

Modify your users table in the testdb database to include the new fields:

```
ALTER TABLE users
ADD COLUMN login_attempts INT DEFAULT 0,
ADD COLUMN is_blocked TINYINT(1) DEFAULT 0,
ADD COLUMN last_attempt DATETIME;
```

Replace the contents of your existing db_connect.php and login.php files with the code provided in the artifact above.

Access the login page by navigating to <http://localhost/login.php> in your web browser.

This updated login system now includes:

- User blocking after 3 failed login attempts
- A 5-minute block duration
- Tracking of login attempts and last attempt time
- Resetting of login attempts upon successful login

Here's a breakdown of the user blocking functionality:

We check if the user is currently blocked before processing the login attempt.

If the login fails, we increment the login_attempts counter.

If login_attempts reaches or exceeds \$max_attempts (3 in this case), we set is_blocked to 1 and update last_attempt to the current time.

When a blocked user tries to log in, we check if the block duration (\$block_time, set to 5 minutes) has passed since their last attempt.

Upon successful login, we reset login_attempts to 0 and is_blocked to 0.

This implementation provides basic protection against brute-force attacks by temporarily blocking accounts after multiple failed login attempts. However, for a production environment, you might want to consider additional security measures such as:

- IP-based blocking
- CAPTCHA after a certain number of failed attempts
- Gradually increasing block durations for repeat offenders
- Notifying the user via email when their account is blocked

```
// db_connect.php
<?php
$host = 'localhost';
$db = 'testdb';
$user = 'root';
$pass = '';
```

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$charset = 'utf8mb4';

$dsn = "mysql:host=$host;dbname=$db;charset=$charset";
$options = [
    PDO::ATTR_ERRMODE          => PDO::ERRMODE_EXCEPTION,
    PDO::ATTR_DEFAULT_FETCH_MODE => PDO::FETCH_ASSOC,
    PDO::ATTR_EMULATE_PREPARES => false,
];

try {
    $pdo = new PDO($dsn, $user, $pass, $options);
} catch (\PDOException $e) {
    throw new \PDOException($e->getMessage(), (int)$e->getCode());
}

// login.php
<?php
session_start();
require 'db_connect.php';

$message = "";
$max_attempts = 3;
$block_time = 300; // 5 minutes in seconds

if ($_SERVER['REQUEST_METHOD'] == 'POST') {
    $username = $_POST['username'];
    $password = $_POST['password'];

    $stmt = $pdo->prepare('SELECT * FROM users WHERE username = ?');
    $stmt->execute([$username]);
    $user = $stmt->fetch();

    if ($user) {
        // Check if user is blocked
        if ($user['is_blocked'] && time() - strtotime($user['last_attempt']) < $block_time) {
            $message = 'Account is temporarily blocked. Please try again later.';
        } else {
            if (password_verify($password, $user['password'])) {
                // Successful login
                $_SESSION['user_id'] = $user['id'];
                // Reset login attempts
                $stmt = $pdo->prepare('UPDATE users SET login_attempts = 0, is_blocked = 0
WHERE id = ?');
                $stmt->execute([$user['id']]);
            }
        }
    }
}

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        $message = 'Logged in successfully!';
    } else {
        // Failed login attempt
        $attempts = $user['login_attempts'] + 1;
        if ($attempts >= $max_attempts) {
            // Block the user
            $stmt = $pdo->prepare('UPDATE users SET login_attempts = ?, is_blocked = 1,
last_attempt = NOW() WHERE id = ?');
            $stmt->execute([$attempts, $user['id']]);
            $message = 'Too many failed attempts. Account temporarily blocked.';
        } else {
            // Update login attempts
            $stmt = $pdo->prepare('UPDATE users SET login_attempts = ?, last_attempt =
NOW() WHERE id = ?');
            $stmt->execute([$attempts, $user['id']]);
            $message = 'Invalid username or password. Attempts left: ' . ($max_attempts -
$attempts);
        }
    }
}
}
} else {
    $message = 'Invalid username or password';
}
}
?>

```

```

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Login</title>
</head>
<body>
    <h2>Login</h2>
    <?php if ($message): ?>
        <p><?php echo $message; ?></p>
    <?php endif; ?>
    <form method="post">
        <div>
            <label for="username">Username:</label>
            <input type="text" id="username" name="username" required>
        </div>
        <div>

```

```
    <label for="password">Password:</label>
    <input type="password" id="password" name="password" required>
  </div>
  <div>
    <input type="submit" value="Login">
  </div>
</form>
</body>
</html>
```