

Content Management Systems

CMSs

The Promise vs. Reality

- "Anyone can do it"
 - "Fire the web developers!", "People on the dock will be able to update the website."
 - *Ektron Salesman at Kodak, 2012*
- Trade-off: flexibility vs. ease of use

	Less Flexibility	Easy to Use
Functionality	PHP and MySQL ... <i>no touchy!</i>	Easy to install plug-ins, add-ons, extensions
Style & Interaction changes	CSS and JavaScript ... <i>no touchy!</i>	Easy to install "skins" / "themes"
Content Updates	HTML ... <i>no touchy!</i>	Back-end interface for non-technical content contributors

...and: "enough rope to hang yourself"

Content Management System (CMS)

- A website application that allows:
 - Publishing to the web
 - Editing the content
 - Modifying the website
 - Organizing the content
 - Deleting the content

*...basically, C.R.U.D. functionality
without the need to know dev skills*
- User (website visitor) interface (front-end)
- Content Maintenance interface (backend)
- Also: collaborative environment
 - Multi-user (contributors)
 - Multi-role (privileges)

The Industry

- EVERY large website → CMS
 - Required: distributed content management
 - UR, UPMC, Xerox, Kodak, Excellus BCBS ...proprietary CMSs (Cascade, Kentico, Ektron, IBM Websphere)
 - Cornell University, The Whitehouse ...open source (Drupal)
- Small company/organization requirement: less dependency
 - Autonomy from web developers for the small stuff
 - WordPress = most popular; plugin & theme development community

Web Developers and CMSs

- Each CMS: very different; a lot in common
 - Concepts - same
 - Terminology - different
- Dynamic Website = Design Complexity x 1,000%
 - Test for each browser
 - Test for each page
 - **Test for each condition**
- CMS = a lot of constraints!
 - Dozens (hundreds?) of PHP Includes
 - Lots of PHP-wrapped SQL statements
 - Themes/Plugins ...buggy and/or not extendable (dead-end)
 - Customizations = risk
- Developers must "Back the Right Horse"
 - Learning curve
 - Frameworks
 - Themes
 - Plugins
 - Remember *Movable Type*? (nobody does)


} *HTML – virtually unreadable by humans*

CMS Comparisons

- Content Management System (CMS)
 - Proprietary: Ektron, Kentico, Websphere, ...
 - Open Source: **WordPress**, Drupal, Joomla, ...
 - See: https://en.wikipedia.org/wiki/List_of_content_management_frameworks
- WordPress: largest base of users and plugin developers
 - ...compared to any other open source or proprietary CMS
 - PHP and MySQL (most common web server stack)
 - Plugins extend functionality
 - Front-end developers: relatively short learning curve (for install and setup)
 - End-customers: relatively easy (for content management)
 - Open source means it's free! (also editable)
 - Also: large number of designers creating themes, plug-ins, extensions

WordPress

- First and foremost: a blogging platform
- Often, *not* used for blogging
- Common: the customer (website owner) needs to manage content in their own website
- Extensive collection of plugins
 - Forms (to capture user input)
 - Shopping carts and credit card transactions
 - Interactive calendars
 - Slideshows, photo galleries
- Extensive collection of themes
 - Easy to re-skin a website by simply applying a new theme
 - Themes may be customized relatively easily
 - Free and for-pay




Blog


A blog is a discussion or informational website published on the World Wide Web consisting of discrete, often informal diary-style text entries. Posts are typically displayed in reverse chronological order, so that the most recent post appears first, at the top of the web page. [Wikipedia](#)

Blog Software


View 15+ more



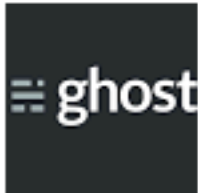
WordPress




b2evoluti...



Movable
Type



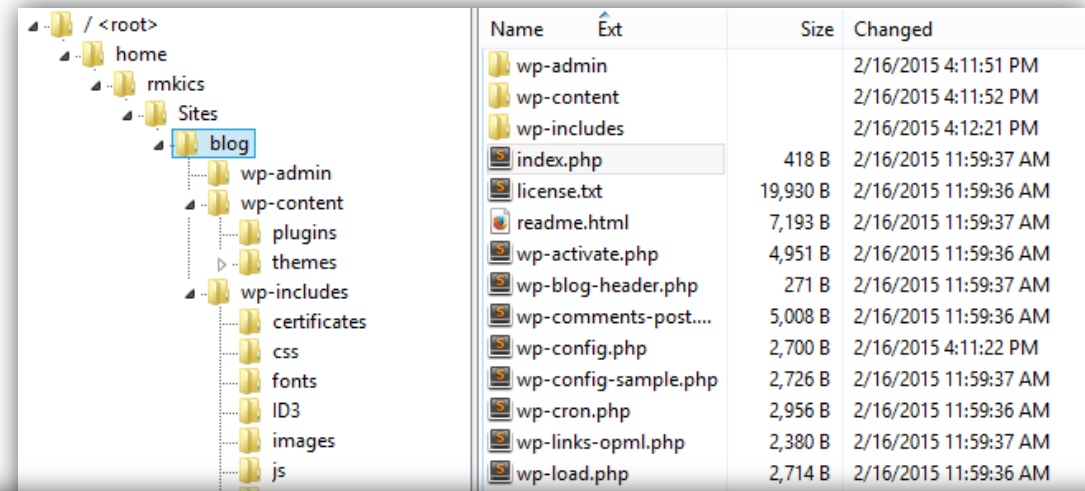
Ghost



VEJOURN
LiveJournal

Technologies Used by WordPress

- HTML in PHP and lots of CSS
- Lots of embedded PHP to get and put data from a MySQL database
- MVC framework (debatable)



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wp-admin			2/16/2015 4:11:51 PM
wp-content			2/16/2015 4:11:52 PM
wp-includes			2/16/2015 4:12:21 PM
index.php		418 B	2/16/2015 11:59:37 AM
license.txt		19,930 B	2/16/2015 11:59:36 AM
readme.html		7,193 B	2/16/2015 11:59:37 AM
wp-activate.php		4,951 B	2/16/2015 11:59:36 AM
wp-blog-header.php		271 B	2/16/2015 11:59:37 AM
wp-comments-post....		5,008 B	2/16/2015 11:59:36 AM
wp-config.php		2,700 B	2/16/2015 4:11:22 PM
wp-config-sample.php		2,726 B	2/16/2015 11:59:37 AM
wp-cron.php		2,956 B	2/16/2015 11:59:36 AM
wp-links-opml.php		2,380 B	2/16/2015 11:59:37 AM
wp-load.php		2,714 B	2/16/2015 11:59:36 AM

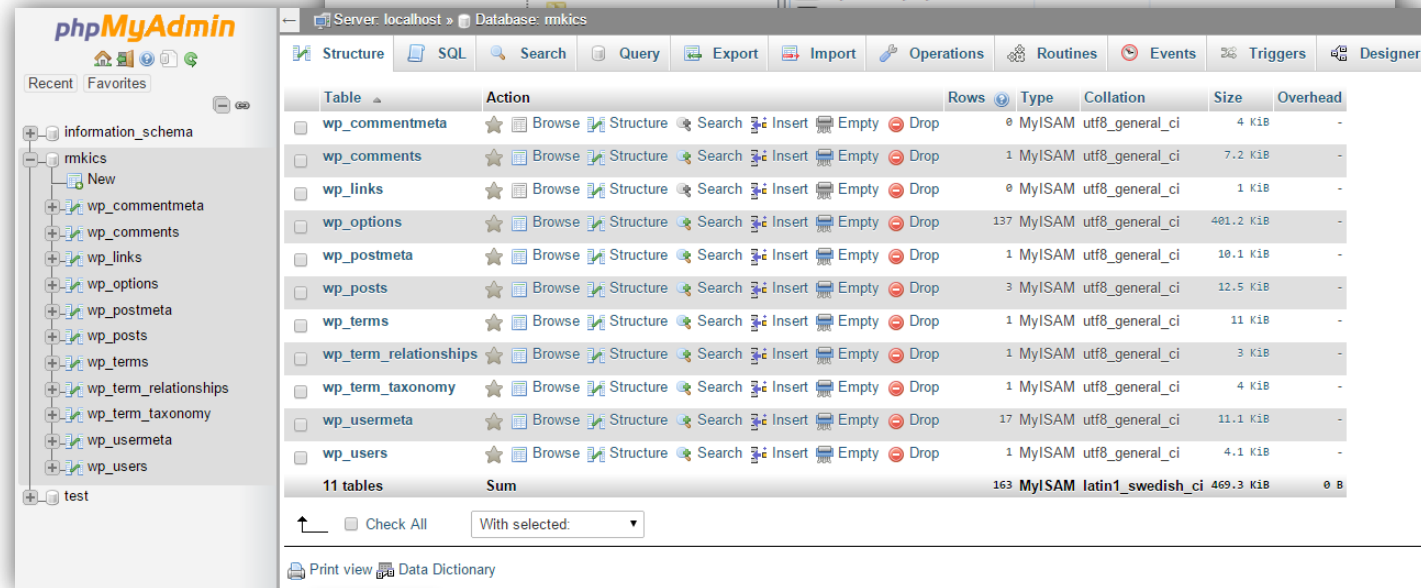
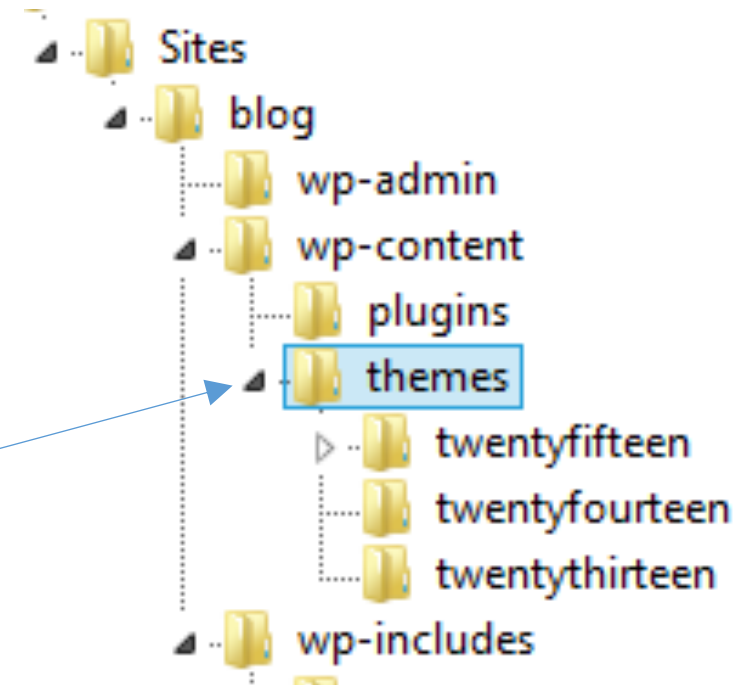


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wp_links	Browse Structure Search Insert Empty Drop	0	MyISAM	utf8_general_ci	1 K1B	-
wp_options	Browse Structure Search Insert Empty Drop	137	MyISAM	utf8_general_ci	401.2 K1B	-
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wp_posts	Browse Structure Search Insert Empty Drop	3	MyISAM	utf8_general_ci	12.5 K1B	-
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wp_usermeta	Browse Structure Search Insert Empty Drop	17	MyISAM	utf8_general_ci	11.1 K1B	-
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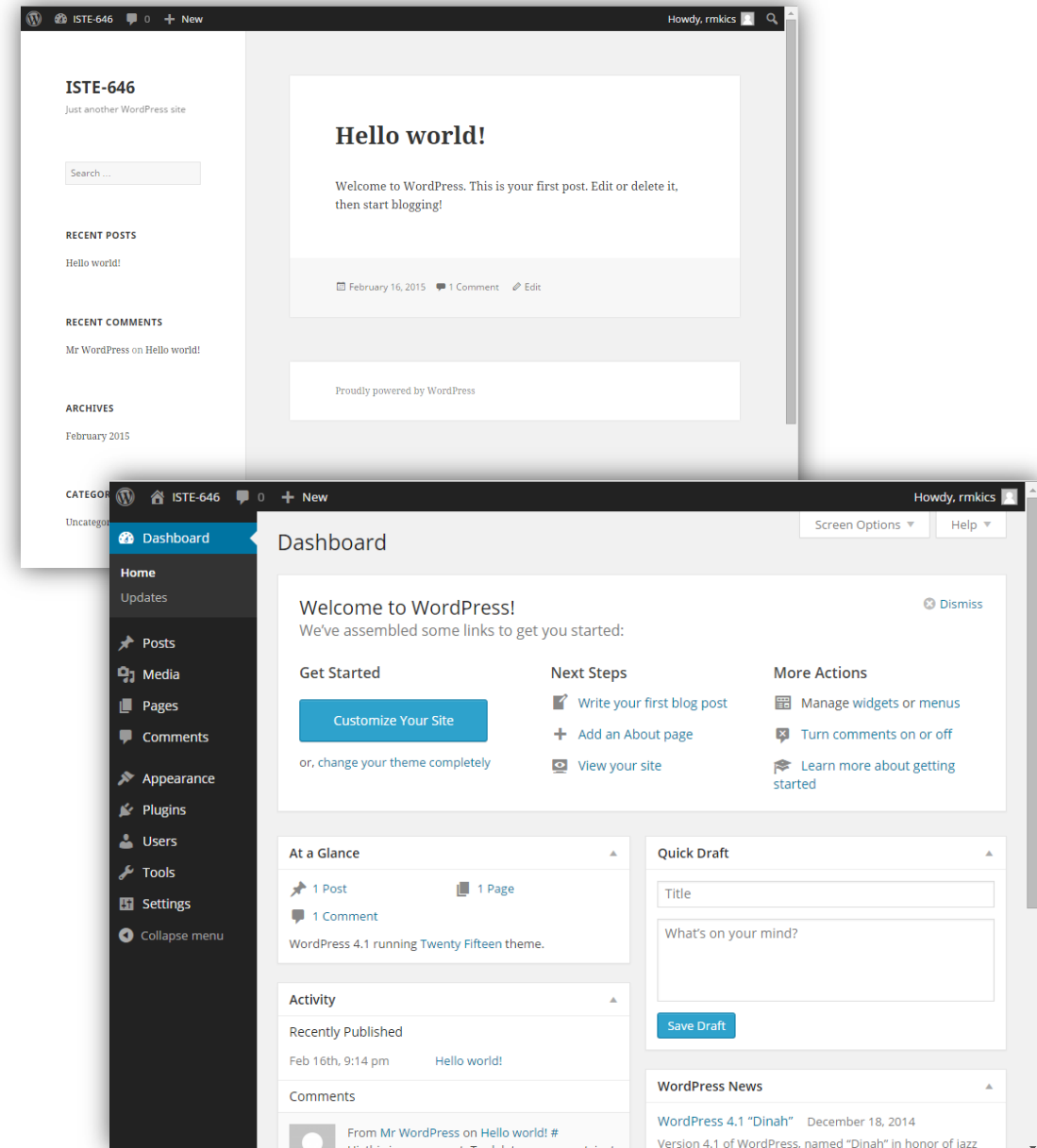
WordPress Themes

- Tightly developed set of HTML/PHP templates with CSS
- Large community of developers writing themes
- Easy to apply a theme
 - End-customer can change themes via the back-end CMS with a few clicks
- Themes may be customized/modified (not trivial)
- Themes are installed in the **./wp-content/themes** directory as it's own subdirectory



Content Management

- Two interfaces
 - Front-end – viewable by the public
 - Back-end – used by the content manager(s) to manage their own content
- The CMS
 - Hidden from the public
 - Password protected user accounts
 - Balance of non-technical tools (for end-customers) and somewhat technical tools (for administrators)



Pages vs. Posts

Pages

- Static – like a “normal” brochure website
- Usually, static formatted text and images
- Able to present installed plugins like calendars, photo galleries, whatever
- End-users may comment on pages

Posts

- Embedded in a “special” Page
 - The page is really just a normal Page that has the code (like a plugin) to pull posts from the MySQL database.
- Usually, reverse chronological posted content, written by the end-customer
- End-users may comment on posts