

Wiki engine hands-on test

WEAVING THE WEB

Ruslan Kodakov / i23RF

Wiki engines drive patient data stores, repositories for ideas or documentation, and treasure troves of knowledge of all kinds. In this review, we put six of these engines through their paces. *By Mela Eckenfels*

Wikis (from the Hawaiian word for “quick”) have been an important part of many computer users’ private and professional lives for years. Wikis are even replacing expensive knowledge-base software in corporate environments. Wikis are perfect for weaving your own thoughts and words, and they make collaborative writing much easier.

The tools consist of a browser on the user’s side and wiki software server-side. The number of engines on the market is well into three digits.

The Stuff of Dreams

Wikis are almost as old as the web itself. As early as 1994, Ward Cunningham saw the need to separate the content of a website from its HTML code and to give users an easy-to-use word processor that lets users collaborate on a single platform and manage knowledge without irritating delays. One revolutionary aspect of his WikiWikiWeb [1] was the idea of “WikiWords,” the automatic linking of CamelCase words with wiki pages of the same name.

Until the late 1990s, wikis were wallflowers, mainly used by software developers. It was not until what is now the most popular wiki project, Wikipedia, took off that the general public became more aware of them. At this time, the original wiki had already sunk into obscurity. One reason is certainly its restricted markup capabilities, but the open structure of the early wikis is also obsolete.

Today, wiki software is either hardened against destructive forces on the Internet or doomed to extinction. An overview of recent changes, versioning, user management, and spam protection are also must-haves. Whereas the first wikis were written in Perl, the most popular programming language for them today is PHP, followed by Java and C, according to Wikimatrix [2]. About half of all wiki engines use a database to store content. Many others use the file-system as a repository; only a few use a versioning system for this purpose.

Of the various engines, I chose MediaWiki, MoinMoin, DokuWiki, TWiki, Tiki Wiki, and Tiddlywiki for testing to

determine how they fared with respect to usability and administration. The last two wikis on the list were not true candidates – Tiki Wiki is more than just a wiki engine; in fact, it is a mature community platform, and Tiddlywiki is useful as a “wiki on a stick,” but not for large collections of data or large numbers of users.

MediaWiki

MediaWiki [3] is the undisputed king of the hill, and it’s hard to imagine anybody not using one of the many wiki projects based on it. Even if they avoid Wikipedia, amateur chefs might exchange recipes on the RecipeWiki [4], and trekkies look for information on the Memory Alpha [5] knowledge base site. And, if you want to know which Sherlock Holmes reference occurred in the latest episode of “House,” you might ask the Wikia [6] service, which links to many fan wikis for popular TV shows.

MediaWiki was released in 2002 and grew along with Wikipedia. The engine replaces UseMod [7], a Perl-based engine on which the Wikipedia project re-

lied between 2000 and 2002. This change meant the demise of UseMod, whose developers quit in 2003. MediaWiki is implemented in PHP and uses MySQL, PostgreSQL, or SQLite as its database back end.

The current 1.16.0 version of MediaWiki offers far better performance than its predecessor, but you do need excellent MySQL skills to run the engine. If you want to grant public access to the wiki, it's not just database management that will keep you busy. Vulnerabilities hit MediaWiki with amazing regularity, and it's a good idea to close the gaps as quickly as possible with botnets targeting wiki installations with known vulnerabilities. In other words, MediaWiki suffers under its own popularity.

Tried and True or Overly Conservative?

MediaWiki installation is not problematic. Packages are available for popular operating systems. Alternatively, you can unpack the source code from the project homepage in your own web space and access the directory in a browser. When you get there, just provide the details of the database to complete the setup. Wiki operators might have good reasons to copy manually the main configuration file `LocalSettings.php`, but it's still a pain. And, it's also annoying that clean URLs (i.e., ones that do not reveal anything about the underlying technology) [8] are impossible without knowledge of Apache. Other software projects have demonstrated for years that there is an easier and more user-friendly way of doing this, whereas MediaWiki is just treading water in this respect.

Very little action is taking place on the markup front as well (Listing 1). Although you would be hard pressed to find another wiki engine that offers so many options, if you need complex templates for whole pages or panes, you have to fight with the partially unintui-

tive and cluttered basic syntax to get there. One baffling feature is the mixing of internal and external links in the markup; even simple tables with no custom line and column width requirements are hard to create without reading the manual first.

Plugins for editors and word processors or Firefox add-ons help you overcome these obstacles, but better documentation would be nice. The manual often fails to take the needs of its target audience into consideration – the MediaWiki/Wikipedia community seems to be caught up in a world of its own terminology. MediaWiki definitely doesn't pander to newcomers, but power users will benefit from templates, parsing instructions, includes, and variables in a powerful toolbox that covers all of their needs. Administrators can use skins to modify the look and feel of their own wikis. The network is a treasure trove of skins, but many MediaWiki installations prefer to use the Monobook default (Figure 1), thus exposing themselves to being confused with Wikipedia.

Despite all the criticism, MediaWiki is a good engine. Almost all wiki fans will have used a MediaWiki installation or contributed to a project that uses the MediaWiki platform, thus becoming accustomed to the look and feel and the less than practical markup.

MoinMoin

This wiki with a strange-sounding Low German name [9] undeservedly has the reputation of being a rarely used exotic

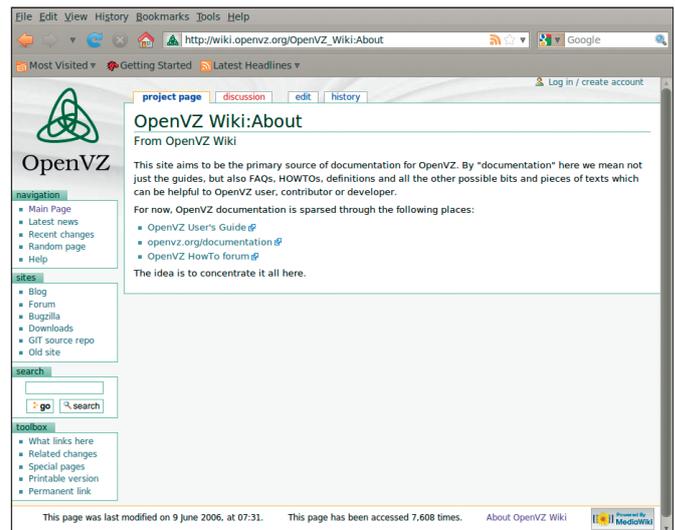


Figure 1: Doppelganger: it looks like Wikipedia, but is actually an out-of-the-box MediaWiki installation with the default Monobook skin.

tool or a purely German invention. Many open source projects and companies all over the world use this engine on their intranets or on the Internet, including Dropbox, OpenOffice, and Edubuntu.

MoinMoin is written in Python and stores wiki content in standard text files. The engine doesn't save revisions incrementally, but instead creates a new file for each change, which means a MoinMoin installation is maintained for many years can consume huge amounts of disk space. The wiki software comes with the Moin [10] command-line tool, a reliable administrative aid that can quickly cure this issue and many others.

MoinMoin supports two installation scenarios: a quick install and a server variant. For the former, you simply download the tarball, which comes with its own web server that can run in place of or parallel to an existing server. This choice makes it perfect for setting up in your own home directory. The second variant requires root privileges; you will find a how-to for modifying the configuration files in the manual for the wiki software.

Even the latest MoinMoin v1.9 still doesn't give you a convenient browser-based setup, and the configuration can be finicky if you don't have shell access, just an FTP connection. To compensate, MoinMoin comes with a clear-cut configuration file, `wikiconfig.py`.

To extend the wiki, users can build macros into normal pages, use Actions to provide additional, global features, or resort to themes. Also, you have a choice

LISTING 1: MediaWiki Markup

```
01 ==Hallo Welt==
02 Wikis are a &apos;&apos;&apos;great
   thing&apos;&apos;&apos;, but they can
   also be pretty
   &apos;&apos;&apos;obtuse&apos;&apos;&apos;.
03 [[Intern|Inside]] there is much to
   see, [http://www.linux-magazine.com/
   outside] too.
04 {}
05 |Clarity
06 |of tables
07 |-
08 |is not one of
09 |its stronger points.
10 |}
```

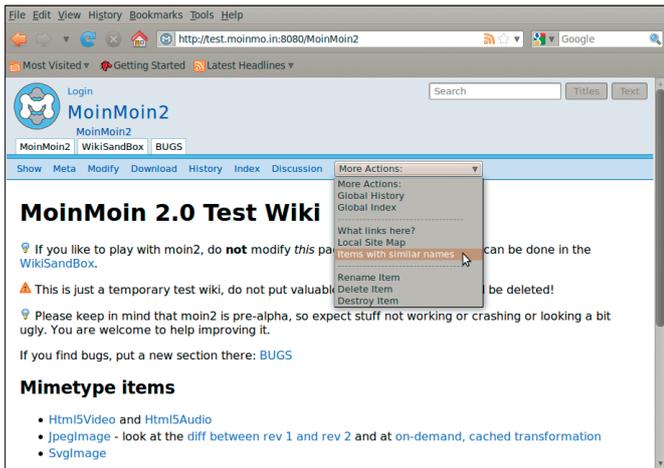


Figure 2: The MoinMoin developers promise various changes in the coming release. The project's website gives users a sneak preview of version 2.0.

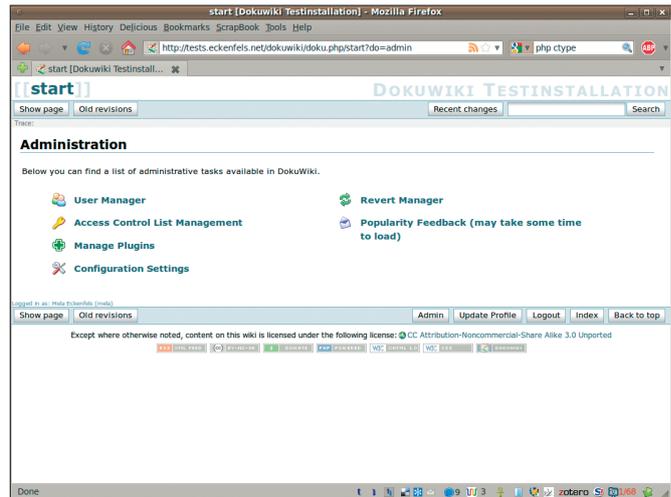


Figure 3: Setting up DokuWiki is an easy, trouble-free process via the web interface. The interface even lets you manage ACLs and plugins.

of add-on software that includes parsers, formatters, and XML RPC functions. All of these add-ons must be set up in the shell; don't bother looking for a web interface to help you with this task.

Shy Star?

Compared with the plethora of extensions for MediaWiki, the offerings for MoinMoin are fairly restricted, but with a little technical know-how and minimal programming skills, you should be able

to patch existing add-ons to suit your own needs.

If you need to run multiple MoinMoin wiki instances on a single server, you can install the software once and then copy the directory, which your users access on the web. This involves no more than half a dozen steps that are easily scripted. Additionally, MoinMoin comes with a useful content management system and access control lists that allow granular privilege assignments for the

whole installation or individual sub-pages.

MoinMoin development continues to push ahead. In 2008, three major version changes occurred. The programmers are working hard on version 2.0 [11], which will include a huge number of new features [12]. A text wiki in a sandbox is available for experimenting (Figure 2). Much of the code will be reworked for the next version. Instead of pages and attachments, the engine will simply use different types of items. Additionally, it will integrate a backup API for various storage media. The MoinMoin developers are also looking to draw more heavily on code from other projects (e.g., Jinja2 [13] as a template engine).

At first glance, MoinMoin seems to be an average wiki engine without any special features, but if you look more closely, you will find that it is flexible and powerful. MoinMoin's performance remains fast even for high access counts; the theme interface lets you customize the wiki with a minimum of effort, and the help pages really are helpful.

Version 1.6 was the first to introduce a reworked and simplified markup thanks to the Creole project [14] (Listing 2). The engine also impresses with good spam protection; this follows attacks by spambots on many MoinMoin wikis that totally wasted the projects.

DokuWiki

Of all the engines tested, DokuWiki [15] wins the prize for fastest and easiest installation. The system is also ideal for newcomers who can't, or prefer not to,

LISTING 2: MoinMoin Markup

```
01 = Hello World =
02 Wikis are a &apos;&apos;&apos;great thing&apos;&apos;&apos;, but they can also
   be pretty &apos;&apos;&apos;obtuse&apos;&apos;&apos;.
03 [[Intern|Inside]] there is much to see, [[http://www.linux-magazine.
   com/|outside]] too.
04 || Clarity || of tables ||
05 || is not one of its || stronger points. ||
```

LISTING 3: DokuWiki Markup

```
01 ===== Hello World =====
02 Wikis are a *great thing*, but they can also be pretty //obtuse//.
03 [[Intern|Inside]] there is much to see, [[http://www.linux-magazine.
   com/|outside]] too.
04 | Clarity | of tables |
05 | is not one of its | stronger points. |
```

LISTING 4: Twiki Markup

```
01 ---+ Hello World
02 Wikis are a *great thing*, but they can also be pretty _obtuse_.
03 [[InTern|Inside]] there is much to see, [[http://www.linux-magazine.com/|
   outside]] too.
04 | Clarity | of tables |
05 | is not one of its | stronger points. |
```

access the shell for minor configuration changes. This PHP-based wiki stores its content in text files, just like MoinMoin, and it also keeps previous versions, although it packs them to save space.

The web interface lets you set up a site in a matter of seconds; the same interface is used for granular settings, like setting up ACLs and plugins (Figure 3). Shell access is only required to install templates that are uploaded to the server and unpacked in the `lib/tp1/` directory.

At first sight, DokuWiki seems able to enable multiple URLs with a single click, but users are advised to steer clear of this option, or make sure they read the instructions in the Rewrite documentation [16]. Otherwise, ending up with an unusable installation is a real danger.

DokuWiki markup is pleasingly intuitive and similar to MoinMoin's (Listing 3). Both engines are noticeably influenced by Creole markup, which they support with a plugin in addition to their home-grown variants.

Besides offering simple administration, the engine impresses with its tem-

plate system. A quick web search provides users with a variety of attractive looks, and the how-to for creating your own is intelligible, too. Although most MediaWiki installations look the same and are directly identifiable as wikis, some elaborate-looking websites are based not on expensive CMS systems but on DokuWiki [17].

TWiki

Compared with the trouble-free installation that DokuWiki offers, setting up TWiki [18] is like rock climbing without a rope. Some maintain that this is normal for Perl and Perl developers; nothing should be simple or convenient. The

documentation is also virtually inaccessible to mere mortals. But hard-core programmers don't RTFM anyway, they just know how things work.

Despite, or possibly because of, this, TWiki enjoys what could be the largest user community outside of MediaWiki.

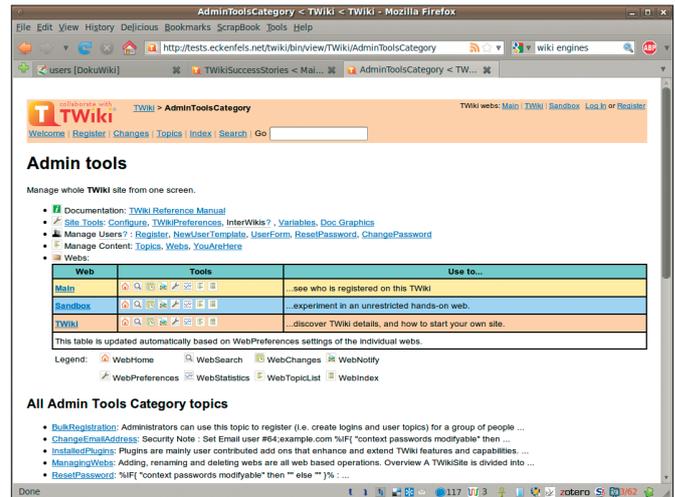


Figure 4: Perl skills are a must before you can use the TWiki engine. Once it is up and running, TWiki impresses with convenient setup options that are available on a single page.



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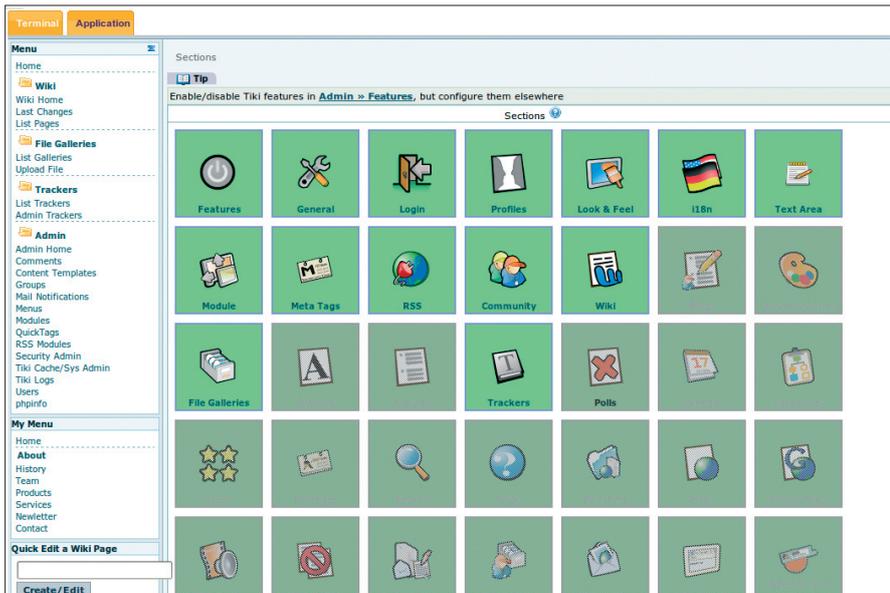


Figure 5: The administrative interface in Tiki Wiki is unrivaled. Look, language, plugins, RSS feeds, blogs, and forums are all configured centrally.

Of the wiki engines tested, it is the oldest and conquered the business world years ago. Corporations such as Motorola and Disney use TWiki as their internal knowledge bases, for document management, and even as a project management tool.

Down to Earth

TWiki has dependencies for Perl (5.6.1 or newer, v5.8.4 or newer is recommended) and a whole bunch of CPAN modules, as listed by the documentation. Additionally, the engine uses a number of GNU tools, such as Diff, Patch, and egrep/fgrep, cron, and a web server (the developers recommend

Apache). Once you have installed TWiki, it will run forever and entertain its administrator with a plethora of configuration options within the wiki (Figure 4). Until you get there, though, you need in-depth Perl skills,

TWiki is one of the engines that does without a database and stores content on the server filesystem. The versioning system is implemented in Perl in the wiki itself, although administrators have the option of using RCS [19]. As for DokuWiki, numerous extensions exist for the engine. One of the more interesting plugins is TWiki Draw [20], which lets users edit text, graphics, and charts at the same time in the wiki. Although

the markup doesn't support Creole, it is still fairly intuitive (Listing 4).

TWiki uses forms to manage the metadata on the page, whereas MediaWiki uses categories. If you want to use a wiki as a project management tool, you can assign each task in the project a separate page and use an embedded form to modify the status of the task.

TWiki also supports fast searching in the metadata; for example, you can output all tasks with a status of *done* at the press of a button.

Tiki Wiki

Tiki Wiki [21] is a cure-all style of wiki that collects everything under a single interface: wiki, blog, forum, time management, image gallery, CMS, DMS, groupware, and community. From a look-and-feel point of view, Tiki Wiki is reminiscent of PHP bulletin board (phpBB) [22]. The engine has nothing in common with a typical wiki, and its user friendliness is affected by terminal featuritis.

On a more positive note, the installation procedure is fairly straightforward. Like most community tools, Tiki Wiki is written in PHP and requires a MySQL database as its back end. The browser-based setup works fine and covers everything from basic functions through the selection of various themes (Figure 5). The markup is also relatively easy to learn, although it is very different from the markup that other wikis use (see Listing 5).

Tiki Wiki is ideal for setting up a small community platform, but if you mainly need basic wiki functionality, you will probably want to use a different engine. The functional scope is a challenge, and wiki functionality is just part of it.

Tiddlywiki

Tiddlywiki [23] is also different from the rest of the field because this pocket wiki is a single HTML file with an embedded JavaScript application that implements the wiki functionality. With no need to install, you just download the `empty.html` file, rename it, and open it in your browser.

Tiddlywiki is not designed to serve large numbers of users or to manage changes or pages. Strictly speaking, the wiki is only useful for your local machine and not for Internet access. In fact,

LISTING 5: Tiki Wiki Markup

```
01 ! Hello World
02 Wikis are a __great thing__, but they can also be pretty
   &apos;&apos;obtuse&apos;&apos;.
03 ((Inside|Intern)) there is much to see, [http://www.linux-magazine.
   com/|outside] too.
04 || Clarity | of tables |
05 | is not one of its | stronger points. ||
```

LISTING 6: Tiddlywiki Markup

```
01 ! Hello World
02 Wikis are a &apos;&apos;great thing&apos;&apos;, but they can also be pretty //
   obtuse//.
03 [[Inside|Intern]] there is much to see, [[outside|http://www.linux-magazine.
   com/]] too.
04 | Clarity | of tables |
05 | is not one of its | stronger points. |
```

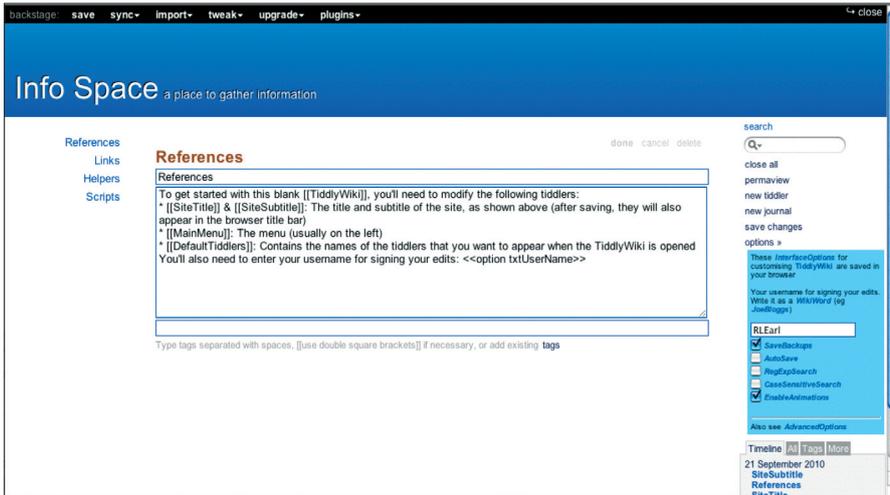


Figure 6: Tiddlywiki runs out of the box and doesn't even need an Internet connection. This makes the software perfect for offline collections of ideas.

it disables the editing function when accessed via HTTP.

Nonetheless, this small tool is useful. If you keep it on a USB stick on your keyring, you can use it as your personal wiki whenever you're on the road, with easily accessible, tagged information keeping everything organized (Figure 6). Also, nothing can stop you from creating programming FAQs in Tiddlywiki. Developers can easily add the single HTML file to the installation CD/DVD for the distribution.

Tiddlywiki works with most modern browsers, although Konqueror refuses to modify the HTML file. The markup is fairly straightforward (Listing 6) and is influenced by the Creole project, with support for Creole markup, too.

Conclusions

A survey of all the wiki engines on the market would fill a book – the offerings

are as plentiful and varied as the requirements of their users (see Table 1). All the test candidates were fairly convenient with respect to installation and setup. Engines that saved content on the file-system performed better during testing; but this changes as the volume of data grows.

The biggest difference between the wikis is still the markup. The decision for or against a product is very rarely based on technical considerations – what really counts is finding a system that your target users can and are willing to use.

Non-convertible markup makes it difficult to move to a different wiki at a later stage and involves a huge amount of work. Creole markup [14] can help you port content between wikis without modifying the markup language.

All of the programs tested suffered from a common drawback: They were

developed by techies for techies. Even the availability of wysiwyg editors or export plugins for third-party formats fail to abstract the markup problems of these wikis.

As long as users are forced to work with a jumble of symbols, includes, and variables, with the body text hidden between them, wikis will remain the tool of choice for IT departments and technology-loving data collectors. There is a genuine lack of systems that support intuitive use. ■■■

INFO

- [1] WikiWikiWeb: <http://c2.com/cgi/wiki?WelcomeVisitors>
- [2] Comparison of wiki software: <http://www.wikimatrix.org>
- [3] MediaWiki: <http://www.mediawiki.org>
- [4] RecipeWiki: http://www.recipewiki.com/index.php/Main_Page
- [5] Star Trek encyclopedia: <http://memory-alpha.org>
- [6] Wikia: <http://www.wikia.com>
- [7] UseMod: <http://www.usemod.com>
- [8] Clean URLs in MediaWiki: http://www.mediawiki.org/wiki/Manual:Short_URL
- [9] MoinMoin: <http://moinmo.in>
- [10] Moin command-line tool: <http://moinmo.in/HelpOnMoinCommand>
- [11] MoinMoin 2.0: <http://moinmo.in/MoinMoin2.0>
- [12] MoinMoin 2.0 feature roadmap at Europython 2010: <http://europythonvideos.blip.tv/file/3980887/>
- [13] Jinja2: <http://jinja.pocoo.org/2/>
- [14] WikiCreole: <http://www.wikicreole.org>
- [15] DokuWiki: <http://www.dokuwiki.org>
- [16] Clean URLs in DokuWiki: <http://www.dokuwiki.org/rewrite>
- [17] List of DokuWiki websites: <http://www.dokuwiki.org/users>
- [18] TWiki: <http://twiki.org>
- [19] Revision control system: <http://www.gnu.org/software/rcs/rcs.html>
- [20] TWikiDraw plugin: <http://twiki.org/cgi-bin/view/Plugins/TWikiDrawPlugin>
- [21] Tiki Wiki: <http://www.tikiwiki.org>
- [22] phpBB: <http://www.phpbb.com>
- [23] Tiddlywiki: <http://www.tiddlywiki.com>

TABLE 1: Feature Overview for Tested Wiki Engines

	MediaWiki	MoinMoin	DokuWiki	TWiki	Tiki Wiki	Tiddlywiki
License	GPLv2	GPLv2	GPLv2	GPLv2	LGPL 2.1	BSD
Language	PHP	Python	PHP	Perl	PHP	JavaScript
Back end	MySQL or PostgreSQL	Text files	Text files	Text files	MySQL	Single HTML file
ACL support	No	Yes	Yes	Yes	Yes	—
Creole markup support	Planned	Yes	Yes	No	No	Yes
Integrated themes	Manual Inst.	Manual Inst.	Manual Inst.	Manual Inst.	Yes	Yes
Multiple instances (farming)	Plugin	Yes	Plugin	Plugin	Yes	—