

## BUILDING WEB JOURNAL DIRECTORY AND ITS ARTICLES WITH DRUPAL

Suwanto Raharjo

*Institute Science & Technology AKPRIND, Yogyakarta, Indonesia  
email: wa2n@akprind.ac.id*

### Abstract

*The rapid growths of web based applications force web programmers to keep updating their knowledge especially on web applications technologies. Drupal is one of open source Content Management System (CMS) that can be used to develop web based applications and meet recent web standard. Unlike other CMS, Drupal is more configurable and customizable; many kind of sites using Drupal as an engine, from University site to Company or even personal blog site. Having been supported by huge modules are the reason why Drupal can be used for many kind of websites. This paper will show the ability of Drupal for building a Web academic Journal directory and its articles content. The developed system can be accessed via url <http://sitasi.com>*

### Keywords:

*Drupal, bibliography, journal, directory, CMS*

### Introduction

Since the end of 90's, public has known several Content Management System (CMS). With CMS is easier for user to produce and manage the content and information of a website. Drupal is one of open-source platform CMSs, other than Wordpress, Joomla, Mambo, etc. Drupal is one of the most preferred Open Source CMS. Several well known companies have used Drupal at their websites. Sites such as yahoo! Style guide at <http://style.yahoo.com> (Figure 1), Java Community (<http://www.java.net>), Nokia research (<http://research.nokia.com>), some famous universities : Stanford, Duke, MIT and others high-traffic sites made in Drupal [1]. Drupal constructed by layered system (Figure 2), consisting 5 layer : Data, modules, block & menus,

user permissions and template. The Drupal layered system make Drupal flexible and customizable, Drupal are used in many variety of web sites: blog, library, forum, dictionary, e-commerce and many others. Installing and running Drupal on web hosting must meet certain minimal requirements. General system requirements to install Drupal are:

- Disk Space 15 MB
- Web Server: Apache or Microsoft IIS,
- PHP
- Database server: MySQL, PostgreSQL, Oracle, MS SQL Server

Applications version may vary, depending on the version of installed Drupal, Oracle and MS SQL Server need separated module to work.

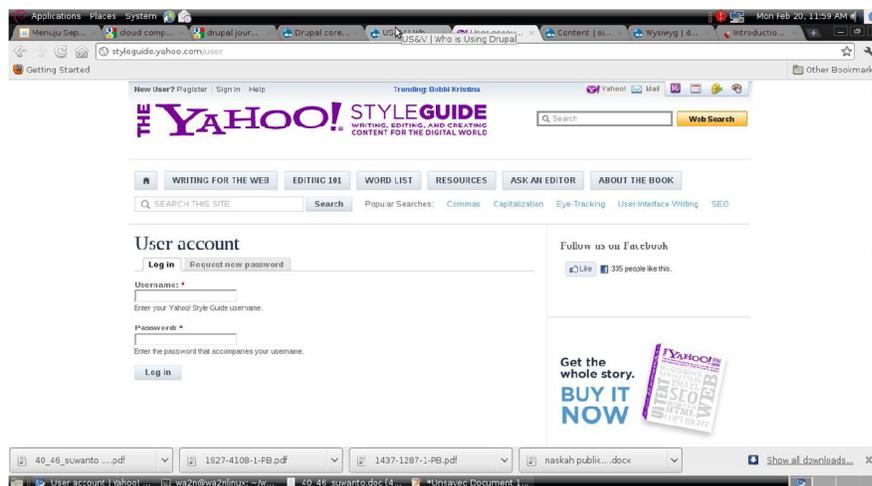


Figure 1. Yahoo style site using Drupal

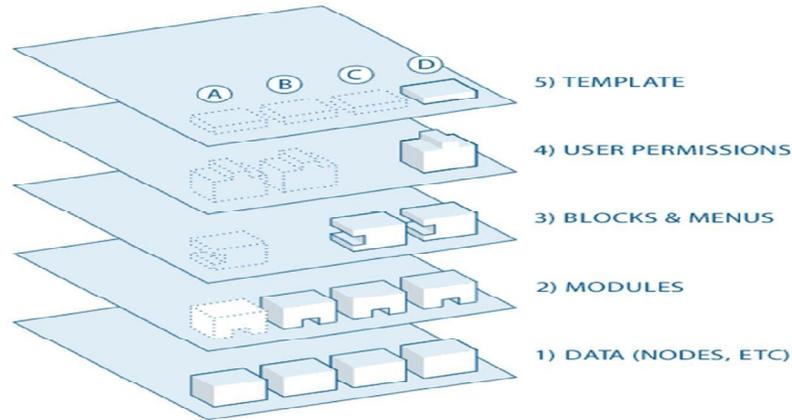


Figure 2. Layered Drupal [2]

### Journal Management System

Academic journals are articles written by academic community such as students, graduate students, lecturers, professors, or others having experience with the subject. Each academic journal has a peer review board by a panel of experts that decides which submissions are acceptable for publication. The main function of academic journal is to spread the knowledges to public community. At the beginning, academic journal publication is done by printing on paper and distributed to Universities, Libraries or Book Stores. By now academic journal is not only published on hard copy, but also published on the Internet as soft copy (files) using special file format, such as pdf, odt or doc.

Special softwares are developed to manage academic journals publication. Some of them are available freely on the Internet, named, Open Journal System (Figure 3), Digital Publishing System (DpubS), Hyperjournal and others. The special softwares are called Journal Management System (JMS). JMS is a CMS having special function: managing journal system publication. Some of them are capable of managing journal from submission, reviewing to publication of the articles. This paper will introduce and explain how to using Drupal as Journal Management System that operate differently with Open Journal Systems (OJS). The system will record journals submitted by administrators or granted users and also display journal based on Journal Name, ISSN, country, categories or others. The system will also record journal articles.



Figure 3. Demo site using OJS

On this paper will introduced and explained how to using Drupal as Journal Management System but not like work of Open Journal Systems (OJS). The system will record journals submitted by administrators or granted users and also display journal based on Journal Name, ISSN, country,

categories or others. The system also will record journal articles associated with submitted journal. The system will be more like Directory of Open Access Journals than OJS. Figure 4 is display of Directory of Open Access Journals web site.

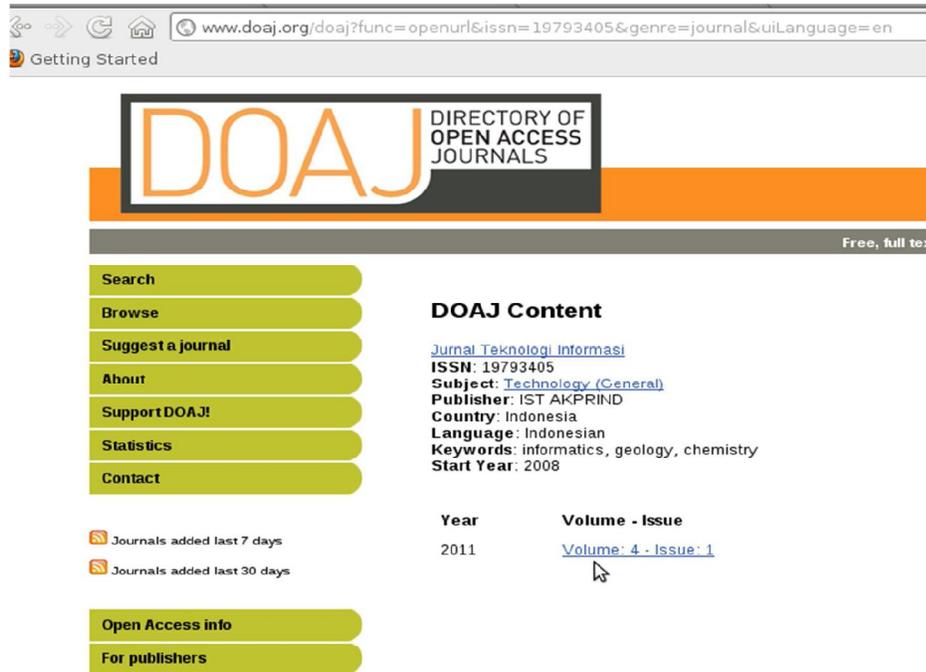


Figure 4. Directory of Open Access Journals web site

## Research Methods

The first development process of system is installing Drupal. Installing Drupal can made by 2 methods [3] :

1. Install directly using source code
2. Using applications on web hosting



Figure 5. Menu installation of Drupal using Softaculous

The first method we have to download Drupal source code at <http://drupal.org> and manually install by extract the source code. The newest version of Drupal while this paper is written is 7.2 for Drupal 7.X based and 6.24 for Drupal 6.X based version. Second method is using auto installer application on web hosting such as Installatron, Fantastico, SimpleScripts or Softaculous. Using second method the Drupal source code is already prepared by web hosting server and user only click a button then the installation will be start. Figure 5 display an automatic installer using Softaculous. After clicking install button on an automatic installer software or by pointing a browser into an url address of target site., the installation process will take about 5-10 minutes.

There are 7 steps on Drupal installation: choose profile, choose language, verify requirements, setup database, install profile, configure site and finished (Figure 6). Next step after installation process completed is downloading requirements modules to build the system. Modules need to build this system are :

1. link

2. email
3. languagefield
4. country
5. date
6. unique field
7. bibliography
8. ctools & views
9. captcha & recaptcha
10. workflow

The main module using on this system is custom construction field (CCK), bibliography and views. The CCK is a module that allows to define the data that makes up sites content type. A web site could contain many types of content, such as informational pages, articles, news items, polls, blog posts, etc. In Drupal, each item of content is called a node, and each node belongs to a single content type. Fresh Drupal 7 installation using default profile will have two content type: basic page and articles. Custom content type can be added using CCK module on Drupal 5 and 6; in Drupal 7 content type already on core system. Content types typically have at least a title field, a body field and several other fields that are used to capture structured information [4].

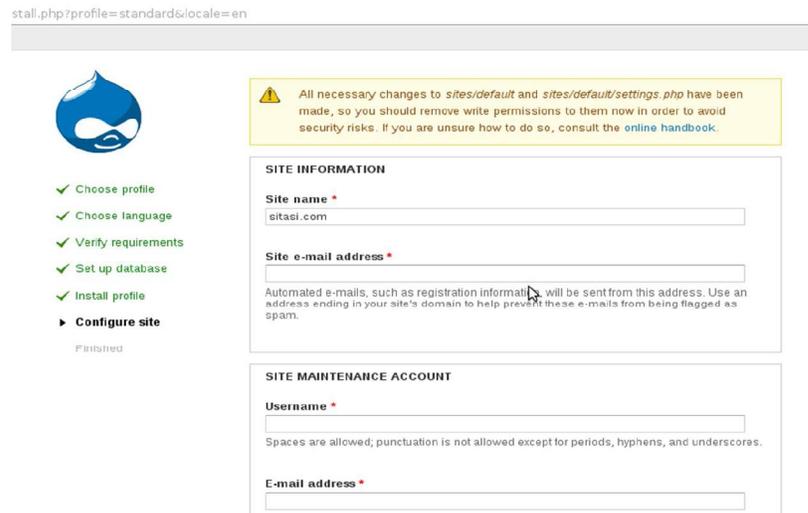


Figure 6. Installation steps

On this system a new content type called Journal was created. Adding content type on Drupal 7 can be done easily by going to menu Structure > Content types > Add content type (Figure 7). The journal content type is used for storing all information about a journal that will submitted to the system. The Journal type contains several fields : Title, Description, Journal URL, Journal Languages, Journal Country, ISSN, eISSN, Publisher, email publisher, publication, Journal field, Journal categories, publisher URL, etc. Each field can store one type of data (text, number, file, etc.). Drupal 7 has several default data types;

adding special modules can be done to extend data types. On this system several modules are downloaded and installed to add more data types : email, link, languagefield, country and date modules. Email module is used to store email data type and link module to storing internal or external links and URLs data type. Languagefield and country modules already store information all languages and country in world, using two modules user can easily add country and language data by selecting it.

The bibliography module is a module to manage articles content. Installing bibliography module will create a new content type called biblio, using this content type user can add content according to biblio content type format. Bibliography module stores many format of articles called publication types that are ready to use, user can choose the format that has been provided. Bibliography

provides many publication types such as: journal articles, thesis, web articles and others (Figure 8). Bibliography module manages articles entities : authors, abstract, title, keywords, issn, isbn and others according to article type. On this system the journal article format will be used, the others will be hidden.

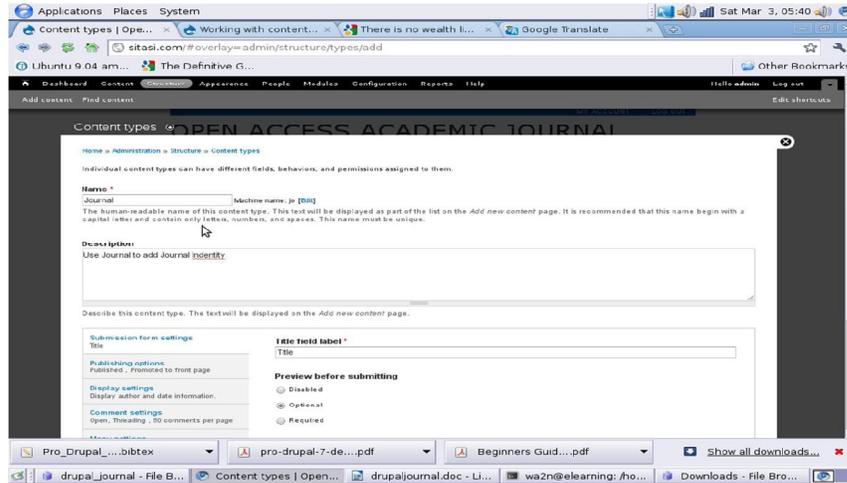


Figure 7. Create new content type

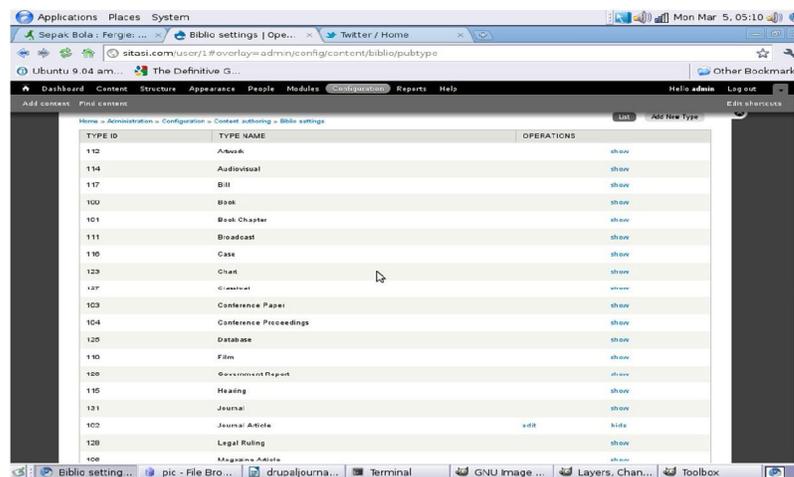


Figure 8. Publication types on bibliography

The views module is other power full Drupal module that is very popular to Drupal users, at February, 192012 about 412,937 users had reported using this module. The views module is used to pull data out of Drupal database and display it on a site. Each display, whether it is page or block, can display sets of fields with the result being narrowed down by the views filter [5]. The Views module is a powerful query builder for Drupal that allows user to fetch content from database and display it using a

variety of options, including but not limited to: content type, author, taxonomy term, date of post and many other options. Views can present data to the user in ways tailored to your needs. On this system, Drupal views module is used to display of various journal information, one of them is display list of journals that have been submitted by users. Figure 9 is display of views module administration page that can be accessed via menu Structure -> Views.

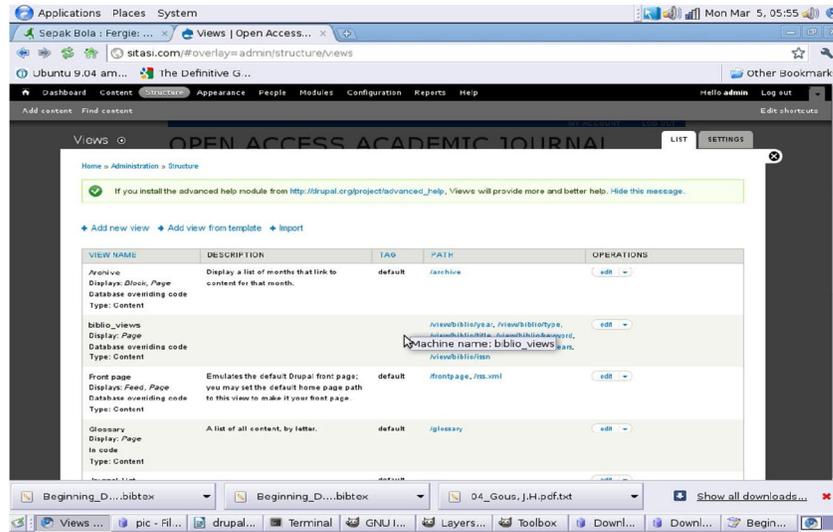


Figure 9. Views module administration page

**Result and Discussion**

The ctools module is required by views module and captcha is module used to protect sitasi.com site from bot (automatic script) submissions. The workflow module is used to allow the creation and assignment of arbitrary workflows to Drupal node types. On this system, workflow module is used to display thank you page after anonymous submitting journal information. The Journal administration system developed using Drupal on this paper is uploaded and registered on domain sitasi.com and can be accessed by browser via url <http://sitasi.com>. There are two major function on this site :

- user suggested journal
- user added journal articles

The flowchart of using this system is display on figure 10. Anonymous user can suggest journal by clicking provided link called suggest a journal or

can be accessed using browser via url address <http://sitasi.com/journal/suggest>. After anonymous added a journal, administrator of sitasi.com site have to review and decided it whether the journal is acceptable for publication on this site or not. If submitted journal is accepted, the administrator will create user account according to the journal editor or some one who is responsible for it and contact them via email. Using created account, journal articles can added to corresponding journal that is already submitted and accepted. The accepted journal will be published on sitasi.com and 10 newest accepted Journal will be displayed on front page. Journal articles added on accepted journal are managed by bibliography module and can be accessed by following journal articles link. List of journals also can be made by using view module, various filter can be added such as filter by country, journal title or other.

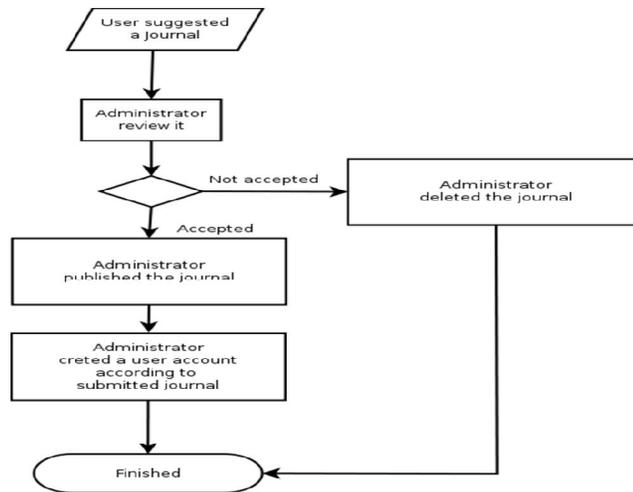


Figure 10. Flowchart using sitasi.com

## Conclusion

Drupal is a CMF having plenty of modules that can be used to developed many kind on websites. Customizable, flexible, expandable are common reasons of many users for using Drupal as an engine for building a website. Developing a journal directory and its articles content website using Drupal can be done easily. The paper demonstrate the power of Drupal by providing a concrete example. Using view and bibliography as back end modules development of this system can be done and can have opportunity to add more features.

## References

- [1] usandv.com, "Who is using drupal," retrieved February 25, 2012 , <http://websites.usandv.com>
- [2] drupal.org, "The Drupal Overview," retrieved February 25, 2012 from <http://drupal.org/getting->
- [3] S. Raharjo, "Membangun Situs Kamus Online Sederhana Menggunakan CMF Drupal," Jurnal Teknologi IST AKPRIND, vol. 2, no. 1, 06/2009 2009
- [4] T. Tomlinson and J. VanDyk, Pro Drupal 7 Development, Third Edition, ser. Apress Series. Apress, 2010. [Online]. Available: <http://books.google.co.id/books?id=vAihEyHcFBgC>
- [5] J. Redding, Beginning Drupal, ser. Wrox beginning guides. John Wiley & Sons, 2010. [Online]. Available: <http://books.google.co.id/books?id=1wAmWjcfQXQC>