Open-source web application basic analysis

Application Security 2024/2025

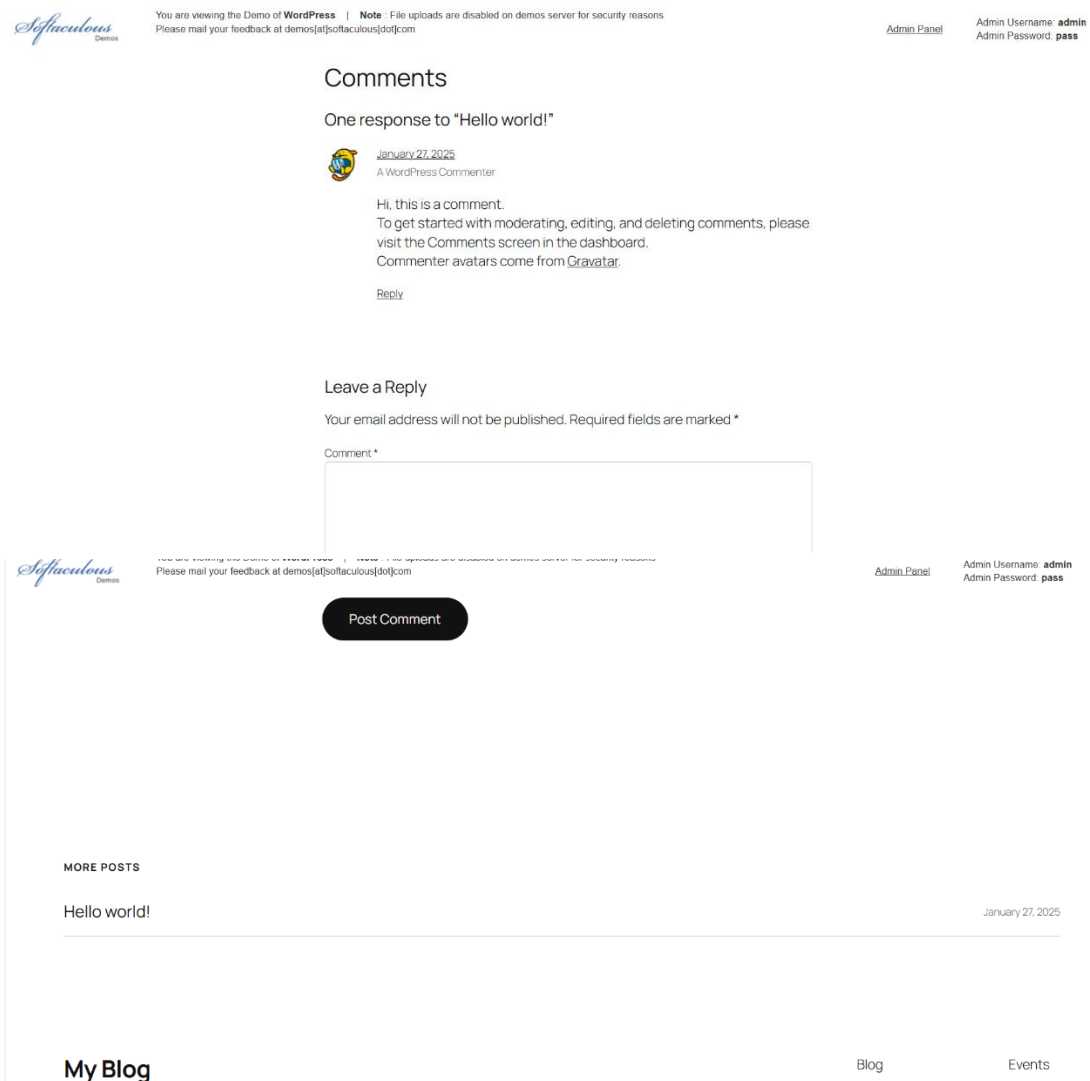ROSARIO PAVONE   ER1799

Table of

1. EXPLORATION

1.1 Softaculous - WordPress Demo

My Blog

Hello world!

Written by admin in Uncategorized

Welcome to WordPress. This is your first post. Edit or delete it, then start writing!

Softaculous Demos

You are viewing the Demo of **WordPress** | **Note** : File uploads are disabled on demos server for security reasons
Please mail your feedback at demos[at]softaculous[dot]com

Admin Panel   Admin Username: **admin**
                   Admin Password: **pass**

Comments

One response to "Hello world!"

January 27, 2025
A WordPress Commenter

Hi, this is a comment.
To get started with moderating, editing, and deleting comments, please visit the Comments screen in the dashboard. Commenter avatars come from Gravatar.

Reply

Leave a Reply

Your email address will not be published. Required fields are marked *

Comment *

Post Comment

MORE POSTS

Hello world!   January 27, 2025

My Blog

Blog   Events

Posts and Pages

First up, you have your **posts** and **pages**. Posts are perfect for your latest blog entries, articles, or news updates. Pages, on the other hand, are for more permanent content like your About Us section or Contact page.

Media Library

Then, there's the **Media Library**. This is your one-stop-shop for all the images, videos, and audio files you'll want to show off on your site. Upload your files here, and you can easily insert them into your posts and pages.

Themes and Customization

Appearance is a big deal because it's all about how your site looks. WordPress offers a ton of **themes**—like outfits for your website—that you can change at any time. Plus, with the **Customize** option, you can tweak colors, fonts, and layouts to fit your style.

Plugins

Next are **plugins**. Think of these as little apps that add extra features to your site. Want a contact form? There's a plugin for that. Need SEO tools? There's a plugin for that too. Plugins are incredibly handy for enhancing your site's functionality.

Users and Roles

Users management allows you to control who can access and modify your site. You can add team members, authors, or even guest bloggers and assign them different roles like administrators, editors, or subscribers.

Settings

The **Settings** section is where you adjust the nitty-gritty details of your site. From changing the site title and tagline to managing comments and media settings, this area helps you fine-tune your website's operation.

In essence, WordPress takes the complexity out of website creation and management. It's user-friendly, versatile, and empowers anyone to build a beautiful, functional site without needing to know how to code. It's why it's loved by bloggers, small business owners, and even large corporations alike.

1.1.1 ADMIN PANEL
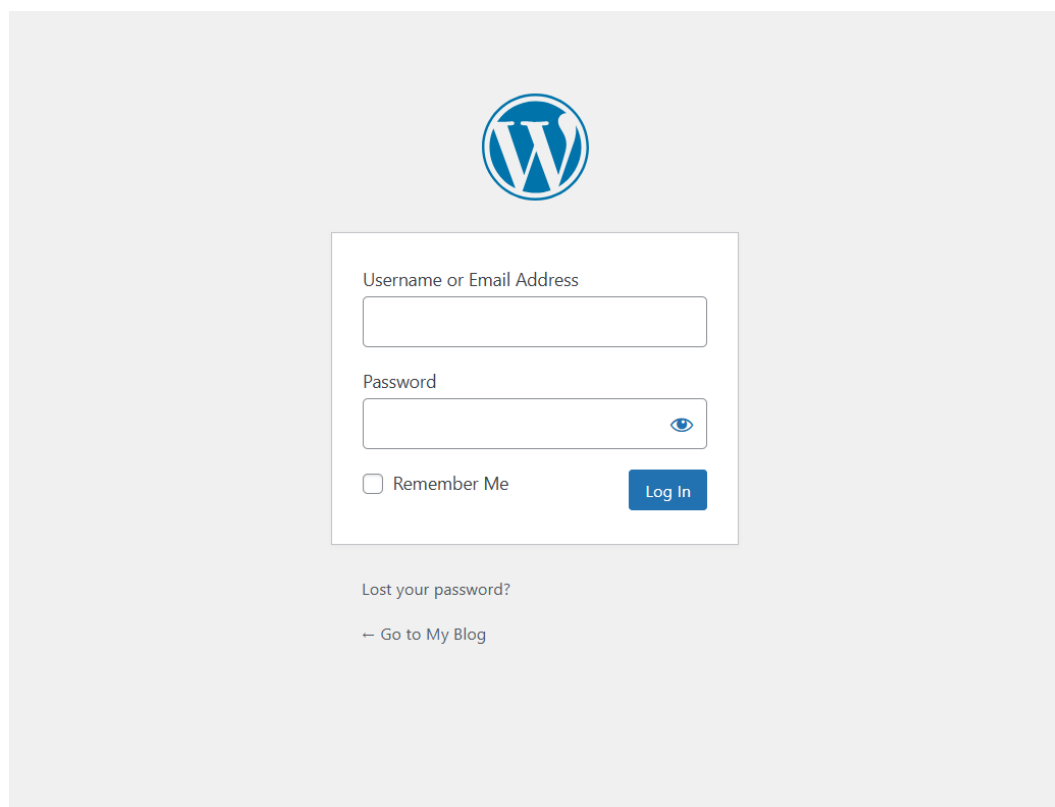
The Dashboard

When you first log in, you're greeted by the **Dashboard**. It's like your mission control, giving you an overview of your site's activity and providing quick access to common tasks. The Dashboard includes widgets that show you recent posts, comments, and updates.

Main Navigation Menu

On the left side of the screen, you'll see the main navigation menu. This menu is your gateway to all the different sections and features of WordPress. Here are the key sections:

Posts

- **All Posts**: View and manage all your blog posts.
- **Add New**: Create a new blog post.
- **Categories**: Organize your posts into categories for better navigation.
- **Tags**: Add tags to your posts to improve searchability and organization.

Media

- **Library**: Manage all your media files, including images, videos, and audio.
- **Add New**: Upload new media files to your library.

Pages

- **All Pages**: View and manage all your static pages.
- **Add New**: Create new static pages for your site.

Comments

- **All Comments**: Moderate and respond to comments left by visitors on your posts and pages.

Appearance

- **Themes**: Change the theme of your site to alter its look and feel.
- **Customize**: Access the theme customizer to make adjustments to your theme.
- **Widgets**: Add and manage widgets for your site's sidebars and other widget areas.
- **Menus**: Create and manage navigation menus.
- **Theme Editor**: Edit the theme's code (for advanced users).

Plugins

- **Installed Plugins**: View and manage your installed plugins.
- **Add New**: Search for and install new plugins to add functionality to your site.
- **Plugin Editor**: Edit the code of your plugins (for advanced users).

Users

- **All Users**: Manage all the users who have access to your site.
- **Add New**: Create new user accounts with different roles and permissions.
- **Your Profile**: Edit your own profile and personal settings.

Tools

- **Available Tools**: Access tools provided by WordPress.

- **Import**: Import content from other platforms.

- **Export**: Export your site's content for backup or transfer.

Settings

- **General**: Configure general settings like your site title, tagline, and timezone.

- **Writing**: Adjust settings related to writing and publishing posts.

- **Reading**: Control how your content is displayed to visitors.

- **Discussion**: Manage settings for comments and discussions.

- **Media**: Set default sizes for images and other media.

- **Permalinks**: Configure the URL structure of your site.

- **Privacy**: Manage your site's privacy settings and policy.

Exploring the Features

Each section of the admin panel is designed to make site management easier and more efficient. For example:

- **Themes and Customization**: You can quickly change the look of your site and make real-time customizations without any coding knowledge.

- **Plugins**: Add new features to your site with just a few clicks. Whether you need SEO tools, contact forms, or e-commerce functionality, there's a plugin for almost everything.

- **User Management**: Easily control who can access and make changes to your site, and set specific roles for different users.

- **Settings**: Fine-tune every aspect of your site's operation, from how posts are displayed to how comments are handled.

The WordPress Admin Panel is designed to be intuitive and user-friendly, allowing you to manage your website with ease. Whether you're publishing content, customizing your site, or managing users, the admin panel gives you all the tools you need at your fingertips.

1.2 [Softaculous - phpBB Demo](#)
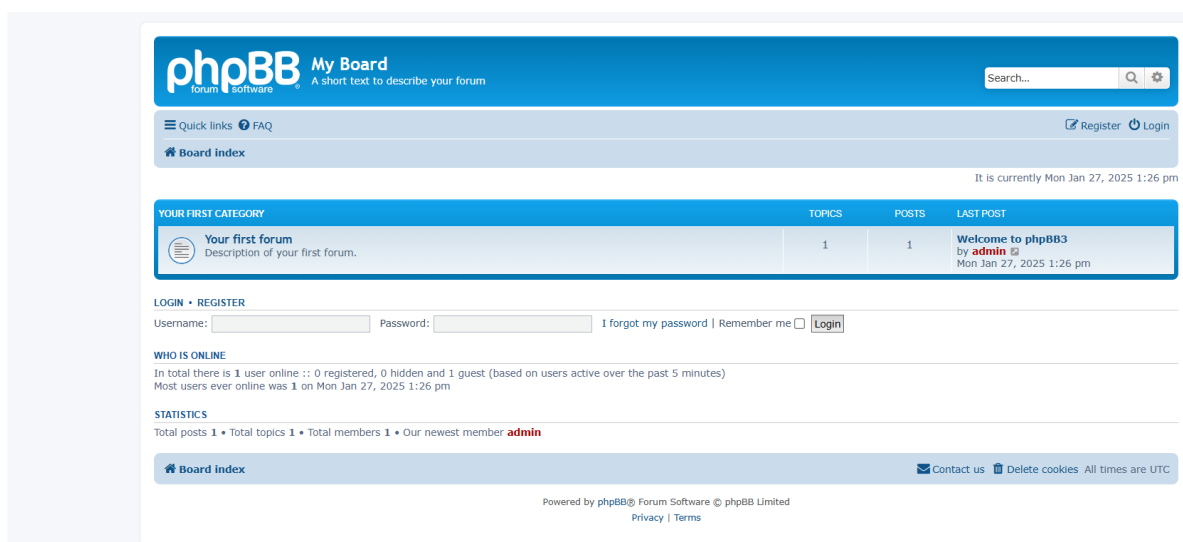
Imagine you've gathered a group of people who share a common passion—maybe it's gaming, gardening, or even tech support. You want a cozy spot where everyone can come together, share ideas, and ask questions. This is where **phpBB** steps in, like the friendly clubhouse manager who ensures everything runs smoothly.

What is phpBB?

phpBB is like a magic wand for creating online forums. It's open-source, meaning it's free to use, and it comes packed with features to help you build and manage your community with ease.

Stepping Into the Admin Panel

Once you log into phpBB's admin panel, it's like being in the control room of your very own forum. Here's a peek at what you'll find:

General:

Think of this as your forum's heart. Here, you'll set up the basics—like your forum's name, description, and security settings to keep everything safe and secure.

Forums:

This section is where you create and organize different discussion areas. Picture it like setting up rooms in your clubhouse for various topics. You can also assign moderators to keep conversations respectful and on track.

Posts:

Managing posts is a breeze here. You can approve new posts, handle reported ones, and even manage attachments like images and files that members share.

Users and Groups:

Just like a real community, you'll have members with different roles. This section lets you add new users, manage their permissions, and create groups for easier management.

Permissions:

Permissions are like the rules of your clubhouse. They determine who can do what—whether it's posting in certain forums or accessing special features. You can set these rules globally or fine-tune them for specific forums.

Customization:

Customization is where you give your forum its unique look and feel. Choose from different styles (themes) and use extensions (like apps) to add new features. It's all about making your forum reflect your community's personality.

Maintenance:

Maintenance is your toolkit for keeping the forum running smoothly. Here, you can backup data, manage the database, and keep an eye on logs to track any changes or issues.

The User Experience

For your community members, phpBB offers a clean and intuitive space to navigate. They can easily join discussions, send private messages, and customize their profiles. It's all about making everyone feel at home.

Why Choose phpBB?

phpBB is fantastic for building a community because it's:

- **Flexible**: Highly customizable with various themes and extensions.

- **Secure**: Strong security features to protect your forum and its members.

- **User-Friendly**: Easy to use for both administrators and users.

- **Supported**: Backed by a large community of developers and users who continuously improve it.

In essence, phpBB is like a cozy clubhouse for your online community. It's where ideas are exchanged, friendships are formed, and passions are shared. Whether you're starting a new hobby group, a support forum, or a discussion board for your business, phpBB makes the process seamless and enjoyable.

1.2.1 REGISTER PAGE

The registration page on phpBB is where new users can create an account to join the forum. Here's a breakdown of what you'll typically find on this page:

Registration Page Overview

1. **Terms and Conditions**: Before you can register, you'll need to read and accept the forum's terms and conditions. This ensures that users agree to follow the rules of the community.

2. **Username**: You'll need to choose a unique username that will identify you on the forum.

3. **Email Address**: Enter your email address, which will be used for account verification and communication.

4. **Password**: Create a password for your account. Make sure it's strong and secure.

5. **Password Confirmation**: Enter your password again to confirm it.

6. **Visual Confirmation**: Some forums use a CAPTCHA or visual confirmation to ensure that the registration is being done by a real person and not a bot.

7. **Optional Details**: You may be asked to provide additional details such as your timezone, language preference, and date of birth.

8. **Account Activation**: Depending on the forum's settings, you might need to activate your account by clicking a link sent to your email.

Steps to Register

1. Click the "Register" link, usually found at the top right corner of the forum.

2. Fill out the registration form with the required information.

3. Read and accept the terms and conditions.

4. Complete the visual confirmation if required.

5. Click the "Submit" button to complete the registration process.

6. Check your email for an activation link (if required) and follow the instructions to activate your account.

User Control Panel (UCP)

Once registered, users can access the User Control Panel (UCP), where they can manage their profile, change their password, control privacy settings, and more.

The registration process is designed to be straightforward and user-friendly, ensuring that new users can join the community quickly and easily.

1.2.2 FORUM PAGE

The first forum on phpBB is typically the **"Welcome to phpBB"** forum. This forum is designed to help new users get started and familiarize themselves with the platform. Here's what you'll usually find in this forum:

Welcome to phpBB Forum

1. **Introduction Post**: A welcome message from the forum administrators or moderators, introducing new users to the forum and providing some basic guidelines.

2. **Getting Started Guide**: A detailed guide or sticky post that walks new users through the process of registering, logging in, and navigating the forum.

3. **FAQ (Frequently Asked Questions)**: A section where common questions are answered, helping new users find quick solutions to common issues.

4. **Helpful Threads**: Various threads that provide tips and tricks for using the forum, such as how to post, how to use private messaging, and how to customize profiles.

5. **Support Threads**: Threads where users can ask for help with specific issues they're facing, and where experienced users or moderators can provide assistance.

Features of the Welcome Forum

- **Sticky Posts**: Important posts that are "stuck" to the top of the forum to ensure they are always visible.

- **Search Functionality**: Users can search for specific topics or threads within the forum to find relevant information quickly.

- **Thread Subscription**: Users can subscribe to threads to receive notifications when new posts are made.

- **User Profiles**: Links to user profiles where new users can learn more about other members and customize their own profiles.

The Welcome forum is a crucial part of the phpBB experience, as it helps new users feel supported and informed as they begin their journey on the forum

1.3 Open Real Estate DEMO FREE
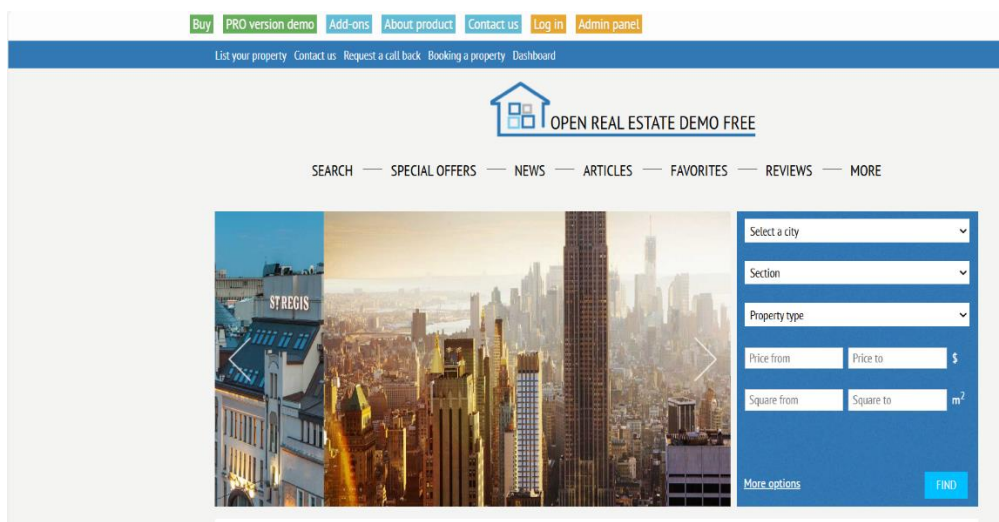
Open Real Estate is a comprehensive and flexible platform designed for creating and managing real estate websites. Whether you're an individual realtor, a real estate agency, or a property management company, Open Real Estate provides all the tools

you need to showcase properties, interact with clients, and run your business efficiently.

Key Features and Functionalities

Let's break down some of the standout features of Open Real Estate:

Property Listings

At the heart of Open Real Estate is its property listing functionality. You can easily add, edit, and manage property listings with detailed descriptions, high-quality images, videos, and interactive maps. Each listing includes essential information such as price, location, property type, and features, making it easy for potential buyers or renters to find what they're looking for.

User Management

Open Real Estate allows you to manage different user roles and permissions. For instance, you can have administrators, agents, and clients, each with specific access levels. Agents can add and manage their listings, while clients can create accounts, save their favorite properties, and contact agents directly through the platform.

SEO Optimization

Visibility is crucial in the competitive real estate market. Open Real Estate comes with built-in SEO tools to help your website rank higher in search engine results. This includes customizable meta tags, friendly URLs, and the ability to create XML sitemaps.

Multi-language and Multi-currency Support

To cater to an international audience, Open Real Estate supports multiple languages and currencies. This feature ensures that users from different regions can navigate your site and understand property prices in their local currency, enhancing their user experience.

Advanced Search and Filters

Potential clients can use advanced search options and filters to find properties that match their specific criteria. Whether they're looking for a particular property type, price range, or location, these tools make it easy to narrow down options.

Responsive Design

In today's mobile-first world, having a responsive website is essential. Open Real Estate ensures that your site looks great and functions smoothly on all devices, including smartphones and tablets.

Payment and Monetization Options

Monetizing your real estate website is straightforward with Open Real Estate. You can integrate various payment gateways to handle transactions directly on your site.

Additionally, you can offer premium listings or charge for advertising space, providing multiple revenue streams.

Customizable Themes and Templates

Open Real Estate offers a variety of customizable themes and templates, allowing you to create a unique and professional-looking website that aligns with your brand. You can tailor colors, fonts, layouts, and more to match your vision.

Analytics and Reporting

Keeping track of your site's performance and user behavior is crucial for making informed business decisions. Open Real Estate provides detailed analytics and reporting tools to monitor traffic, user interactions, and other key metrics.

Why Choose Open Real Estate?

Open Real Estate stands out for its flexibility, user-friendliness, and comprehensive feature set. It's ideal for real estate professionals looking to establish a robust online presence without needing extensive technical knowledge. The platform's adaptability means it can grow with your business, supporting everything from small real estate portfolios to large-scale property management operations.

Exploring the Demo

The demo site for Open Real Estate gives you a hands-on experience of what the platform offers. You can navigate through the various features, test the property listing functionality, and explore the admin panel to get a feel for how easy it is to manage your site.

Open Real Estate is more than just a website builder; it's a complete solution for real estate professionals. Whether you're just starting out or looking to enhance your current operations, this platform has everything you need to succeed in the digital real estate market.

1.3.1 NEWS PAGE
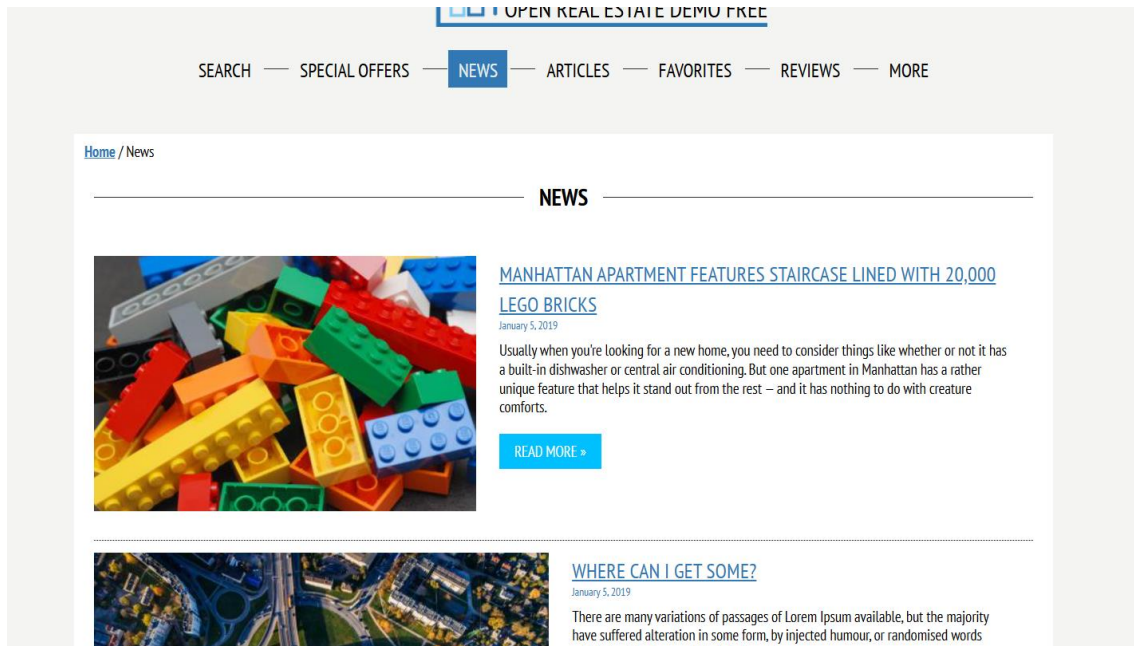
The News section of the Open Real Estate demo site is where you can find the latest updates, announcements, and blog posts related to the platform. This section is designed to keep users informed about new features, improvements, and other relevant information.

Key Features of the News Section

Latest Updates: Regularly updated posts about new features, bug fixes, and other changes to the platform.Announcements: Important information about upcoming events, releases, and other significant updates.

Blog Posts: Articles and insights from the developers and community, providing tips, tutorials, and industry news.

Categories: Organized by topics to help users find specific types of news and updates easily.

Comments: Users can engage with the content by leaving comments, asking questions, and participating in discussions.

Why It's Important

The News section is a valuable resource for users to stay up-to-date with everything happening in the Open Real Estate ecosystem. Whether you're a real estate agent, property owner, or developer, keeping informed about the latest developments can help you make the most of the platform.

Feel free to explore the News section to see what's new and exciting in the world of Open Real Estate.

1.4 Softaculous - Dolphin Demo
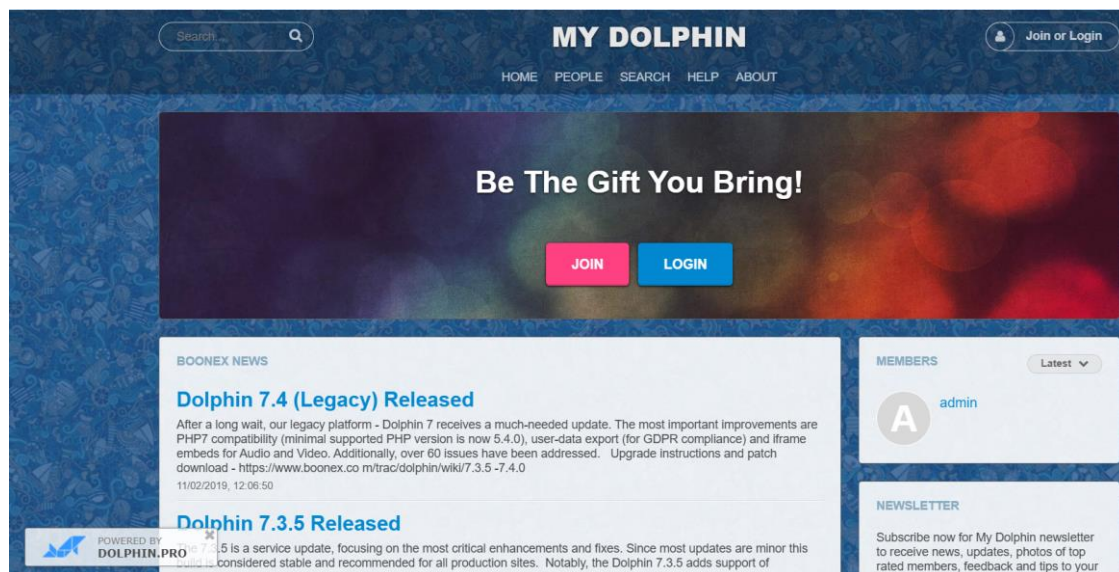
Dolphin is an open-source content management system (CMS) designed to create and manage social networks, community sites, and other interactive websites. It's a versatile platform that offers a range of features to help you build a dynamic and engaging online community.

Key Features of Dolphin

1. **User Management**: Dolphin allows you to manage user profiles, roles, and permissions. You can create different user groups with specific access levels, making it easy to control who can view and interact with certain parts of your site.

2. **Social Networking**: With Dolphin, you can build a social network where users can connect, share content, and interact with each other. Features include friend requests, messaging, and activity feeds.

3. **Customizable Themes**: Dolphin comes with a variety of themes that you can customize to match your brand and design preferences. You can change colors, fonts, and layouts to create a unique look for your site.

4. **Extensions and Plugins**: Dolphin supports a wide range of extensions and plugins, allowing you to add new functionalities and features to your site. Whether you need additional social features, SEO tools, or e-commerce capabilities, there's likely an extension available.

5. **SEO Optimization**: Dolphin includes built-in SEO tools to help your site rank higher in search engine results. You can customize meta tags, URLs, and other SEO settings to improve your site's visibility.

6. **Responsive Design**: Dolphin ensures that your site looks great on all devices, including smartphones and tablets. This responsive design helps provide a seamless user experience across different screen sizes.

7. **Multilingual Support**: Dolphin supports multiple languages, making it easy to reach a global audience. You can create content in different languages and provide a localized experience for users.

8. **Analytics and Reporting**: Dolphin provides detailed analytics and reporting tools to help you track user engagement, site performance, and other key metrics. This information can be invaluable for making informed decisions about your site's content and features.

Why Choose Dolphin?

Dolphin is an excellent choice for anyone looking to build a social network, community site, or any interactive website. Its flexibility, extensive features, and user-friendly interface make it a powerful tool for creating engaging online communities.

Exploring the Demo

The demo site for Dolphin gives you a hands-on experience of what the platform offers. You can navigate through the various features, test the user management system, and explore the customization options to get a feel for how easy it is to manage your site.

Dolphin is more than just a CMS; it's a comprehensive solution for building interactive and engaging websites. Whether you're starting a new social network or enhancing an existing community site, Dolphin has everything you need to succeed.
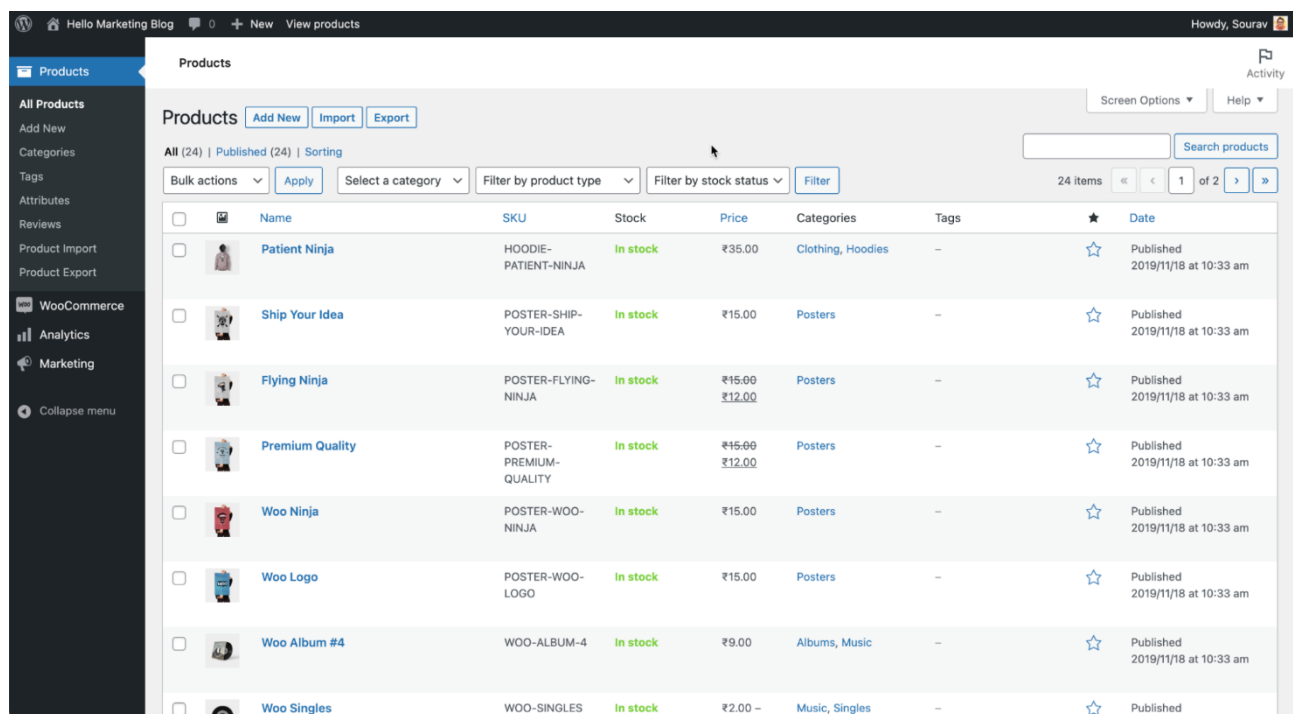
1.4.1 JOIN PAGE

The **Join Page** on the Dolphin demo site is where new users can sign up to become part of the community. Here's what you'll typically find on this page:

Join Page Overview

1. **Sign-Up Form**: A form where users can enter their details to create a new account. This usually includes fields for username, email address, password, and password confirmation.

2. **Terms and Conditions**: Users are required to read and accept the terms and conditions of the site before they can complete their registration.

3. **Privacy Policy**: Information about how the site handles user data and privacy.

4. **Security Measures**: Features like CAPTCHA or visual confirmation to ensure that registrations are being done by real people and not bots.

5. **Optional Details**: Users might be asked to provide additional information such as their date of birth, location, or interests to help personalize their experience.

Steps to Join

1. **Visit the Join Page**: Navigate to the join page on the Dolphin demo site.

2. **Fill Out the Form**: Enter your desired username, email address, and password. Make sure to confirm your password by entering it again.

3. **Read and Accept Terms**: Carefully read the terms and conditions and privacy policy, then check the box to accept them.

4. **Complete Security Check**: If there's a CAPTCHA or visual confirmation, complete it to verify that you're not a bot.

5. **Submit**: Click the "Join" or "Sign Up" button to submit your registration.

6. **Email Verification**: Check your email for a verification link and click it to activate your account.

User Control Panel (UCP)

Once registered, users can access the User Control Panel (UCP), where they can manage their profile, change their password, control privacy settings, and more.

The Join Page is designed to be straightforward and user-friendly, ensuring that new users can easily become part of the communit

1.5 Softaculous - pH7Builder Demo
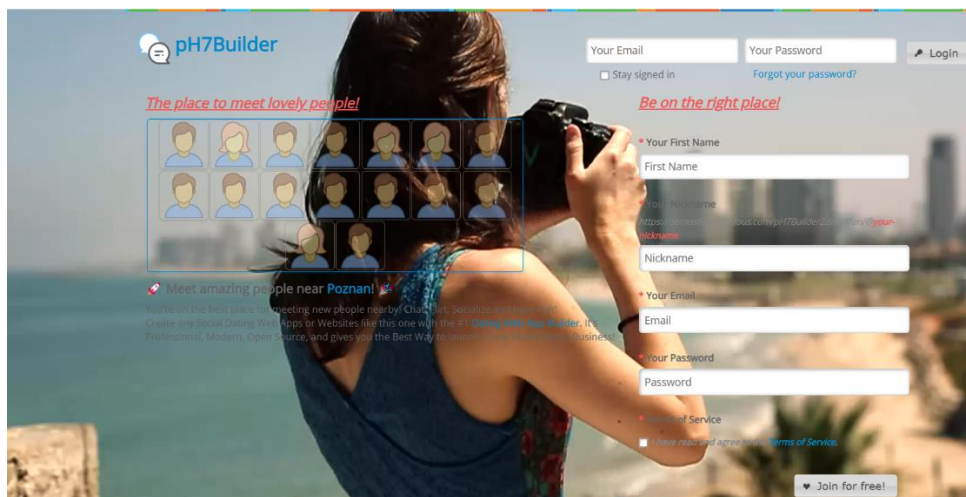
pH7Builder, formerly known as pH7CMS, is a professional, free, and open-source social dating site builder software. It's designed to help you create enterprise-level dating apps or social networking sites with ease1. Here's a deeper look into what makes pH7Builder special:

Key Features of pH7Builder

1. **Professional and Open Source**: pH7Builder is built using object-oriented PHP (OOP) with the MVC (Model-View-Controller) pattern, ensuring a robust and scalable platform.

2. **Low Resource Intensive**: Despite its powerful features, pH7Builder is designed to be resource-efficient, making it suitable for a wide range of hosting environments.

3. **Extensive Modules**: It comes with over 42 native modules, covering everything from user management to advanced search functionalities.

4. **Security**: pH7Builder includes a powerful anti-spam system and IP restriction for the admin panel, ensuring a secure environment for both admins and users.

5. **SEO Friendly**: With features like schema.org markup, SEO-friendly URLs, and sitemap modules, pH7Builder helps improve your site's search engine ranking.

6. **Multilingual Support**: The platform supports multiple languages, making it easy to reach a global audience.

7. **Affiliate System**: An in-built affiliate system encourages brand influencers and ambassadors to promote your dating service.

8. **RandomUser.me API**: This API allows for the creation of high-quality profiles, enhancing the user experience.

Why Choose pH7Builder?

pH7Builder is an excellent choice for anyone looking to build a social dating site or a community platform. Its flexibility, extensive features, and user-friendly interface make it a powerful tool for creating engaging online communities.

Exploring the Demo

The demo site for pH7Builder gives you a hands-on experience of what the platform offers. You can navigate through the various features, test the user management system, and explore the customization options to get a feel for how easy it is to manage your site.

pH7Builder is more than just a CMS; it's a comprehensive solution for building interactive and engaging websites. Whether you're starting a new social network or enhancing an existing community site, pH7Builder has everything you need to succeed.

2. Application Demos Analysis

2.1 WordPress

2.2 Joomla

2.3 phpBB

2,1 WordPress

Technology Stack and File Structure

WordPress is a popular content management system (CMS) primarily built using PHP and utilizes a MySQL database for data storage. The application follows the Model-View-Controller (MVC) architecture, which enhances its maintainability and scalability. The key directories in the WordPress installation include:

- **wp-admin**: Contains files necessary for the WordPress administration interface. This folder is responsible for managing users, posts, and settings.

- **wp-content**: The heart of any WordPress installation, where themes, plugins, and uploaded media files are stored. Custom themes and plugins can be added here, allowing for a highly customizable user experience.

- **wp-includes**: This folder contains core WordPress files, including the API functions and classes that define WordPress's core functionality.
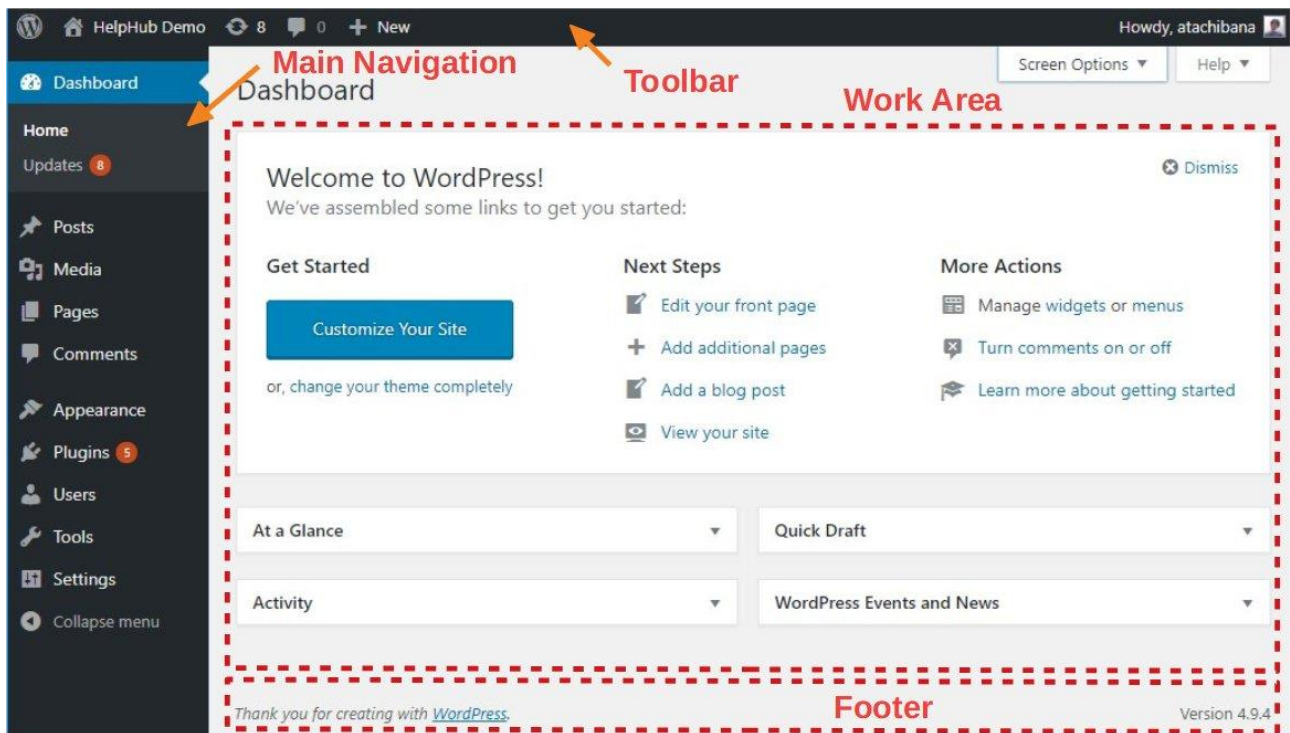
Database Structure

Using phpMyAdmin, I accessed the WordPress database and focused on the wp_users table, which stores essential user data. This table comprises several key fields:

- **ID**: Unique identifier for each user.

- **user_login**: The username used for login.

- **user_pass**: The hashed password, which is stored using the bcrypt algorithm, making it significantly more secure against attacks.

- **user_email**: Registered email address of the user.

- **user_registered**: Timestamp for when the user registered.

- **user_status**: Represents the user's status (active, inactive, etc.).

Additionally, the wp_usermeta table holds metadata about users, allowing for the storage of user roles and capabilities. This two-table structure facilitates the management of user permissions effectively.

Configuration and Sample Content

I began configuring WordPress by adding example content. I created a sample blog titled "Tech Insights," which included several introductory posts like "Welcome to My Blog," detailing the purpose and vision of the site. I also created a few pages such as "About Us" and "Contact," providing a holistic view of what the blog offers.

For user management, I registered example users with different roles:

- **Administrator**: Full access to all features and settings.

- **Editor**: Capable of managing and publishing posts.

- **Subscriber**: Basic access, primarily to read and comment.
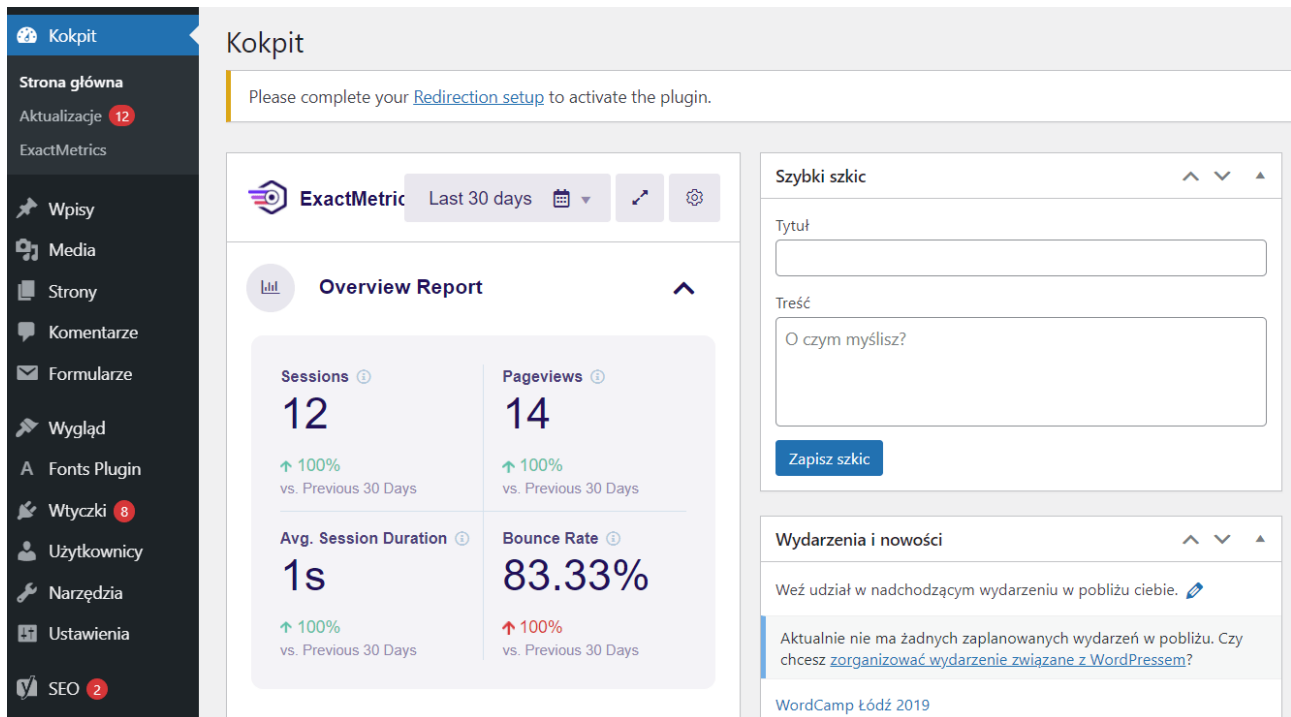
User Sign-In Process

The user sign-in process in WordPress is straightforward, accessible via the /wp-admin URL. Upon entering the correct credentials, the user session is initiated through session cookies. These cookies store user identification information, allowing for persistent login until the user logs out or the cookie expires. The session management system is robust, featuring nonce tokens for enhanced security during actions like posting comments or logging in.

Password Reset Functionality

The password reset process is user-friendly. If a user forgets their password, they can click the "Lost your password?" link on the login page. This prompts them to enter their registered email address, triggering an automated email containing a password reset link. This link includes a nonce for added security, ensuring that the reset request is valid.

Vulnerabilities

In my research, I found that WordPress is often a target for attackers due to its popularity. Common vulnerabilities include:

- **Outdated Plugins/Themes**: Many vulnerabilities arise from third-party plugins and themes that are not regularly updated. It's crucial to regularly audit installed plugins for updates and vulnerabilities.

- **SQL Injection**: Although WordPress implements security measures, poorly coded plugins can lead to SQL injection vulnerabilities. Best practices for sanitizing user input are vital.

- **Cross-Site Scripting (XSS)**: This vulnerability can occur if plugins allow users to input data without proper validation. Keeping plugins updated and choosing reputable sources mitigates this risk.

2.2 Joomla

Technology Stack and File Structure

Joomla, like WordPress, is built using PHP and utilizes a MySQL database. It follows a more modular architecture, which allows for better scalability. The Joomla file structure includes:

- **administrator**: This directory houses the files necessary for backend management.

- **components**: Contains core components that drive the application's functionalities, such as content management and user management.

- **modules**: Holds additional functionalities that can be integrated into Joomla's front-end.

Database Structure

In Joomla, I focused on the #__users table, which includes:

- **id**: Unique identifier for each user.

- **name**: The full name of the user.

- **username**: The login name.

- **password**: A hashed password, securely stored.

- **email**: User's email address.

- **block**: Indicates whether the user account is active.

Joomla uses password_hash for hashing passwords, ensuring strong security. The #__user_usergroup_map table associates users with their respective user groups, facilitating role-based access control.

Configuration and Sample Content

For my example content, I created a website titled "Joomla for Beginners." The site featured articles such as "Getting Started with Joomla" and "Top Joomla Extensions." I also configured example users:

- **Super User**: Full administrative access.

- **Author**: Can create and manage their own articles.

User Sign-In Process

Joomla's user sign-in process occurs at the /administrator URL. Users can access their accounts using session management similar to WordPress. Joomla leverages session tokens to prevent CSRF (Cross-Site Request Forgery) attacks, ensuring secure access.

Password Reset Functionality

The password reset process in Joomla is also intuitive. Users can request a password reset by entering their username or email address. Joomla sends an email with a reset link, maintaining security through nonce validation.
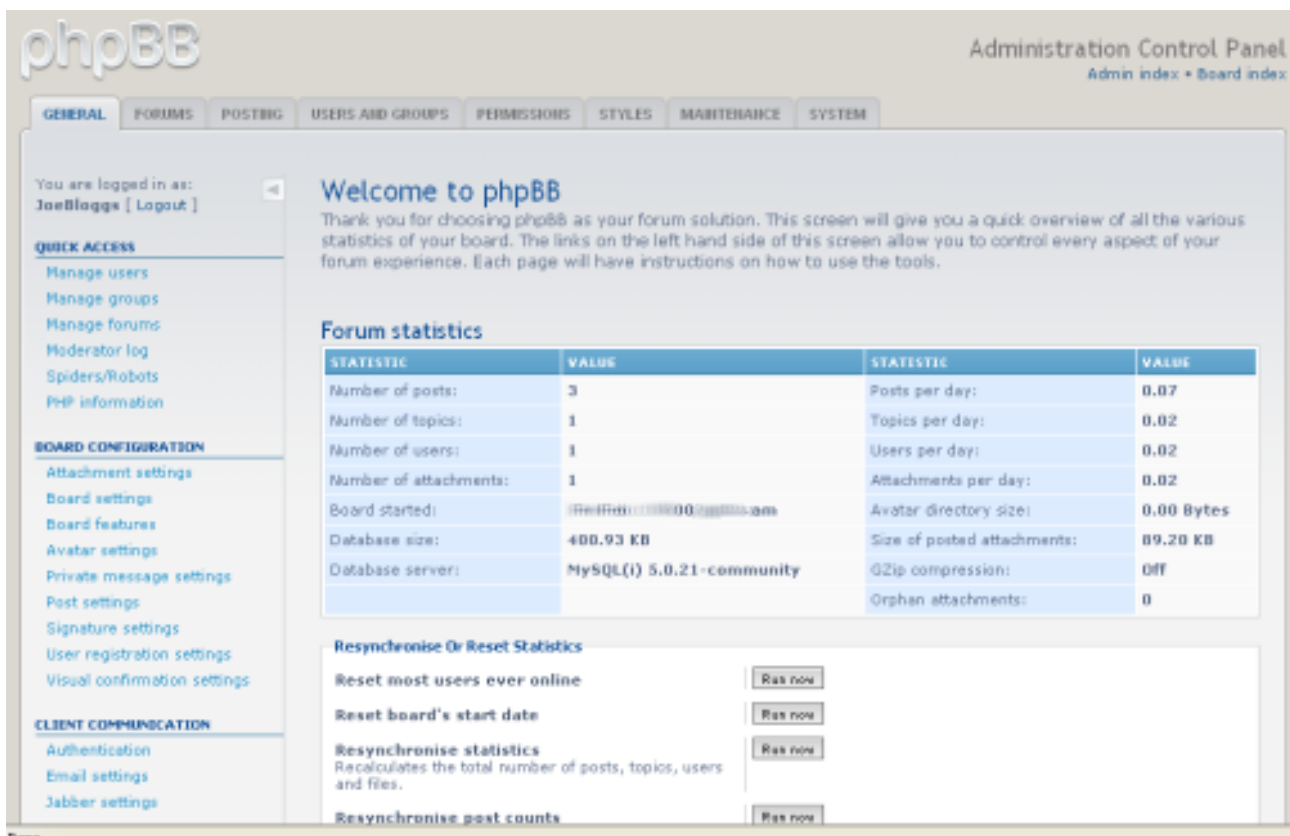
Vulnerabilities

Joomla faces several known vulnerabilities, including:

- **SQL Injection**: Certain components have been known to allow SQL injection if not coded correctly.

- **XSS**: Improperly sanitized user input can lead to cross-site scripting vulnerabilities. Regular updates and adherence to secure coding practices are crucial.

- **Outdated Components**: As with WordPress, outdated extensions can introduce vulnerabilities. Regularly auditing and updating installed components is necessary.

2.3 phpBB

Technology Stack and File Structure

phpBB, a forum software, also employs PHP and MySQL, focusing specifically on community interactions. The application structure is as follows:

- **cache**: This directory holds cached files to enhance performance.

- **images**: Contains images used in the forum's themes and icons.

- **files**: Stores uploaded files by users, including attachments.

Database Structure

In phpBB, the primary focus was on the phpbb_users table, which includes:

- **user_id**: Unique identifier for each user.

- **username**: The chosen username for forum activities.

- **user_password**: A hashed password, stored securely with a unique salt.

- **user_email**: Email address associated with the account.

- **user_regdate**: Timestamp indicating when the user registered.

The use of password hashing with salts significantly enhances security, protecting user credentials from brute-force attacks.

Configuration and Sample Content

To populate the forum, I created categories such as "General Discussion" and "Help & Support," filling them with threads and user posts. Example users included:

- **Administrator**: Full control over the forum settings and user management.

- **Regular User**: Can post, reply, and manage their profile.

User Sign-In Process

The phpBB login process is accessible through the forum interface. Upon entering their credentials, users are granted access through session cookies. The application's session management includes timeout settings and user tracking to enhance security.

Password Reset Functionality

The password reset feature in phpBB is straightforward. Users can access the reset link from the login page by providing their registered email. The system sends a reset email containing a secure link, allowing users to change their passwords without exposing their original credentials.

Vulnerabilities

Research into phpBB vulnerabilities revealed several risks:

- **Session Management Issues**: Past versions had vulnerabilities that allowed session fixation attacks.

- **XSS and CSRF Attacks**: Without proper validation of user input, these vulnerabilities can be exploited.

- **SQL Injection**: Incorrectly handled queries can lead to database breaches.

Keeping phpBB updated and adhering to best practices is essential for maintaining security.

Conclusion

This thorough analysis of WordPress, Joomla, and phpBB not only highlights their functionalities and features but also emphasizes the importance of security practices in open-source applications. Each application has unique strengths, but they all require vigilant maintenance to safeguard against vulnerabilities. By keeping the applications installed on my machine, I have established a foundation for further exercises and explorations into web application security, usability, and customization.

I will compile these insights into a comprehensive report, complete with screenshots and detailed findings, ready to submit to my lecturer for review. The lessons learned from this exercise will guide my future endeavors in web application development and security management.