

# IS 2004 : Web Application Development

## Handout 3: Content Management Systems

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# Plan for Today

- Web Site Development
- Understand Domain names, DNS, IP address
- Introduction to CMS
- CMS tools

# Introduction

- A **website** can be defined as a collection of several webpages that are all related to each other and can be accessed by visiting a homepage, by using a browser like Internet Explorer, Mozilla, Google Chrome, or Opera.
- Each website has its own **URL** which is an **unique global address** called **domain name**.

# URL (Uniform Resource Locator)

- Each web page has to be requested using a particular web address called **URL (Uniform Resource Locator)**.
- Syntax of URL :

**https://www.example.com**

<b>Protocol (scheme)</b>	<b>Sub- domain</b>	<b>Domain name</b>	<b>Top level domain (TLD)</b>
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- Everything on the World Wide Web has a unique URL. The structure of a URL is hierarchical.
- **Parts of URL:**
  - **Protocol** - Used to access the website, which in this case is **http**, meaning port 80. It can also be **https**; port 443.
  - **Subdomain** - which by default is **www**.
  - **Domain name** - domain names are normally chosen to have a meaning.
  - **Top Level domain** - which can be **.com**, **.org**, **.net**, **.edu**, or country specific.

# Domain Name

## What is it?

- On the World Wide Web your domain name is your own unique identity. No two parties can ever hold the same domain name simultaneously.
- A domain name locates an organization or other entity on the Internet.
- A domain name represents a physical point on the Internet —an IP address.
- The Internet Corporation for Assigned Names and Numbers (ICANN) governs coordination of the links between IP addresses and domain names across the Internet.

# TLD & SLD

- **Top Level Domain**

- A TLD identifies something about the website associated with it, such as its purpose, the organization that owns it or the geographical area where it originates.
- Each TLD has a separate registry managed by a designated organization under the direction of the Internet Corporation for Assigned Names and Numbers(ICANN).

- **Examples :**

- .com (Commercial)
- .net (Network)
- .org (Organizational)

# TLD & SLD contd..

- **Second Level Domain**

- A second-level domain (SLD) is the portion of the domain name that is located immediately to the left of the dot and domain name extension.
- For example, the SLD in *godaddy.com* is “*godaddy*”



# How these domains work?

- Once you enter the domain name into a Web browser, the browser uses your domain name to find the domain name's associated IP address.
- Then the IP address is used to find the location that the resource exists.
- **Why people use domain names then?**
  - Because it is easier to remember a name rather than a series of numbers.

# What should I use as a domain name?

- You can use a word or phrase as a domain name. When thinking of a domain name, think of **catchy words or phrases** that are easy to remember and that will bring more traffic to your site.
- Try to use a domain name that is relevant to your web site.
- Also try to keep your domain name **as short as possible**, around 5 to 20 characters is fine. The shorter domain names are easier to remember.
- E.g : Which one is much better?
  - 1luv4u.com
  - oneloveforyou.com

# How to acquire a domain name?

- There are two main ways you can get a domain name. You can either register your domain name yourself or you can get your web host or ISP (Internet Service Provider) to register it for you.

# Why register and renew domain?

- If you loose your domain name you can loose your whole online identity.
- Because you can only register a domain name for a year or so, you will need to make sure that you renew it before the expiry date.
- Once your domain name expires you will no longer own that domain name. Your Registrar will then own it and be able to sell your domain name to the highest bidder.

# Domain Name System (DNS)

- A DNS server provides '**name resolution service**' which means that DNS servers resolve domain names into IP addresses or vice versa.
- DNS servers are also called **Name Servers**.
- A local DNS server which performs domain names lookup is usually located on the network to which your computer is attached.
- If you are using an Internet Service Provider (ISP), your DNS server is at your ISP.

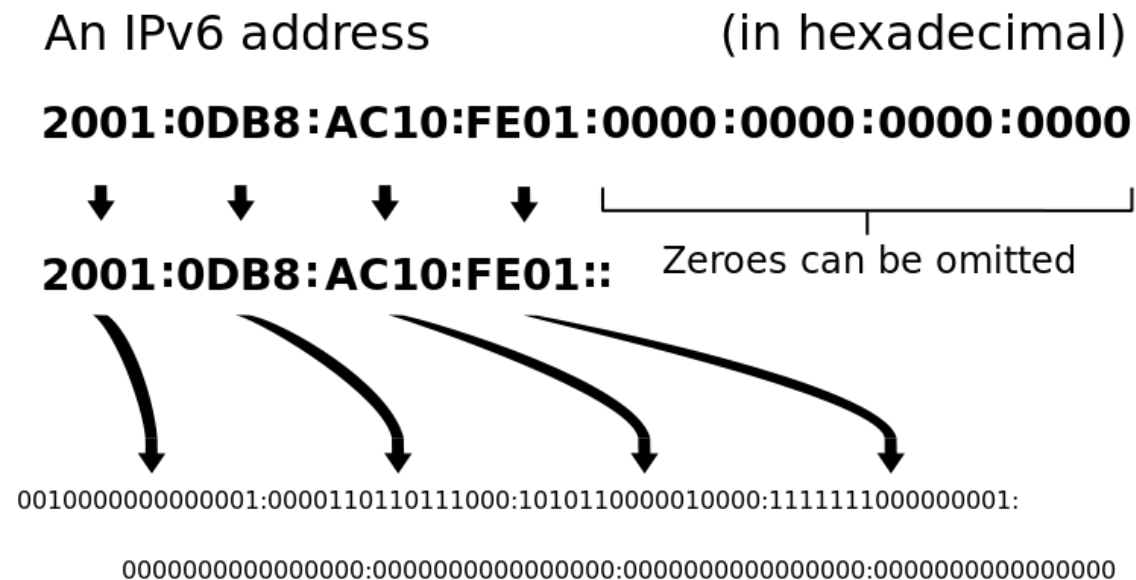
- Translates human – readable computer hostnames, e.g. `www.google.com`, into the IP addresses that networking equipment needs for delivering the information.
- A domain name server (DNS) is a machine that keeps a table of names and corresponding IP addresses.

# Internet protocol address (IP Address)

- An IP address is a number used to identify the logical connection of a computer in a physical network using a 32-bit binary address (IPv4), composed of four 8-bit numbers.
- IP address is represented as four decimal numbers between 0 and 255 separated by dots (e.g. 199.221.66.20). This is referred to as **dotted-decimal notation**.
- Any resource attached to an IP network can be assigned an IP address, e.g. computer, printer or a scanner.

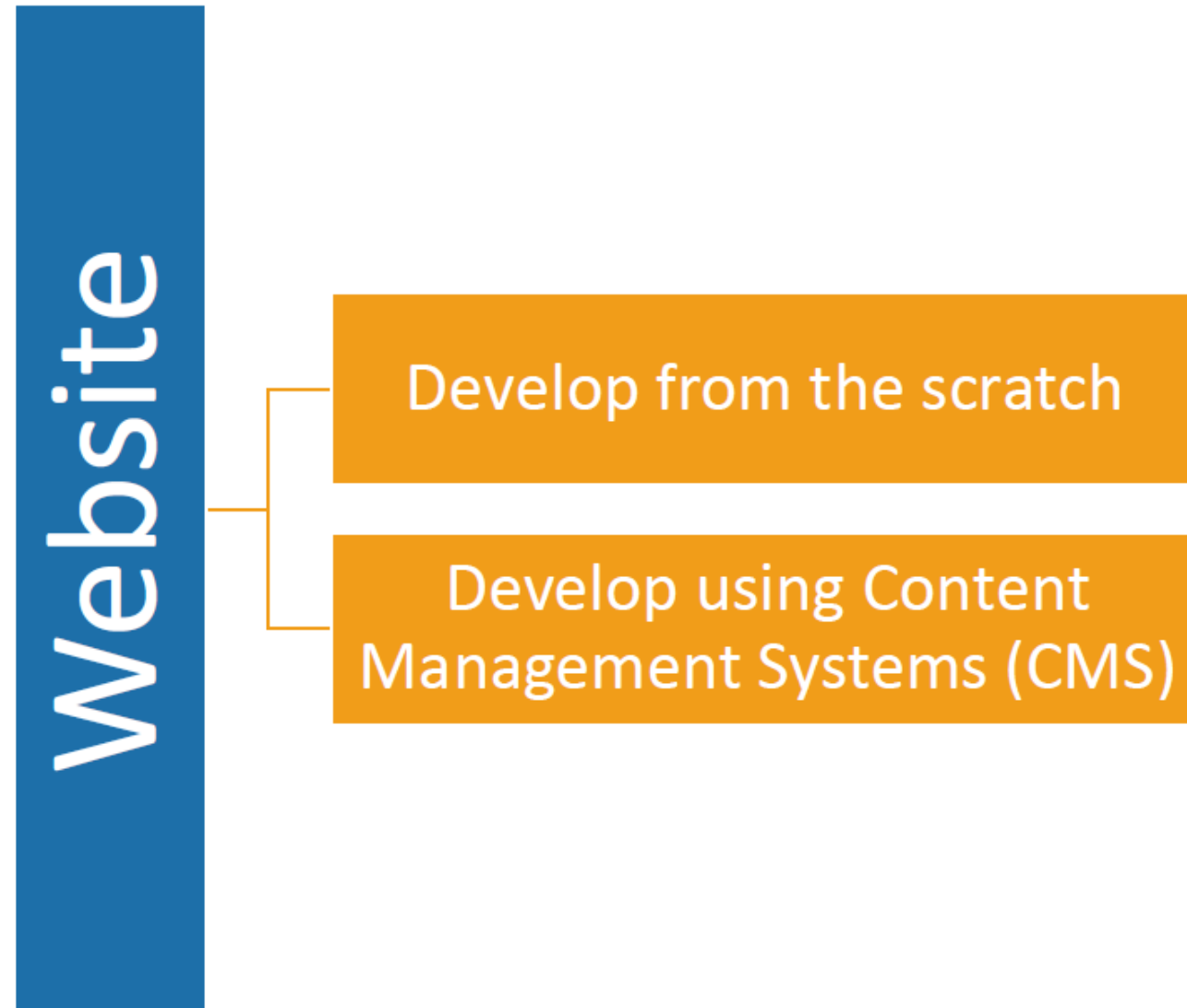
# IPv6

- Internet Protocol version 6 (IPv6) is the latest version of the Internet Protocol (IP), the communications protocol that provides an identification and location system for computers on networks and routes traffic across the Internet.





# Options to Develop Websites



# CMS ( Content Management System)

- A content management system (CMS) is a computer application.
- It supports the creation and modification of digital content using a common user interface where we can create and update pages, posts and other type of content (images, videos, etc.) and arrange the content the way we need.
- Usually supporting multiple users working in a collaborative environment.

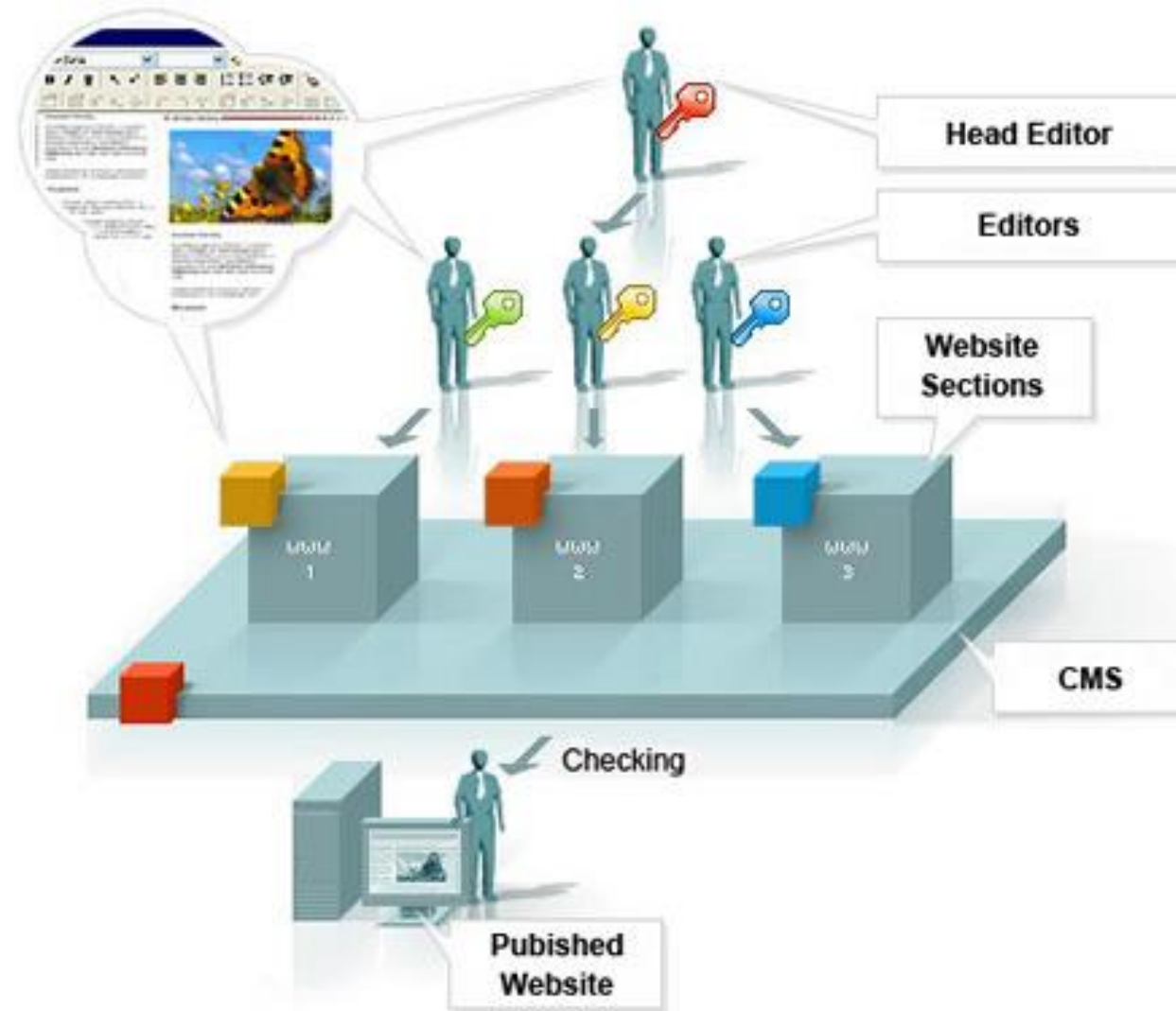
# Basic CMS Features

- Access Control
- Collaboration tools
- Version Control: Allow editors to retrieve previous version of content
- Library: Automated and standard templates, images, other assets
- Content Repository: Text and other assets stored in a database or XML repository
- Publishing Functionality: An automated publishing process

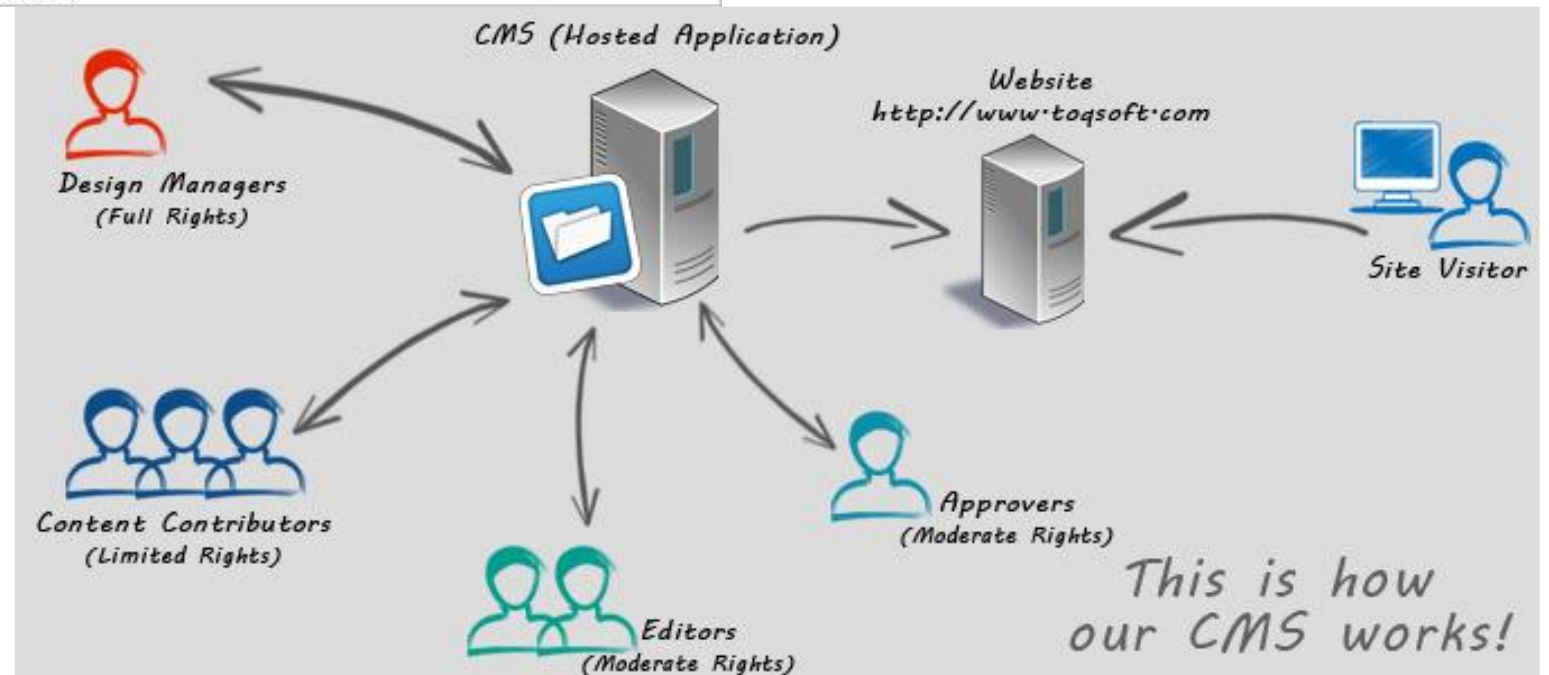
# Who is involved?

- Content management is a collaborative process. Often consists of the following basic roles and responsibilities:
  - **Creator** - responsible for creating and editing content.
  - **Editor** - responsible for tuning the content message and the style of delivery, including translation and localization.
  - **Publisher** - responsible for releasing the content for use.
  - **Administrator** - responsible for managing access permissions to folders and files, usually accomplished by assigning access rights to user groups or roles.
  - **Consumer, viewer or guest** - the person who reads or otherwise takes in content after it is published or shared.

# Who is involved?



# How does CMS work?



# Pros and Cons

- Inexpensive
- Easy to use
- Not requiring users to have a technical coding background in order to create or maintain content
- Workflow management can be controlled and personalized by administrators
- Larger implementation can get expensive
- Maintenance can also be costly
- Larger systems can become slower with time
- Security can be a concern

# Popular Content Management Systems



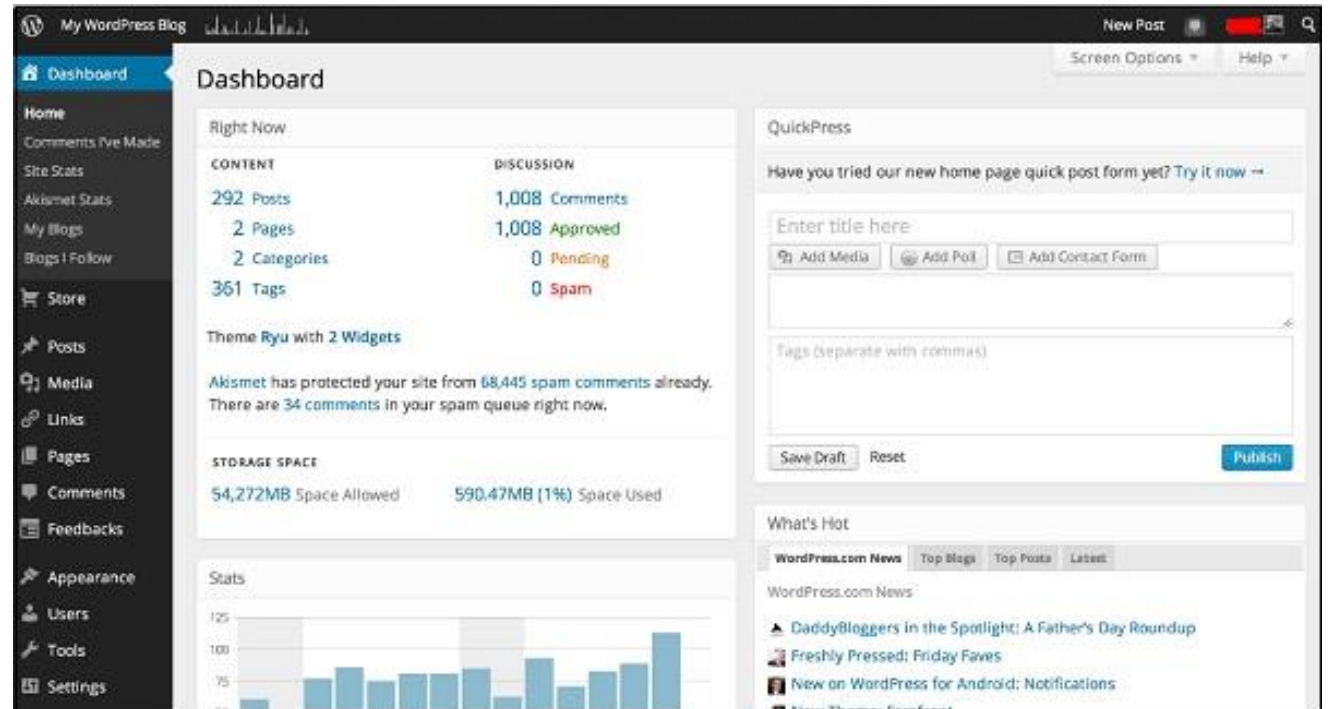
WORDPRESS





# What is WordPress?

- An online, open source blog/ website creation tool.
- Developed based on PHP.
- A powerful blogging and website content management system.
- Easy to use.
- Light weight.



# System Requirements for WordPress

- Database – MySQL
- Web Server
  - WAMP (Windows)
  - LAMP (Linux)
  - XAMP (Multi-platform)
  - MAMP (Macintosh)
- Operating System – Cross platform
- Browser Support – IE, Firefox, Google chrome, Safari, Opera
- PHP compatibility

# How do I get started using WordPress?



# Two Different Ways to Start

- [Wordpress.com](#)
  - No need to download the files.
  - Can be used as a hosted service.
- [Wordpress.org](#)
  - Need to download the installation file.
  - Comes with a self-hosting installation package.



# WordPress installation process

**Step 1:** Download the WordPress installation package from

**<https://wordpress.org/download/>**

**Step 2:** Unzip and rename the directory as you prefer.

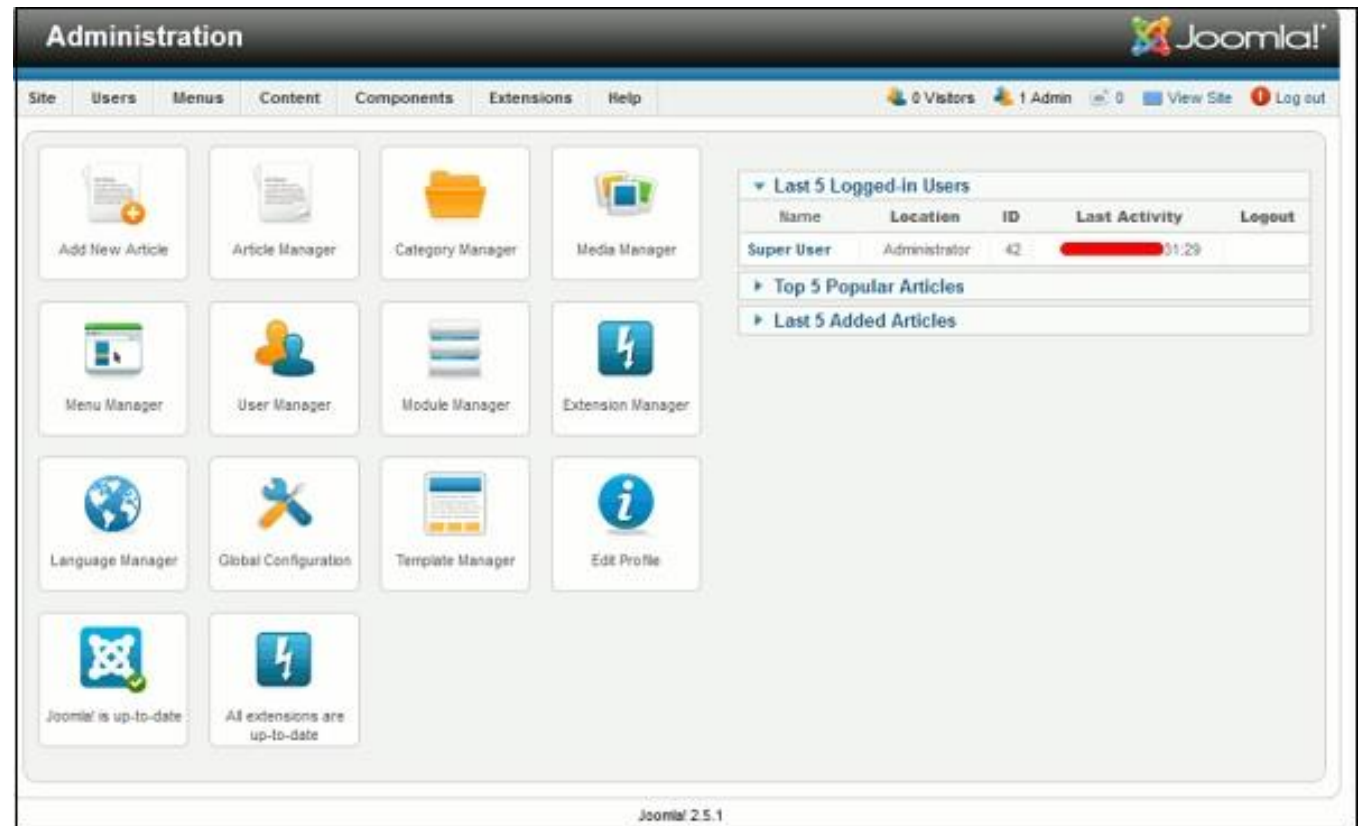
**Step 3:** Upload the WordPress files to your server or copy to the root.

**Step 4:** Create a MySQL Database for WordPress to use.

**Step 5:** Go through the installation process.

# What is Joomla?

- Joomla is PHP – based website development CMS and uses MySQL database to store content.
- Open source platform.
- Joomla can be used for the developing of
  - Powerful online applications
  - Web sites
  - Forms



# Real World Examples of What Joomla can create?

- Joomla is used for all types of websites:
  - 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 and church Web sites
  - Personal or family homepages

# System Requirements for Joomla

- Database – MySQL
- Web Server
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- Operating System – Cross platform
- Browser Support – IE, Firefox, Google chrome, Safari, Opera
- SSL (Secure Socket Layer) – A valid security certification is required for HTTPS
- PHP compatibility

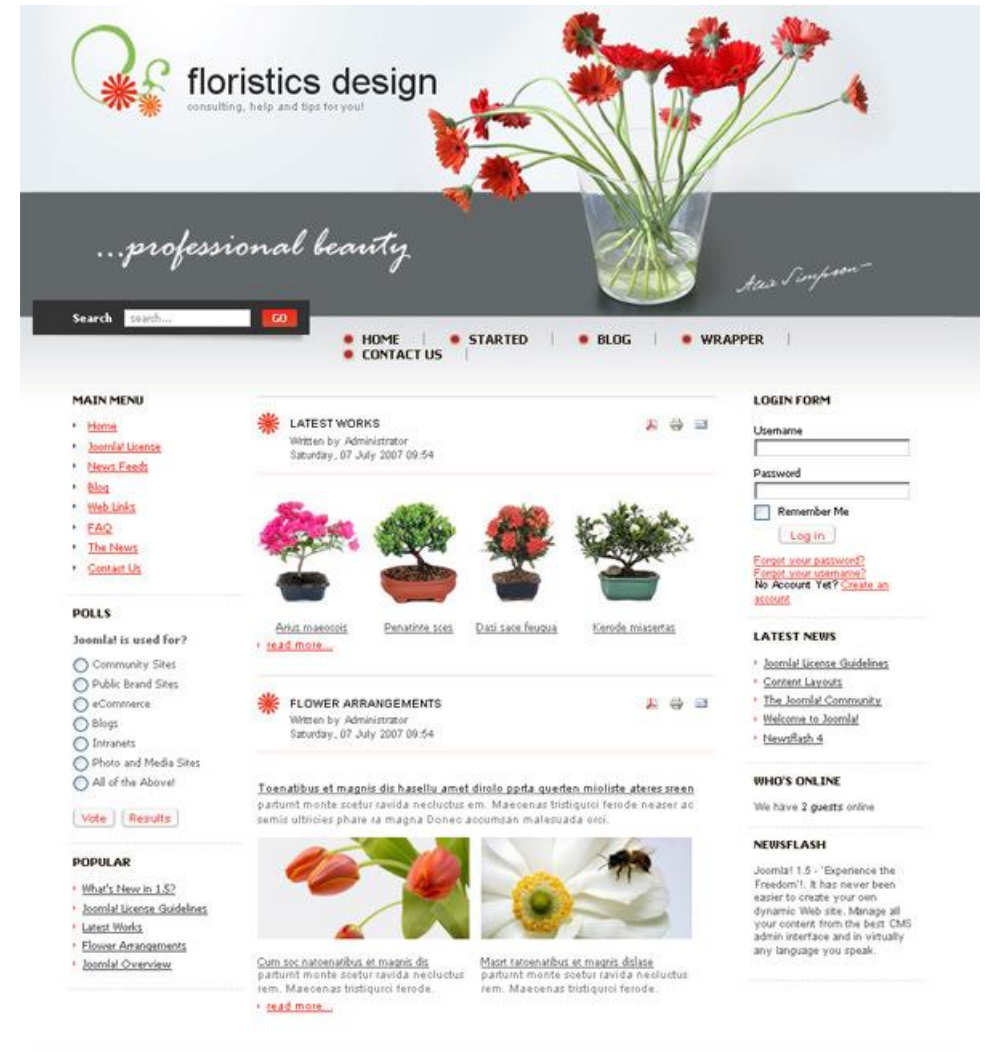


# Joomla Features

- Simple creation and revision of content using a browser-based text editor
- Web-based administration
- User registration and the ability to restrict the viewing of pages based on user levels
- Control of editing and publishing of content based on permissions

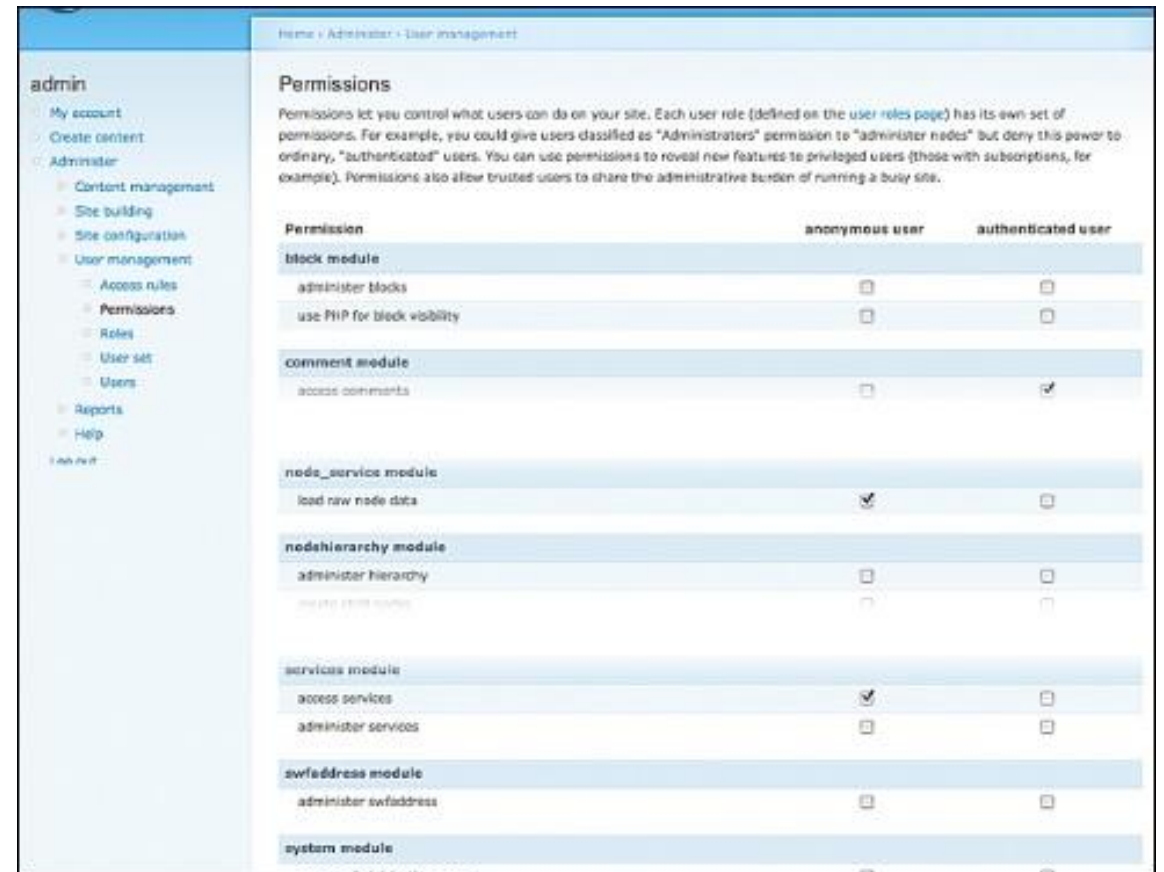
# Joomla Templates

- Build your own template
- Use one of Joomla's pre-installed templates
- Open source community templates



# What is Drupal?

- Drupal is an extremely flexible website development CMS.
- But, It isn't as user-friendly as WordPress or Joomla.
- Popular brands using Drupal are :
  - Twitter
  - NASA
  - Intel
  - Warner Brothers and many more.



# Drupal Features

- Platform, web server and Database Independent
- Online Community Features
- Drupal can publish your content on social media such as Twitter, Facebook and other social medias
- Drupal provides more number of customizable themes
- Drupal is an open source software hence requires no licensing costs.
- Drupal designs highly flexible and creative website with effective display quality thus increasing the visitors to the site.

# System Requirements for Drupal

- Database – MySQL
- Web Server
  - WAMP (Windows)
  - LAMP (Linux)
  - XAMP (Multi-platform)
  - MAXP (Macintosh)
- Operating System – Cross platform
- Browser Support – IE, Firefox, Google chrome, Safari, Opera
- SSL (Secure Socket Layer) – A valid security certification is required for HTTPS
- PHP compatibility

# Past Papers Discussion

# 2014

- What are the basic user roles and their responsibilities in maintaining Content Management System?
- List four types of Content Management System?

# 2016

- Name three widely used Content Management Systems (CMS).