostly HTML, CSS, JavaScript, JQuery.) and layout designed by web designer. If the website is a company, there should be completed information inside the company that runs the company, such as managing the staff inside, making profit and avoiding risk in the markets. These are all included in the back end part. But there is special types that can be defined the company such as the type of the company, the main products of the company and annual financial state. All the phenomenon can be seen is called the front end type.



GRAPH 18. Metro UI example (Microsoft ,2015)

Graph 18 shows a metro UI example. It is a model borrow from Windows 8. Because Windows series operating system and Windows operating system has been developed for more than ten years, it is decided to apply the windows 8 system on the main page. Windows 8 style is also called the Metro UI CSS. Metro originally was a design language creating by Microsoft and it primarily used on user interface. There are two reasons that it is chosen this theme. One is it's easy to start and simple. Metro UI theme is a graphic interface. Not every customer is able to read the text. But at least, they can identify the pictures so that they can know what they are looking for. Each picture is linked to another page, and all of them are parts of the main page. The way they are combined gives the customer a simple way to view the website. These are aimed to create the convenience for customers to find what they want, like product information, company brief introduction, company contact information and online shopping.



GRAPH 19. Purus main website pages

Graph 19 shows the website the main page has 10 graphic. Three main products of Purus are marked as the largest graphic: skin care on the top left, make up in the middle and sun care at the bottom of the left. These three products make a triangle which gives the customer an intuitive feeling about product. The other information and the company brief introduction, shopping calendar event, company contact information, social media parts and offer details was placed according to its own level.

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8"/>
5 <meta http-equiv="X-UA-Compatible" content="IE=edge,chrome=1" />
6 <title>Purus:Find your beauty</title>
7
8 <link rel="stylesheet" href="css/demo-styles.css" />
9 <script src="js/modernizr-1.5.min.js"></script>
10
11 </head>
12
13 <body>
14 <header>
15 <a href="rl/login.php" class="tutorial-link" style="float:left">Login</a>
16 <a href="rl/register.php" class="tutorial-link" style="float:left">Register</a>
17 <a href="eshop.html" class="tutorial-link" style="float:right">E-Shop</a>
18 </header>
19 <!--=====Start Demo=====-->
20 />

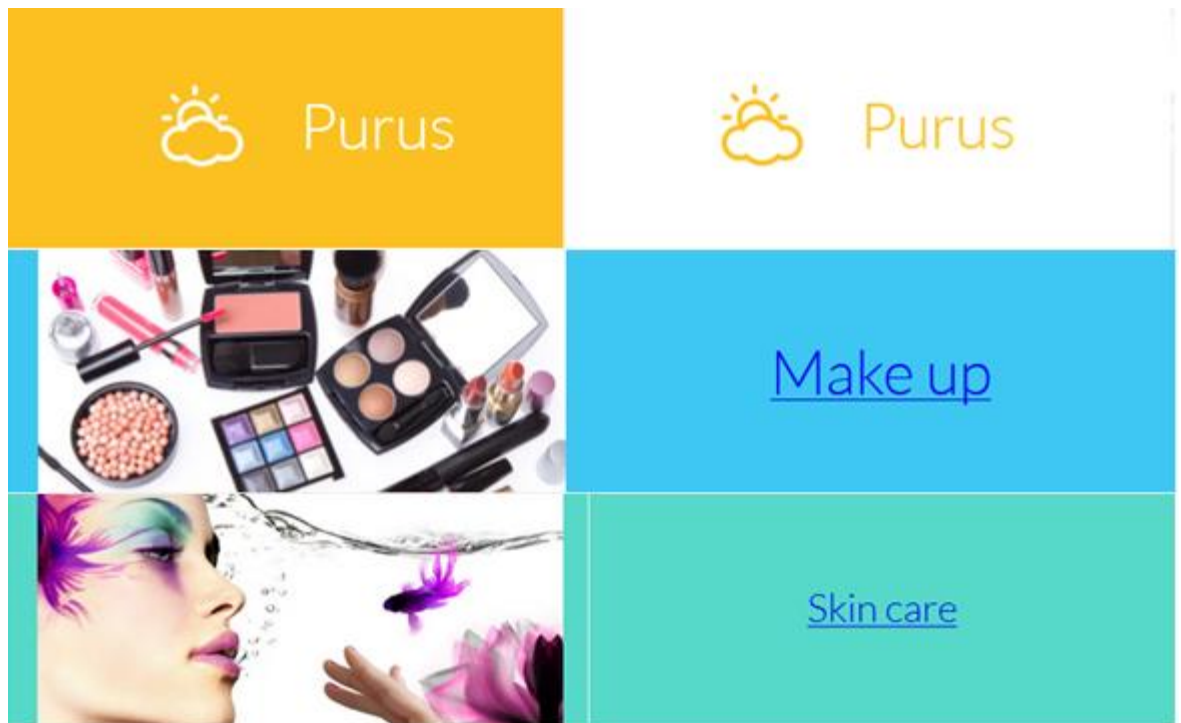
```

GRAPH 20. Part of the main page html code

To create the main page, the authors use technology such as HTML, CSS and JavaScript. HTML is in charge of the main contents of the main pages. CSS file includes all the style will be used on the HTML page and JavaScript makes the effect for the main pages. CSS and JavaScript file could be added into the HTML code. But to keep code concise can

make everything simple. If the company wants to change or add or delete something on the main page on the future, the web developer can easily find and change through the HTML file's code.

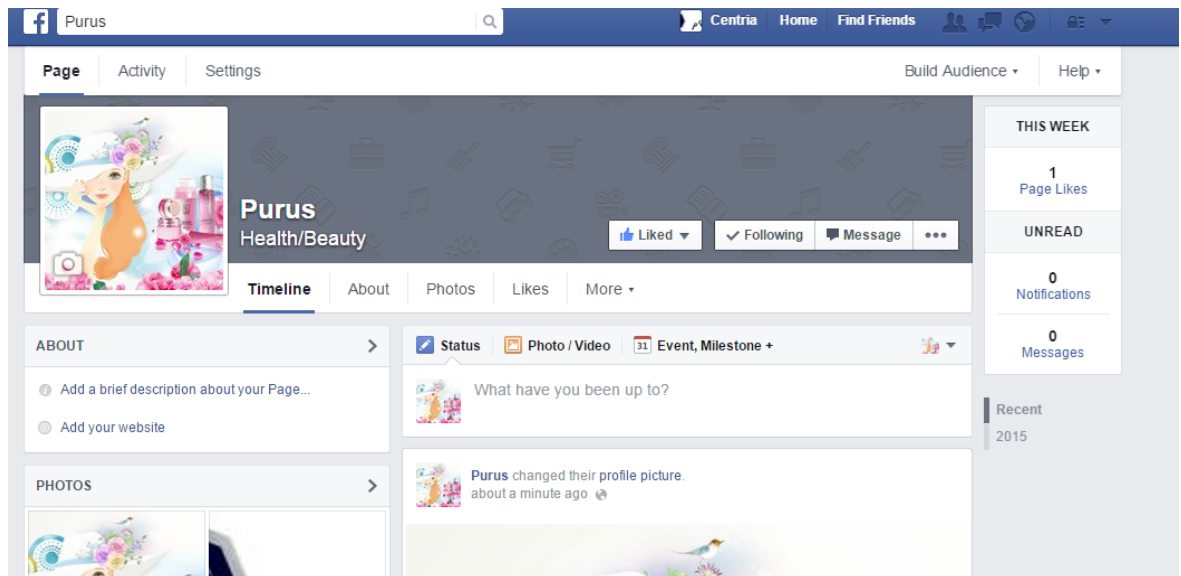
### Animation



GRAPH 21. Animation effect on Purus main pages

Graph 21 shows the animation effect on Purus main pages. Animation on website is also important. It gives the customer a deep impression of the website or the company. The three graphs show 3 animations, which are mouse over text: when the mouse pointer stay on it, the text color will be changed with the background color, the second effect is the mouse pointer stay on the pictures, the picture will disappear from left, right or above, and then the picture correspond text will be appeared after the picture is removed, it can help the customer know the products deeply. Sometimes the customers cannot connect “a” picture with “b” text. So it is better to make the kind of animation to help them. There is another reason why the authors make this animation. The authors put Purus product pictures on the main page. It can leave a deep impression on the customer. Maybe in the future, when the customer sees the pictures, then Purus products will be immediately be shown on their brains.

Before publishing the websites, the company should integrate the websites with the social media parts. For Purus, there are only two social media on the main page websites: Facebook and LinkedIn. Creating the Facebook page is a simple process. But creating a LinkedIn page is not easy. It requires many information, such as background and other views on it. Because Purus did not have such kind of information it instead with twitter.



GRAPH 22. Purus Facebook websites

Graph 22 is Purus Facebook websites. Purus Facebook websites haven't been created for a long time. So it does not own many "Liked" and following currently. But the authors think, with the development of the company, Purus should update their information regularly on the website. Facebook website will be more and more popular in the future.

```
<div class="r-page random-fb-page">
  <div class="page-content">
    <h2 class="page-title">Purus</h2>
    <p><a href="https://www.facebook.com/pages/Purus/1573630856207836" >Click to give us a like!</a>
    </p>
  </div>
  <div class="close-button r-close-button">x</div>
</div>

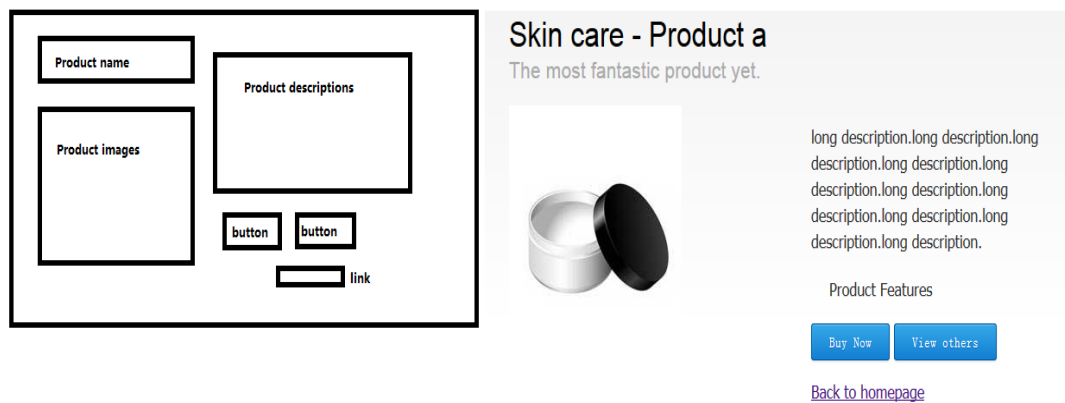
<li class="tile tile-small last tile-8 rotate3d rotate3dY" data-page-type="r-page" data-page-name="random-fb-page">
  <div class="faces">
    <div class="front"><span class="icon-facebook"></span></div>
    <div class="back"><p >Launch Facebook</p></div>
  </div>
</li>
</div>
```

GRAPH 23. Main page link to Facebook sites html codes

Graph 23 is part of codes of social media parts. To connect main pages with the Facebook sites, the authors make a Facebook icon and link to the Facebook site. When the customer

clicks, the browser will automatically jump to the Facebook site, to view the company information and give the posts on the sites.

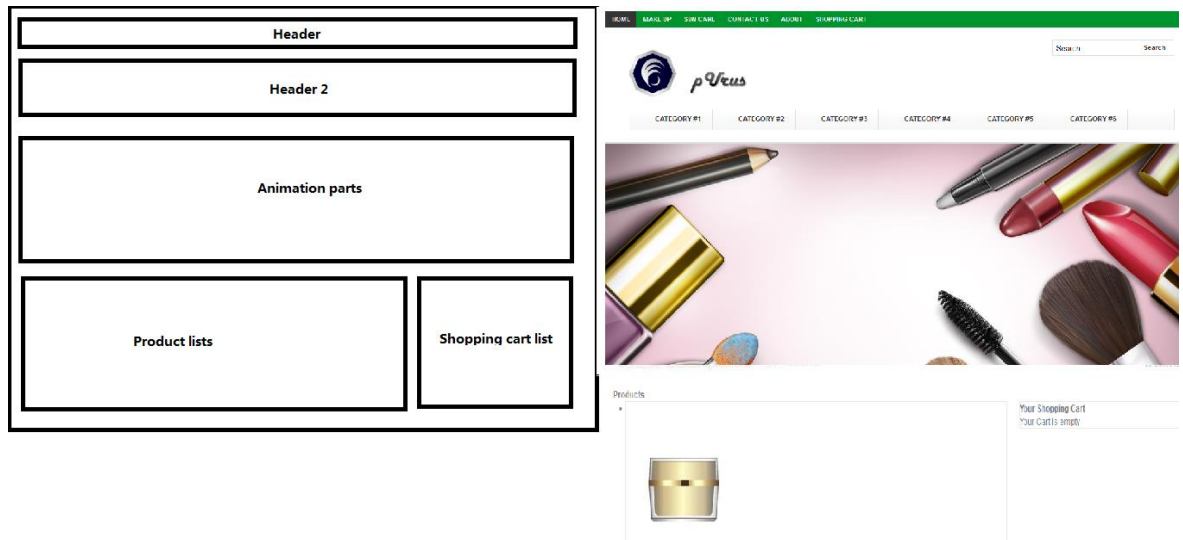
Each e-commercial website shows the company's products so that the users can view the products' information directly. For example, customers can find the types, the different names, the description, the details, the usage and the price of the products. They can decide and choose the right products for themselves through these information.



GRAPH 24. Product detail page wireframe and real page

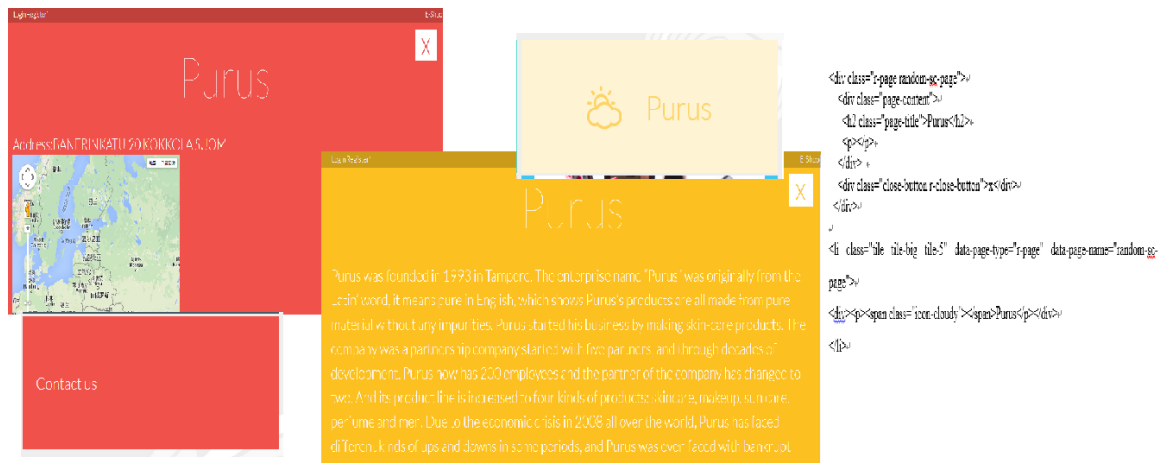
Graph 23 is the product detail page wireframe and real page. The page has all the main contents of the products. Product name and images on the left so that the user can view them directly, because most of the people they reading from left to right. When opening the page, the first information they can read is the product name and images. Then on the right are the product descriptions and two buttons and links, which display the main details of the products and how to buy it or turn to Purus's home page if the user do not want to view the products.

Purus has its own online shop which can allow the user to view and buy their products online. A standard online shop should have these features: the category which distinguish the products, the name, the pictures and the short descriptions. The short descriptions is the most important factor because there are so many products on the pages the user cannot compare the products if the products have long descriptions.



GRAPH 25. ESHOP wireframe and pages

Graph 25 is Purus Eshop wireframe and pages. There are five parts on the E-shop page. On the top of the page is the header1. On the header1, there are six links. They are “home” links to the home page, the product category links to each product, “contact us” that offers the company location or the shop location for the customer to know where to buy, “about us” that shows the company’s information and “shopping carts” that allows the user to check their purchase history. The second part shows the company logo, the search function and the small categories beyond each product. Then it is the animation part that shows the products, offers or other information that affects the user to buy the products. The fourth part is the product list. The product list related to the database. It does not need to add to the HTML code, it only need add the product information to the database. Then it will automatically update on the websites. The sixth part is the shopping cart. When the user adds products to the shopping list, it will be automatically added to the shopping cart.



GRAPH 26. Contact and brief introduction page and code example

Graph 26 is the contact and brief information page. Contact information and company's general introduction page does not need a separate page, so they can be embedded in the main page. It is convenient for the user to view and they are easy to open and close. When the mouse clicks the text or the images, a new, small website will be displayed on the previous website. And previous website will not be closed after the click because it is an embedded page. Using this method releases the stresses of front end develop working.

#### 4.4.2 Back end development

After it is done with the front-end develop of the website, it should start to develop the back-end parts. Back-end supports the front-end services. It usually closes to the required source from the front-end controls or communication with the required sources between the browser and servers. Usually, in the website development area, backend development technology includes PHP, MySQL, apache and aps.net services. In the past, the back end developer use these technologies separately, but with the rapid development of technology, there is software that has the package of these tools. It contains new backend technology tools. On the windows platform, WAMP (Windows Apache MySQL PHP) is the most famous tool to develop the websites backend parts. And on the Linux platform, there is also similar software which is called LAMP (Linux+Apache+Mysql+PHP). LAMP is similar to WAMP, except they are used on different platforms, and their notable features



are also different with the operating system. But there is a new backend software nowadays, it not only has most of the functions such as WAMP or LAMP, but also it has several platforms versions, includes three most famous platforms: Windows, Linux and OS X. (searchdatacenter, 2005.)

XAMPP is a free, easily installed, open sourced cross-platform web server solution package, consists of most of the backend development tools. X means cross-platform. It means XAMPP can be used on several platforms. A means Apache HTTP server, it develops and maintain the open source HTTP server for common operating systems. M means MySQL database system. It manages and stores the users' information. The first P means PHP, a back-end HTML programming language and the second P means Perl, Perl is also an advanced programming language and it is mainly used in several areas, because it is flexible, so Perl is also named as Swiss Army Knife in the scripting language. (XAMPP, 2015.)

**XAMPP** Apache + MySQL + PHP + Perl

**What is XAMPP?**  
 XAMPP is the most popular PHP development environment  
 XAMPP is a completely free, easy to install Apache distribution containing MySQL, PHP, and Perl. The XAMPP open source package has been set up to be incredibly easy to install and to use.

**Why use XAMPP?**

- The most popular PHP dev package
- For Windows, Mac OS X & Linux
- Easy installation and configuration
- Completely free of charge

**Download**  
 Click here for other versions

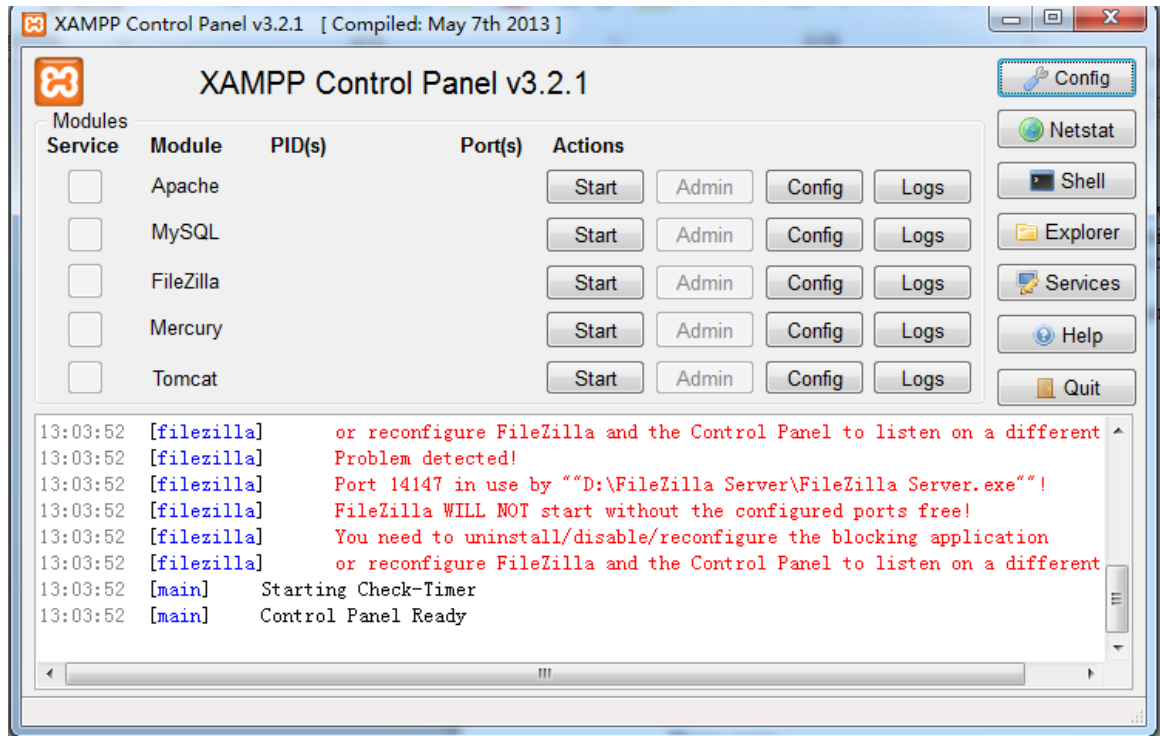
**XAMPP for Windows**  
 v5.6.3 (PHP 5.6.3)

**XAMPP for Linux**  
 v5.6.3 (PHP 5.6.3)

**XAMPP for OS X**  
 v5.6.3 (PHP 5.6.3)

GRAPH 27. XAMPP official websites (XAMPP, 2015)

Graph 27 shows the XAMPP software official websites. XAMPP is free, so it can be downloaded in their official websites. When open XAMPP official websites, it will appear a welcome interface which includes the introduction of XAMPP, the different platform versions of XAMPP some Add-ons can be used on XAMPP. Based on different platforms, the authors choose different versions. So the authors choose XAMPP for Windows. After downloading and installing the software, the authors should start to configure the XAMPP.



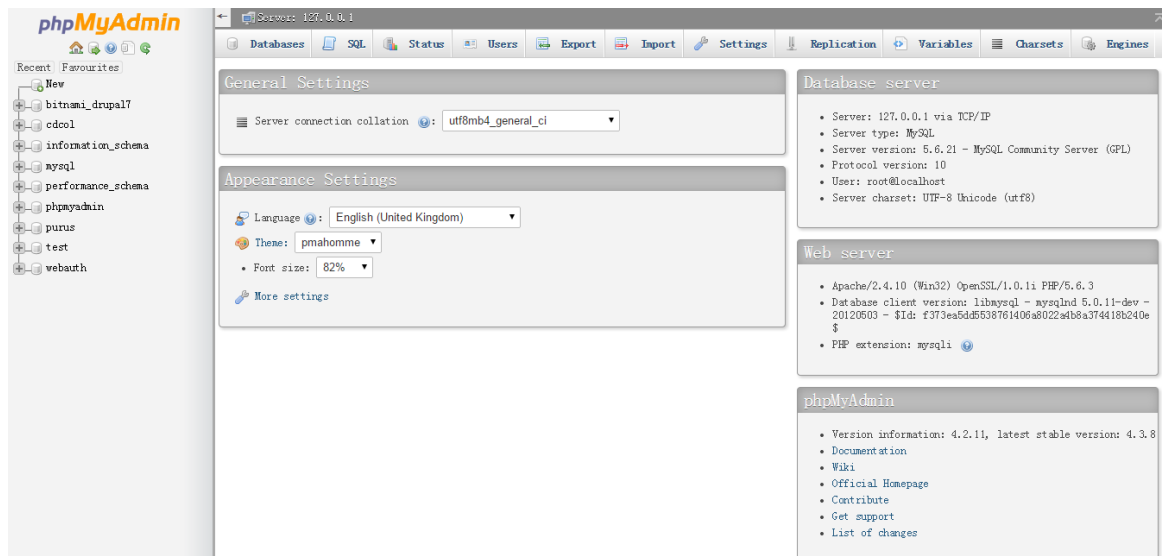
GRAPH 28. XAMPP Control Panel interface

Graph 28 is XAMPP control panel interface. There are 5 services on XAMPP Control Panel: Apache, MySQL, FileZilla, Mercury and Tomcat. They can be easily started by clicking the “Start” button. And if the developer wants to configure these services, it does not need to find the configure file by search all the files in the disk. They only need to press the “Config” button, and the configure fill will be immediately showed on the screen.



GRAPH 29. XAMPP localhost interface

Graph 29 is XAMPP localhost interface. After the start of all services, the authors can open the browser and type “localhost” or “127.0.0.1” on the address bar, then it will display XAMPP configure interface. On the left side, there are several links grouped by categories. On the welcome page the authors can see the XAMPP guides, it helps the new user get to know to use it quickly and easily. To connect to the MySQL database, the it is only need to use phpMyAdmin options.



GRAPH 30. phpMyAdmin main page

Graph 30 shows the phpMyAdmin main page. To enter on this page, there are two different ways: one is by click the “phpMyAdmin” on the XAMPP localhost interface, the other is to by typing “localhost/ phpMyAdmin” on the address bar. Once the web developer entered phpMyAdmin application, there are several areas. The upper part is server address: localhost or “127.0.0.1”. The server address is also the databases server address. The following part is SQL charset which defines MySQL connection collation.

The screenshot shows the MySQL Databases interface. At the top, there is a navigation bar with options: Databases, SQL, Status, Users, Export, Import, Settings, Replication, Variables, Charsets, and Engines. Below this, the 'Databases' section is active, showing a 'Create database' form with fields for 'Database name' and 'Collation', and a 'Create' button. A note below the form states: 'Note: Enabling the database statistics here might cause heavy traffic between the web server and the MySQL server.'

Below the note, there is a table listing existing databases and their collations:

Database	Collation	Check Privileges
<input type="checkbox"/> bitnami_drupal7	utf8_general_ci	<a href="#">Check Privileges</a>
<input type="checkbox"/> edcol	latin1_general_ci	<a href="#">Check Privileges</a>
<input type="checkbox"/> information_schema	utf8_general_ci	<a href="#">Check Privileges</a>
<input type="checkbox"/> mysql	latin1_swedish_ci	<a href="#">Check Privileges</a>
<input type="checkbox"/> performance_schema	utf8_general_ci	<a href="#">Check Privileges</a>
<input type="checkbox"/> phmyadmin	utf8_bin	<a href="#">Check Privileges</a>
<input type="checkbox"/> purus	latin1_swedish_ci	<a href="#">Check Privileges</a>
<input type="checkbox"/> test	latin1_swedish_ci	<a href="#">Check Privileges</a>
<input type="checkbox"/> webauth	latin1_general_ci	<a href="#">Check Privileges</a>
<b>Total: 9</b>	<b>latin1_swedish_ci</b>	

At the bottom of the table, there are options: 'Check All' (disabled), 'With selected:' (disabled), and 'Drop' (disabled). Below the table, there is a link to 'Enable Statistics'.

On the right side of the interface, there is a SQL editor showing the following code:

```
CREATE TABLE MyGuests (
  id INT(6) UNSIGNED AUTO_INCREMENT PRIMARY KEY,
  firstname VARCHAR(30) NOT NULL,
  lastname VARCHAR(30) NOT NULL,
  email VARCHAR(50),
  reg_date TIMESTAMP
)
```

GRAPH 31. Two methods for creating databases and tables

Graph31 shows the two methods for creating databases and tables. MySQL database can be easily created, it is only need to click “Databases” options and then the following steps it is giving. It will require the user to enter a database name and collation type. Then a new database is created. After creating the databases, there are two methods to create the new table: one is followed by its steps, requiring table name, number of columns and variable names. And the other is through SQL language.

Login/register system includes several parts: login functions, register functions, change or reset password functions and confirm registration functions. Before starting to create these functions, the first step is to connect PHP and MySQL database.

```

<?PHP
require_once("../include/fg_membersite.php");

$fgmembersite = new FGMembersite();

//Provide your site name here
$fgmembersite->SetWebsiteName('user11.com');

//Provide the email address where you want to get notifications
$fgmembersite->SetAdminEmail('user11@user11.com');

//Provide your database login details here:
//hostname, user name, password, database name and table name
//note that the script will create the table (for example, fgusers in this case)
//by itself on submitting register.php for the first time
$fgmembersite->InitDB(/*hostname*/'localhost',
                    /*username*/'purus',
                    /*password*/'',
                    /*database name*/'purus',
                    /*table name*/'fgusers3');

//For better security. Get a random string from this link: http://tinyurl.com/randstr
// and put it here
$fgmembersite->SetRandomKey('qSRcVS6DrTzrPvr');

```

GRAPH 32. PHP connect with databases and tables

Graph32 shows PHP connect with databases and tables codes. To connect with databases, the PHP script should include the hostname, database username, password, database name and the table name. Username and password can be easily found in the configure file, or it also can be created in phpMyAdmin application to test whether it is successfully connected with databases. The user goes to the address bar and type “localhost/fg\_membersite.php” if it does not show anything, then it means it is successfully connected with databases. Then it should be started from next step to store user information to the databases.

### Register

\* required fields

**Your Full Name\*:**

**Email Address\*:**

**UserName\*:**

**Password\*:**

[Show](#) [Generate](#) weak

**Thanks for registering!**

Your confirmation email is on its way. Please click the link in the email to complete the registration.

id_user	name	email	phone_number	username	password	confirmcode
3	purus	centriapurus@gmail.com		purus	0a2ec800ba934e160e593445b94b20	1a2896265c446203509962a95afba

GRAPH 33. Step of register user information to the databases

Graph33 shows the step of register user information to the database. After completing filling the register forms press submit. Then it will turn into another displayed page “Thanks for registering”. It means the user information was successfully stored into the table. But to confirm that, turn to phpMyAdmin page and check it. If the table includes the information typed before, then it is successfully stored in the table. The registration part is completed.

```

function RegisterUser()
{
    if(!isset($_POST['submitted']))
    {
        return false;
    }

    $formvars = array();

    if(!$this->ValidateRegistrationSubmission())
    {
        return false;
    }

    $this->CollectRegistrationSubmission($formvars);

    if(!$this->SaveToDatabase($formvars))
    {
        return false;
    }

    if(!$this->SendUserConfirmationEmail($formvars))
    {
        return false;
    }

    $this->SendAdminIntimationEmail($formvars);
}

```

GRAPH 34. Register function php code

Graph 34 shows the code of register function. The main core of register function is to store information in the database table and to valid it. Once the user’s information has been saved in the database’ table successfully, the user can start to log in the website with the username and password he/she previously registered.

```

function Login()
{
    if(empty($_POST['username']))
    {
        $this->HandleError("UserName is empty!");
        return false;
    }

    if(empty($_POST['password']))
    {
        $this->HandleError("Password is empty!");
        return false;
    }

    $username = trim($_POST['username']);
    $password = trim($_POST['password']);

    if(!isset($_SESSION)){ session_start(); }
    if(!$this->CheckLoginInDB($username,$password))
    {
        return false;
    }

    $_SESSION[$this->GetLoginSessionVar()] = $username;

    return true;
}

```

GRAPH 35. Login php code

Graph 35 shows the php code of login function. When the user types the username, password and presses “Login” button, the PHP code will connect the database and then search the username and password. If the username and password match the data in the table, it will show login succeed. If the data does not exist or the username or password did not match, it will not allow illegal user to log in.

Shopping-carts’ function is an important part of each e-commercial websites. It includes loading the product on the websites, adding products to the shopping carts and checking out functions. It also requires connecting to the database first and then needs a table that stores the product information such as product name, pictures, description and price.

#	Name	Type	Collation	Attributes	Null	Default	Extra	Action
1	id	int(11)			No	None	AUTO_INCREMENT	Change Drop Primary Unique Index Spatial More
2	product_code	varchar(60)	latin1_swedish_ci		No	None		Change Drop Primary Unique Index Spatial More
3	product_name	varchar(60)	latin1_swedish_ci		No	None		Change Drop Primary Unique Index Spatial More
4	product_desc	tinytext	latin1_swedish_ci		No	None		Change Drop Primary Unique Index Spatial More
5	product_img_name	varchar(60)	latin1_swedish_ci		No	None		Change Drop Primary Unique Index Spatial More
6	price	decimal(10,2)			No	None		Change Drop Primary Unique Index Spatial More

GRAPH 36. Product table information

Graph 36 shows the product table information. The picture above is “Purus” product table. It includes the product id, the product code, the product name, description, products’ images and price. If the company wants to add its products to the websites, the web developer can do it by adding new information to the table, because the “eshop” HTML file includes a PHP file that can export information to the page from the database and the web developer does not need to write information into the HTML file, because it waste time and energy.

Your Shopping Cart	
<b>SKIN CARE</b>	
P code :	PD1001
Qty :	1
Price :	\$15.00
<b>MAKE UP</b>	
P code :	PD1002
Qty :	2
Price :	\$20.00
<a href="#">Empty Cart</a>	<b>Total : \$55</b> <a href="#">Check-out!</a>

GRAPH 37. Shopping cart functions

Graph 37 shows the shopping cart functions. To add products to the shopping cart, type the quantity of products and press add, then the product will be successfully added into the shopping cart. The shopping cart has two links: one is empty the cart so that the customer can start over again and the second is check-out links, which links to PayPal page to let the customer pay the money. Because of using PayPal needs an account, it will not work in this project.



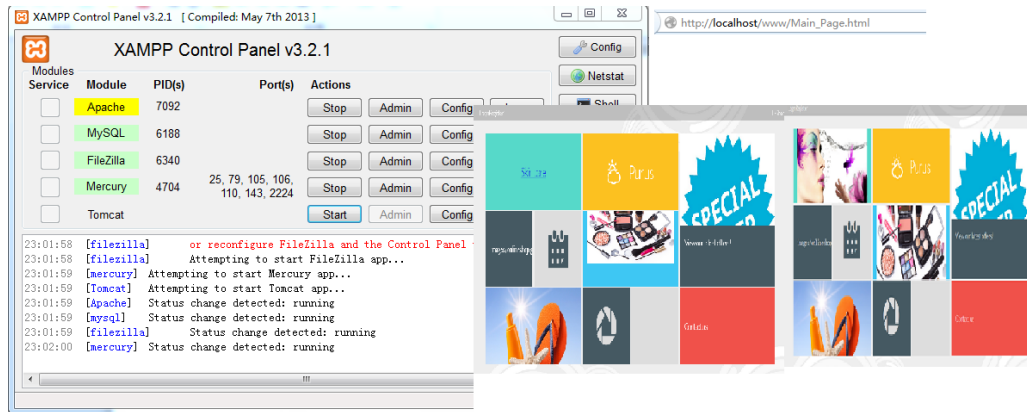
#### 4.8 Testing the website

Once the website has been accomplished, then the web developer can use a web browser to test it, such as Mozilla Firefox, Google Chrome and Internet Explorer. The web browser usage can be checked by w3school. The screen shot of the Purus websites is displayed in chapter 6 results.

TABLE 2. TESTING THE WEBSITES

Code test	There is no problem on all web language
Design test	All the web pages design fits the requirements
Spelling test	External CSS, JS, PHP file was correctly inserted into related html code
Hyperlink test	All links on the page are correctly related
Page weight test	Almost all pages fits the maximum allowed page weight
Browser test	Web pages fits the Firefox but a little smaller in chrome
Usability test	Will be done by the software
Security test	Database has its own username and password. So the project has min security
Functional test	Login/register and shopping cart function is working well

In the table 2 shows the test category of testing the website. The left side is the name of test names, the right side is the result of test. From the table the author can know almost all the test is done, there is no problem on all web language, all of the functions is working perfect.



GRAPH 38. XAMPP services and testing main pages

Graph 38 shows the XAMPP services and testing main pages. Testing the website is easy. It mainly has two steps: starting all the service and opening the browser then typing the localhost address. After the test graph the reader can see in the Google chrome browser but the pictures have difficult to display, but in Firefox, it is as normal as in the code. To the speed test part, Firefox and Google Chrome is faster than the Internet Explorer. Because IE is always full loading, it increases the loading time. The IE browser is not recommended, no-IE browser is better to view the websites.

## **5 PROMOTION AND PUBLISHING**

After completing the website construction, the web constructor needs to prepare to publish the website. Although publishing the website is almost the last step in website construction, it still has a lot of factors to be prepared. And the preparation is different depends on the way of publishing.

### **5.1 Publishing the website**

Publishing the website is simple. Firstly, the company should have its own domain names. With domain names the customer can directly log in the website. The second part is the main part of the website. If the company's website is static, Microsoft IIS and Apache are the best tools to publish the website online. If the company's website is dynamic, the company should also connect PHP or database to the website to make the website run successfully. Thirdly, the company needs a web server. Without a web server the website cannot be run, the web server can configure the domain names and IP address. Normally, it can be chosen the well performed computer to run the web server.

### **5.2 Domain names**

Before publishing the website or starting plan to the construction of building a website, the website constructor needs to apply for a domain name. There are two types of the domain names. One is international top-level domain names, which is also called iTLDs. The other one is national top-level domain names, which is called nTLDs.

The internet top level domain is the earliest and widest domain names in the world. The table 3 below is the list of internet top level domain names. (Dost álek, Libor, Kabelov á Alena, 2006.)

TABLE 3. List of internet top level domain names

Name	Entity	IDN	DNSSEC
.com	Commercial	Yes	Yes
.org	Organization	Yes	Yes
.net	Network	Yes	Yes
.int	International organization	No	No
.edu	Education	No	Yes
.gov	General service	No	Yes
.mil	United states department of defenses	No	Yes

Generally, the internet top level domain names have 7 types, and “.com” is to be used the most widely. IDN means the kind of domain names which can be supported internationalized domain names. And DNSSEC means presence of DS records for Domain Name System Security Extensions. It can be seen on the table if the domain names support IDN and DNSSEC, these kinds of domain names can be used widely. If the domain names only support one of these, it means these kinds of domain names was only used for the specific usage. But for our project’s company called Purus, the domain name .com is enough for the enterprise. (Dost áek, Libor, Kabelov á Alena, 2006)

National top level domain names means the websites can have different suffixes depending on which country the enterprise wants to publish in. For example, if the company wants to publish the websites in Finland, it can be published as [www.purus.fi](http://www.purus.fi). If it were in China, it can be published as [www.purus.cn](http://www.purus.cn).

TABLE 4. List of national top level domain names

Name	Entity	IDN	DNSSEC
.fi	Finland	Yes	Yes
.cn	China	Yes	Yes
.ru	Russia	Yes	Yes
.it	Italia	No	Yes
.fr	France	Yes	Yes
.kp	North Korea	No	No

Table 4 describes the list of national top level domain names. From the table, it is depended on the political factors whether the domain name support IDN or DNSSEC. It means that if the company wants to enter a new market, those domain names that does not support IDN or DNSSEC are more difficult than the other domain names.

### 5.3 Web server

After publishing the website, the authors need to use the web server to maintain the company's website. Web server is an application that can offer documents which are required from the browsers. Web server can not only cans storage data, but also run script and applications that the user is required for based on the information on the website.

The main principle of a web server is not complex. It can be divided into 4 steps: connecting stage, requiring stage, response stage and closing the connection. Connecting stage is the connection between the web server and its browsers. Connecting stage aims to make sure the connection is successfully established. If the user can find and open the "sock" file, it means this stage was successfully established. Requiring stage is the web browser using a virtual file "sock" to send different requirements to the web server. Response stage is the browser using different kinds of HTTP protocols to send the requirement from the last stage to the web server, doing the tasking process and using HTTP protocol to send the result back to the web browser and display the result on the web browser. Closing the connection means after finishing those three steps, closed the web server and its browser disconnected. The forth step of the web server processing is

connecting to each other. It has very strong logic that can support multi-process, multi-thread and the mixture of multi-process and multi-thread. (Brain, 2011.)

There are different web server softwares depending on the environment of the computer. When choosing the right web server, the company should consider performance, security, logging and statistics, web hosting, proxy, buffer service and integrated application. There are common web server applications under different operating systems. (ScriptRock, 2014.)

IIS called internet information service from Microsoft Inc. using IIS allow the user to publish the website with public internet. Microsoft IIS is one of the most popular web servers in the world. Many famous website were established on the IIS platform. IIS offers graphic manage tools and it was also called internet service management in order to monitoring configuration and controlling internet services. (ScriptRock, 2014.)

IIS is a web service component, which includes web server, FTP server, NNTP server and SMTP server. They are used for web browsing, file transfer, RSS service, mail sending etc. IIS makes publishing new websites on the internet easier. It offers ISAPI (Intranet Server API) as an expanding programming interface of the web server function, and at the same time it also offers an internet database connection and using it can search and update the database. (ScriptRock, 2014.)

Apache is the most popular web server application in the world. Many famous websites are based on Apache. The reason why apache becomes successful is that it is open source code has an open development team and also it supports cross-platform application. (ScriptRock, 2014.)

Web server is an important tool for web developers, even for the company. Once the company publishes its website, the company needs to use the web server application, either IIS or Apache, to update the website content allowing users to do specific functions on the websites. Choose a suitable web server is important for a company. A suitable web server application can not only release new information on the website, but also makes the company famous.

## **5.4 Way of promoting**

There are different ways of promoting nowadays. The company mostly use search engines to promote their website. Promoting the website need the marketing skills. Promotion is not only about marketing, but also it concerns about IT. When the company choose search engines to promote, the web developer need add specific keywords to meet the requirement of search engines.

### **5.4.1 Through the search engines**

The authors can take the advantages of search engines like Google, Yahoo, Baidu, Bing or Yandex, using their content of users' searching results to show the website. Also keywords, advertisements and recommendations of websites on the result-contents can be used as good ways of promotion. The authors believe this is the best ways to promote the website although there are still lots of ways. (Wilson, 2011.)

### **5.4.2 Using optional e-mail push messages**

E-mail can be used as a messenger between the customers and our company. It is possible to have the company's own magazines, information for members, customer services and new products' advertisements. It can make it as optional choices whether they want to receive this information and whether they want to share with their own friends when they register a new account. (Wilson, 2011.)

### **5.4.3 Cooperate with other platforms**

Sharing resources is popular nowadays. The company has plenty of resources on the internet. Relationship can be established between different companies and make a link as a logo on the website. When customers click the link, the page will jump to company's

website. Using this kind of promote methods can not only help the company promote their website, and also help the other platform more attractive. (Wilson, 2011.)

#### **5.4.4 New social media information publishing**

Social communication platforms are being one of the most popular ways of spending free time. Official accounts of these famous social platforms become a necessity in promotion. Publish information can be on these websites and attract more people paying attention to our newly-built company website. And there is a good reason to do so, for free. Lack of money is the most serious problem of a newly-built company will face. It is obvious that these free ways of promotion are the most convenient choices. (Wilson, 2011.)

#### **5.4.5 Cooperate with traditional media**

To a certain extent of fame, traditional media plays an important role in the promotion. This could be done when the company has the financial basis and own their company credibility. Then the advertisements can be published on TV, newspapers or famous magazines to expand the group of people who do not usually use the electric devices. (Wilson, 2011.)

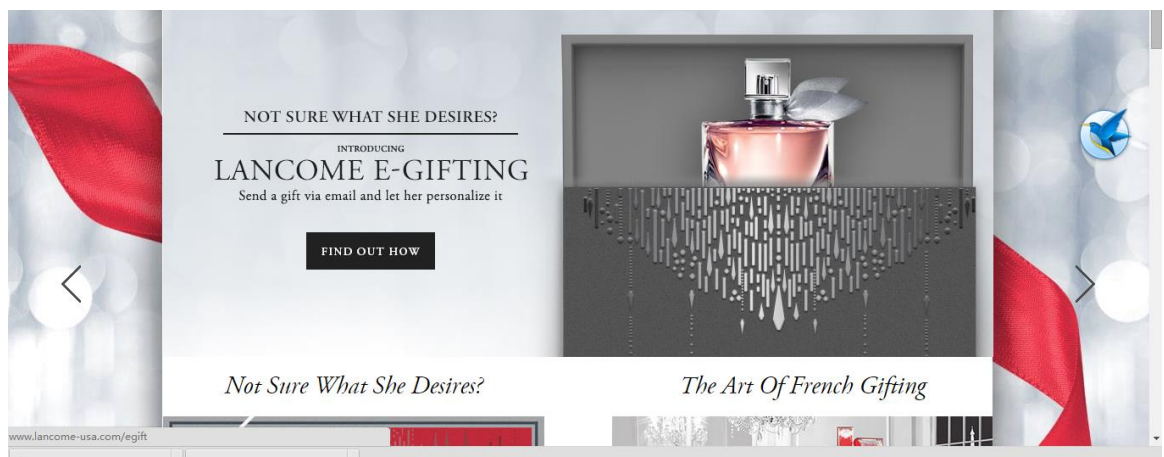
The aims of promoting the website are to let the customer know the product of the company. And there are variety ways to promote the websites. Although there are a lot of ways to promote the website, always remember to choose the right one, the suitable one for your company. For our project company “Purus”. The authors think the best way for it is to mix different kinds of way of promoting and add local elements to make a new way.

Purus was a small enterprise, for the small company due to the limitation of the advertisement cash, the company can put the limited funds on the search engine login and optimization, and the company also can put funds on other ways of promoting the websites. For example, besides using the search engine to promote the website, Purus also can cooperate with other platforms. Using this way not only can achieve the effect of promoting, but also can make new commercial cooperators. Maybe in the future the two



company can cooperate together in order to benefit both. Besides these promotion ways, Purus also can use social media to promote. For example, it can open an account on Facebook, Twitter and Google. The company can publish new information of the product on these social Medias. And it also can ask for the customer to publish their use feeling on these social media, in order to promote, and increase the value of a brand. (Wilson, 2011)

The website also can be promoted by itself. Websites itself is also a very good promoting tool. Linking to the content of a page to related content on the website, if the websites concerns about buying the skin care product, it can put useful links on how to use the product in many different ways. This will teach the customer use the product effectively. Creating a small banner advertisement on the website is also a good tool to promote, for example, on the main page of websites. The authors can add such banner like “Last Deal!! Last Chance!”. Famous company has been found to use this kind of promotions. (DR. RALPH F. WILSON, 2011)



GRAPH 39. Special promoting ways of Lancôme (Lancôme, 2014)

Graph 39 shows a special promoting ways of cosmetic website. Putting the product in a gift box will make the product more attractive and it makes the customer more comfortable about the product. And there are also other different, excellent ways to promote the website, but promoting is only the tool for a company to increase market. The most important thing is to make the high quality of the product. Let the customer trust your product, and your brand.

## **5.5 Search engine optimization**

Search engine is the first way for people to find the website. If people cannot find company's websites on the first 3 pages, or even on the first pages, the company's website is at a series disadvantage. So make sure your company's websites always on the first page. At least the first three pages of the search engine is a very important thing.

To be the first rank of the search engine, it should be understand how the search engine works. It is assume that search engine was human. It wants to display the most relevant and the most suitable results for the customer. But the search engine is a computer program. It may need help. Search engine optimization starts to analyze and rank the website rank. The main technique of SEO was to analyze the website HTML code. Search engine can calculate the times a word appeared in HTML code. No matter when the HTML code was published or the word was edited in the HTML title.

## **5.6 ISP and Web hotels**

Publishing the website also needs two things: Internet service provider and web hotels. ISP mainly provides different internet services and different countries and states have different internet service providers. Depending on the country website publish, it is always a smart idea to choose the best local internet service provider. Web hotel is a package of different internet service. Compare to internet service provider, web hotels are more focus on the website development. (Colton Matheson, 2014.)

### **5.6.1 ISP**

ISP is the abbreviation of Internet Service Provider. ISP is an organization that provides services for internet access, internet usage and participation. The internet services provided by ISPs included internet access, domain name registration and web hosting. To choose a suitable ISP for Purus should consider these things: how fast of a connection the company's websites needs, the ability of bundle the services, the security level the ISPs

provides and the level of customer support always comes with the service. (Colton Matheson, 2014.)

In Finland, there are several ISPs. Anvia is a provider with a strong presence in western Finland, includes mobile and home telephone services, brand and TV services.

Archipelago Networks providing high speed for access to rural archipelago areas - often islands are only accessible by boat. DNA offers mobile communications, broadband, TV Services. Elisa provides mobile and home telephone services, broadband, TV services Lounea, Saunalahti, Sonera provides the same services like mobile and home telephone Services, Broadband and TV Services. (expat-Finland, 2014.)

Purus is a small company, so not so many data will be transformed. The company can choose 20Mbs speed for their company's website. But consider to the future plan, in the future the company website may be updated more quickly than before. At that time the connection speed should be level up to 50 to 60 Mbs. Firstly, the web developer should use their own internet service to test the loading time of the websites. And internet speed test tools can help. And if with that speed the websites can be displayed in a very short time, then that speed is the minimum speed for the connection speed. Cost is always an issue for a small business, so find an ISP that can bundle services like Internet access, TV, telephone or other things could be a good solutions. Using the money properly. Purus Company's website has the online shop function and also the login/register function, so it needs the ISP to have the security to protect the company member's profile. The last one is the ISP customer service. If the ISP does not go well in the company, unfortunately, the company's website should be updated. At that time, a 7/24 services and the ability to fix the problem quickly is needed.

### **5.6.2 Web hotels**

Web hotel includes a web domain name and a web server on the internet. If the company wants to publish the websites, and keep it running all day, the company should buy the web hotel via the internet. Depending on the location of the markets, the company should choose local web hotel so that the user can browse the websites easily and fast.

	Mini	Medium	Large	Extra Large
Disk space for web pages	250 MB	1 GB	5 GB	20 GB
Number of email accounts (POP3/IMAP)	20	50	100	200
Disk space per email account	5 GB	5 GB	5 GB	5 GB
Unlimited number of email addresses	Yes	Yes	Yes	Yes
Unlimited traffic per month <sup>1</sup>	Yes	Yes	Yes	Yes
Unlimited number of subdomains	Yes	Yes	Yes	Yes
Unlimited number of DNS records	Yes	Yes	Yes	Yes
Unlimited number of www forwardings	Yes	Yes	Yes	Yes
Servers in Europe	Yes	Yes	Yes	Yes
Webmail	Yes	Yes	Yes	Yes
Spam filter for email	Yes	Yes	Yes	Yes
Virus scanning of email	Yes	Yes	Yes	Yes
Traffic statistics	Yes	Yes	Yes	Yes
FTP	Yes	Yes	Yes	Yes
SSL (Secure Socket Layer)	-	Yes	Yes	Yes
Optional SSL with dedicated IP address	-	Yes	Yes	Yes
CGI scripts (Perl, Python, Ruby, etc.)	-	Yes	Yes	Yes
SSI (Server-Side Include)	-	Yes	Yes	Yes
Unix shell (ssh)	-	Yes	Yes	Yes
PHP 5	-	Yes	Yes	Yes
My SQL 5	-	Yes (2)	Yes (5)	Yes (10)
IPv6	-	Yes	Yes	Yes
Invoice frequency (months)	12	12	12	12
Setup fee	€ 0.00	€ 0.00	€ 0.00	€ 0.00
Price per month	€ 1.45	€ 2.95	€ 5.45	€ 7.45

All prices are in EUR and are for customers outside Norway only. Customers in Norway must add 25% VAT. Prices are updated monthly based on current exchange rates. Show prices in [DKK](#) [GBP](#) [NOK](#) [SEK](#) [USD](#). In addition to the cost of the web hotel, you will be paying for the domain name related to the web hotel (example: € 8.45/yr for .com domains; see our [complete price list](#)).

GRAPH 40. Web hotel price list (domainname, 2015)

Graph 40 shows the price list of Web hotel. Depending the type and size of the websites file, there are four kinds of web hotels, and their function are not the same. Functions and price are increased according to the type. If the company's websites is a simple page and only need the basic functions such as webmail, php5 and MySQL. Then the mini type is suitable for the company. According to its own situation, the company could choose the right web hotel.

### 5.6.3 How to choose the web address

Web address is the address of the website on the internet. Each computer has its own address, without the web address, the computer cannot connect with each other. Web address is also called "URL", which is the abbreviation of "Uniform Resource Locator".

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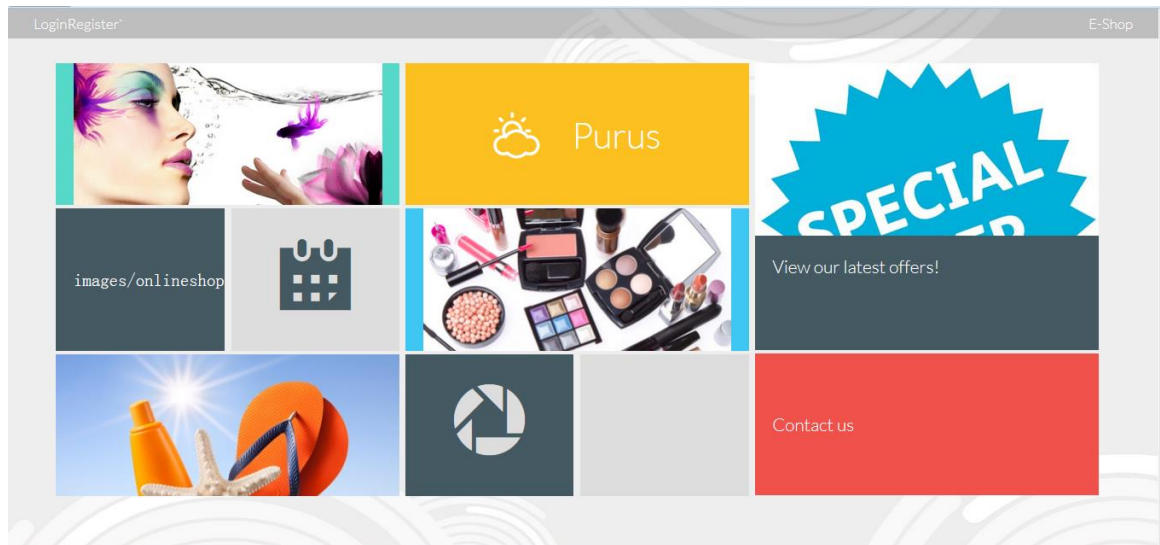
**Domain name prices**

Top-level domain ▼	Registration fee ▼	Annual fee		
		2nd year	3rd year	4th year
.academy	€ 19.95	€ 19.95	€ 19.95	€ 19.95
.accountants	€ 49.95	€ 49.95	€ 49.95	€ 49.95
.actor	€ 34.95	€ 34.95	€ 34.95	€ 34.95
.agency	€ 16.95	€ 16.95	€ 16.95	€ 16.95
.as	€ 86.95	€ 0.00	€ 43.95	€ 43.95
.associates	€ 19.95	€ 19.95	€ 19.95	€ 19.95
.auction	€ 19.95	€ 19.95	€ 19.95	€ 19.95
.audio	€ 11.95	€ 11.95	€ 11.95	€ 11.95
.bargains	€ 19.95	€ 19.95	€ 19.95	€ 19.95
.be	€ 4.95	€ 4.95	€ 4.95	€ 4.95
.beer	€ 19.95	€ 19.95	€ 19.95	€ 19.95
.bid	€ 19.95	€ 19.95	€ 19.95	€ 19.95
.bike	€ 19.95	€ 19.95	€ 19.95	€ 19.95
.bio	€ 43.95	€ 43.95	€ 43.95	€ 43.95
.biz	€ 11.95	€ 11.95	€ 11.95	€ 11.95
.blackfriday	€ 25.95	€ 25.95	€ 25.95	€ 25.95
.boutique	€ 19.95	€ 19.95	€ 19.95	€ 19.95
.builders	€ 19.95	€ 19.95	€ 19.95	€ 19.95
.business	€ 16.95	€ 16.95	€ 16.95	€ 16.95
.cab	€ 19.95	€ 19.95	€ 19.95	€ 19.95
.camera	€ 19.95	€ 19.95	€ 19.95	€ 19.95
.camp	€ 19.95	€ 19.95	€ 19.95	€ 19.95
.capital	€ 34.95	€ 34.95	€ 34.95	€ 34.95
.cards	€ 19.95	€ 19.95	€ 19.95	€ 19.95
.care	€ 19.95	€ 19.95	€ 19.95	€ 19.95
.careers	€ 34.95	€ 34.95	€ 34.95	€ 34.95
.cash	€ 19.95	€ 19.95	€ 19.95	€ 19.95

GRAPH 41. Price list of domain name (domainname, 2015)

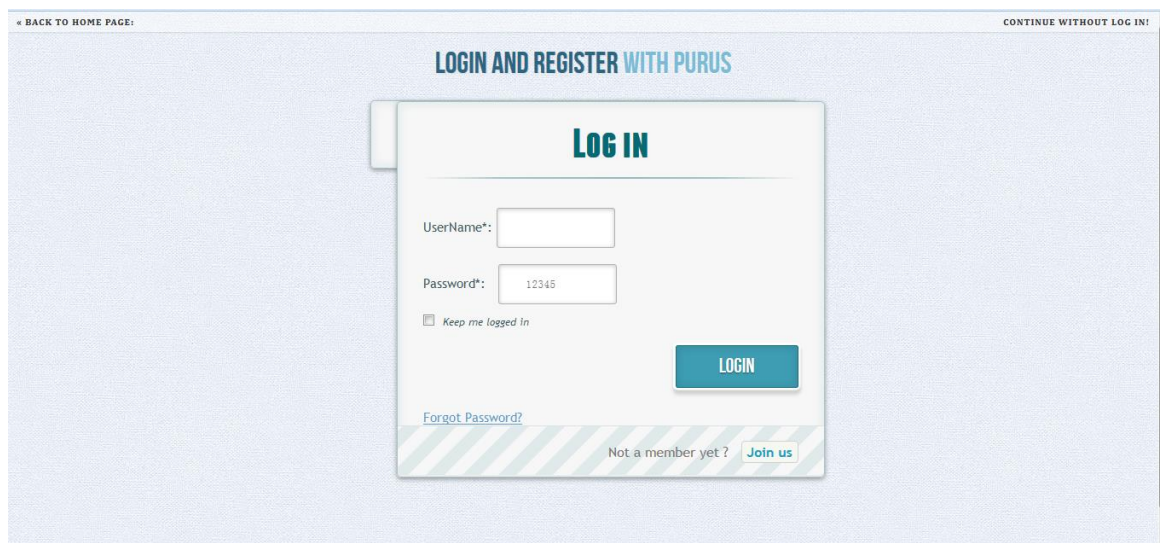
Graph 41 is the prices list of domain name. There are different kinds of domain names in the world. Each suffix means the types of the company or the websites. But for many people who does not familiar with the information technology enough, it would be better to choose “.com” because it is easier to remember and to use. And the domain name would better to be a company name because if it is not a company name or related to it, the customer may have difficulty to remember. But if the domain name is already registered, “my” or “the” before name can be added. But to remember the domain names should always use the company name or related to it.

## 6 RESULTS



GRAPH 42. Purus main page

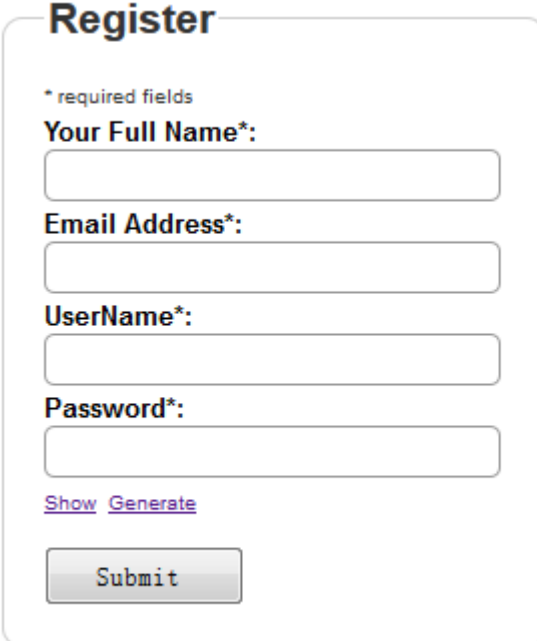
Graph 42 shows the main page of the website. The main page is similar to the Windows8 user interface. This CSS style is also called the metro UI css. The main page consists of different size of magnetic stripe. There is one large magnetic stripe located on the right side of the main page, and the content is Purus latest offer information. Four medium magnetic distributed in different corner, and the content is Purus product line and contact information and brief introduction. Four small magnetic on the left side and bottom. Content is the Purus calendar event and social media. Through different magnetic stripes, the user can view the information they want to know about Purus.



GRAPH 43. Purus login page

Graph 43 shows the login page of the Purus website. Login page mainly has two elements: header and the body. Header offers two links, which can enable user back to home page and continue browser on other web page without log in. Two links are set on the header because of two reasons. Some customers do not want to log in and want to back to the home page and some customers do not want to log in but they want to view the product. The body is a small log in dialogue embedded in the browser. And the log in dialogue gives the user a simple feeling and a clear glance.

---



**Register**

\* required fields

**Your Full Name\*:**

**Email Address\*:**

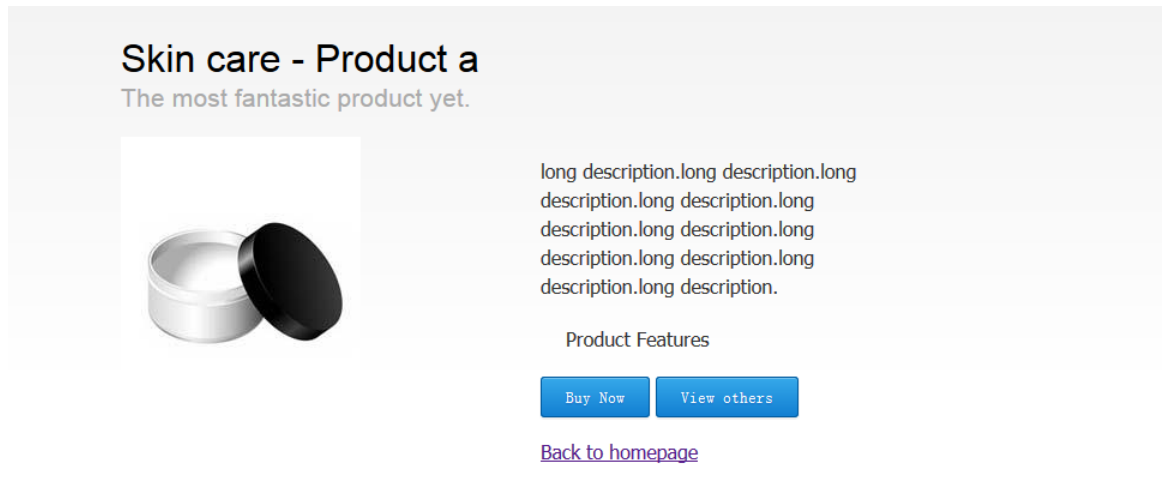
**UserName\*:**

**Password\*:**

[Show](#) [Generate](#)

GRAPH 44. Purus register page

Graph 44 shows the register page of Purus website. Compared to log in page, the register page is much simpler. The register form mainly has four input text, which requires the user's full name, email address, username and password. Under the password input text, there are two links which can show the password the user typed and another link can make a random password provided by the computer. When the user type all the register information, then can easily press the submit button. The browser will collect the data and send them into the database. This is how the register function works.

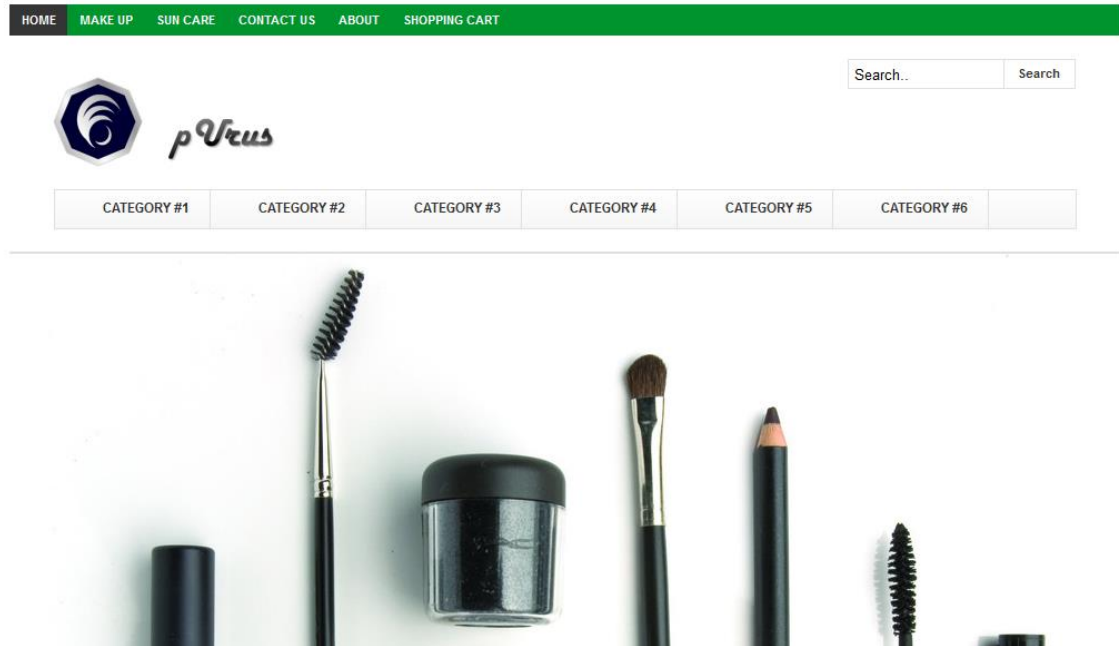


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GRAPH 45. Purus product detail page

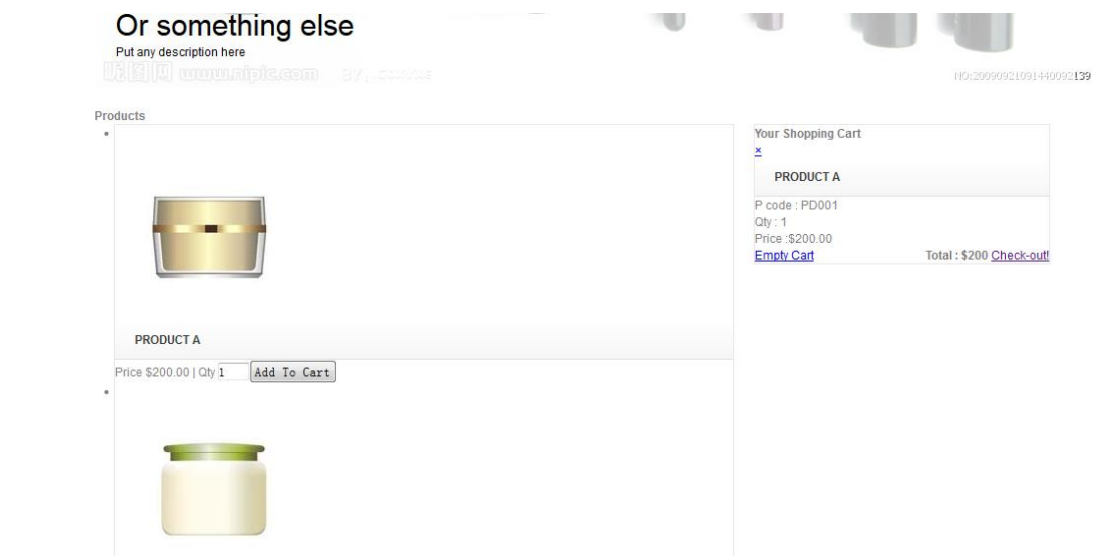
Graph 45 shows the product detail page of Purus website. The product name and pictures are on the left so that the user can see the product easily because left has high priority than the left and middle side. On the right side of the web page is the product description and product features. When the user clicks on product features, these features will be expanded on the website. There are also two buttons allowing the user to press, to buy the product and view other products. One link allows the user back to the home page.





GRAPH 46. Purus ESHOP page1

Graph 46 shows the first part of eshop page. The first part of eshop page has two headers and one javascript animation. The first header has six links which allow the user back to home page, turn to make up product page, skin care page, see company contact information, brief introduction and see the user shopping cart. The second header has the Purus logo and search function and also the product category. One animation shows Purus product and latest information.



GRAPH 47. Purus ESHOP page2

Graph 47 shows the second part of eshop page of Purus. The second part is mainly about the list of product and shopping cart. On the left side is the product list. They are all

exported from the database. It is easy for the authors and company to manage the product only by editing the database table. And on the right side of the product is the shopping cart list, when the user click add to cart then the product will be displayed in the shopping cart list. Shopping cart also has two links which allow the user to empty their products and check out the products.

## 7 CONCLUSIONS AND DISCUSSION

The project was created for the virtual cosmetic company —Purus. Although Purus is not a real company in the world, it represents most of the small enterprises in the common field. Through the website construction for Purus, most goals of the company have been achieved through the websites which the authors created. And two main PHP functions have been successfully reviewed. But the main problem is when opening the website with different browsers, it will display a little different although they use the same CSS code. But this problem can be solved in the future. In the new software XAMPP environment, the login/register system functions, shopping cart functions and logout tool were successfully developed.

The website can be a tool that helps both the company and the customers. For the company, the website is a way to advertise their product and services, in order to open markets and attract new customers. The customers can find the information they want on the website and also will know the company latest information.

Purus websites use metro UI theme, which gives the user a new but cordial interface. And it also has online shop, which allow user to buy their products online so that they do not need to go outside. And also the website allows the user online register as a member so that the user can receive the latest information by email to complete if they want. All the user information and product information can be updated through MySQL database.

Integrated with social media parts which allows the company can listen customer or others' suggestions so that the company can correct the mistake can improve itself and have one-to-one communication with the customer. Compared to an official website, customers are more likely to browse the Facebook page. If the company can update information on Facebook regularly, then the customer will see the company's information such as new products and latest offers by just becoming fan of the company. It becomes easier for both the company and customers to communicate with each other.

To sum up, all the work has been finished successfully and it brings a great benefit for the authors. Authors have learned a lot about creating the websites, not only how to using the

web programming languages, but also the authors know what's the preparation should be done before starting creating it. These kinds of skills will help the two authors a lot in the future.

For further studies, the web developer should use another way to construct the website. There are so many methods to construct the website. The method the author using is a simple and basic. There are also new tools and software can construct the website more perfectly. Depending on different situation, the web developer should choose the most suitable method to construct the website.

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## APPENDICES

### Client Survey – Web Design

#### 1) General Information – just the basics

Project Name:

Current URL (or desired URL):

Contacts for this project: (name, email, phone)

Target date for launching the new site:

External factors that influence/affect the schedule:

#### 2) Why?

What is the business problem you hope to solve with this project?

#### 3) Who?

Who is your customer/target audience? Describe your target audience (age range, education level...)

#### 4) Value

Why do your customers need you? What is your most important benefit (to the customer not you)?

What do you offer that is different from your competition?

What is your product in the eyes of the customer?

How do(will) customers use your site? What are their goals?

## 5) Perception

What do you want to project about UT, your department, your project?

List adjectives describing how you want visitors to perceive the new site.

Is this different than their current perception?

List URLs of sites you like. What do you like about these sites?

## 6) Content

Do you have existing content for the site or will you create new content? Who will write the new content?

Any visuals or content you want to use from your current site or marketing materials (logo, color scheme, navigation, naming conventions, etc.)?

## 7) Technology

Any specific technologies you would like to use in your site? (Flash, AJAX, etc) If so, explain how they will enhance the user experience.

Any required database functionality (dynamic content generation, personalization, login...)?

Need for secured transactions? (like online shopping)

Any additional programming requirements? (like search functionality)

## 8) Marketing

How do people find out about your current site? What triggers prompt a visit (referral links, incentives, search engine terms)? How do you currently distribute the URL within your organization on and offline?

Do you have a marketing strategy in mind to promote this project? If yes, could you describe it?



## 9) Updating

How do you plan to keep the content on the site current and updated?

How often should content change on your site?

Who is responsible for updating and providing content?

What software will they use to keep the site updated?

## 10) Additional Notes/Comments