

1. config.php:
 - Contains database connection details and reCAPTCHA keys.
 - Defines the session timeout duration.
2. db.php:
 - Provides a function to connect to the database.
3. functions.php:
 - Contains utility functions for input sanitization, reCAPTCHA verification, login, and session management.
4. login.php:
 - Handles the login form submission.
 - Verifies reCAPTCHA and user credentials.
 - Starts a session upon successful login.
5. dashboard.php:
 - Displays the dashboard for logged-in users.
 - Implements JavaScript to track user activity and logout after 30 seconds of inactivity.
6. logout.php:
 - Destroys the session and redirects to the login page.

To set up this system:

1. Create a MySQL database and a `users` table with columns for `id`, `username`, and `password`.
2. Replace the placeholder values in `config.php` with your actual database credentials and reCAPTCHA keys.
3. Implement proper password hashing when creating user accounts.
4. Place all these files in your web server's document root.

This implementation includes several security features:

- Input sanitization to prevent XSS attacks.
- Prepared statements to prevent SQL injection.
- reCAPTCHA to prevent automated login attempts.
- Secure password hashing (assumed when creating user accounts).
- Session management with timeout.
- Automatic logout after 30 seconds of inactivity.

Remember to always use HTTPS in production to encrypt data in transit.

```
// config.php
```

```
<?php
```

```
define('DB_HOST', 'localhost');
define('DB_USER', 'your_db_user');
define('DB_PASS', 'your_db_password');
define('DB_NAME', 'your_db_name');

define('RECAPTCHA_SITE_KEY', 'your_recaptcha_site_key');
define('RECAPTCHA_SECRET_KEY', 'your_recaptcha_secret_key');
```

```
// Set session timeout to 30 seconds
define('SESSION_TIMEOUT', 30);
?>
```

```
// db.php
<?php
require_once 'config.php';

function db_connect() {
    $conn = new mysqli(DB_HOST, DB_USER, DB_PASS, DB_NAME);
    if ($conn->connect_error) {
        die("Connection failed: " . $conn->connect_error);
    }
    return $conn;
}
?>
```

```
// functions.php
```

```
<?php
require_once 'config.php';
require_once 'db.php';

function sanitize_input($data) {
    $data = trim($data);
    $data = stripslashes($data);
    $data = htmlspecialchars($data);
    return $data;
}

function verify_recaptcha($recaptcha_response) {
    $url = 'https://www.google.com/recaptcha/api/siteverify';
    $data = array(
        'secret' => RECAPTCHA_SECRET_KEY,
        'response' => $recaptcha_response
    );
```

```

$options = array(
    'http' => array(
        'header' => "Content-type: application/x-www-form-urlencoded\r\n",
        'method' => 'POST',
        'content' => http_build_query($data)
    )
);
$context = stream_context_create($options);
$result = file_get_contents($url, false, $context);
$json = json_decode($result);
return $json->success;
}

function login($username, $password) {
    $conn = db_connect();
    $username = $conn->real_escape_string($username);
    $stmt = $conn->prepare("SELECT id, password FROM users WHERE username = ?");
    $stmt->bind_param("s", $username);
    $stmt->execute();
    $result = $stmt->get_result();
    if ($result->num_rows === 1) {
        $user = $result->fetch_assoc();
        if (password_verify($password, $user['password'])) {
            $_SESSION['user_id'] = $user['id'];
            $_SESSION['last_activity'] = time();
            return true;
        }
    }
    return false;
}

function is_logged_in() {
    return isset($_SESSION['user_id']);
}

function check_session_timeout() {
    if (isset($_SESSION['last_activity']) && (time() - $_SESSION['last_activity'] >
SESSION_TIMEOUT)) {
        session_unset();
        session_destroy();
        return false;
    }
    $_SESSION['last_activity'] = time();
    return true;
}

```

```
}  
?>
```

```
// login.php
```

```
<?php  
session_start();  
require_once 'config.php';  
require_once 'functions.php';
```

```
if (is_logged_in()) {  
    header("Location: dashboard.php");  
    exit();  
}
```

```
$error = "";
```

```
if ($_SERVER["REQUEST_METHOD"] == "POST") {  
    $username = sanitize_input($_POST["username"]);  
    $password = $_POST["password"];  
    $recaptcha_response = $_POST["g-recaptcha-response"];
```

```
    if (verify_recaptcha($recaptcha_response)) {  
        if (login($username, $password)) {  
            header("Location: dashboard.php");  
            exit();  
        } else {  
            $error = "Invalid username or password";  
        }  
    } else {  
        $error = "reCAPTCHA verification failed";  
    }  
}
```

```
}  
?>
```

```
<!DOCTYPE html>
```

```
<html lang="en">
```

```
<head>
```

```
    <meta charset="UTF-8">
```

```
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
```

```
    <title>Login</title>
```

```
    <script src="https://www.google.com/recaptcha/api.js" async defer></script>
```

```
</head>
```

```
<body>
```

```

<h2>Login</h2>
<?php if ($error) { echo "<p style='color: red;'>$error</p>"; } ?>
<form method="post" action="<?php echo htmlspecialchars($_SERVER["PHP_SELF"]); ?>">
    <label for="username">Username:</label>
    <input type="text" id="username" name="username" required><br><br>
    <label for="password">Password:</label>
    <input type="password" id="password" name="password" required><br><br>
    <div class="g-recaptcha" data-sitekey="<?php echo RECAPTCHA_SITE_KEY;
?>"></div><br>
    <input type="submit" value="Login">
</form>
</body>
</html>

```

```
// dashboard.php
```

```

<?php
session_start();
require_once 'functions.php';

if (!is_logged_in() || !check_session_timeout()) {
    header("Location: login.php");
    exit();
}
?>

```

```

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Dashboard</title>
    <script>
        let timeout;
        function resetTimer() {
            clearTimeout(timeout);
            timeout = setTimeout(function() {
                window.location.href = 'logout.php';
            }, <?php echo SESSION_TIMEOUT * 1000; ?>);
        }
        document.addEventListener('mousemove', resetTimer);
        document.addEventListener('keypress', resetTimer);
        resetTimer();
    </script>
</head>

```

```
<body>
  <h2>Welcome to the Dashboard</h2>
  <p>You are logged in.</p>
  <a href="logout.php">Logout</a>
</body>
</html>
```

```
// logout.php
<?php
session_start();
session_unset();
session_destroy();
header("Location: login.php");
exit();
?>
```