A STUDY OF OPEN SOURCE CONTENT MANAGEMENT SYSTEM: JOOMLA

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Abstract - *A content management system (CMS) is software that helps us to make easier, faster and responsive websites in a very short time. In the CMS, this complete work can be done by putting the content using admin panel and showing it on the appropriate pages according to the rules. These days there are several CMS available based on functionalities, usage and platform. The main challenge is to select the most appropriate CMS that fulfill the users' requirements, easy to use, update, performance, compatibility with the different platforms and searching and security purpose. The study t to analyze Joomla, on the basic of User interface, functionality, usage, easy availability of plugins, default integrated features, installation process, browser compatibility, performance with different platforms, SEO, security purpose.*

*Key Words***: CMS (content management system), Open Source, Joomla**

1. INTRODUCTION

CMS- Content management system is a computer application. CMSs are mostly used to develop news, blogs, events and shopping websites. Many Govt. organization, corporate and shopping and Marketing websites use CMS. CMS is normally used to avoid the same type code writing. A content management system is a self-contained application to create, manage and store content. As we know that a webpage has text, graphics, photos, video, audio etc that display content or interacts with the user. CMS has made managements of the content simple and has grown the project's use in the countless production of websites [1].

CMS has great capabilities, but one of its great strengths is to ease the extending those capabilities. One can add an unbelievable amount of functionality just by customizing the core modules, but once you learn to write your own tags and modules, the ability to add features is virtually limitless.

CMS consists of two basic elements: the content delivery application (CDA) and the content management application (CMA). [2]
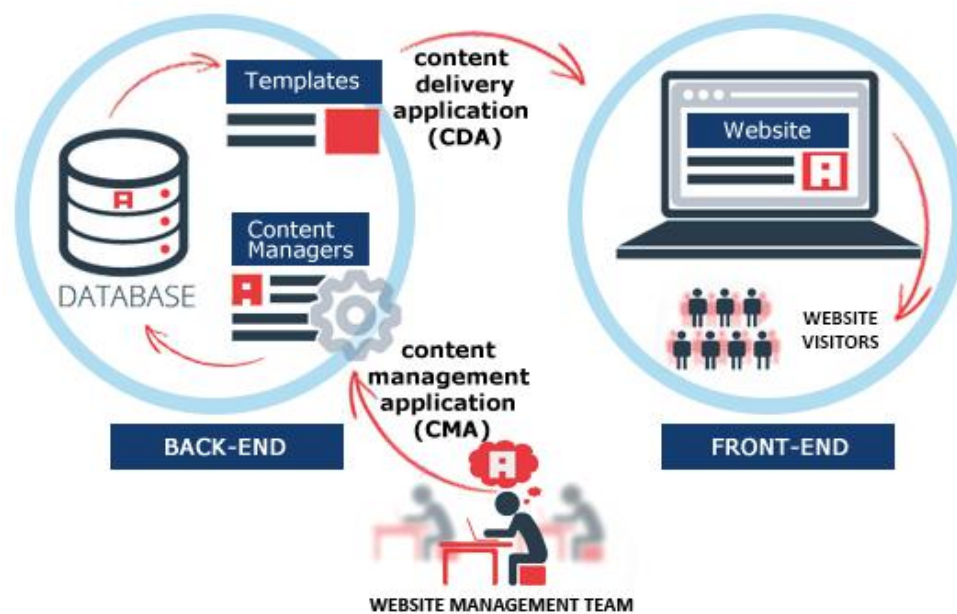

Fig -1: Workflow of CMS

1.1 CMA

The content management application (CMA) element allows the site administrator, content manager or author, to manage the creation, modification, and removal of content from a Web site without the expertise knowledge of a Hypertext Markup Language (HTML).

1.2 CDA

The content delivery application (CDA) element uses and compiles that information input by the author to update the Web site. The features may vary, but mostly include Web-based publishing, formatting, revision control, indexing, search and retrieval.

2. CONTENT MANAGEMENT SYSTEM: JOOMLA

Joomla is the most popular open source content management system (CMS), which enables the user to build Web sites and powerful online application that can also be used independently. Joomla is written in PHP (scripting language), using object-oriented programming (OOP) techniques and MySQL database for the backend section. Joomla is much more than just a powerful content management system with the list of features, User Management, Banner Management, Media Manager, Templates, Languages Manager, Contact, Polls, Search, Web Link, Content, Menu, Web services Management and Powerful Extensibility. Joomla keeps content in its database to provide dynamic formatting and display for end user [3].

Joomla is used all over the world to create powerful Web sites of all shapes and sizes.

For example:

• Corporate Web sites or portals

• Corporate intranets and extranets

• Online magazines, newspapers, and publications

• E-commerce and online reservations

• Government applications

• Small business Web sites

• Non-profit and organizational Web sites

• Community-based portals

• School, Colleges, Hospitals and church Web sites

• Personal or family homepages

• Multiple language sites

3. JOOMLA FILE STRUCTURE

The understanding of the basics directories and files structure in Joomla site is essential. When Joomla is installed, there will be a default file structure either on the server. Below is a graphical example showing how each folder has all the important documentation structured and organized [5].
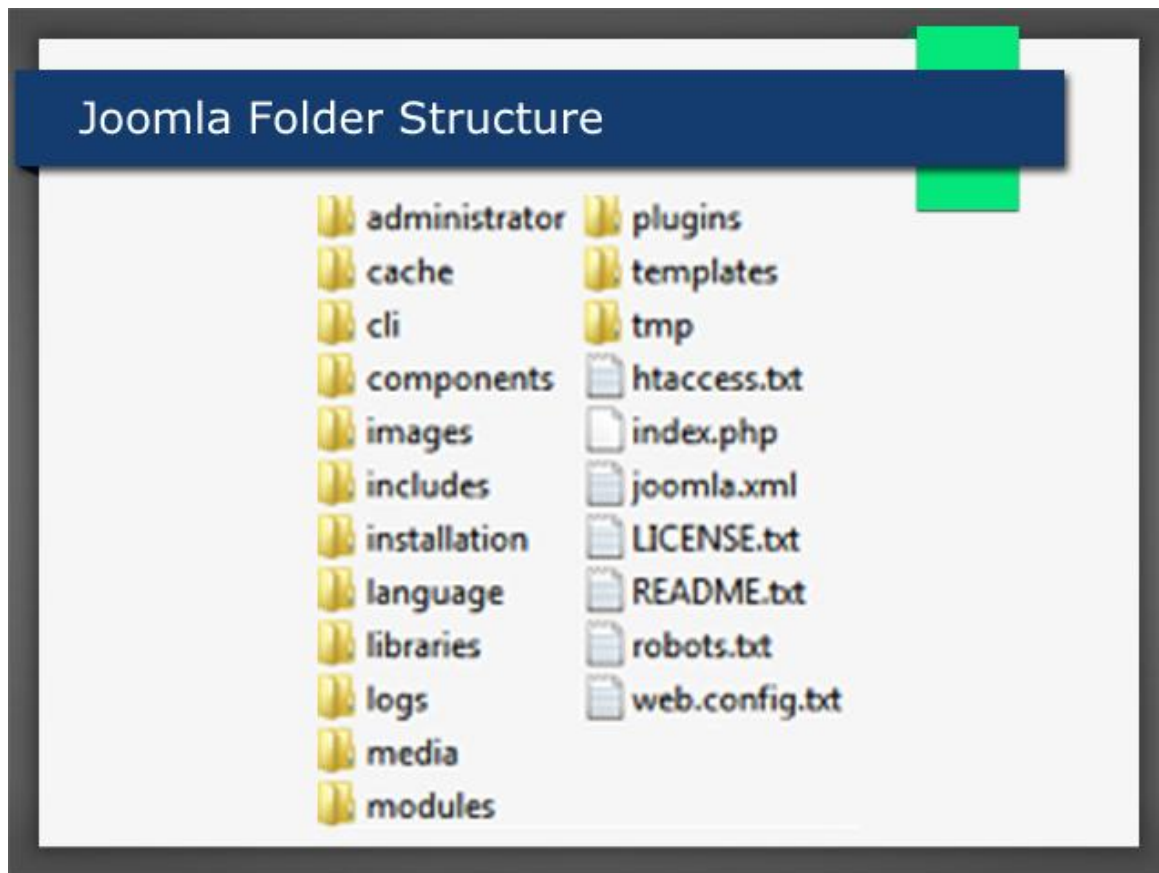

Fig -2: File Structure

4. MAIN FEATURES OF THE JOOMLA [4]

4.1 Content Management

Joomla is a Content management system at heart and has some seriously great features that make organizing and managing user content a breeze. Content creation is made very easy by the inbuilt WYSIWYG editor and allows user to edit content without any knowledge of code. Next to different layouts, users are able to use several pre-installed modules to show the most popular articles, latest items, related articles and more. Joomla is very user friendly and widely used content management system with easy customization features.

Currently 1,619,460 live websites using Joomla! And an additional 2,603,299 websites that used Joomla! Historically and 6,172 websites in India [6].

Fig -3: Main Features of Joomla

4.2 Multilingual

Joomla is the most accepted and user friendly multilingual CMS in the web application industry, its supported more than 64 languages.

4.3 Easy Upgrades

In case of up gradation, admin/developer can easily update joomla version with one click update button. No extra technical knowledge or coding require for cms update. The in-build updater system also has an automated checker which notifies admin if anything new update require.

4.4 Media Manager

Joomla media manager is the tool for uploading, organizing and managing Joomla site media files and folders. Admin can even handle more types of files, with the help of configurable MIME settings. Joomla Media Manager tool feature is included into the Article Editor so admin can access images and others media files for easy usage and improvement of your written content.

4.5 Banner Management

Admin have the possibility to easily add advertising and monetize Joomla developed website with the banner manager. This tool allows you to create clients and campaigns, to add banners as need, even custom codes, to set impression numbers, track the clicks and much more.

4.6 Contact Management

Contact Management allows Admin to add several contacts, categories and extend the basic contact information with miscellaneous information and an image. Easily set up a contact form for each contact you create and allow access to the public or some registered users, or create a listing of these contacts.

4.7 Search Better, Search Smarter

Website visitors will be able to quickly and easily find the appropriate information on your site With Joomla built in search and smart search module and even more, thanks to the statistics admin can analyze site visitors' needs and streamline website content even better to serve them. Site user have the ability to use the included smart indexing, advanced search options and auto suggest searches - making search the best in class right out of the box.

4.8 Nested Categorization

When Joomla site users are managing content, organization is a key condition. Admin able to create nested categories.

4.9 Frontend Editing

Joomla Site content editing should be easy and fast. The site users are reading through the Joomla site's content and see a change that user needs to make. Not require to login to the site administrative section any more for simple edits of content and modules. Just simply click and edit from the frontend.

4.10 Content Versioning

The Joomla site users will never again lose a previous important version of the article and other changes on site. Amin can now able to track every changes, when, and if a new version note was entered, why the item got edited. Then if required, admin can revert to any previous version.

4.11 Menu Manager

Joomla site Menu Manager allows admin to create as many menus and submenu items as our need.

4.12 Powerful Extensibility

The Joomla CMS core is just the start, the main control is in the way user can customize Joomla have more than 8000 extensions are available to extend website and broaden its functionality.

4.13 Maintenance and Update

Maintaining and updating of the Joomla site is easy. Joomla site need to take backup before updating it. The Site administrator can back-up the whole website by downloading a file which contains the assets of website, and replacing the web directories using a web update interface.

5. JOOMLA FEATURES FOR DESIGNERS

5.1 Design Uncoupled

Joomla was one of the most widely used open source CMS's by adopting a MVC design strategy. MVC means that site views are firmly separate from the business logic

5.2 Responsive with Bootstrap

Nowadays, every user requires the website should be fully responsive. This is very time consuming. Joomla is in-build Mobile responsive and also respond to virtually any device. Joomla! Main templates are built with the Bootstrap technology to making it responsive.

5.3 Do Extra customization with Less Coding

Spend less time coding and reduce the tedious tasks associated with building interfaces in Joomla 3.9. Latest Joomla version have features with less CSS and jQuery , as a result you can write very less code to add new feature. The Joomla User Interface library support easily standardized backend & frontend interface.

5.4 Beautiful Fonts for that Extra Edge

With Joomla you don't need to get constrained by standard Web fonts. Joomla core opens a new world of appearance because it allows admin the independence to use Google fonts to make that new customized look.

5.5 Template Management

Joomla Templates contains a framework for managing designs but a powerful tool for making Joomla based site look exactly the way client want. Admin have complete control of presentation since admin can use a single template for the full Joomla site or admin can use a separate template for each site section or menu item.

6. JOOMLA FEATURES FOR DEVELOPERS

6.1 User Management

Registration system allows site users to configure personal options setting. There are 9 types user groups possible with various types of access permissions. User Authentication is the most important part of user management component and Joomla also supports multiple protocols, including LDAP, OpenID, and even Gmail. This allows users to use their existing account information to simplify the registration process. All of this can be added onto with extensions, giving you complete control over what users can access and how they authenticate to the site.

6.2 Cloud Storage APIs

Using cloud storage API it's possible to access cloud storage services including Amazon S3, Google Cloud Storage, Rackspace and Dropbox as content distribution networks without the need for third party Joomla extensions.

6.3 System Features

Joomla site fast loading possible with page caching, granular-level module caching, and GZIP page compression feature. With the help of APIs supporting many third party services and a connector enabling requests to anywhere on the web, users and developers have a magnitude of power and data readily available to them.

6.4 Create add-ons to extend the power

Some companies and organizations have specific requirements that go away from what is offered in the Joomla! Core. To solve this issue, Joomla's application framework makes it simple for developers to create classy add-ons that extend the control of Joomla into virtually limitless directions.

The core Joomla! Support developers to quickly and easily build:

- Inventory control systems
- Data reporting tools
- Application bridges
- Custom product catalogs
- Integrated e-commerce systems
- Complex business directories
- Reservation systems
- Communication tools

7. CONCLUSION

The web is getting more complex day by day. A few years ago, knowing HTML was enough for creating a website. But today, to develop a good responsive and user friendly website with lots of features, user should acquire good programming skills and years of experience. On the other hand, Joomla is one of the most powerful Open Source Content management Systems. It is very useful for creating highly interactive Multilanguage different kinds of website like E-commerce, portals, blogs etc. in short time without need to lots of programming knowledge. One can easily add additional functionality using add-ons. There are lots of extensions available at Joomla for free download. So any user or organization can develop their site using Joomla very easily without knowing any programming language and no need to know the design also. Economically Joomla is very cheap because it's open source and easy to handle so saves time.

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