The Web Development Based on the Drupal System

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Abstract— **In this paper, we introduce the concepts and features of Content Management System(CMS) - Drupal and then develope the website for a real project under the WAMP (WIndows + Apache + Mysql + PHP) development environment. Based on the Content Management System - Drupal, we analyze how CMS integrates and actualizes the whole Website.**

Keywords- content management system (CMS); Drupal; the PHP

I. INTRODUCTION

Drupal[1] is developed by a scripting language PHP. Drupal is a free, open source web content management system (CMS Content Management System), also known as content management framework (the CMF, Content Management Framework) under the GPL. It has a stability and integrity community support, a large number of application developers to participate in the maintenance and management of the community. Drupal can be easily published, used to manage and organize complex and diverse content of one or more sites. In recent years, the popularity of Drupal developed sites rose rapidly, not only for personal website or blog, small website, more and more large-scale enterprise portals, commercial companies, social networking sites, universities, forums; but also for professional e-commerce website that also started using Drupal to build their own online platform.

II. DRUPAL OPERATING ENVIRONMENT

Drupal is written in PHP language, so it can run on a variety of servers, such as Mac OS X, FreeBSD, Windows, Linux, Solaris, OpenBSD, and other support ApachePHP explained server. Drupal also supports MySQL and PostgreSQL databases. This site uses the following development environment:

Operating system: Windows XP

Server: Apache-2.2.8

Database: MySQL-5.0.1b

PHP: php-5.2.6

III. BASIC CONCEPTS OF DRUPAL

A. Node

The Node module can create, edit, delete, set up and display content. Each node is a content, a blog is a node; a news report is a node too. All the nodes have a certain common attribute, that's why all kinds of content types belong to Node.

B. Content Type

As mentioned above, node is collectively for all content in Drupal, so the content type is the node type. In Drupal7, it has two default content types: Basic page and Article, besides that, Drupal allows third-party modules to extend the functionality of content type, rather than start from scratch. After establishing the content type we can create the content based on the built content type, such as create a news content type, we can publish news in the site.

C. Appearance of the theme

Theme controls the look and layout of the site; it is the interface for the user to see. To identify a site is successful or not, one rule is users recognition for the page's style[2]. Drupal7 comes with several core themes: Bartik, Seven, Garland, and Stark. If those themes don't reach you're expected, you can go to Drupal official website (http://drupal.org/themes) to find and download your style third party theme, after install it you can modify css to adjust the appearance and layout

D. Block

In Drupal, block is a content unit which can be placed on the selected region[3]. In general, every site has a uniform page layout; different layouts apply for the different theme. The default theme has following regions: head, bottom, district, left side bar, and right side bar. It may be vary in other themes. When choose a theme, one way is finding the best fit region for the design. In a region, it can contain several blocks, but one block can only place in one region. All modules can be setted under the "structure" block.

E. Menu

Each site can not leave menu, which is distributed in every page of the site. User can easily direct to different parts of site by one sample click. Drupal provides the main link (Primary links) and personal navigation (Navigation).Users can also add submenu by request. In addition, users can also create their own menu, the self create menu will automatically generate block, then user can configure it on their desired region.
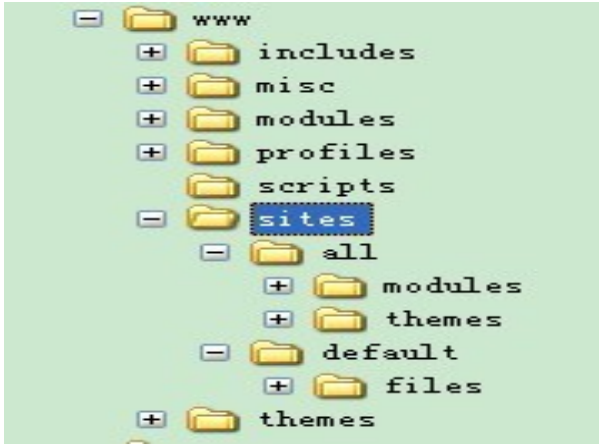
CPS
Conference Publishing Services

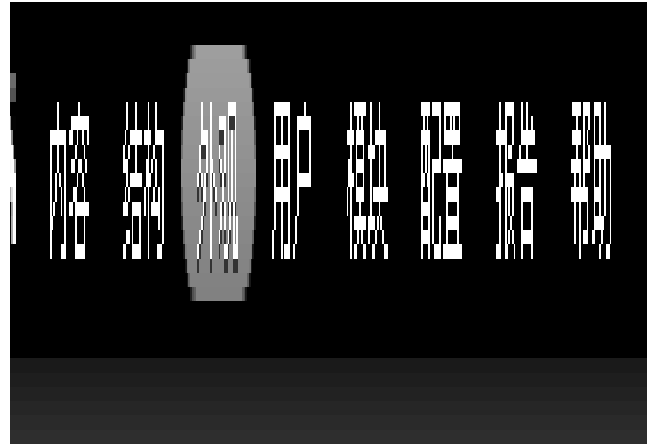Figure1. drupal file directory

Figure2. drupal panel

F. module

Module is defined as people write some code to achieve a specific function. Drupal comes with a number of core modules, users only need to active the module then they can use the function. Somehow, the core modules cannot feed all the request, but it's not a big deal, with the well community support, people can download the module on http://drupal.org/project/modules. All those modules are free, one thing before download, you need to check the version and some issues. In the list of the module, other modules can play well only request module be installed. "Support" modules support other modules. But some module releases as text or development, which means it is not stable, for the websites when install the module, it may crash the whole site.

As the space reason, the above information only introduced the general ideas about Durpal. In the following part, I will use a real example to explain how to use Drupal.

IV.   BUILD OWN SISE

Drupal file directory: The relative information about Drupal site by fault it saved at Sites file. In Sites directory it contains two sub-directory: all and default. Drupal's file can be shown by Figure 1. The file has following information:

Modules(\site\all\modules)

Under this directory, all third party or self-build modules are placed in it, and set activation from user control, same as control core modules.

Themes(\sites\all\themes)

All the themes download from official Drupal site or written by self can be saved in this directory and actived from Appearance.

Files(\sites\default\files)

Files is system default to store user's upload videos, documents, images and so on.

Settings.php(\sites\default\settings.php)

This PHP file record the data connection, database's username and password, ports information, etc. When publish the website, this file may need modify.

Besides Sites file, rest of files are all the core files for Drupal, the site need them to keep it work well, thus you'd better do not modify them, otherwise your site maybe down.

Before build the site, you need analysis what's you need, the following stuff will show your the lifecycle to develop a Drupal site.

A. Set up themes

On the Office website download corporatecle theme and place it in C:\wamp\www\sites\all\themes then click appearance to active and modify it. User can change the color style and set logo, slogan, menus and so on. Then the layout for the site is settled down. Drupal's panel can be shown by Figure 2.

B. Rotation picture changes

The default directory is C:\wamp\www\sites\all\themes\corporateclean\mockup, so the things need to do is place image 11.jpg to his directory, and rename the page.tpl.php to 11.jpg in the upper level directory, by this way can change the other rotation picture.

C. Ckeditor module

Download ckeditor module from http://drupal.org/project/ckeditor and unzip it to C:\wamp\www\sites\all\modules and active it. Then it can rich your edit mode same like using Word to edit text, etc.

D. Dbblocks

Download ddblock module from http://drupal.org/project/ddblock . The main function for this module is exhibition attractive articles, products, videos, etc. As active other module, this module need one more step: need to create a libraries folder under the C:\wamp\www\sites\all. In that file need to create jquery.cycle folder and download file jquery.cycle.all.min.js add-on in this folder. The download url is http://malsup.com/jquery/cycle/download.html . Now click "structure" , "ddblock" sign the information as figure 3.

After that, under C:\wamp\www\sites\default\files create news-picture folder and put pictures in this folder. Now a
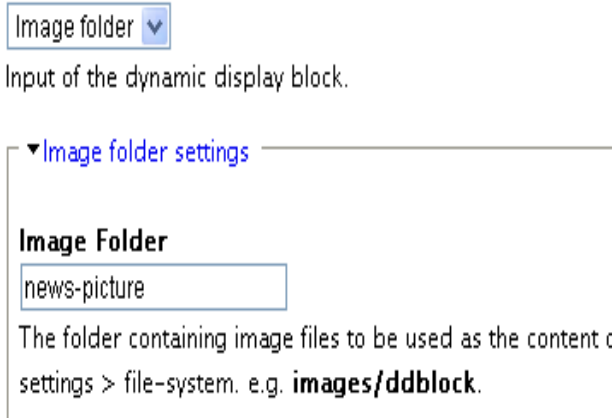
Figure 3. the figure of Ddblock block establish

block was built, and then in the "structure", "block" to choose the region for it.

E. Content type

Click "structure", "content type" adds content type, publish, appearance setting, menu setting and then add text.

Drupal core include number, text, list, picture, and other text type modules. If need add other fields need to download the module and place it in the appropriate folder, such as add a video field, it will need to download the video module on the C:\wamp\www\sites\all\modules and turn the module on, and then a content type with the video field is successfully created.

At the end , use Firebox development tools adjust the appearance of the site. With the new style of editing tools, developer can use it as to use a text editor style to modify the CSS style sheet, and immediately preview of the corresponding changes in the browser, in this way you can quickly and conveniently repeat test site[4]. Firebug can easily find the path of the CSS and you can write it in the appropriate folder.

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