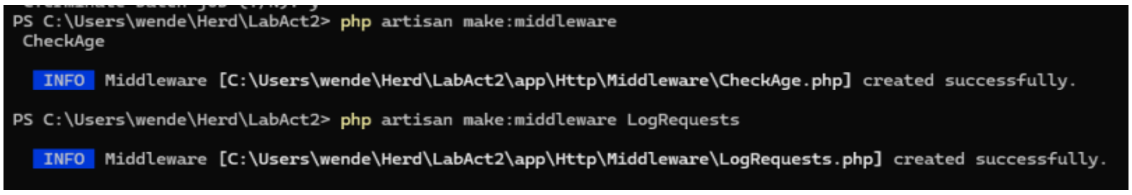
Middlewares

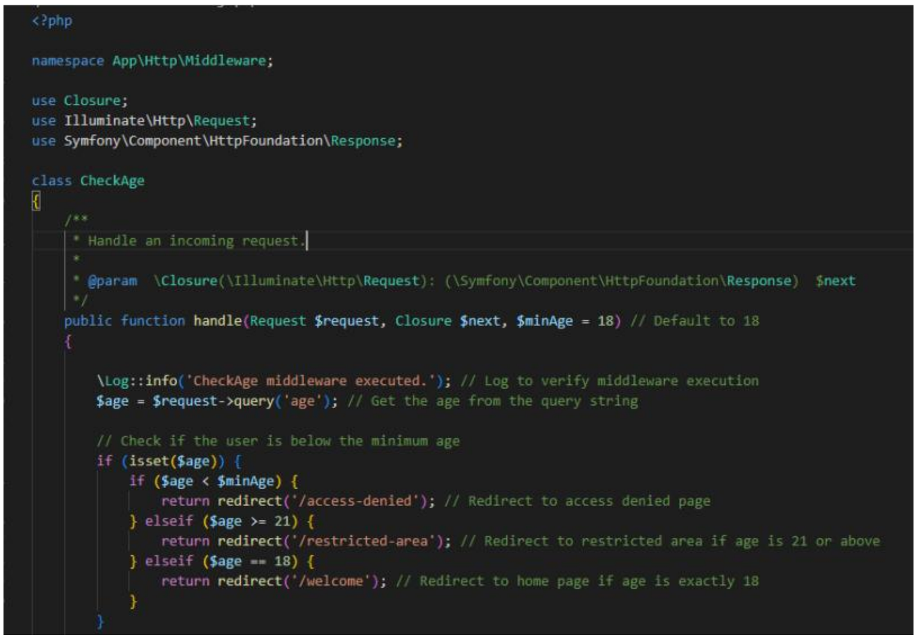
- In our Laravel project, we created two middleware using the command prompt:
  CheckAge: Ensures users meet age criteria and redirects them if not.
  LogRequests: Logs details of incoming HTTP requests, including the method and full URL.



```
PS C:\Users\wende\Herd\LabAct2> php artisan make:middleware
 CheckAge

  INFO  Middleware [C:\Users\wende\Herd\LabAct2\app\Http\Middleware\CheckAge.php] created successfully.

PS C:\Users\wende\Herd\LabAct2> php artisan make:middleware LogRequests

  INFO  Middleware [C:\Users\wende\Herd\LabAct2\app\Http\Middleware\LogRequests.php] created successfully.
```

CheckAge.php

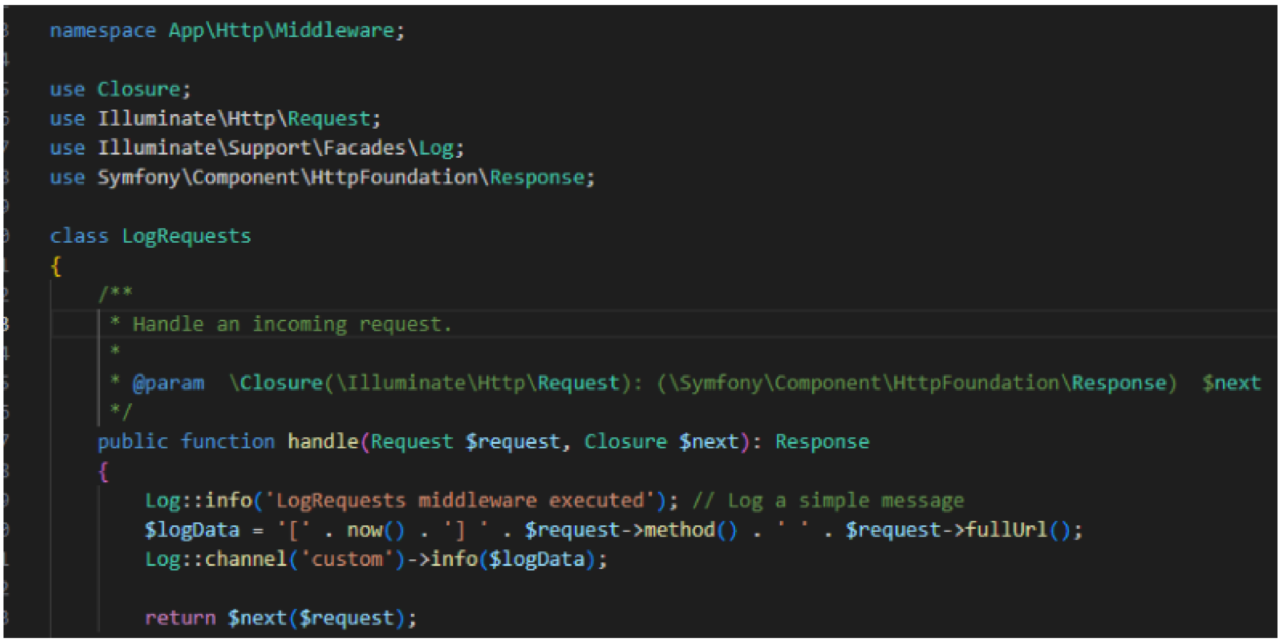
- This middleware evaluates the user's age from the query string (defaulting to a minimum of 18). It logs the execution and redirects users based on age: "Access Denied" if under 18, "Restricted Area" if 21 or older, and a welcome page if exactly 18. If none of these conditions are met, the request continues as usual.



```php
<?php

namespace App\Http\Middleware;

use Closure;
use Illuminate\Http\Request;
use Symfony\Component\HttpFoundation\Response;

class CheckAge
{
    /**
     * Handle an incoming request.
     *
     * @param  \Closure(\Illuminate\Http\Request): (\Symfony\Component\HttpFoundation\Response)  $next
     */
    public function handle(Request $request, Closure $next, $minAge = 18) // Default to 18
    {

        \Log::info('CheckAge middleware executed.'); // Log to verify middleware execution
        $age = $request->query('age'); // Get the age from the query string

        // Check if the user is below the minimum age
        if (isset($age)) {
            if ($age < $minAge) {
                return redirect('/access-denied'); // Redirect to access denied page
            } elseif ($age >= 21) {
                return redirect('/restricted-area'); // Redirect to restricted area if age is 21 or above
            } elseif ($age == 18) {
                return redirect('/welcome'); // Redirect to home page if age is exactly 18
            }
        }
```

LogRequests.php

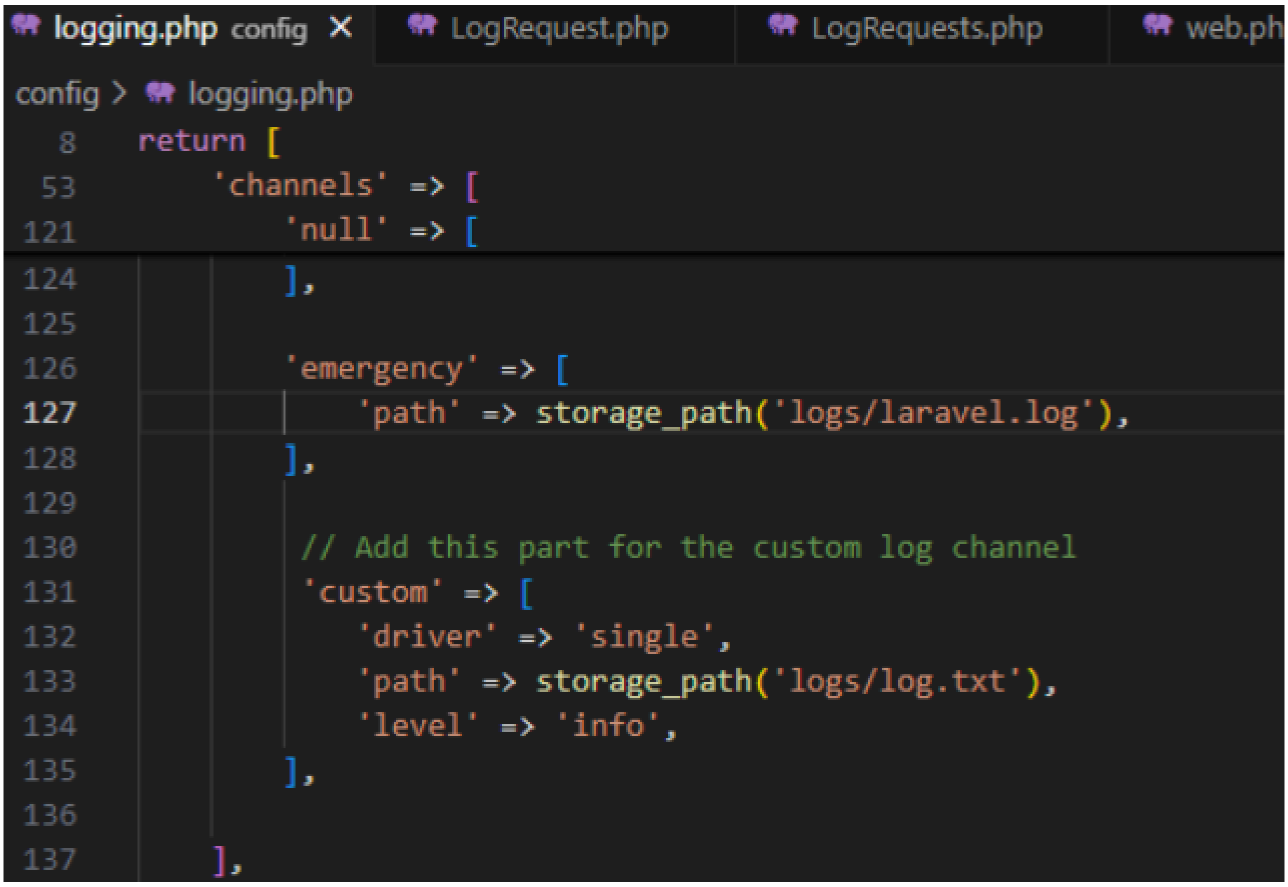
- This middleware captures HTTP request details, including method, full URL, and timestamp, using a custom logging channel. After logging, the request proceeds to the next step.content to be modified while maintaining a consistent layout structure.



```php
namespace App\Http\Middleware;

use Closure;
use Illuminate\Http\Request;
use Illuminate\Support\Facades\Log;
use Symfony\Component\HttpFoundation\Response;

class LogRequests
{
    /**
     * Handle an incoming request.
     *
     * @param  \Closure(\Illuminate\Http\Request): (\Symfony\Component\HttpFoundation\Response)  $next
     */
    public function handle(Request $request, Closure $next): Response
    {
        Log::info('LogRequests middleware executed'); // Log a simple message
        $logData = '[' . now() . '] ' . $request->method() . ' ' . $request->fullUrl();
        Log::channel('custom')->info($logData);

        return $next($request);
```

config/logging.php

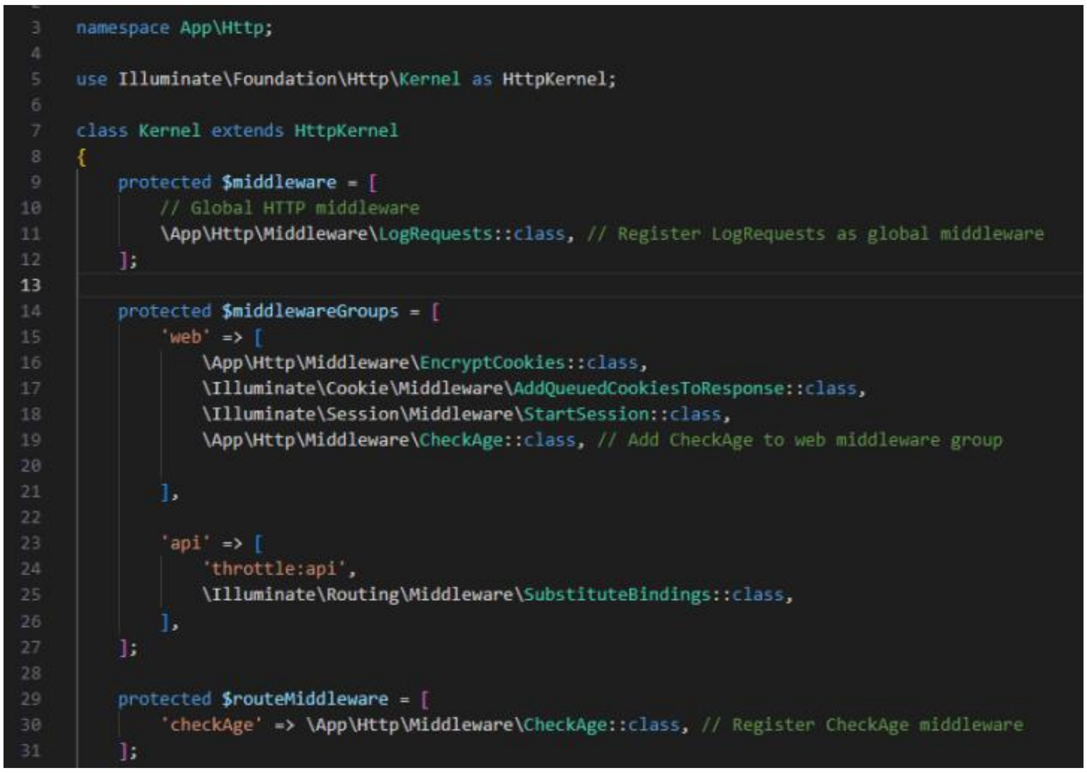
- To make the LogRequests middleware output logs to log.txt, a custom log channel was added to logging.php, configured with a 'single' driver. This channel directs all log entries from the middleware to log.txt in the storage/logs directory.



```php
return [
    'channels' => [
        'null' => [
        ],

        'emergency' => [
            'path' => storage_path('logs/laravel.log'),
        ],

        // Add this part for the custom log channel
        'custom' => [
            'driver' => 'single',
            'path' => storage_path('logs/log.txt'),
            'level' => 'info',
        ],

    ],
```

REGISTRATION IN Kernel.php:

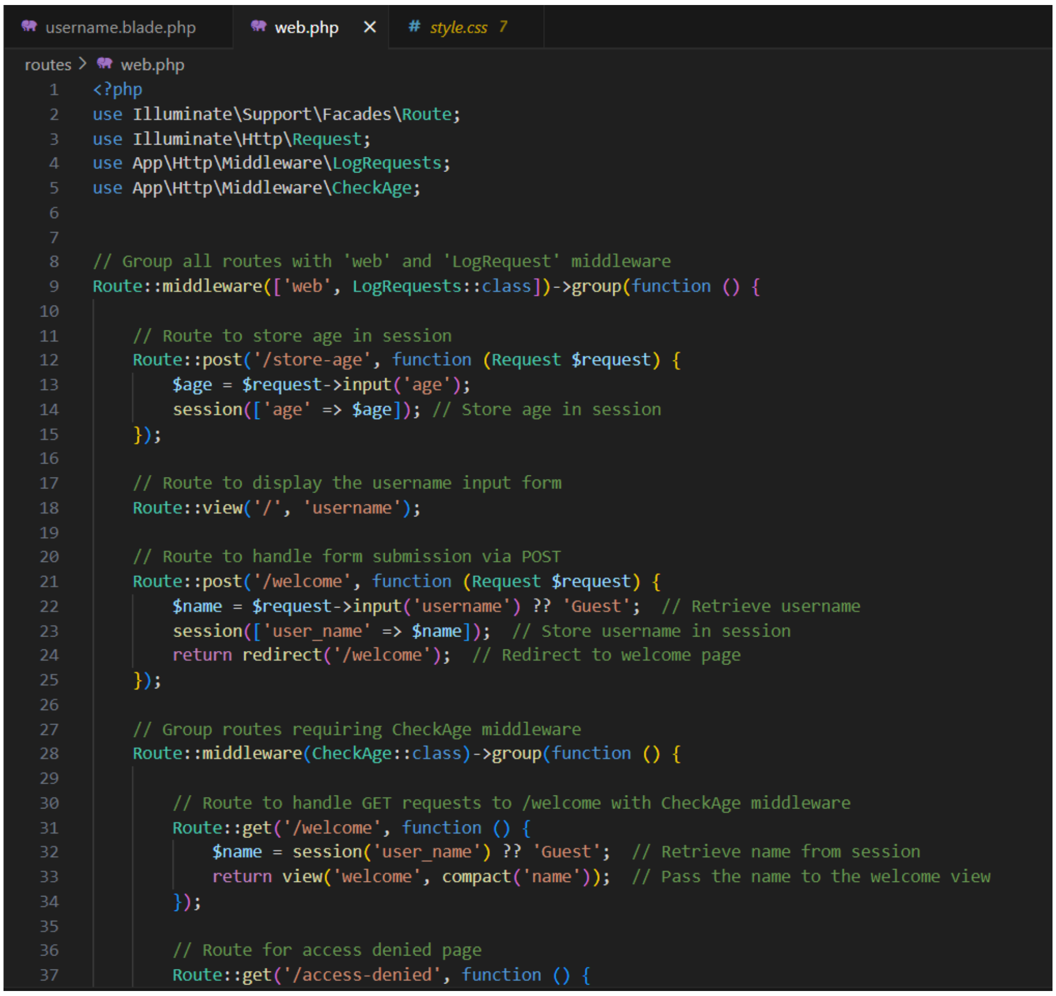
- Due to the missing Kernel.php in App/Http, we created a new file there to manage middleware functionality. We registered CheckAge.php as route-specific for age-verification routes, and LogRequests.php as global middleware to log all incoming HTTP requests across the application.



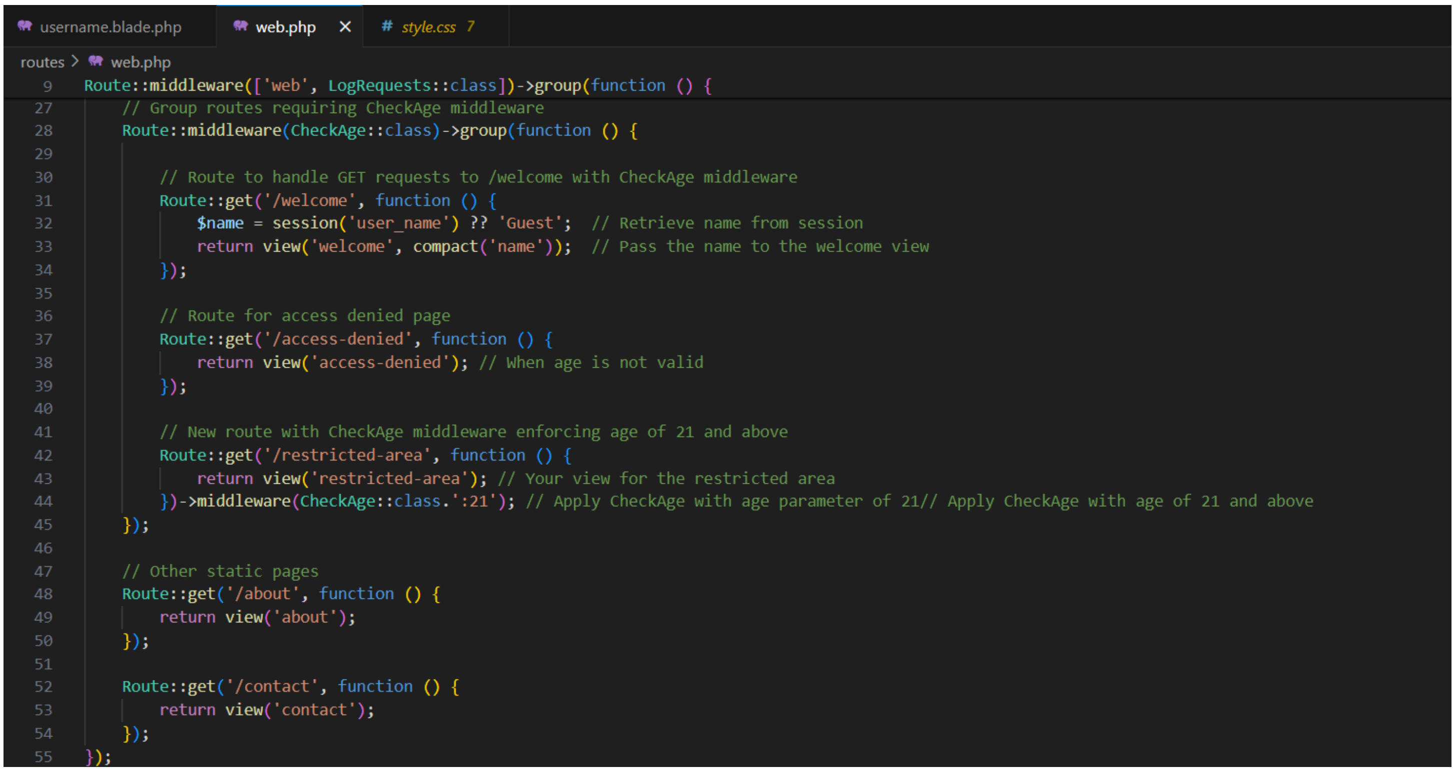
```php
namespace App\Http;

use Illuminate\Foundation\Http\Kernel as HttpKernel;

class Kernel extends HttpKernel
{
    protected $middleware = [
        // Global HTTP middleware
        \App\Http\Middleware\LogRequests::class, // Register LogRequests as global middleware
    ];

    protected $middlewareGroups = [
        'web' => [
            \App\Http\Middleware\EncryptCookies::class,
            \Illuminate\Cookie\Middleware\AddQueuedCookiesToResponse::class,
            \Illuminate\Session\Middleware\StartSession::class,
            \App\Http\Middleware\CheckAge::class, // Add CheckAge to web middleware group

        ],

        'api' => [
            'throttle:api',
            \Illuminate\Routing\Middleware\SubstituteBindings::class,
        ],
    ];

    protected $routeMiddleware = [
        'checkAge' => \App\Http\Middleware\CheckAge::class, // Register CheckAge middleware
    ];
```

ROUTING CONFIGURATION:

- The routes/web.php file uses two middleware—LogRequests and CheckAge. LogRequests middleware logs details of all incoming requests for monitoring. CheckAge middleware enforces age restrictions on specific routes, allowing access to the welcome page for those meeting the age requirement and redirecting underage users to an "Access Denied" page. Users 21 or older can access a separate "Restricted Area." This setup ensures proper user access based on age and maintains a log of all requests



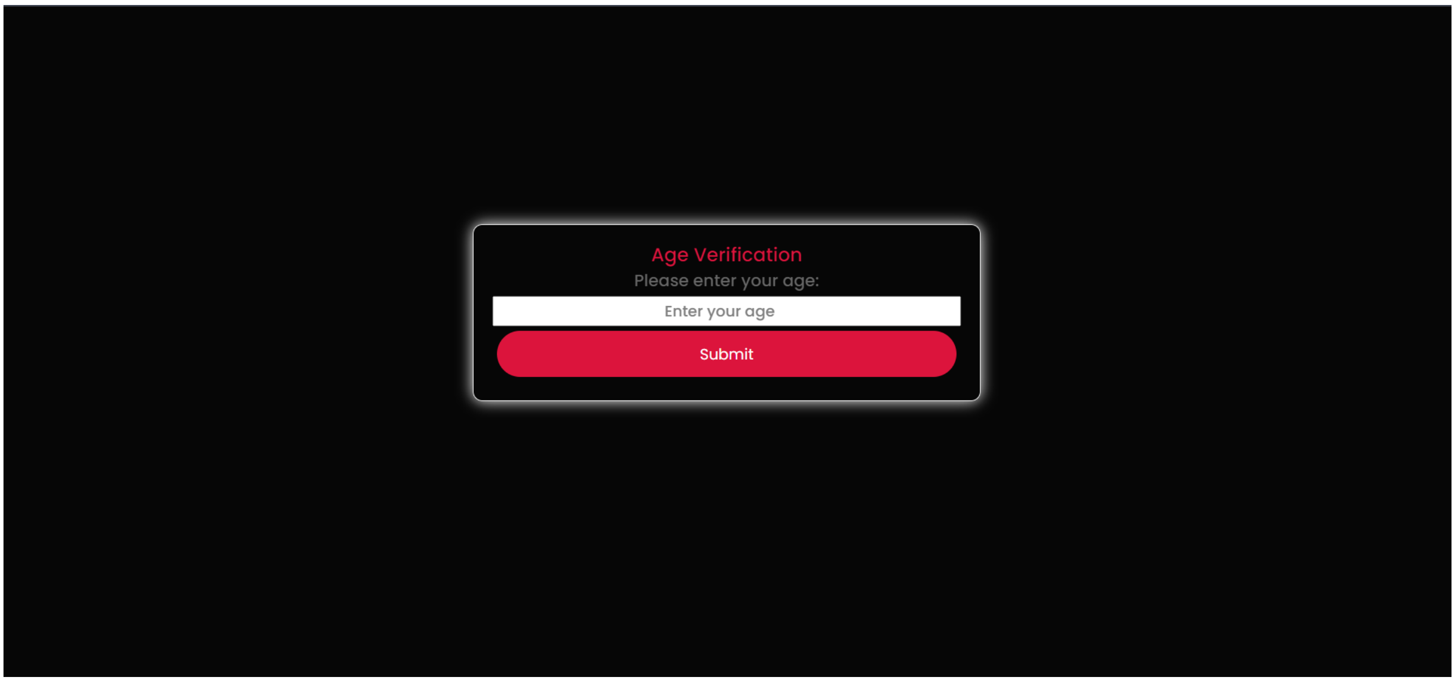
```php
<?php
use Illuminate\Support\Facades\Route;
use Illuminate\Http\Request;
use App\Http\Middleware\LogRequests;
use App\Http\Middleware\CheckAge;


// Group all routes with 'web' and 'LogRequest' middleware
Route::middleware(['web', LogRequests::class])->group(function () {

    // Route to store age in session
    Route::post('/store-age', function (Request $request) {
        $age = $request->input('age');
        session(['age' => $age]); // Store age in session
    });

    // Route to display the username input form
    Route::view('/', 'username');

    // Route to handle form submission via POST
    Route::post('/welcome', function (Request $request) {
        $name = $request->input('username') ?? 'Guest';  // Retrieve username
        session(['user_name' => $name]);  // Store username in session
        return redirect('/welcome');  // Redirect to welcome page
    });

    // Group routes requiring CheckAge middleware
    Route::middleware(CheckAge::class)->group(function () {

        // Route to handle GET requests to /welcome with CheckAge middleware
        Route::get('/welcome', function () {
            $name = session('user_name') ?? 'Guest';  // Retrieve name from session
            return view('welcome', compact('name'));  // Pass the name to the welcome view
        });

        // Route for access denied page
        Route::get('/access-denied', function () {
```



```php
Route::middleware(['web', LogRequests::class])->group(function () {
    // Group routes requiring CheckAge middleware
    Route::middleware(CheckAge::class)->group(function () {

        // Route to handle GET requests to /welcome with CheckAge middleware
        Route::get('/welcome', function () {
            $name = session('user_name') ?? 'Guest';  // Retrieve name from session
            return view('welcome', compact('name'));  // Pass the name to the welcome view
        });

        // Route for access denied page
        Route::get('/access-denied', function () {
            return view('access-denied'); // When age is not valid
        });

        // New route with CheckAge middleware enforcing age of 21 and above
        Route::get('/restricted-area', function () {
            return view('restricted-area'); // Your view for the restricted area
        })->middleware(CheckAge::class.':21'); // Apply CheckAge with age parameter of 21// Apply CheckAge with age of 21 and above
    });

    // Other static pages
    Route::get('/about', function () {
        return view('about');
    });

    Route::get('/contact', function () {
        return view('contact');
    });
});
```

CheckAge Middleware

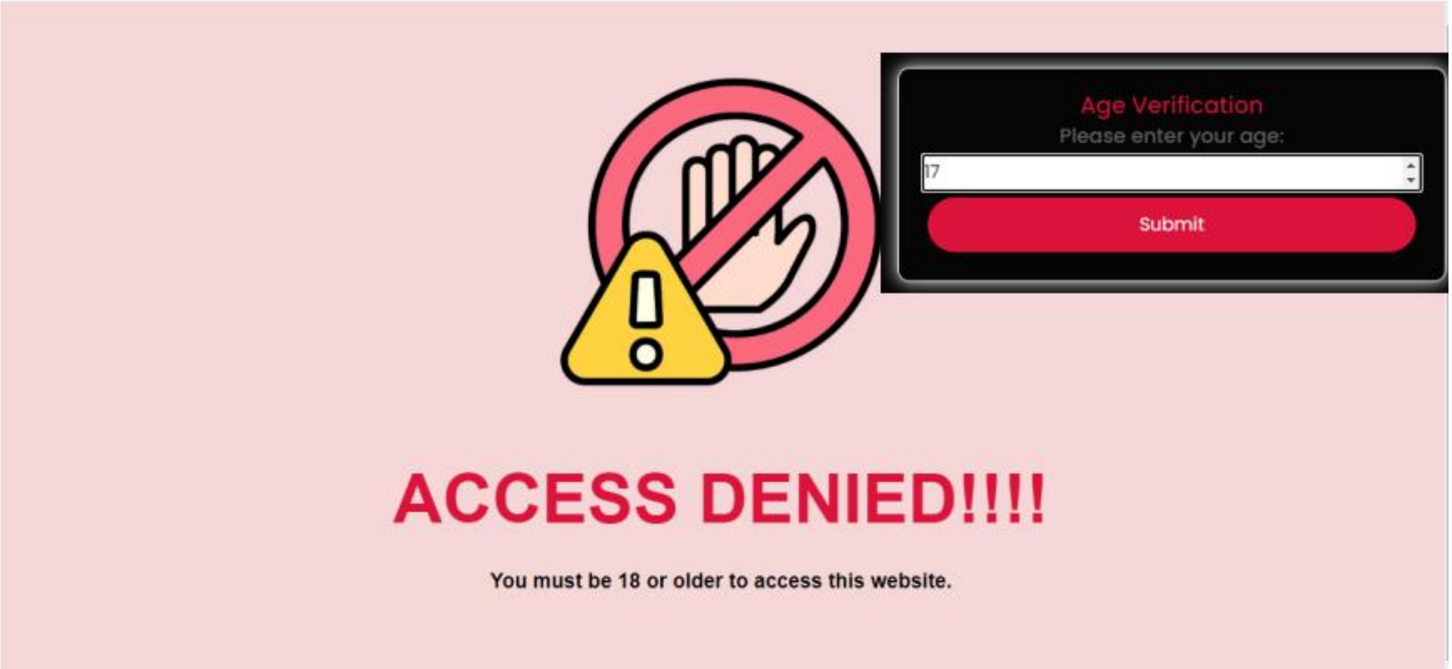
- We implemented a modal that appears just before users access our website to verify their age.



Age Verification

Please enter your age:

- (If 18 below) If a user enters an age below 18, they'll be redirected to this page since they don't meet the age requirement to access our website.



Age Verification

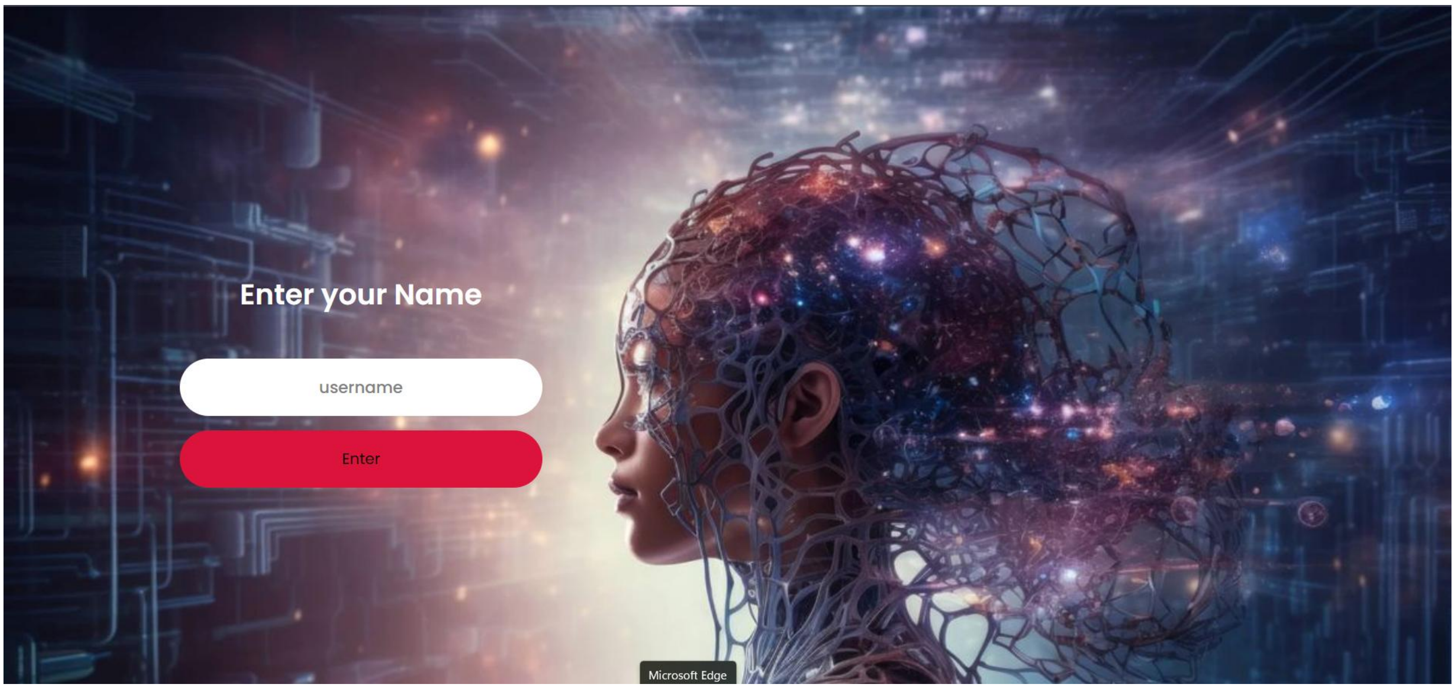
Please enter your age:

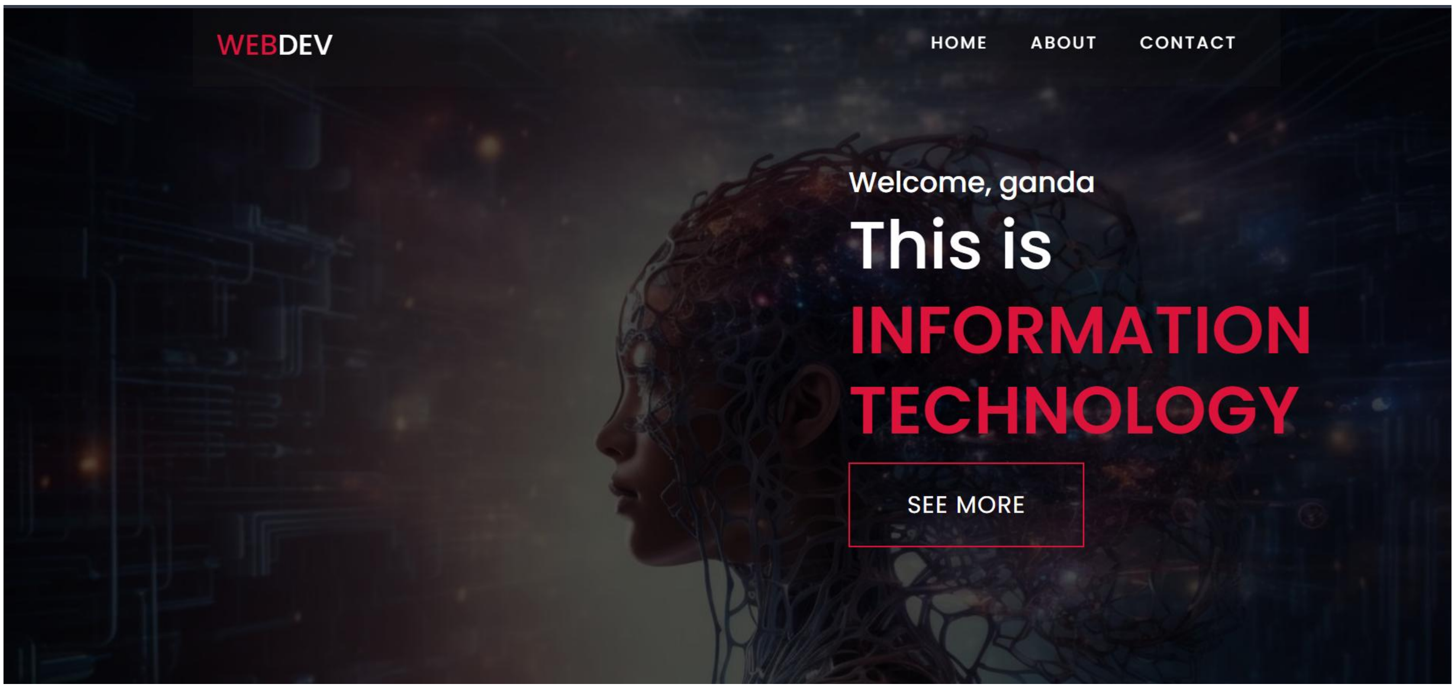
17

ACCESS DENIED!!!!

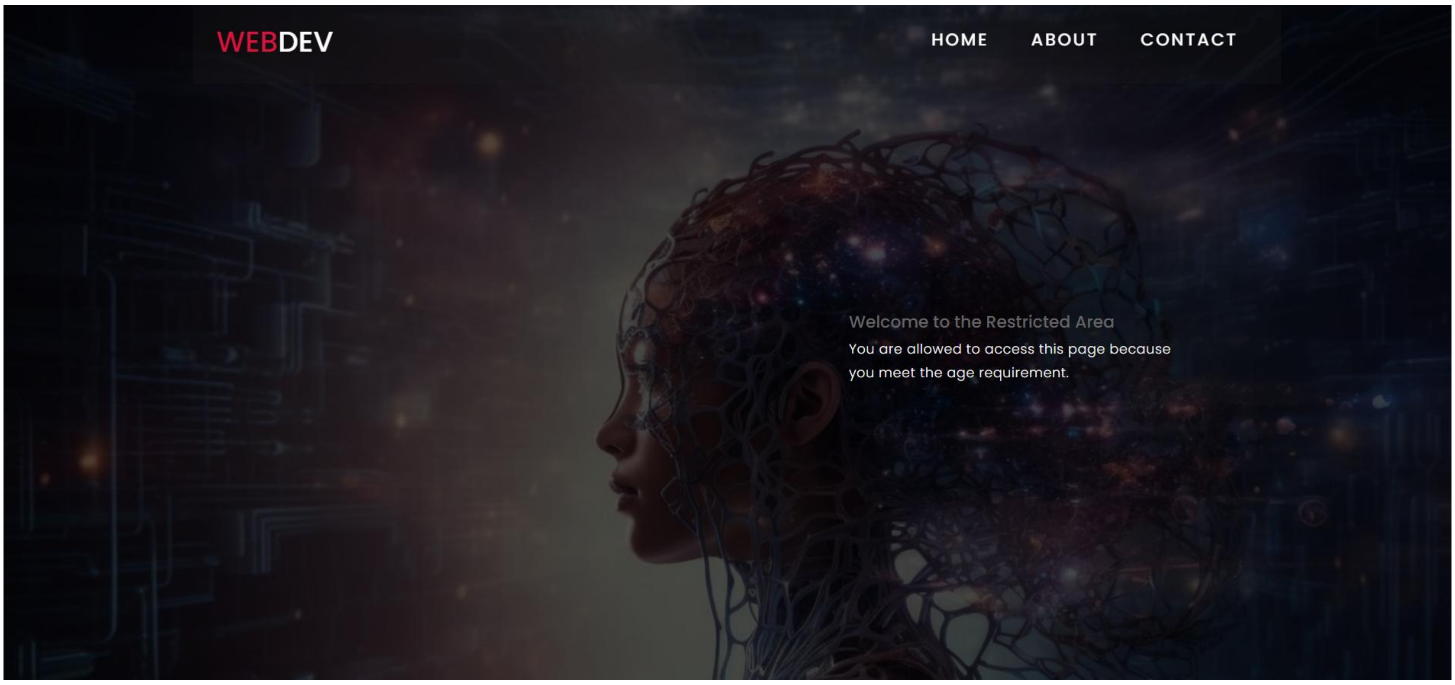
You must be 18 or older to access this website.

- (If 18-20) In our username.blade.php and welcome.blade.php, users who are at least 18 can enter their username and, upon successful login, access this page and others.





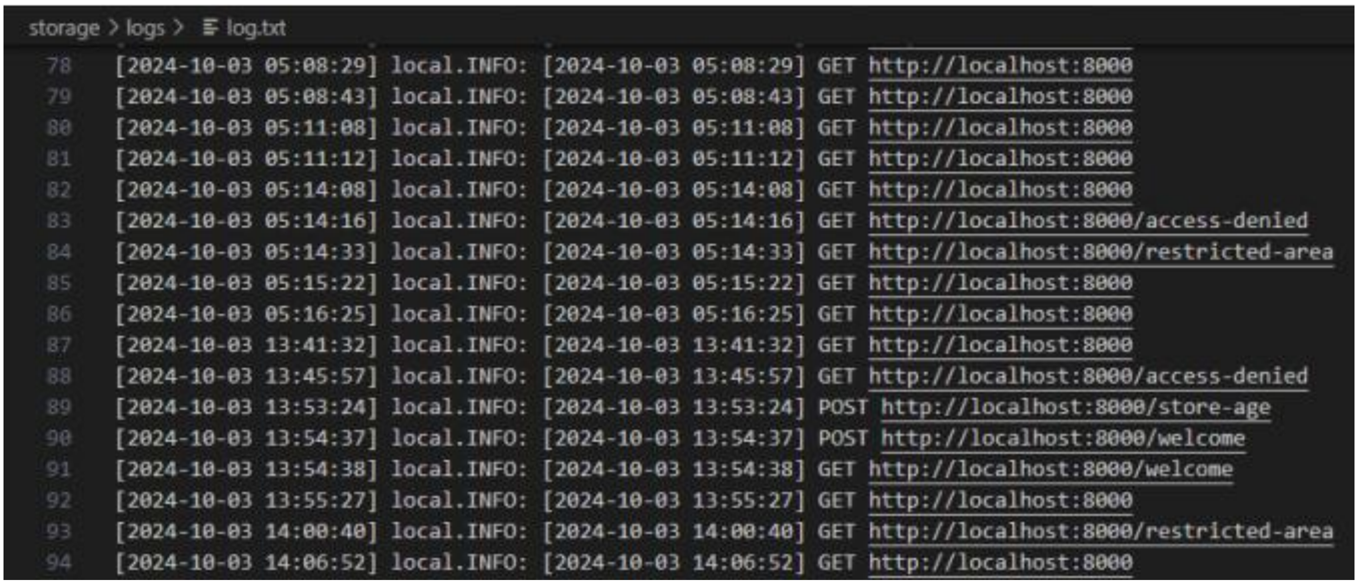
- (If 21-above) Our restricted-area.blade.php is designed for users aged 21 and above. It excludes those aged 18-20. Users 21 and older gain access to this page and additional sections of the site, enjoying more privileges.



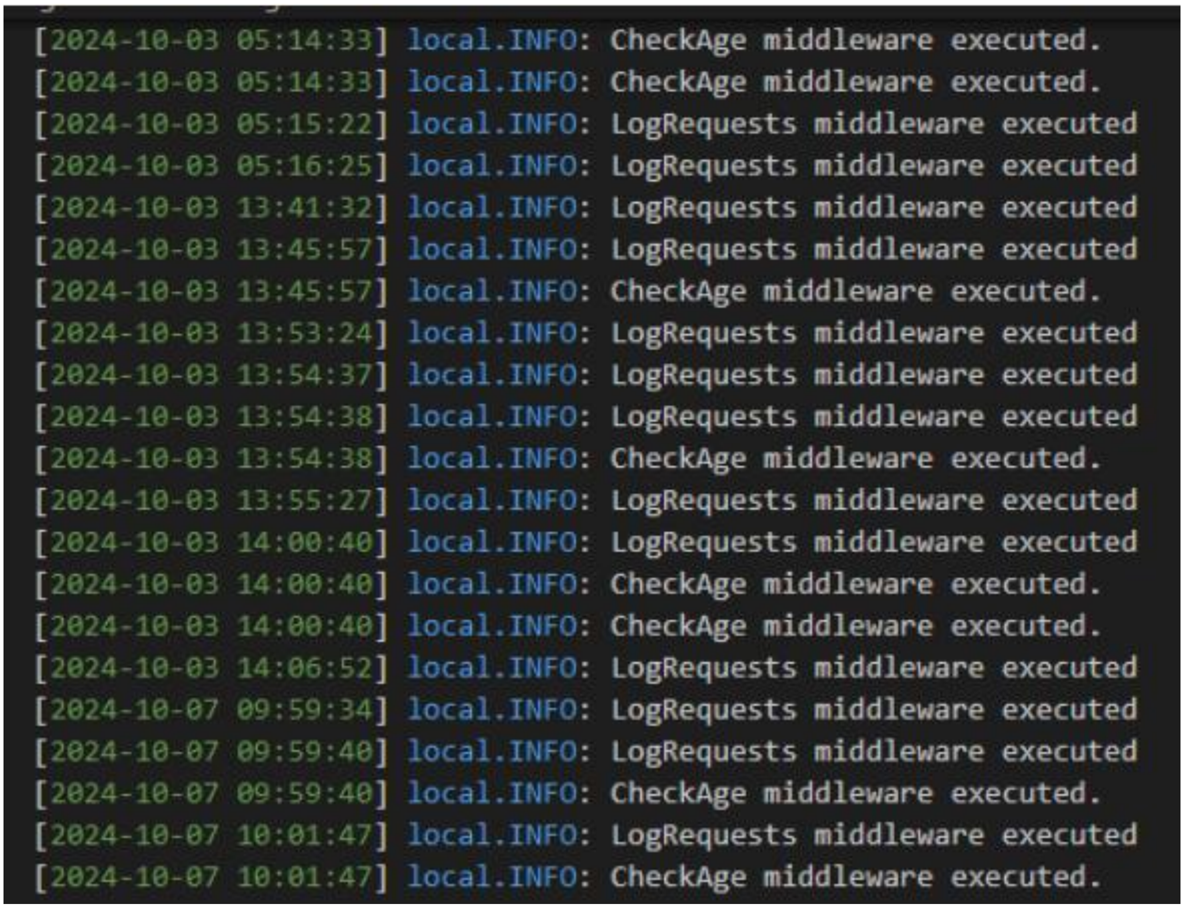
Welcome to the Restricted Area
You are allowed to access this page because you meet the age requirement.

LogRequests Middleware

- Our log.txt file records details such as page URL, timestamp, and HTTP method for each website request. It serves as a comprehensive log of all incoming traffic, tracking user activity, request types, and timings.



```
[2024-10-03 05:08:29] local.INFO: [2024-10-03 05:08:29] GET http://localhost:8000
[2024-10-03 05:08:43] local.INFO: [2024-10-03 05:08:43] GET http://localhost:8000
[2024-10-03 05:11:08] local.INFO: [2024-10-03 05:11:08] GET http://localhost:8000
[2024-10-03 05:11:12] local.INFO: [2024-10-03 05:11:12] GET http://localhost:8000
[2024-10-03 05:14:08] local.INFO: [2024-10-03 05:14:08] GET http://localhost:8000
[2024-10-03 05:14:16] local.INFO: [2024-10-03 05:14:16] GET http://localhost:8000/access-denied
[2024-10-03 05:14:33] local.INFO: [2024-10-03 05:14:33] GET http://localhost:8000/restricted-area
[2024-10-03 05:15:22] local.INFO: [2024-10-03 05:15:22] GET http://localhost:8000
[2024-10-03 05:16:25] local.INFO: [2024-10-03 05:16:25] GET http://localhost:8000
[2024-10-03 13:41:32] local.INFO: [2024-10-03 13:41:32] GET http://localhost:8000
[2024-10-03 13:45:57] local.INFO: [2024-10-03 13:45:57] GET http://localhost:8000/access-denied
[2024-10-03 13:53:24] local.INFO: [2024-10-03 13:53:24] POST http://localhost:8000/store-age
[2024-10-03 13:54:37] local.INFO: [2024-10-03 13:54:37] POST http://localhost:8000/welcome
[2024-10-03 13:54:38] local.INFO: [2024-10-03 13:54:38] GET http://localhost:8000/welcome
[2024-10-03 13:55:27] local.INFO: [2024-10-03 13:55:27] GET http://localhost:8000
[2024-10-03 14:00:40] local.INFO: [2024-10-03 14:00:40] GET http://localhost:8000/restricted-area
[2024-10-03 14:06:52] local.INFO: [2024-10-03 14:06:52] GET http://localhost:8000
```



```
[2024-10-03 05:14:33] local.INFO: CheckAge middleware executed.
[2024-10-03 05:14:33] local.INFO: CheckAge middleware executed.
[2024-10-03 05:15:22] local.INFO: LogRequests middleware executed
[2024-10-03 05:16:25] local.INFO: LogRequests middleware executed
[2024-10-03 13:41:32] local.INFO: LogRequests middleware executed
[2024-10-03 13:45:57] local.INFO: LogRequests middleware executed
[2024-10-03 13:45:57] local.INFO: CheckAge middleware executed.
[2024-10-03 13:53:24] local.INFO: LogRequests middleware executed
[2024-10-03 13:54:37] local.INFO: LogRequests middleware executed
[2024-10-03 13:54:38] local.INFO: LogRequests middleware executed
[2024-10-03 13:54:38] local.INFO: CheckAge middleware executed.
[2024-10-03 13:55:27] local.INFO: LogRequests middleware executed
[2024-10-03 14:00:40] local.INFO: LogRequests middleware executed
[2024-10-03 14:00:40] local.INFO: CheckAge middleware executed.
[2024-10-03 14:00:40] local.INFO: CheckAge middleware executed.
[2024-10-03 14:06:52] local.INFO: LogRequests middleware executed
[2024-10-07 09:59:34] local.INFO: LogRequests middleware executed
[2024-10-07 09:59:40] local.INFO: LogRequests middleware executed
[2024-10-07 09:59:40] local.INFO: CheckAge middleware executed.
[2024-10-07 10:01:47] local.INFO: LogRequests middleware executed
[2024-10-07 10:01:47] local.INFO: CheckAge middleware executed.
```

- The log entries in laravel.log show the CheckAge middleware verifying user ages and the LogRequests middleware capturing request details (time, method). These entries confirm that both middleware are effectively performing their roles in age validation and request logging.