Simple Machines Forum (SMF v.2.0.14)
https://www.forum.cognovo.net

$$\text{CreativeAdvantage} = \frac{F_{\text{out}}}{F_{\text{in}}} = \eta \frac{v_{\text{in}}}{v_{\text{out}}} \tag{1}$$

Document created with LaTeX2ε

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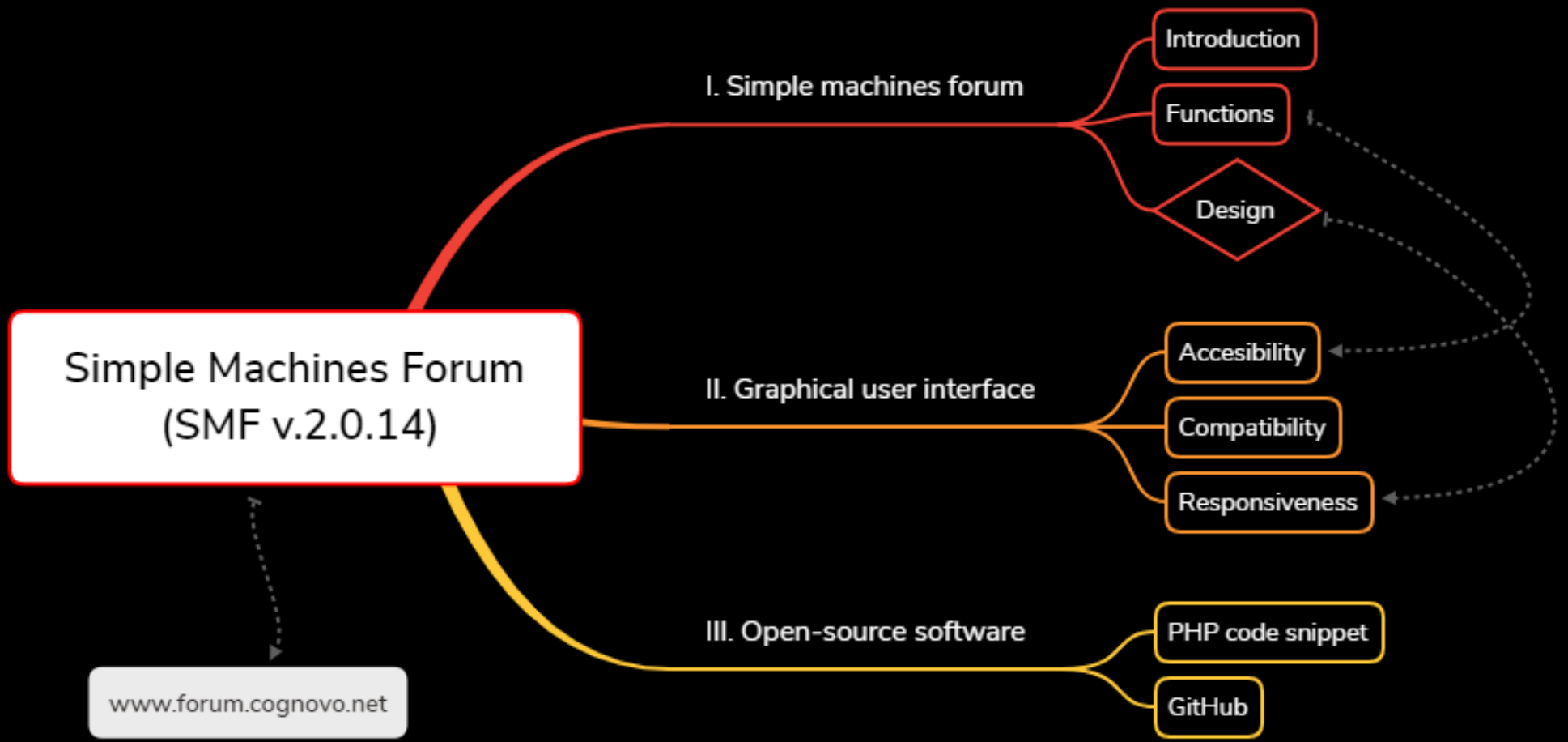
The philosophy of simple machines

The idea of a simple machine originated with the Greek philosopher Archimedes around the 3rd century BC, who studied the Archimedean simple machines: lever, pulley, and screw. He discovered the principle of mechanical advantage in the lever. Archimedes' famous remark with regard to the lever: "Give me a place to stand on, and I will move the Earth." (Greek: δῶς μοι πᾶ στῶ καὶ τὰν γᾶν κινάσω) expresses his realization that there was no limit to the amount of force amplification that could be achieved by using mechanical advantage. Later Greek philosophers defined the classic five simple machines (excluding the inclined plane) and were able to roughly calculate their mechanical advantage.

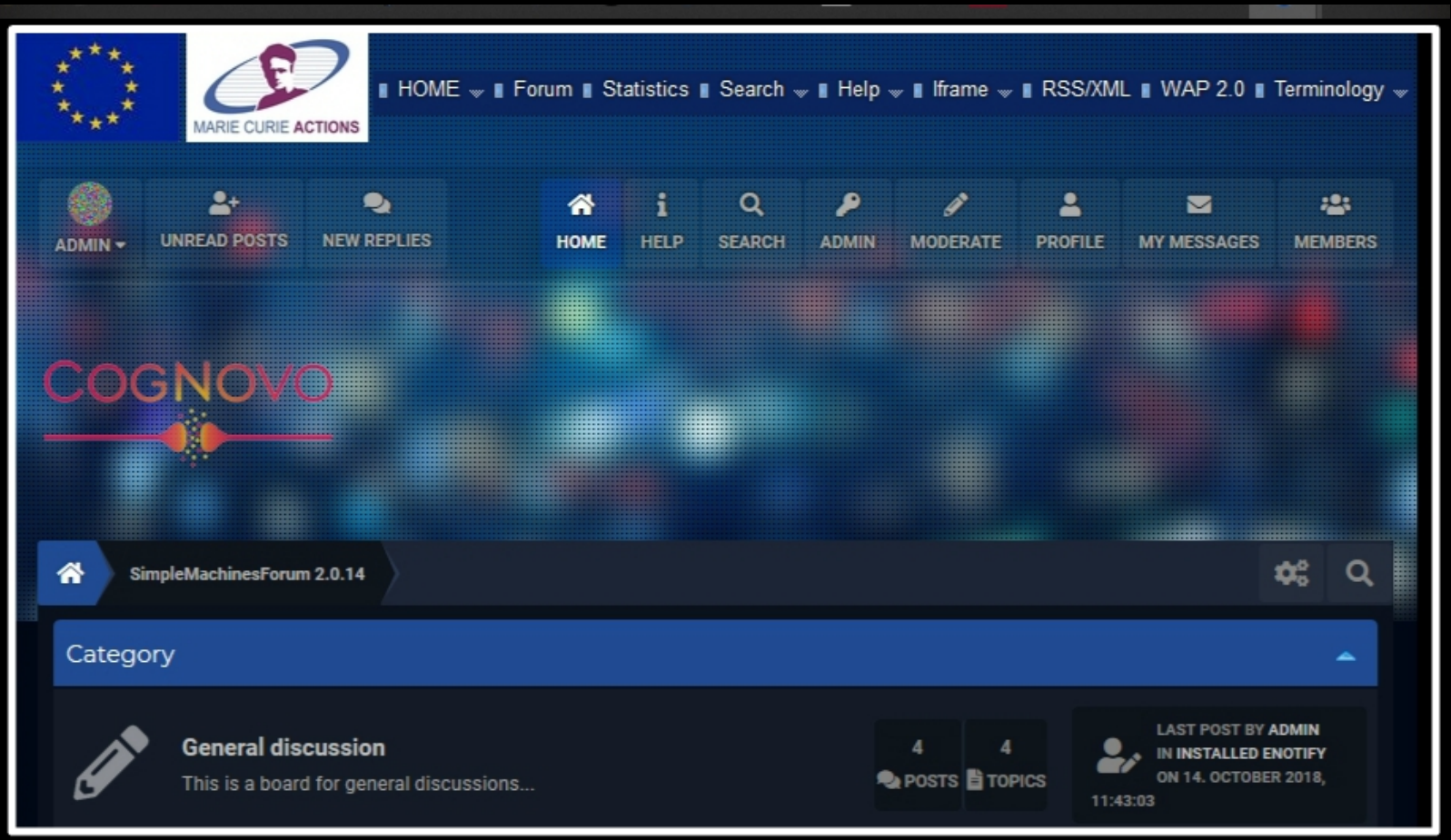
The logic of simple machines

Simple machines do not contain a source of energy, so they cannot do more work than they receive from the input force.

$$\mathrm{MA} = F_{\mathrm{out}}/F_{\mathrm{in}} \tag{2}$$


Simple Machines Forum
(SMF v.2.0.14)
I. Simple machines forum
Introduction
Functions
Design
II. Graphical user interface
Accesibility
Compatibility
Responsiveness
III. Open-source software
PHP code snippet
GitHub
www.forum.cognovo.net

Outline



www.forum.cognovo.net

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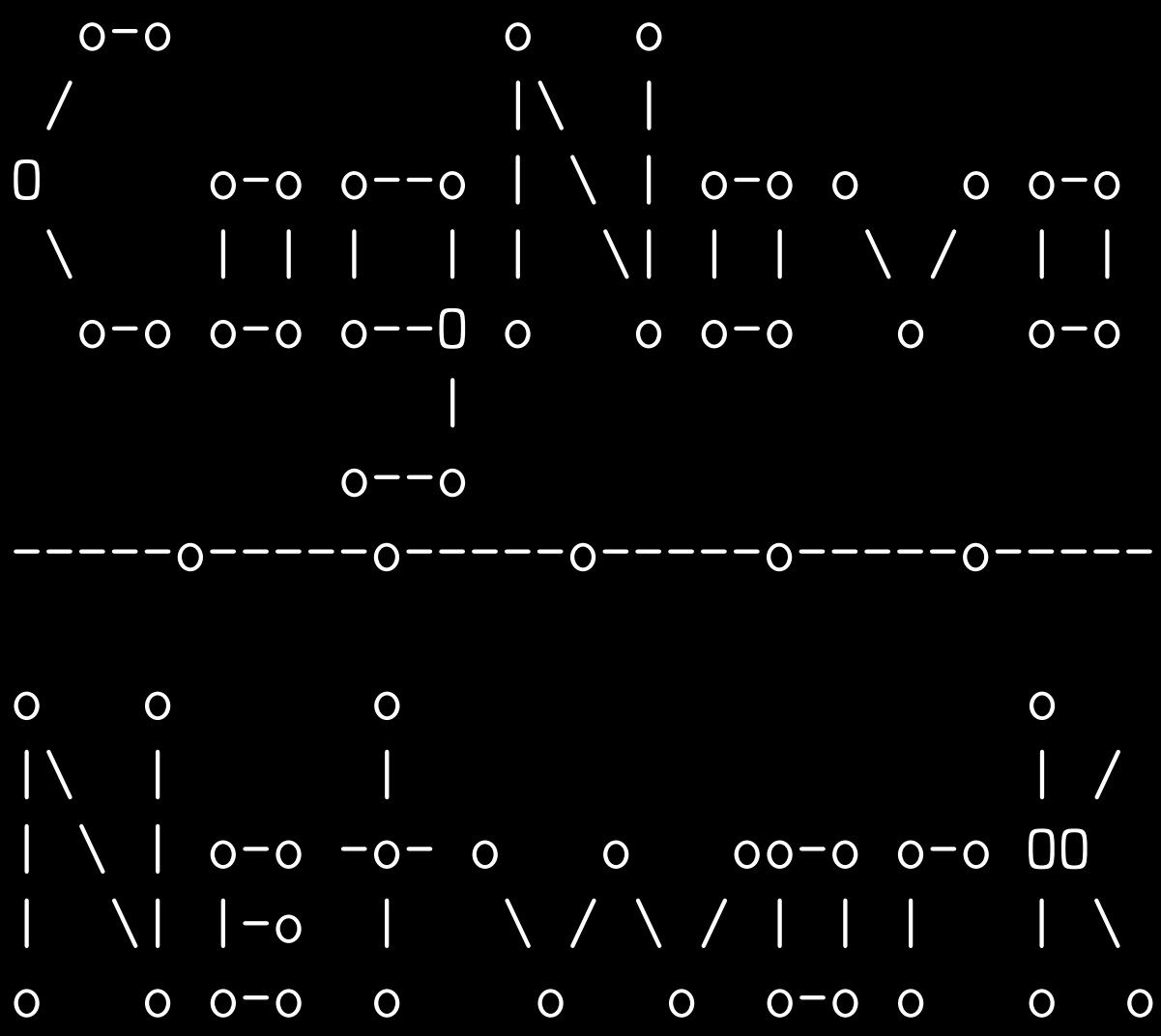

Outline

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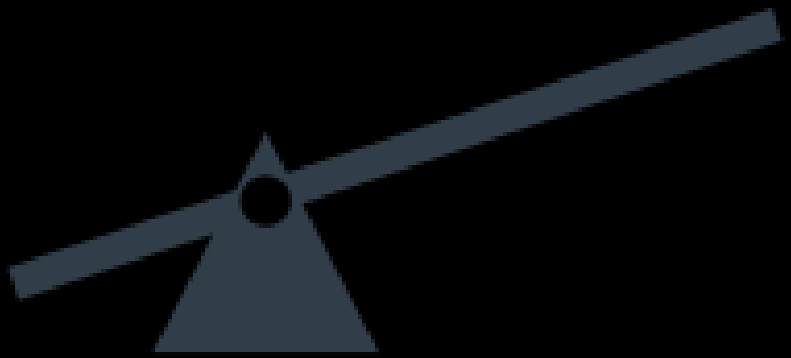
Part I: Open-source software
Graphical User Interface (GUI)
Function & Accessibility
Functions & Accessibility
Source code
Function overview
Credits

SimpleMachinesForum v.2.0.14

URL: https://www.simplemachines.org

SMF philosophy



Simple Machines®

A simple machine is a mechanical device that changes the direction or magnitude of a force. In general, they can be defined as the simplest mechanisms that use mechanical advantage (also called leverage) to multiply force.

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Simple Machines Forum software, acronymised as SMF, is an open-source, Internet forum, message-board program developed by Simple Machines. SMF is an open-source discussion board software project, which consists of volunteers participating in various operating functions including development, customization, documentation, localization/translation, and user support. The project is owned by a non-profit organization, named ”Simple Machines”.

Licensing

While SMF is source-available, redistribution and/or distribution of modified components is limited to authorized entities.
SMF 2.0 and 2.1 are licensed under the 3-clause BSD license.
The software is thus open source with redistribution of modified code subject to the BSD requirements.
https://www.simplemachines.org/about/smf/license.php
https://opensource.org/licenses/BSD-3-Clause

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GUI

Functions & Accessibility

The SMF user interface is very intuitive. More information can be found under the following URL: https://wiki.simplemachines.org/smf/Category:General_SMF

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WAP 2.0

URL: http://forum.cognovo.net/index.php?wap2
Wireless Application Protocol is a technical standard for accessing information over a mobile wireless network. A WAP browser is a web browser for mobile devices such as mobile phones that uses the protocol.

RSS is a type of web feed which allows users to access updates to online content in a standardized, computer-readable format. These feeds can, for example, allow a user to keep track of many different websites in a single news aggregator.
https://forum.cognovo.net/index.php?action=.xml;type=rss

SMF online resources I

SMF Wiki: https://wiki.simplemachines.org
Community: https://www.simplemachines.org/community
Development: https://dev.simplemachines.org

SMF online resources II

See also:
https://github.com/SimpleMachines/SMF2.1

SMF code snippet

```
@package SMF
 * @author Simple Ma-
chines http://www.simplemachines.org
 * @copyright 2018 Simple Machines and individual con-
tributors
 * @li-
cense http://www.simplemachines.org/about/smf/license.php BSD
 *
 * @version 2.1 RC1
 */
$software_year = '2018';
$forum_version = 'SMF 2.1 RC1';
// Get everything started up...
define('SMF', 1);
error_reporting(E_ALL);
$time_start = microtime(true);
// This makes it so headers can be sent!
ob_start();
// Do some cleaning, just in case.
```

```
foreach (ar-
ray('db_character_set', 'cachedir') as $variable)
 if (isset($GLOBALS[$variable]))
 unset($GLOBALS[$variable], $GLOBALS[$variable]);
// Load the settings...
require_once(dirname(__FILE__) . '/Settings.php');
// Make absolutely sure the cache directory is defined.
if ((empty($cachedir) || !file_exists($cachedir))
&& file_exists($boarddir . '/cache'))
 $cachedir = $boarddir . '/cache';
// Without those we can't go anywhere
require_once($sourcedir . '/QueryString.php');
require_once($sourcedir . '/Subs.php');
require_once($sourcedir . '/Subs-Auth.php');
require_once($sourcedir . '/Errors.php');
require_once($sourcedir . '/Load.php');
// If $maintenance is set specifically to 2,
then we're upgrading or something.
if (!empty($maintenance) && $maintenance == 2)
```

```
 display_maintenance_message();
// Create a variable to store some SMF specific func-
tions in.
$smcFunc = array();
// Initiate the database connection and define some
database functions to use.
loadDatabase();
```

SMF Functions

SMF is a very versatile forum software. It has many features, including the following:

- Uses HTML, CSS, PHP, and a database system: MySQL, PostgreSQL or SQLite.
- It provides a comprehensive template system.
- Advanced permission and user management.
- Supports multiple languages at once.
- Open and well-documented source code.
- Tracking of new and old unread topics, not just from your last visit.
- Designed for optimal performance and scalability.
- Multi-media output: XHTML, XML, RSS, WAP.
- Multi-language support from a large community.

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- Package manager that automatically installs or uninstalls mods (also known as packages).
- Search:
- Search the entire forum, a category/board or within a topic.
- Search within your personal messages.

Security

- All actions seamlessly require a session based authorization code.
- Administrative actions require the user's password (and do not rely solely on cookies).

- Major actions are time and IP locked, preventing 'hammering'.
- The number of login attempts from a certain IP can be limited and time locked.

Forum Settings

- Ability to display page creation time and query count per page.
- Put a board into maintenance mode, allowing only administrators to log in.
- Word censoring, either full word or partial.
- Ability to break up long words.

Boards and Categories

- Group boards into collapsible categories.
- Set categories as non-collapsible.
- Reorder boards within categories, or reorder categories.
- Create child boards under other boards (sub boards).
- Assign moderators to boards.
- Allow certain membergroups to access a board, including guests only.
- Configure permissions for each membergroup on the board level.

- Ability to indicate new posts to child boards but nothing new in parent.

Member Registration

- Require registration before forum entrance.
- Require a user to agree to terms before they register.
- Disable member registration completely (allowing only administrators, or moderators with the necessary permissions, to register people).
- Require email authentication by sending an authentication link.
- Require an administrator, or moderator(s) with the necessary permissions, to approve registration.

- Register new members from the admin center.

Member Navigation and Authentication

- Password reminder option, by email with confirmation (doesn't automatically reset your password).
- Both cookie and session based authentication (works without cookies).
- Cookies can be set local to a path, global to all subdomains, or normally.
- Adjustable expiration time for authentication cookies.

Member Tracking and Tracing

- Sortable and searchable public memberlist (accessible by a permission).
- Powerful sortable and searchable admin memberlist.
- Show all (error) messages and IPs made by a member (track user).
- Show all (error) messages from an IP address or range (track IP).
- See who's doing what (accessible by permission).

Statistics

- Several board statistics (accessible by permission).
- Tracking of member's online time in seconds.
- Tracking of topics, messages, new members, and hits per day.
- Individual member statistics accessible from their profile.

News and Announcements

- Send a Newsletter from the admin center, or post any topic as an Announcement.
- Member option to disable receiving announcements (and Admin override of this option).
- Email or private message your members by membergroup.

- Show a news fader.

Communication

- Ability to choose sendmail or SMTP (with or without authentication).
- Ability to send a topic to a friend.
- Ability to view a ”printer friendly” version of topics.

Membergroups

- Create membergroups to group members on permissions, access rights, and/or appearance.
- Assign several membergroups to a single member, with one membergroup as the primary group.
- Define membergroups that are auto-assigned based on the amount of posts a user has.
- Determine the maximum number of personal messages a membergroup is allowed to have by group.
- Assign badge or star to a membergroup - by primary group.
- Determine which membergroups are allowed to access a board.

Banning

- Ban members based on their username, email address, IP address or hostname.
- Support of wildcards for email address, IP address, and hostname.
- Include a ban reason (viewable for the banned user).
- Include a ban note (only viewable by the administrators).
- Choose between full ban, 'no post' ban, or registration ban.
- Include an expiration time for bans.

External integration

- Integrate parts of the forum software into an existing website using SSI or PHP.
- Recent topics or posts.
- Recent news posts in a board.
- Recent polls.

Export forum data using XML/RSS

- Latest members.
- News.
- Recent posts.

Wireless access

- Support for WAP, WAP2 and I-mode protocols.
- Browse through boards/topics/messages with reduced page size.
- Ability to login and logout.
- Ability to see new topics/boards with new replies.
- Ability to jump to first unread reply.
- Ability to post new messages.

Theming and Templating

- Ability to allow or disallow your users to select their own theme.
- Ability to reset all of your members to a certain theme.
- Ability to install a new theme via your administration center.
- Admin can add smileys and smiley sets.
- Members can choose which smiley set they wish to use (or none).
- SSI can have and show layers and the like from the template system.

Posting Features

- Spell Check.
- Quick Reply
- Members can disable it or collapse it.
- Can be used with ”Quote”.
- Also contains ”Spell Check”.
- Vast number of Bulletin Board Codes to use (including rtl, acronym, and others).
- Optional editing grace period before a post is shown as modified.
- Insert Quote feature on posting screen to quickly quote previous replies.

Polls

- Can be added or removed to existing topics.
- Ability to set expiration date.
- Ability to hide results till expiration of poll.
- Ability to hide results until after people have voted.
- Ability to determine how many votes a user may cast.
- Polls can have up to 256 options.
-

Attachments

- Allowed on a per member group or board basis.
- The filename is hashed to increase the security (so you can upload .php files).
- Optional restriction on what filetypes may be uploaded.

- Ability to restrict such that only registered members can view them (disables hotlinking, mostly).
- Images can be embedded into posts.

Calendar Support

- Shows Birthdays, Events and Holidays.
- Display calendar information on board index.
- Link an existing topic to the calendar.
- Allow only certain members/groups to post events.
- Event poster can edit event.
- Events can span multiple days.

Moderation Tools

- Ability to lock and unlock a topic.
- Topics which are locked by an administrator can not unlocked by anyone else.
- Ability to allow members to use moderation on just topics they posted.
- Report to moderator link.
- Delete or modify posts.
- Ability to merge/split topics.
- Move or delete topics.
- Sticky or unsticky topics.

- Recycle bin/board for all deleted topics and posts.
- Moderation log which shows moderation activity and dissallows the removal of log entries until they are at least 24-hours old.
- AJAX editing:
- Edit a post without page reloads.
- Double click to edit topic subjects on message index.

User Profiles and User Options

- Ability to hide your email address from the public.
- Select favorite theme among the activated forum themes.
- Select smiley set from the ones available.

- Email notification
- New topics per board.
- Single topics.
- Private messages.
- Login with 'invisible' mode.
- Options to hide other members' avatars and signatures.
- Ability to download and resize uploaded avatars.
- Personal text, avatar, signature, and all the niceties of forums can be used and are kept up to date in all your posts.

User Resources

- Icons for topics you've posted to.
- Show new replies to your posts.
- Collapsible 'Additional Options' on post screen.
- Ability to view most recent messages.
- List all topics that have new replies since your last visit.
- See who is browsing the same boards or topics as you.
- Topics that span multiple pages have the page numbers listed as well as an "all" link.

Other features

- Several forum statistics.

- List of users online.
- The menu bar.
- News.
- Search.
- Login/logout.
- Today's events/birthdays/holidays.

Credits

Document created with LaTeX 2ε

URL: https://www.latex-project.org