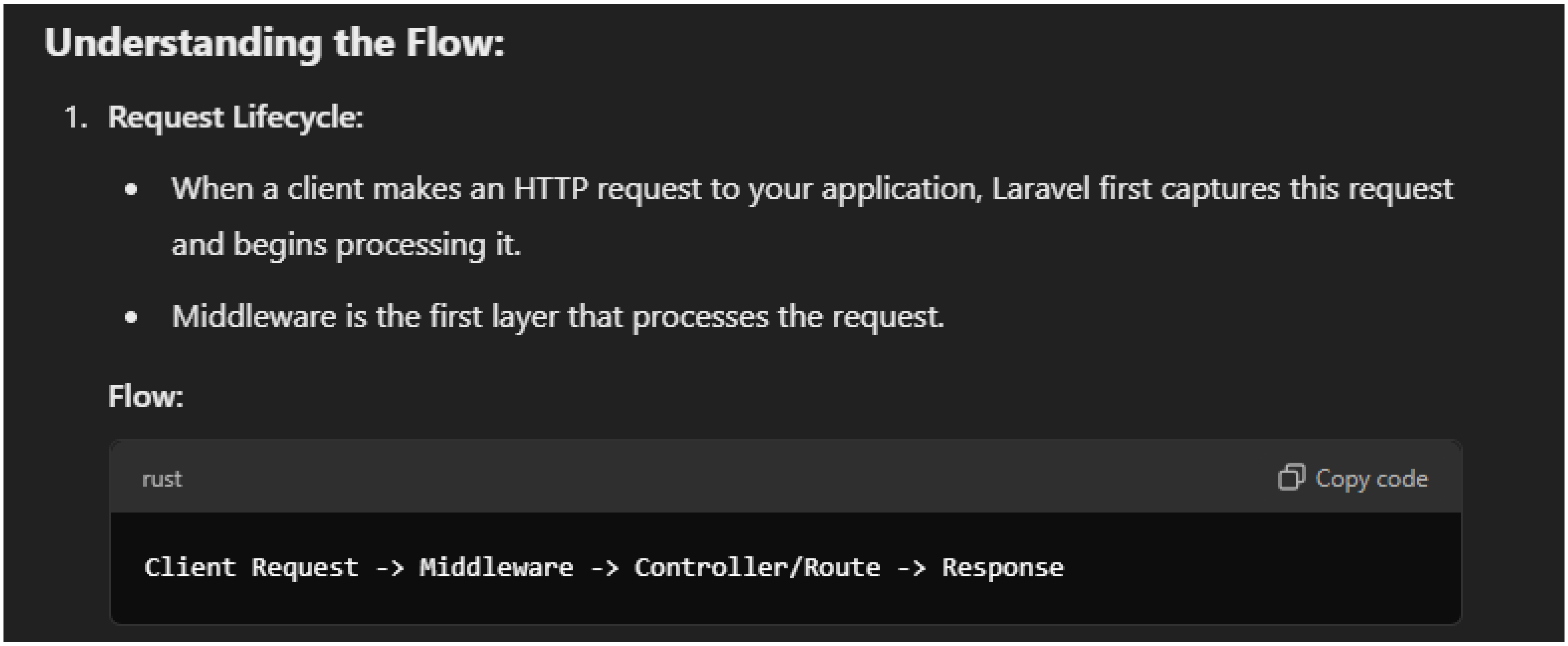
MIDDLEWARE:

১.Request দেয়ার পর যাবে MiddleWare এর কাছে এরপর Controller এরপর Response দিবে Controller



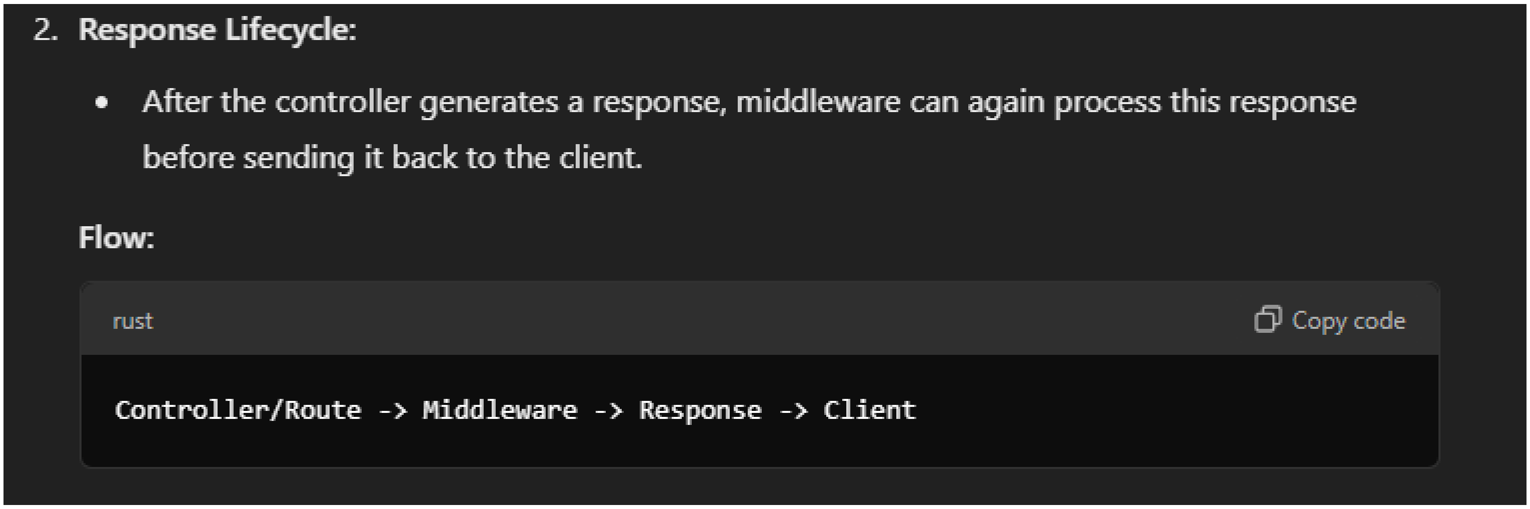
Understanding the Flow:

1. **Request Lifecycle:**
    - When a client makes an HTTP request to your application, Laravel first captures this request and begins processing it.
    - Middleware is the first layer that processes the request.

Flow:

```rust
Client Request -> Middleware -> Controller/Route -> Response
```

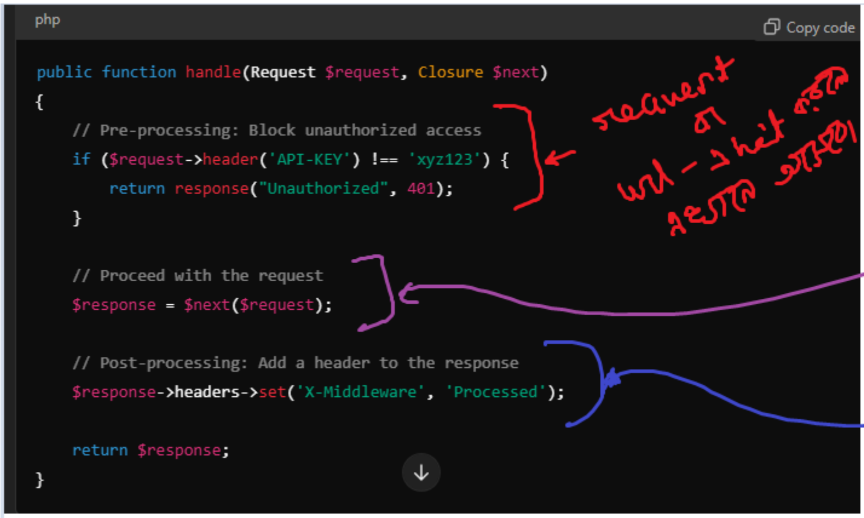
২.Controller Response দেয়ার পর আবার Middleware থেকে পরিবর্তন করা যায়।



2. **Response Lifecycle:**
    - After the controller generates a response, middleware can again process this response before sending it back to the client.

Flow:

```rust
Controller/Route -> Middleware -> Response -> Client
```



```php
public function handle(Request $request, Closure $next)
{
    // Pre-processing: Block unauthorized access
    if ($request->header('API-KEY') !== 'xyz123') {
        return response("Unauthorized", 401);
    }

    // Proceed with the request
    $response = $next($request);

    // Post-processing: Add a header to the response
    $response->headers->set('X-Middleware', 'Processed');

    return $response;
}
```

request টা url-এ hit করলে এখানে আসবে।

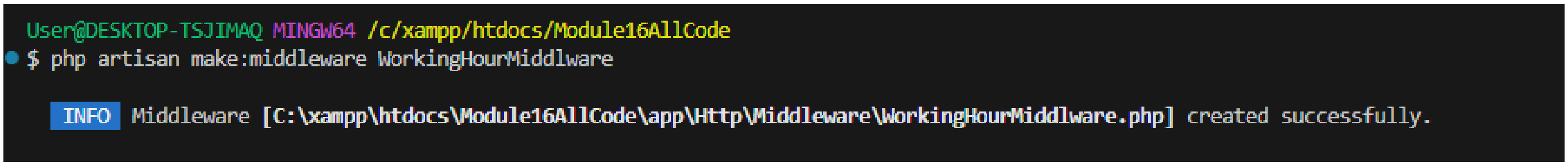
controller-এ যাবে। controller থেকে কাজ শেষে $response আসবে।

এখানে response কে পরিবর্তন করে client এর কাছে পাঠাবে।

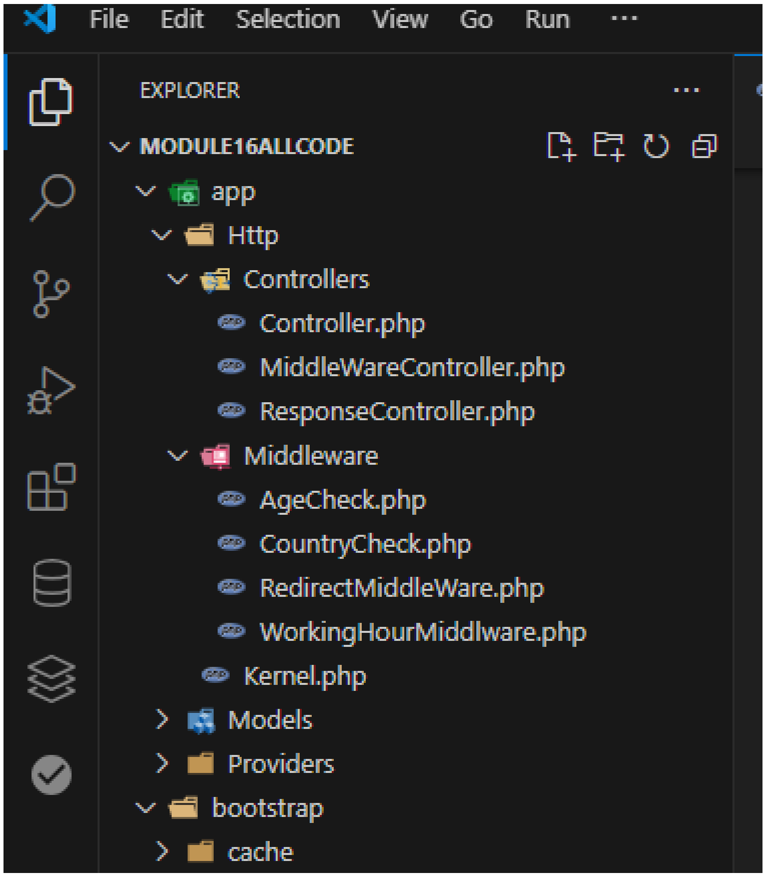
১.GLOBAL MIDDLEWARE

(সব Route এর জন্য automatically এই MiddleWare apply হবে।)

১.১ শুরুতে MiddleWare বানাতে হবে।

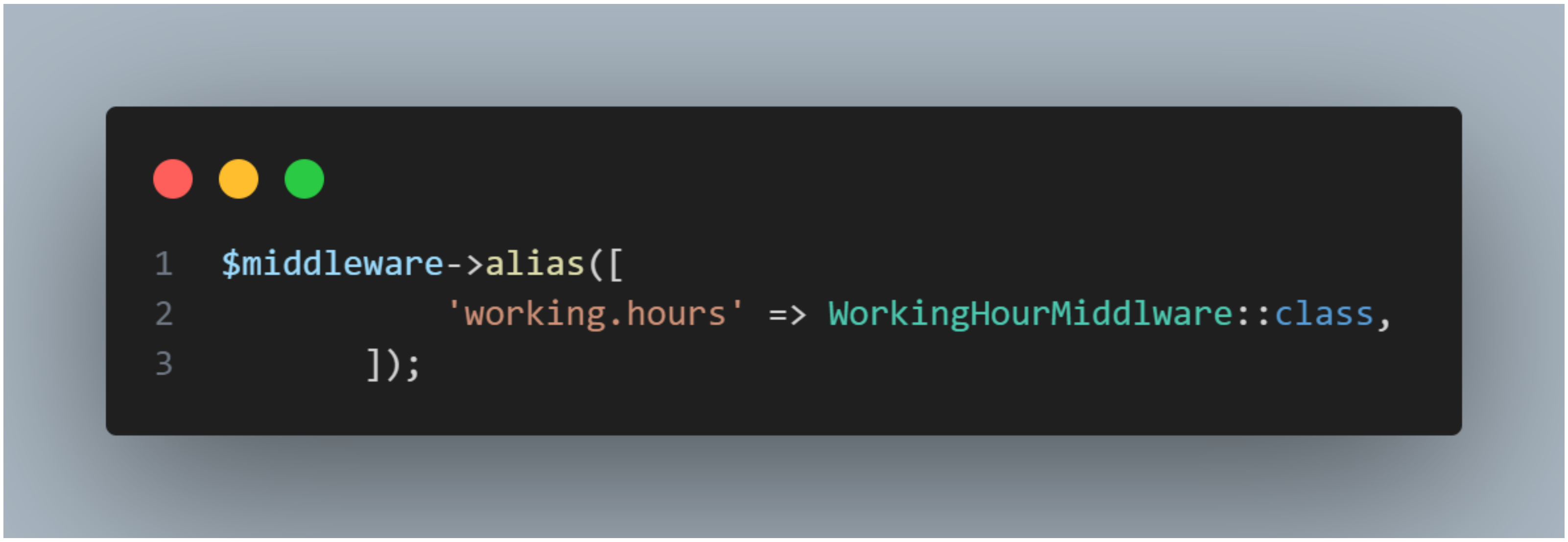


```
User@DESKTOP-TSJIMAQ MINGW64 /c/xampp/htdocs/Module16AllCode
$ php artisan make:middleware WorkingHourMiddlware

   INFO  Middleware [C:\xampp\htdocs\Module16AllCode\app\Http\Middleware\WorkingHourMiddlware.php] created successfully.
```

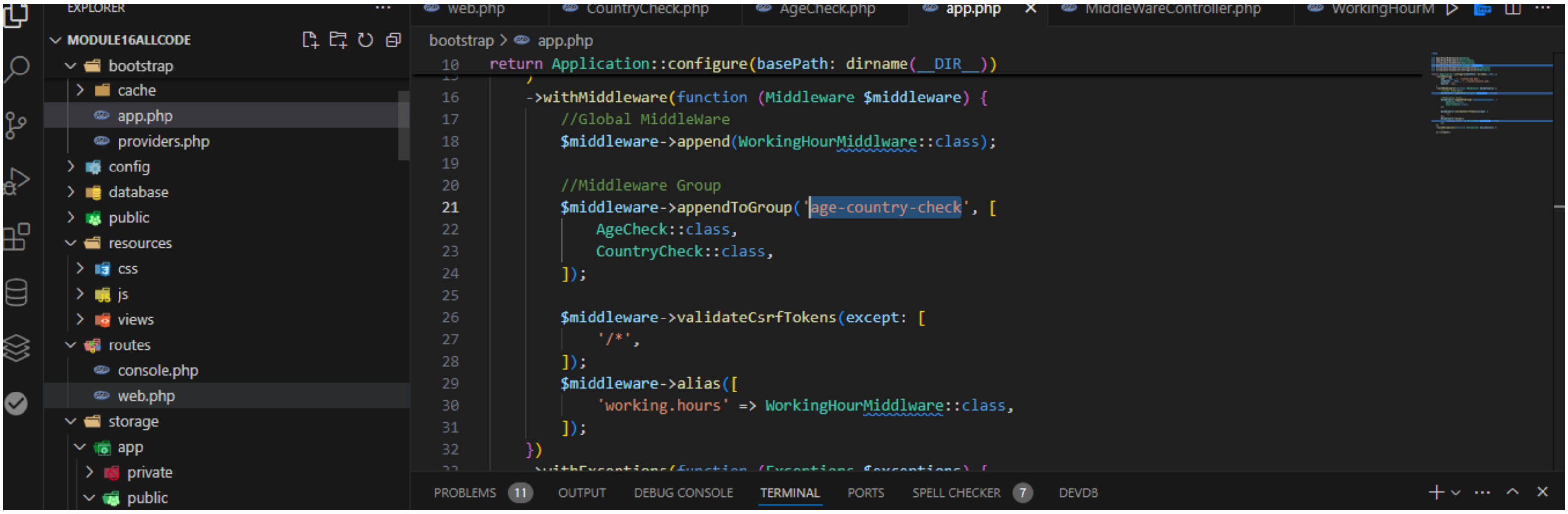


```
MODULE16ALLCODE
  app
    Http
      Controllers
        Controller.php
        MiddleWareController.php
        ResponseController.php
      Middleware
        AgeCheck.php
        CountryCheck.php
        RedirectMiddleWare.php
        WorkingHourMiddlware.php
      Kernel.php
    Models
    Providers
  bootstrap
    cache
```

১.২ এরপর bootstrap->app এর ভিতর registration করে ফেলব যাতে simple কোন নাম দিয়ে access করতে পারি।

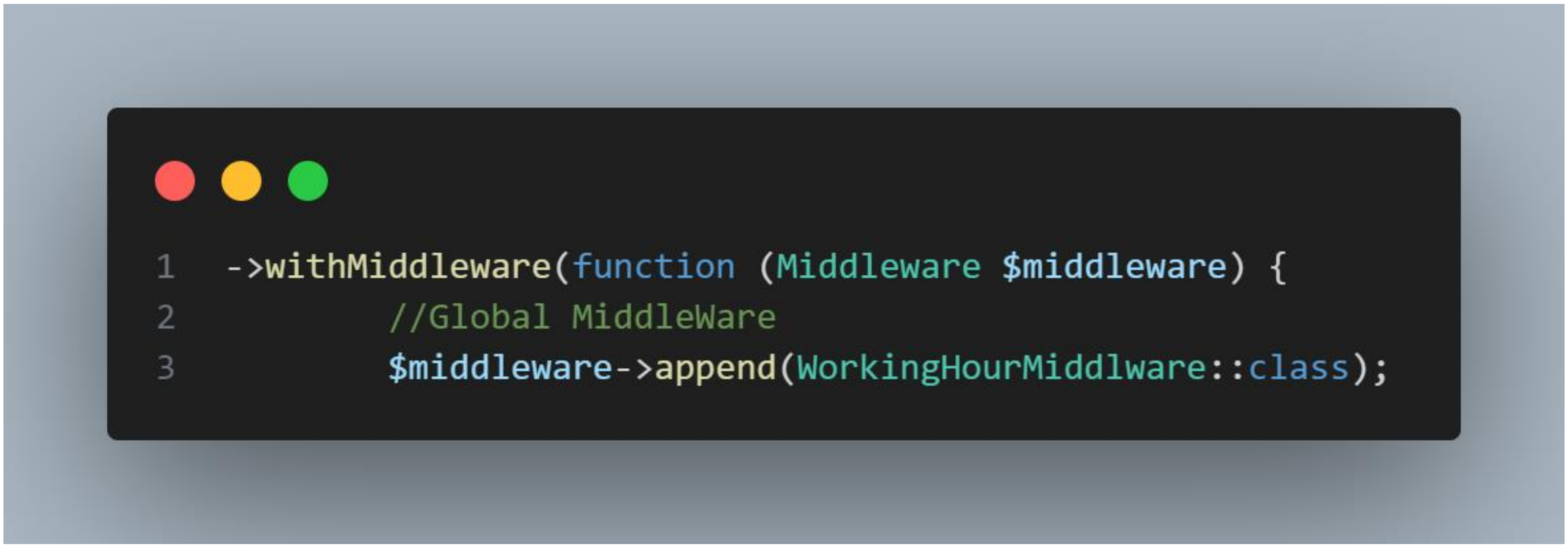


```php
$middleware->alias([
            'working.hours' => WorkingHourMiddlware::class,
        ]);
```



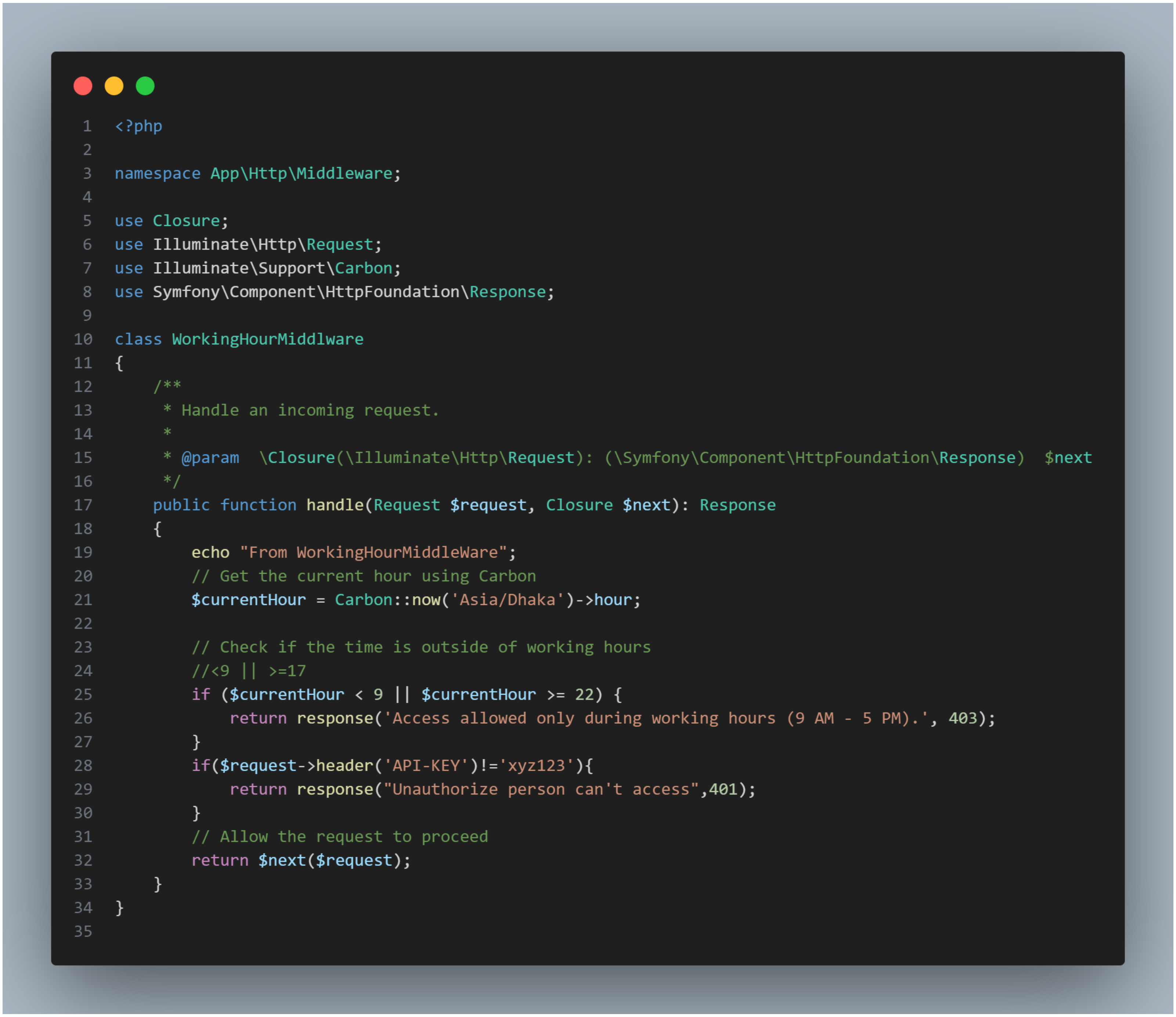
```
return Application::configure(basePath: dirname(__DIR__))
    ->withMiddleware(function (Middleware $middleware) {
        //Global MiddleWare
        $middleware->append(WorkingHourMiddlware::class);

        //Middleware Group
        $middleware->appendToGroup('age-country-check', [
            AgeCheck::class,
            CountryCheck::class,
        ]);

        $middleware->validateCsrfTokens(except: [
            '/*',
        ]);
        $middleware->alias([
            'working.hours' => WorkingHourMiddlware::class,
        ]);
    })
    ->withExceptions(function (Exceptions $exceptions) {
```

১.৩ এরপর GlobalMiddleWare বানানোর জন্য নীচের কমান্ড লিখতে হবে।



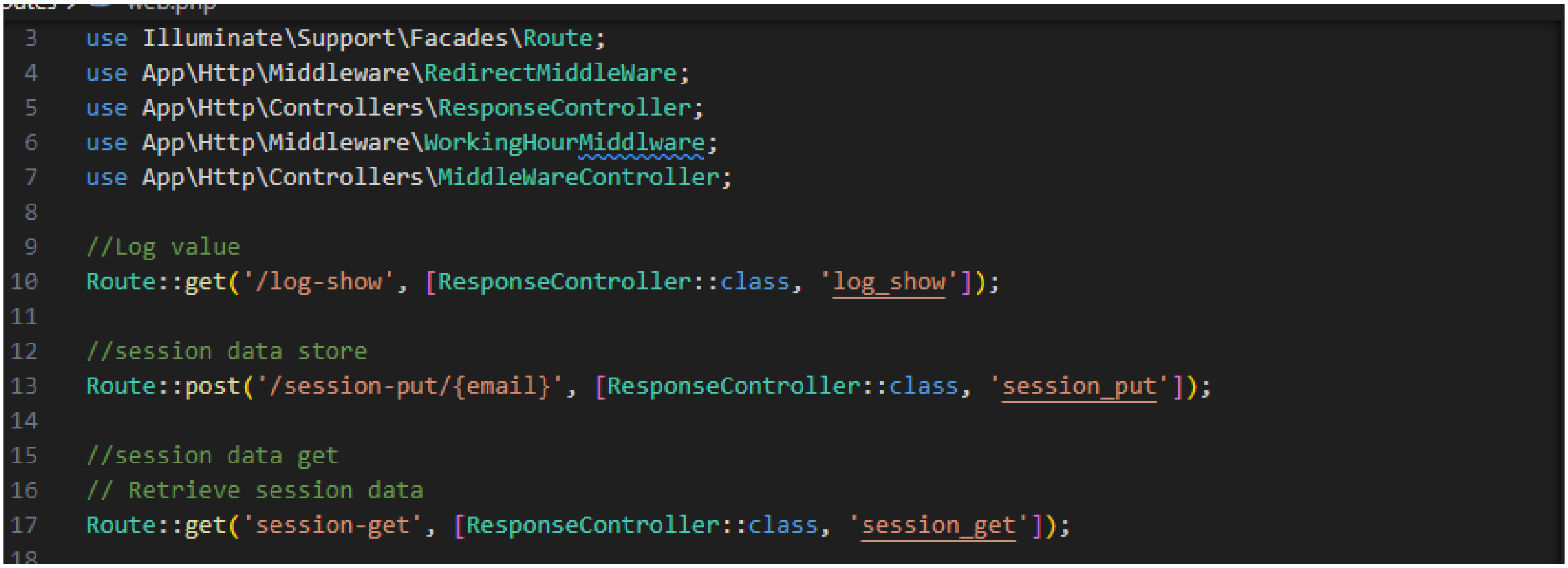
```
->withMiddleware(function (Middleware $middleware) {
        //Global MiddleWare
        $middleware->append(WorkingHourMiddlware::class);
```

১.৪ এরপর MiddleWare এর ভিতর code লিখব। যা সব route এর জন্য apply হবে।



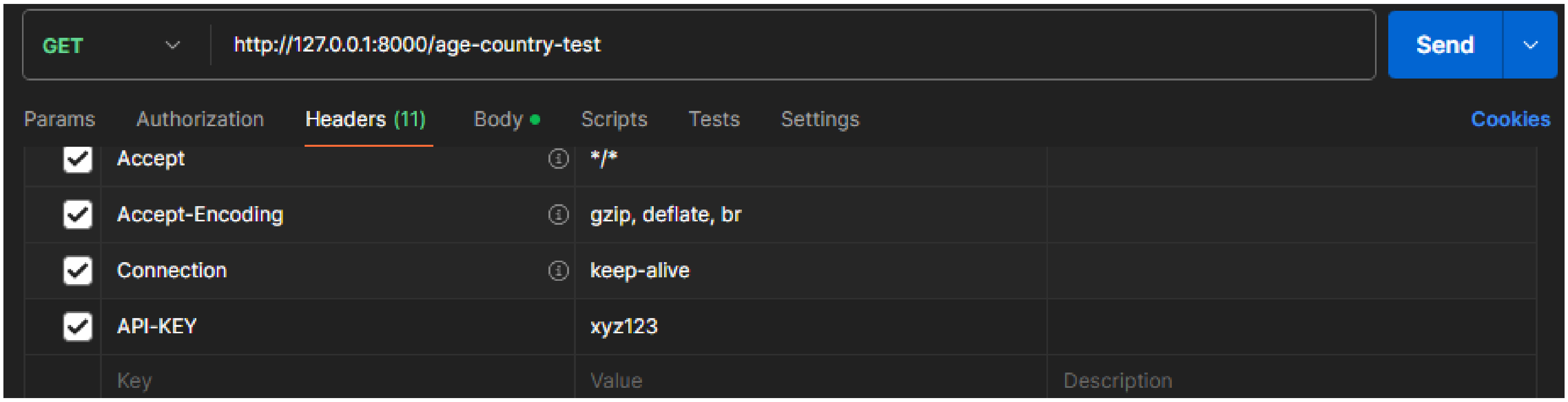
```php
<?php

namespace App\Http\Middleware;

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

class WorkingHourMiddlware
{
    /**
     * Handle an incoming request.
     *
     * @param  \Closure(\Illuminate\Http\Request): (\Symfony\Component\HttpFoundation\Response)  $next
     */
    public function handle(Request $request, Closure $next): Response
    {
        echo "From WorkingHourMiddleWare";
        // Get the current hour using Carbon
        $currentHour = Carbon::now('Asia/Dhaka')->hour;

        // Check if the time is outside of working hours
        //<9 || >=17
        if ($currentHour < 9 || $currentHour >= 22) {
            return response('Access allowed only during working hours (9 AM - 5 PM).', 403);
        }
        if($request->header('API-KEY')!='xyz123'){
            return response("Unauthorize person can't access",401);
        }
        // Allow the request to proceed
        return $next($request);
    }
}

```

১.৫ যে কোন route এর জন্য automatically WorkingHourMiddleWare apply হবে।কোন extra code middleware এর জন্য লিখতে হবে না।



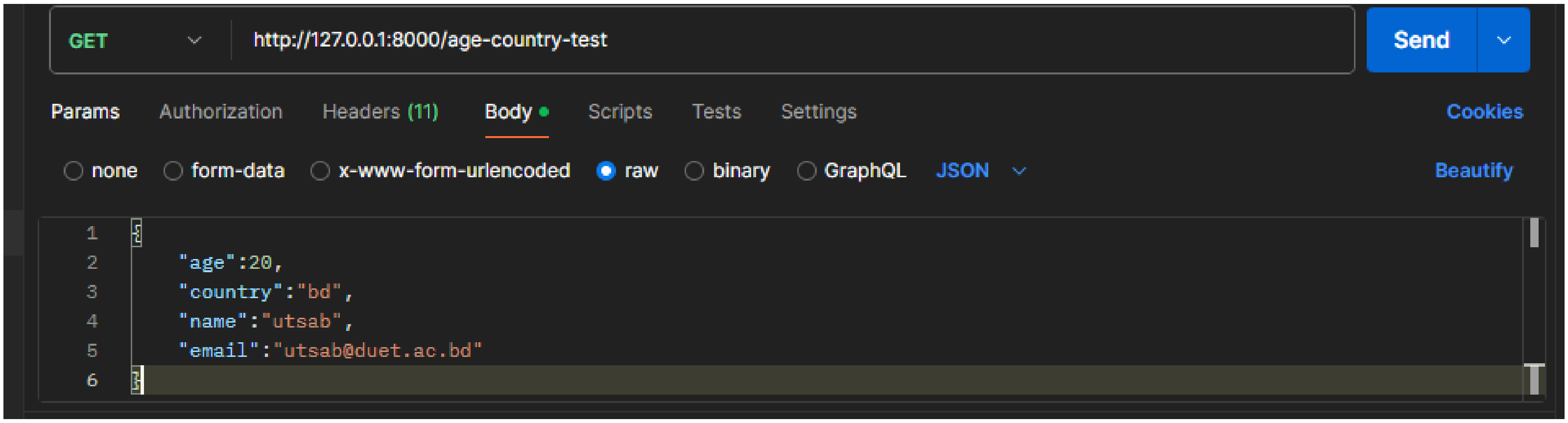
```php
use Illuminate\Support\Facades\Route;
use App\Http\Middleware\RedirectMiddleWare;
use App\Http\Controllers\ResponseController;
use App\Http\Middleware\WorkingHourMiddlware;
use App\Http\Controllers\MiddleWareController;

//Log value
Route::get('/log-show', [ResponseController::class, 'log_show']);

//session data store
Route::post('/session-put/{email}', [ResponseController::class, 'session_put']);

//session data get
// Retrieve session data
Route::get('session-get', [ResponseController::class, 'session_get']);
```

১.৬ Header , Body তে ডাটাগুলো পাঠাব প্রয়োজন অনুযায়ী।



GET http://127.0.0.1:8000/age-country-test

	Key	Value	Description
☑	Accept	*/*	
☑	Accept-Encoding	gzip, deflate, br	
☑	Connection	keep-alive	
☑	API-KEY	xyz123	



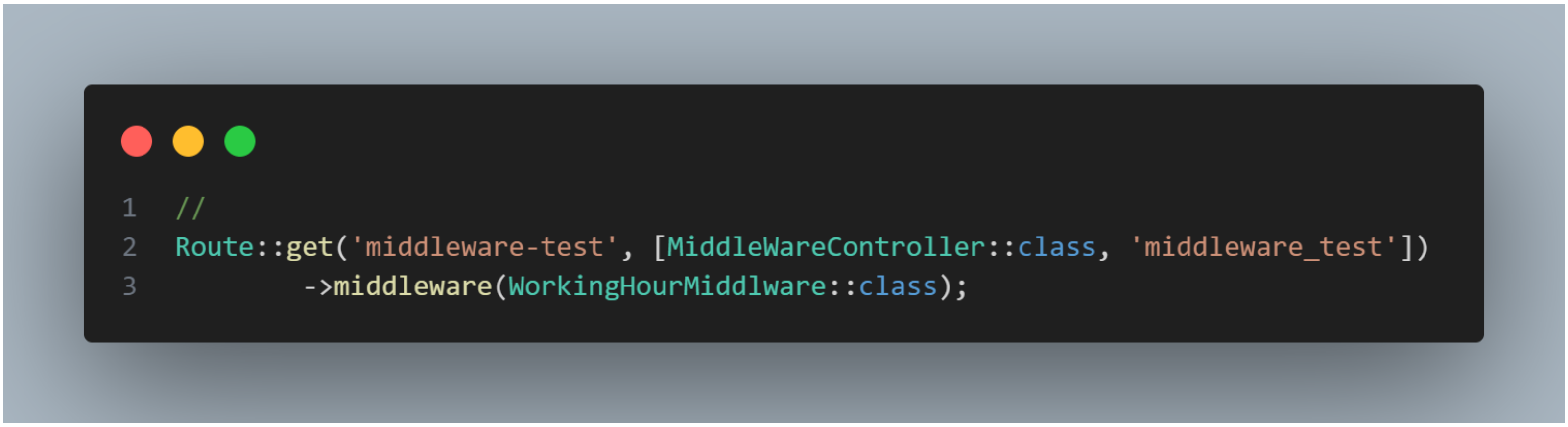
GET http://127.0.0.1:8000/age-country-test

○ none ○ form-data ○ x-www-form-urlencoded ● raw ○ binary ○ GraphQL JSON

```json
{
    "age":20,
    "country":"bd",
    "name":"utsab",
    "email":"utsab@duet.ac.bd"
}
```

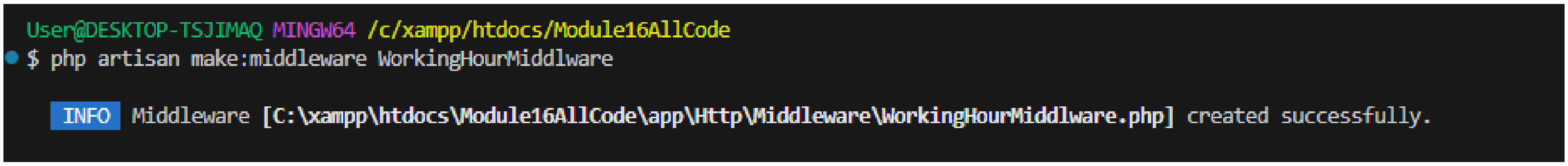
২.Route এ যে কোন একটা MiddleWare apply করব।

২.১ Route বানাব। এখানে Middleware apply করব।এখানে MiddleWare এ্যাড করব।

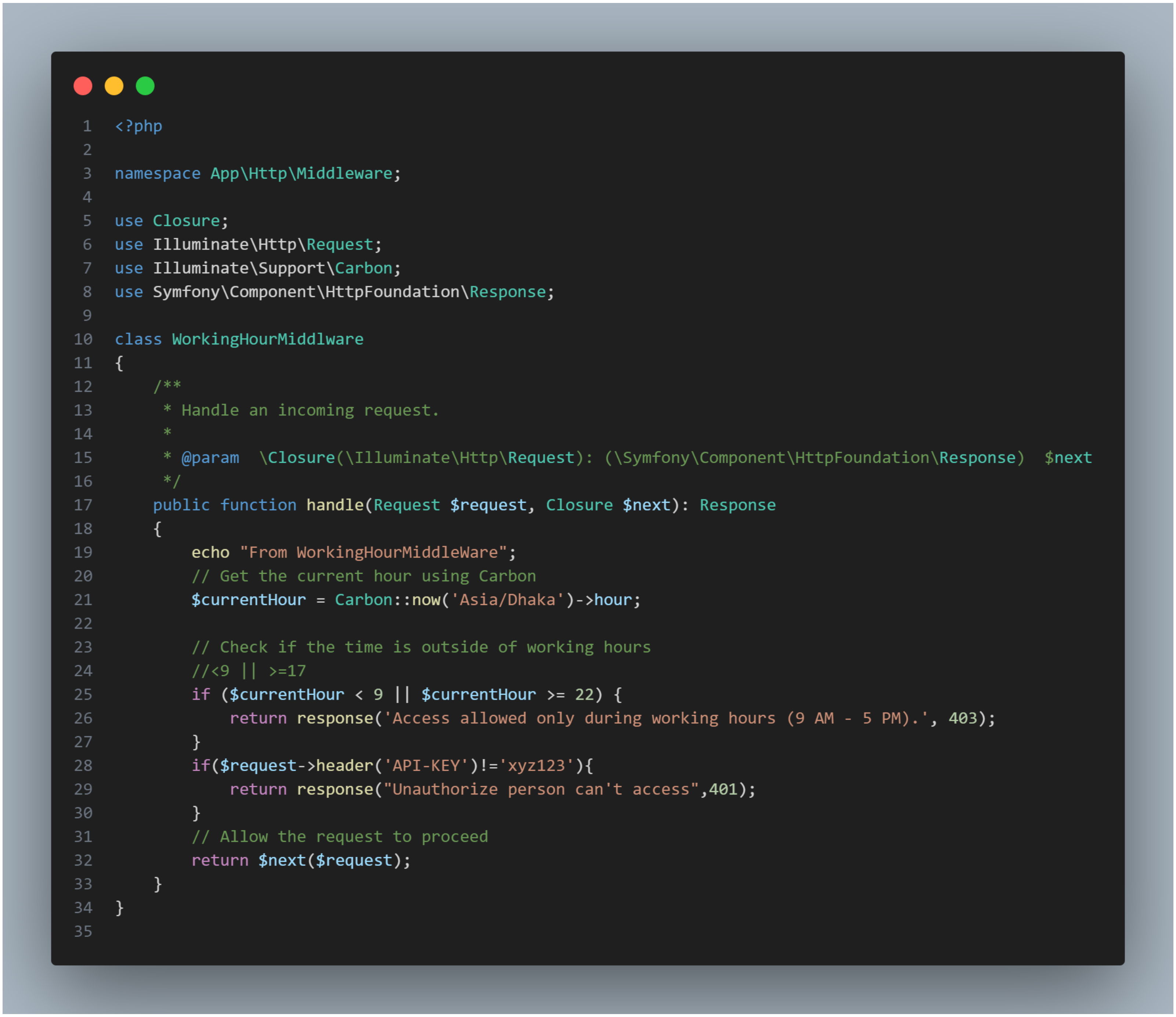


```php
//
Route::get('middleware-test', [MiddleWareController::class, 'middleware_test'])
        ->middleware(WorkingHourMiddlware::class);
```

২.২ MiddleWare বানাব

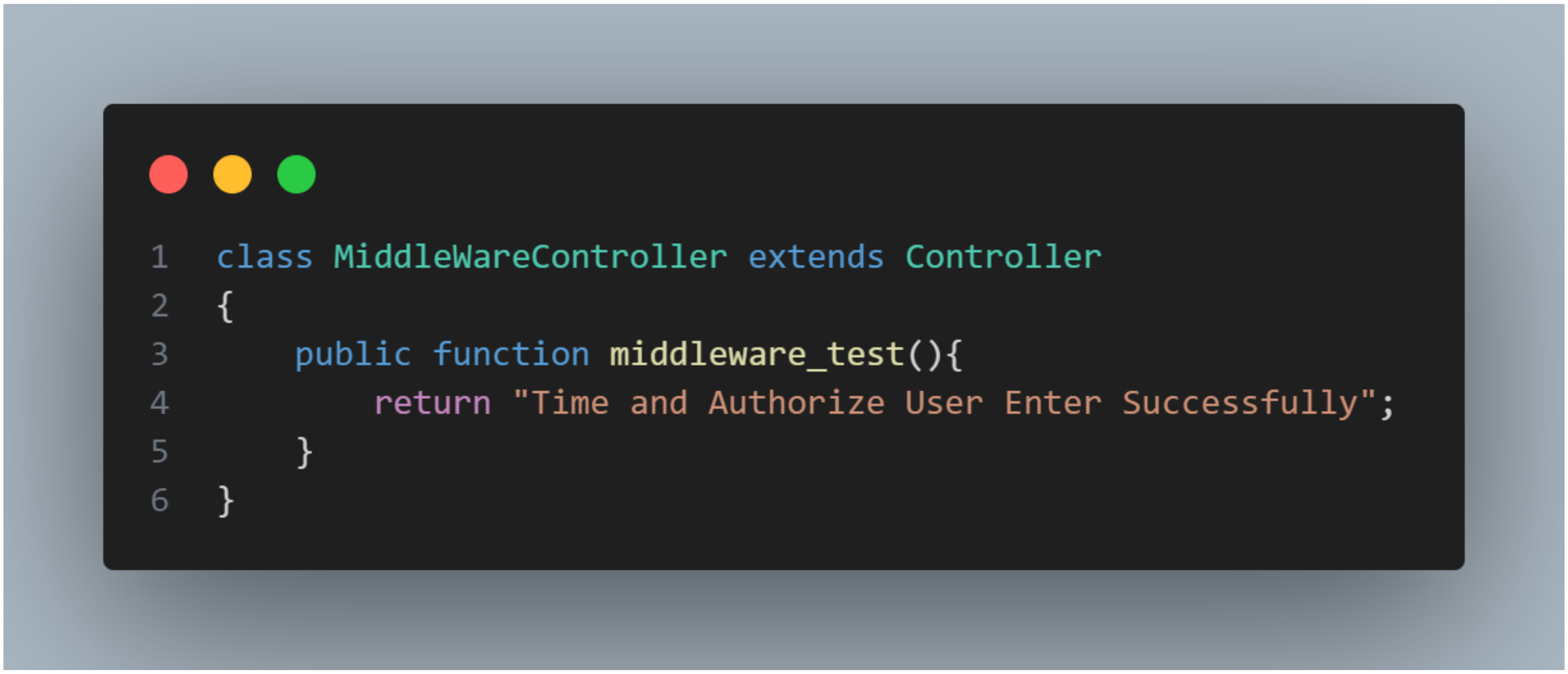


```
User@DESKTOP-TSJIMAQ MINGW64 /c/xampp/htdocs/Module16AllCode
$ php artisan make:middleware WorkingHourMiddlware

   INFO  Middleware [C:\xampp\htdocs\Module16AllCode\app\Http\Middleware\WorkingHourMiddlware.php] created successfully.
```



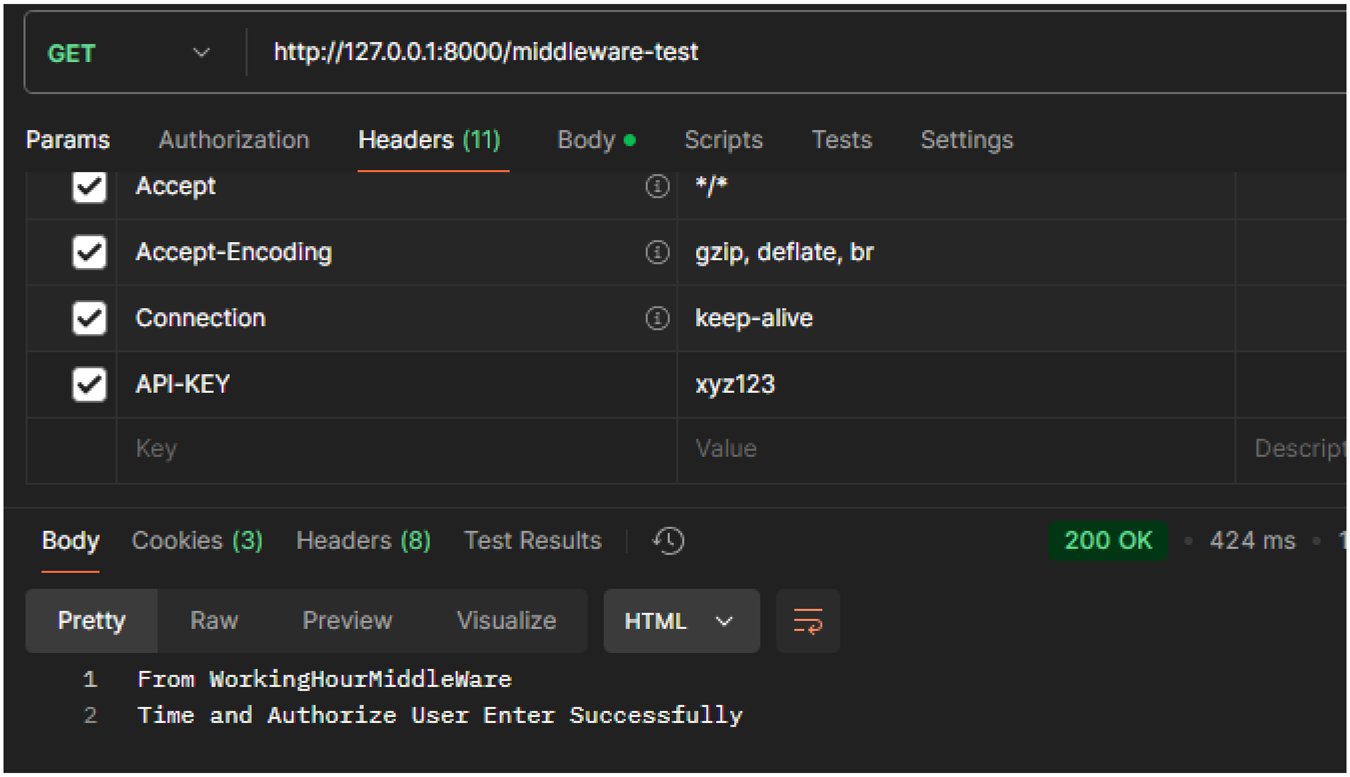
```php
<?php

namespace App\Http\Middleware;

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

class WorkingHourMiddlware
{
    /**
     * Handle an incoming request.
     *
     * @param  \Closure(\Illuminate\Http\Request): (\Symfony\Component\HttpFoundation\Response)  $next
     */
    public function handle(Request $request, Closure $next): Response
    {
        echo "From WorkingHourMiddleWare";
        // Get the current hour using Carbon
        $currentHour = Carbon::now('Asia/Dhaka')->hour;

        // Check if the time is outside of working hours
        //<9 || >=17
        if ($currentHour < 9 || $currentHour >= 22) {
            return response('Access allowed only during working hours (9 AM - 5 PM).', 403);
        }
        if($request->header('API-KEY')!='xyz123'){
            return response("Unauthorize person can't access",401);
        }
        // Allow the request to proceed
        return $next($request);
    }
}

```

২.৩ Controller বানাব



```php
class MiddleWareController extends Controller
{
    public function middleware_test(){
        return "Time and Authorize User Enter Successfully";
    }
}
```

২.৪ আউটপুট



GET http://127.0.0.1:8000/middleware-test

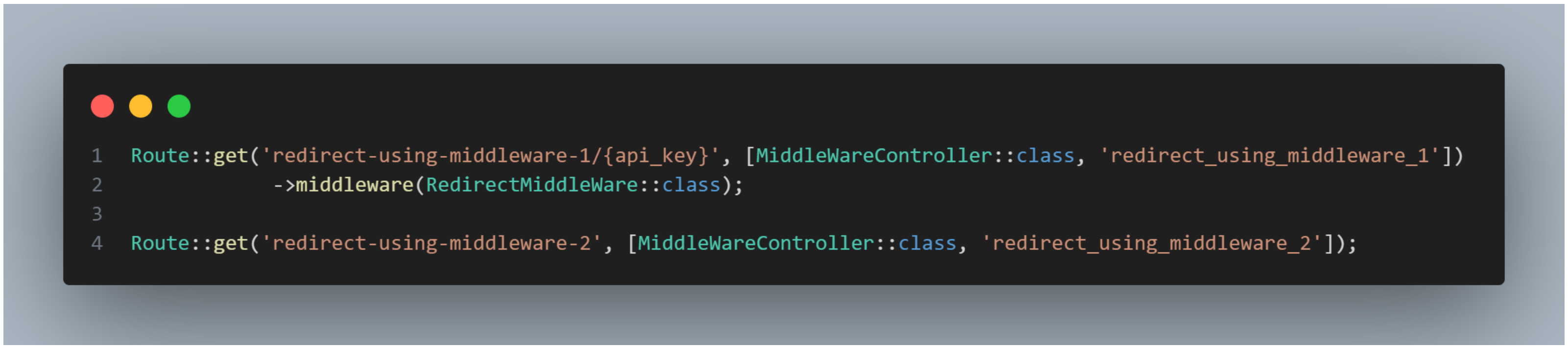
	Key	Value	Descript
☑	Accept	*/*	
☑	Accept-Encoding	gzip, deflate, br	
☑	Connection	keep-alive	
☑	API-KEY	xyz123	
	Key	Value	Descript

200 OK • 424 ms

```
From WorkingHourMiddleWare
Time and Authorize User Enter Successfully
```

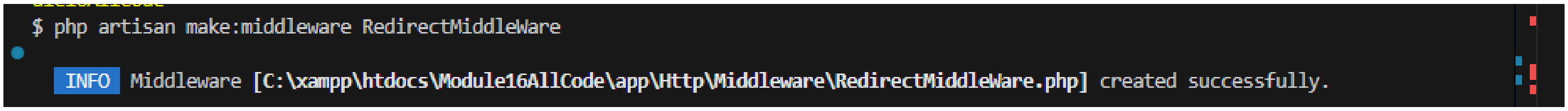
৩.Redirect কিভাবে করব MiddleWare দিয়ে।

৩.১ Route বানাব।

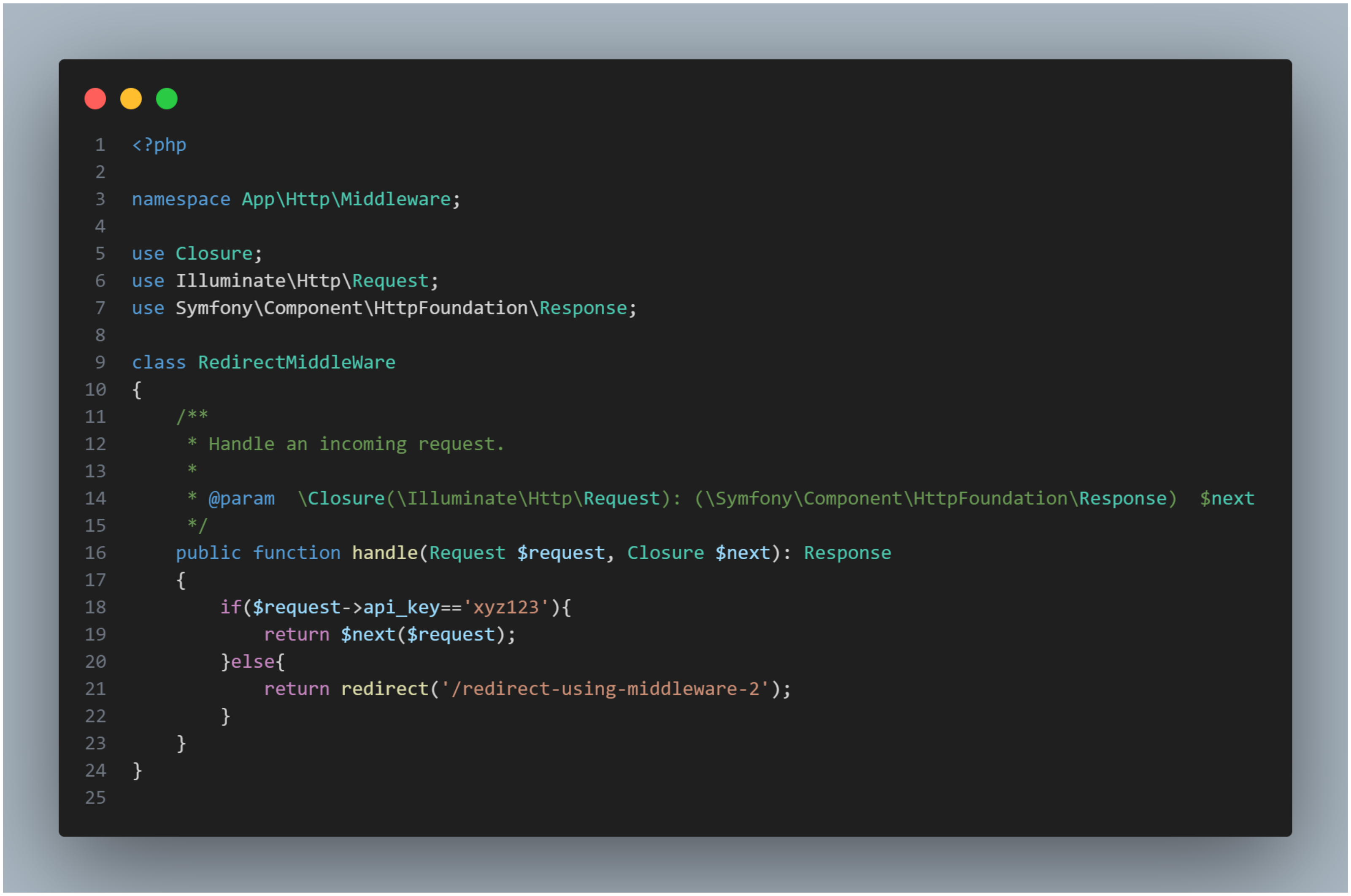


```php
Route::get('redirect-using-middleware-1/{api_key}', [MiddleWareController::class, 'redirect_using_middleware_1'])
           ->middleware(RedirectMiddleWare::class);

Route::get('redirect-using-middleware-2', [MiddleWareController::class, 'redirect_using_middleware_2']);
```

৩.২ MiddleWare বানাব

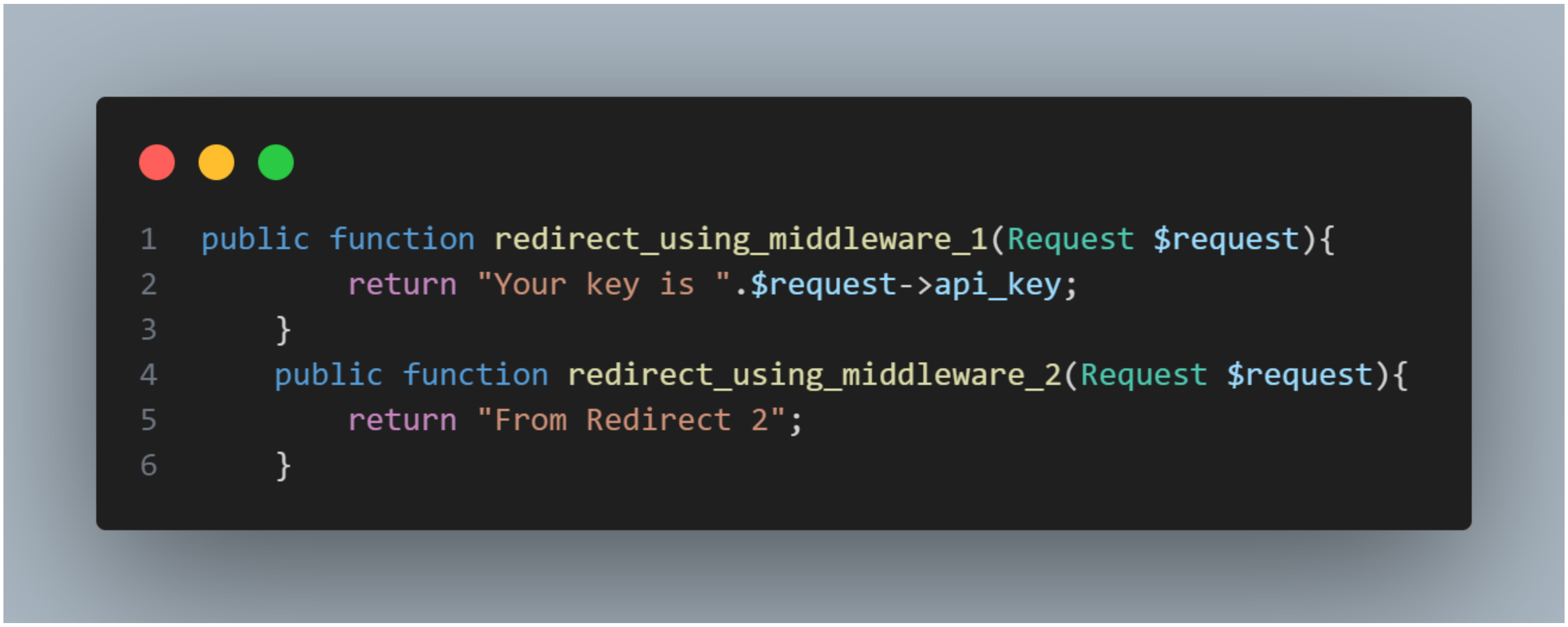


```
$ php artisan make:middleware RedirectMiddleWare

   INFO  Middleware [C:\xampp\htdocs\Module16AllCode\app\Http\Middleware\RedirectMiddleWare.php] created successfully.
```



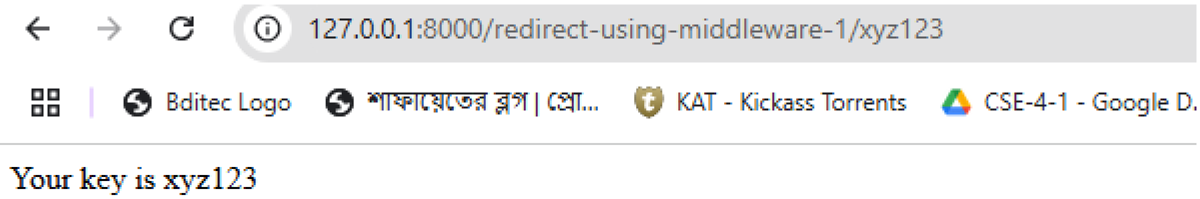
```php
<?php

namespace App\Http\Middleware;

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

class RedirectMiddleWare
{
    /**
     * Handle an incoming request.
     *
     * @param  \Closure(\Illuminate\Http\Request): (\Symfony\Component\HttpFoundation\Response)  $next
     */
    public function handle(Request $request, Closure $next): Response
    {
        if($request->api_key=='xyz123'){
            return $next($request);
        }else{
            return redirect('/redirect-using-middleware-2');
        }
    }
}

```

৩.৩ Controller এ দুইটা মেথড ডিফাইন করব।



```php
public function redirect_using_middleware_1(Request $request){
        return "Your key is ".$request->api_key;
    }
    public function redirect_using_middleware_2(Request $request){
        return "From Redirect 2";
    }
```

৩.৪ আউটপুট

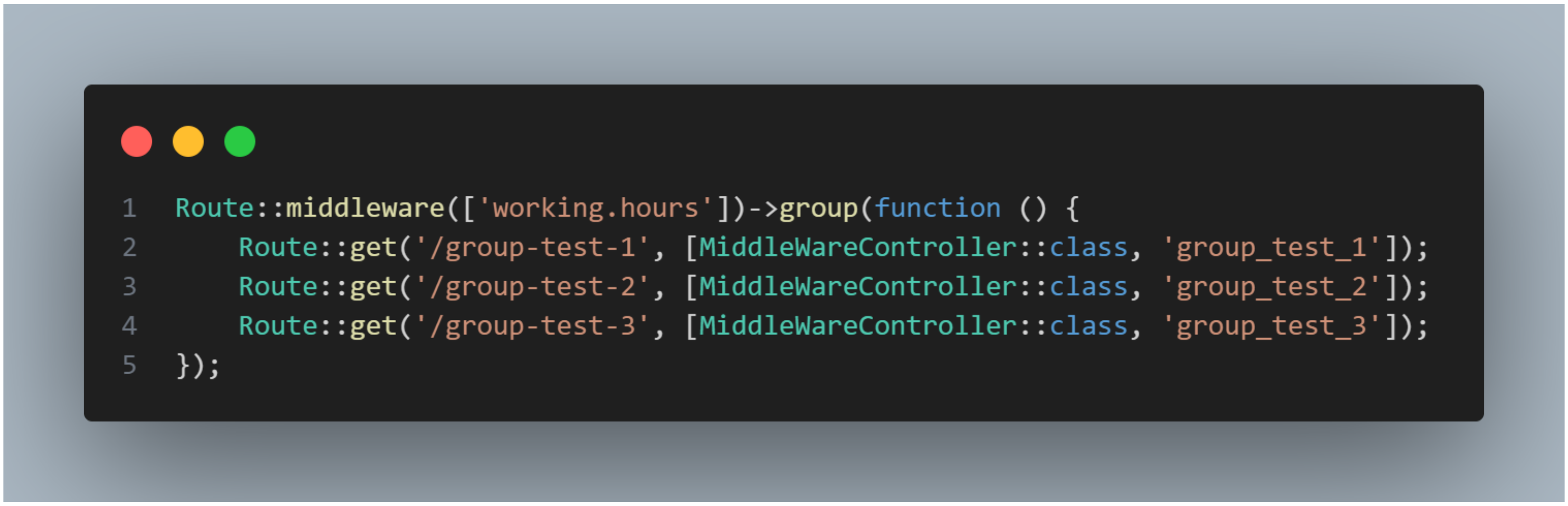


127.0.0.1:8000/redirect-using-middleware-1/xyz123
Bditec Logo
শাফায়েতের ব্লগ | প্রো...
KAT - Kickass Torrents
CSE-4-1 - Google D.

```
Your key is xyz123
```

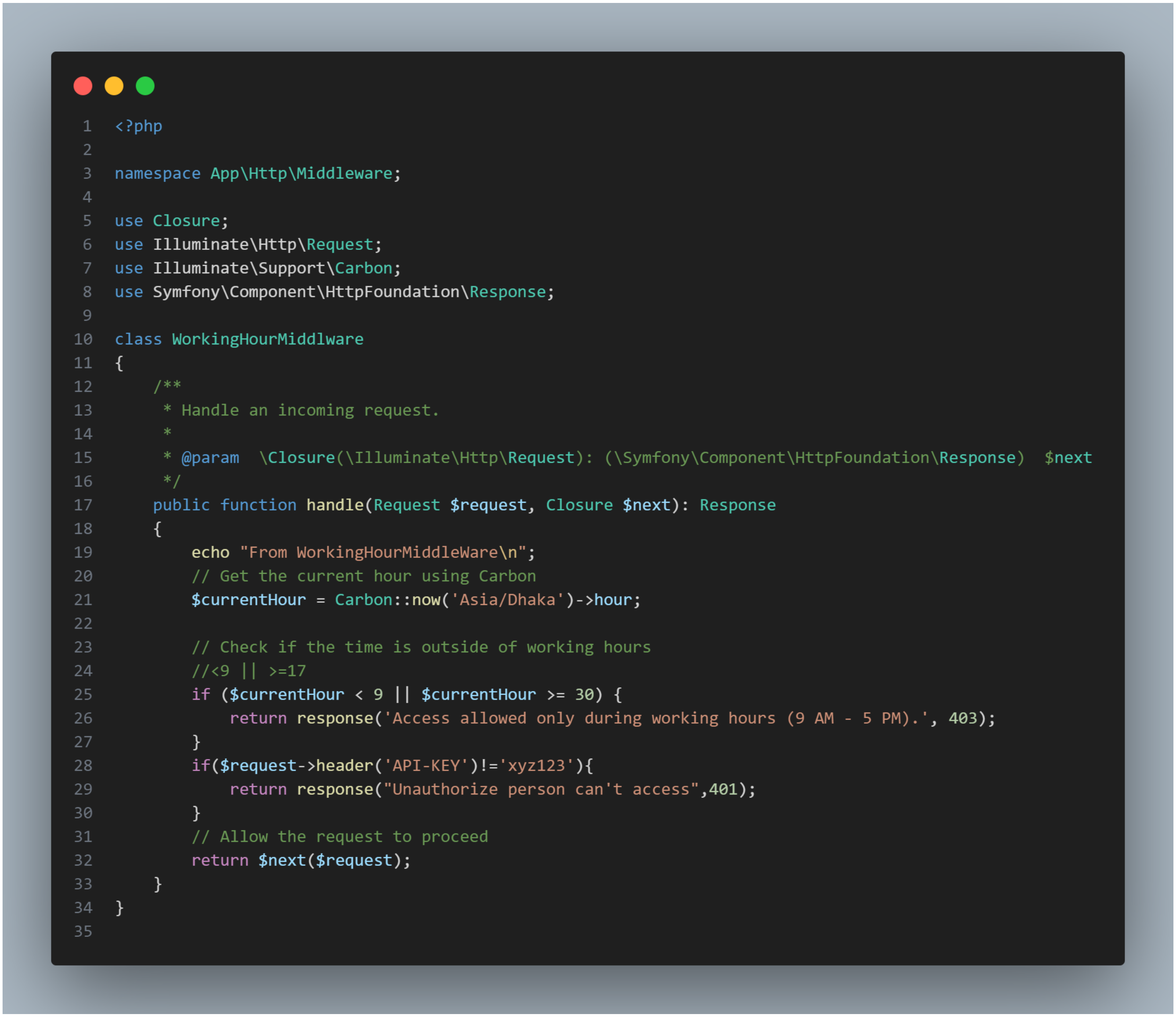
৪.কয়েকটা Route কে একটা MiddleWare apply করব কিভাবে।

৪.১ Route বানাব।



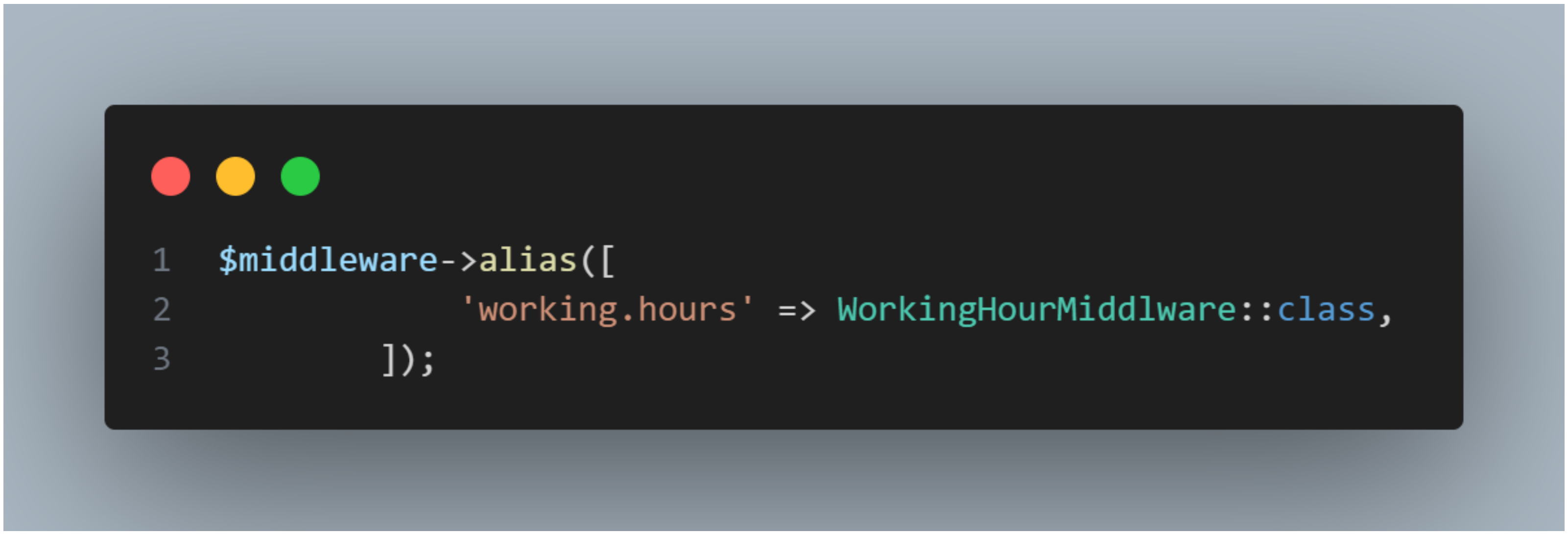
```php
Route::middleware(['working.hours'])->group(function () {
    Route::get('/group-test-1', [MiddleWareController::class, 'group_test_1']);
    Route::get('/group-test-2', [MiddleWareController::class, 'group_test_2']);
    Route::get('/group-test-3', [MiddleWareController::class, 'group_test_3']);
});
```

২. MiddleWare বানাব।



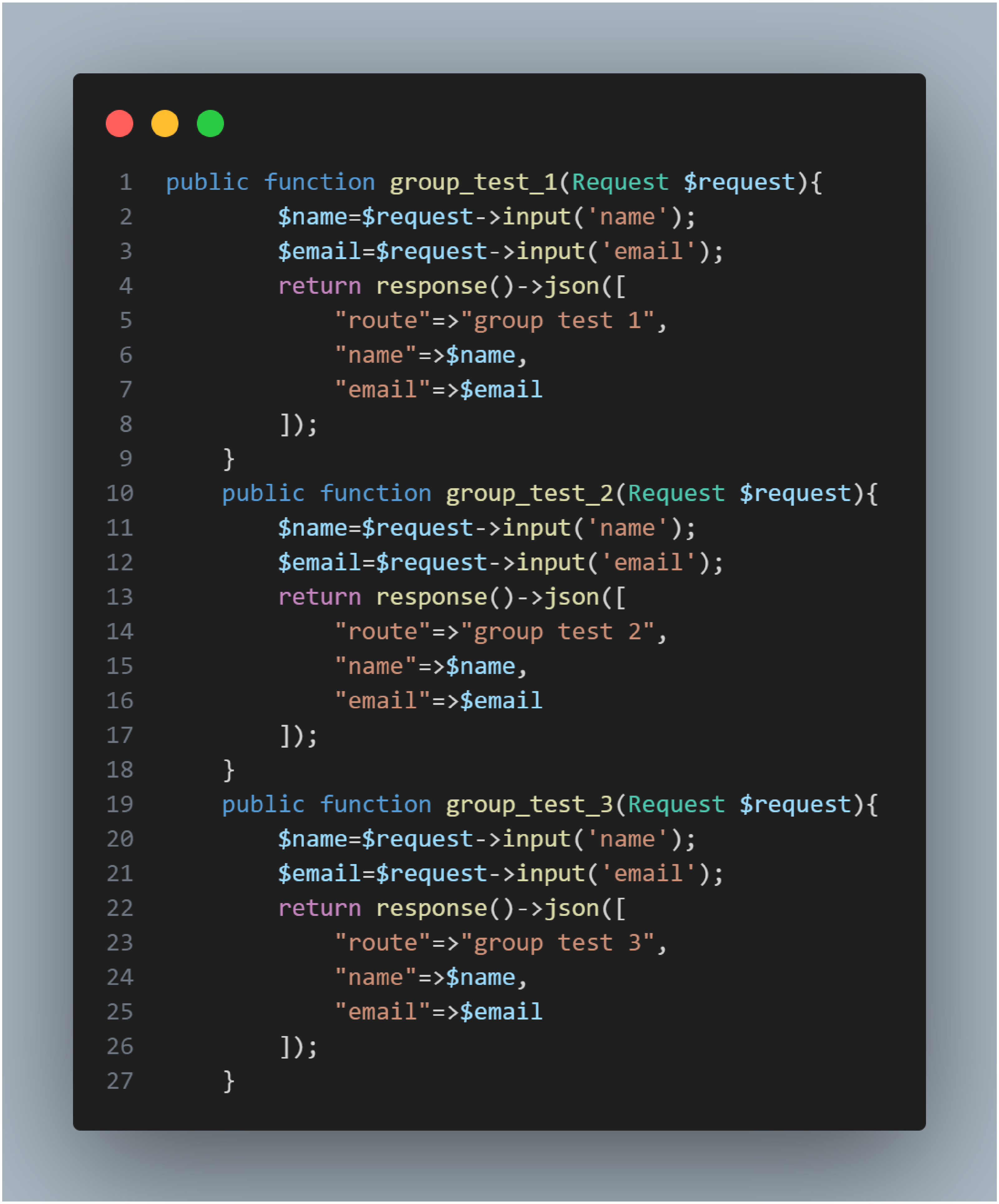
```php
<?php

namespace App\Http\Middleware;

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

class WorkingHourMiddlware
{
    /**
     * Handle an incoming request.
     *
     * @param  \Closure(\Illuminate\Http\Request): (\Symfony\Component\HttpFoundation\Response)  $next
     */
    public function handle(Request $request, Closure $next): Response
    {
        echo "From WorkingHourMiddleWare\n";
        // Get the current hour using Carbon
        $currentHour = Carbon::now('Asia/Dhaka')->hour;

        // Check if the time is outside of working hours
        //<9 || >=17
        if ($currentHour < 9 || $currentHour >= 30) {
            return response('Access allowed only during working hours (9 AM - 5 PM).', 403);
        }
        if($request->header('API-KEY')!='xyz123'){
            return response("Unauthorize person can't access",401);
        }
        // Allow the request to proceed
        return $next($request);
    }
}

```

৪.৩ MiddleWare যার shortcut নাম দিব ‘working.hours’



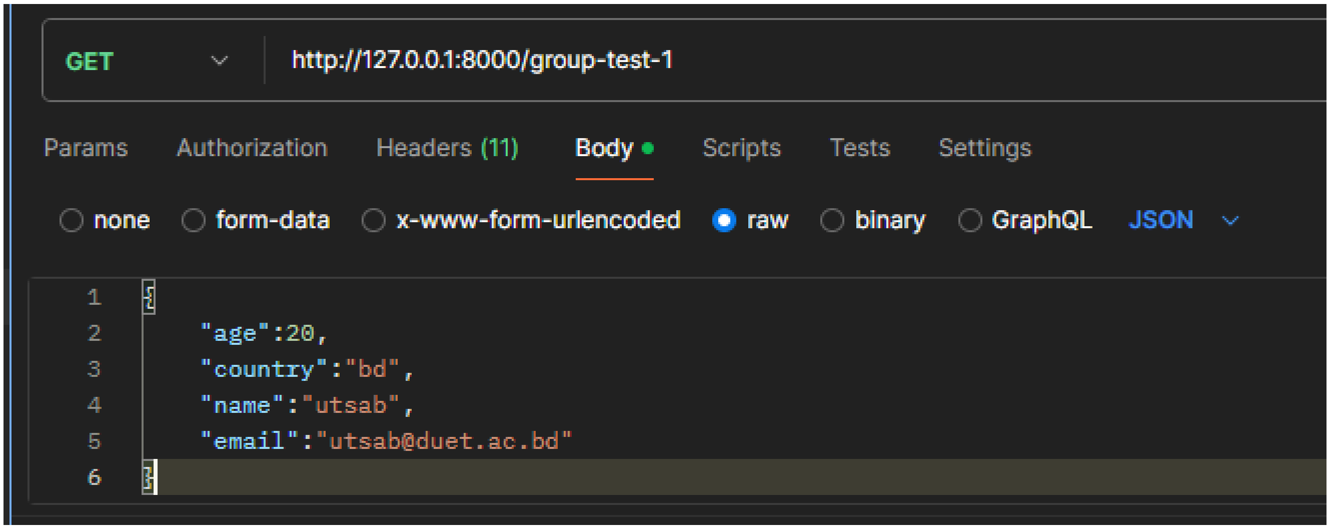
```php
$middleware->alias([
            'working.hours' => WorkingHourMiddlware::class,
        ]);
```

৪.৪ Controller বানাব



```
public function group_test_1(Request $request){
        $name=$request->input('name');
        $email=$request->input('email');
        return response()->json([
            "route"=>"group test 1",
            "name"=>$name,
            "email"=>$email
        ]);
    }
    public function group_test_2(Request $request){
        $name=$request->input('name');
        $email=$request->input('email');
        return response()->json([
            "route"=>"group test 2",
            "name"=>$name,
            "email"=>$email
        ]);
    }
    public function group_test_3(Request $request){
        $name=$request->input('name');
        $email=$request->input('email');
        return response()->json([
            "route"=>"group test 3",
            "name"=>$name,
            "email"=>$email
        ]);
    }
```

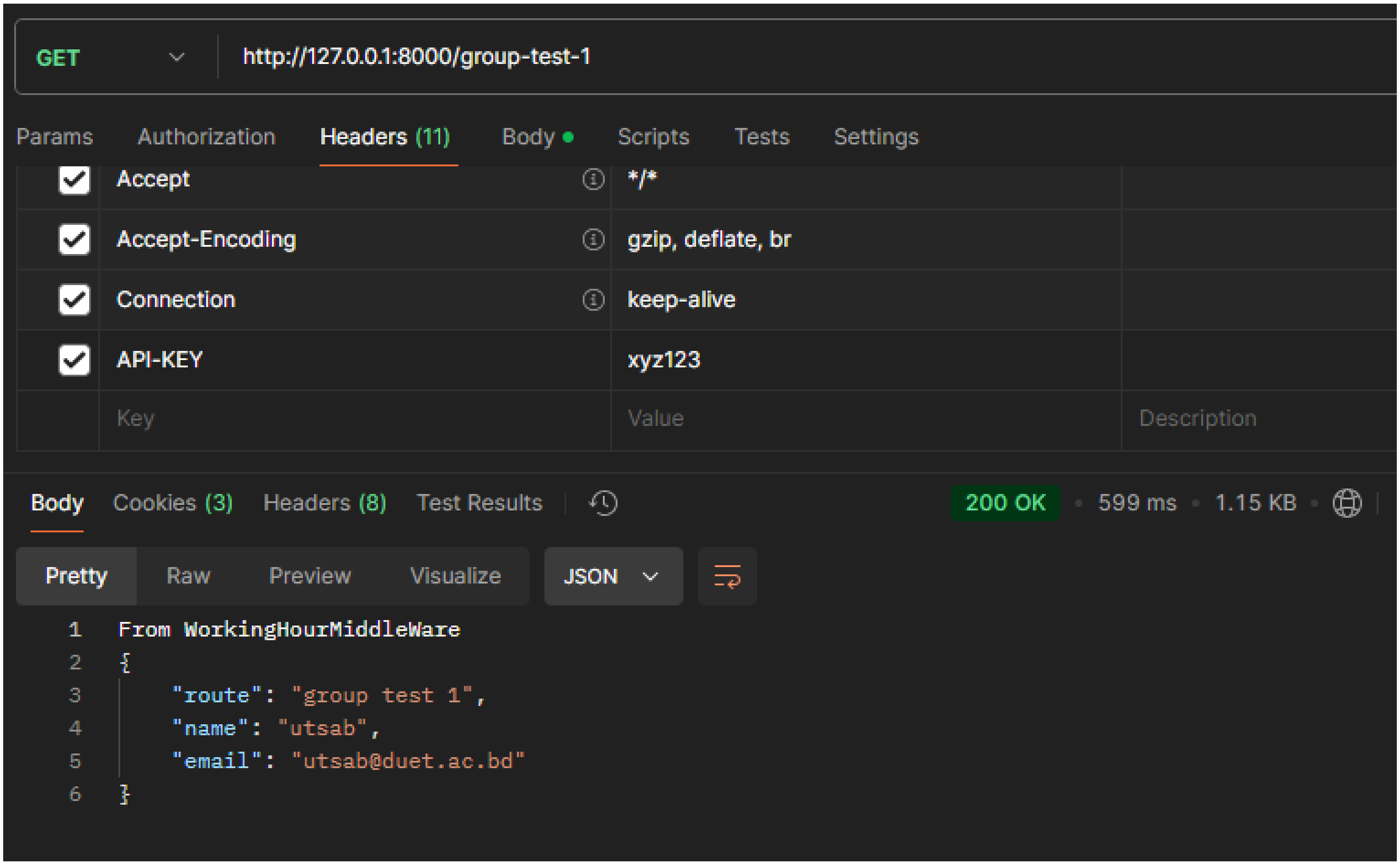
৪.৫ আউটপুট



GET http://127.0.0.1:8000/group-test-1

○ none ○ form-data ○ x-www-form-urlencoded ● raw ○ binary ○ GraphQL JSON

```
{
    "age":20,
    "country":"bd",
    "name":"utsab",
    "email":"utsab@duet.ac.bd"
}
```



GET http://127.0.0.1:8000/group-test-1

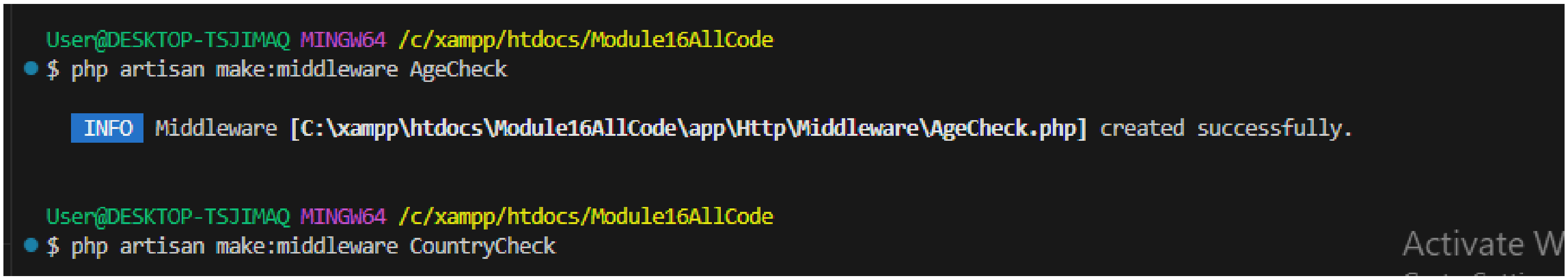
	Key	Value	Description
☑	Accept	*/*	
☑	Accept-Encoding	gzip, deflate, br	
☑	Connection	keep-alive	
☑	API-KEY	xyz123	

200 OK • 599 ms • 1.15 KB

```
From WorkingHourMiddleWare
{
    "route": "group test 1",
    "name": "utsab",
    "email": "utsab@duet.ac.bd"
}
```

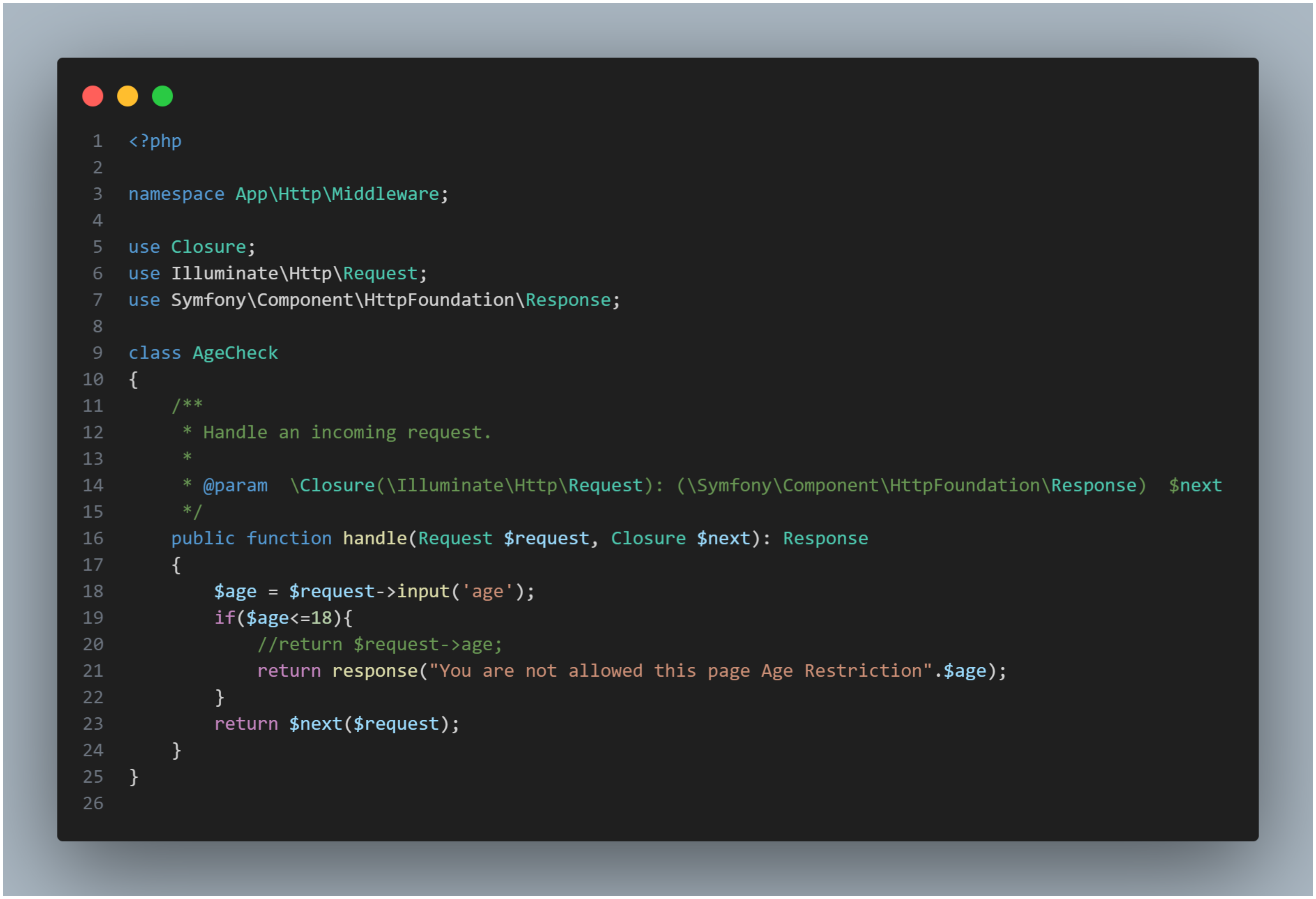
৫. **MiddleWare এর গ্রুপ বানাব।**

৫.১ দুটি MiddleWare বানাব।

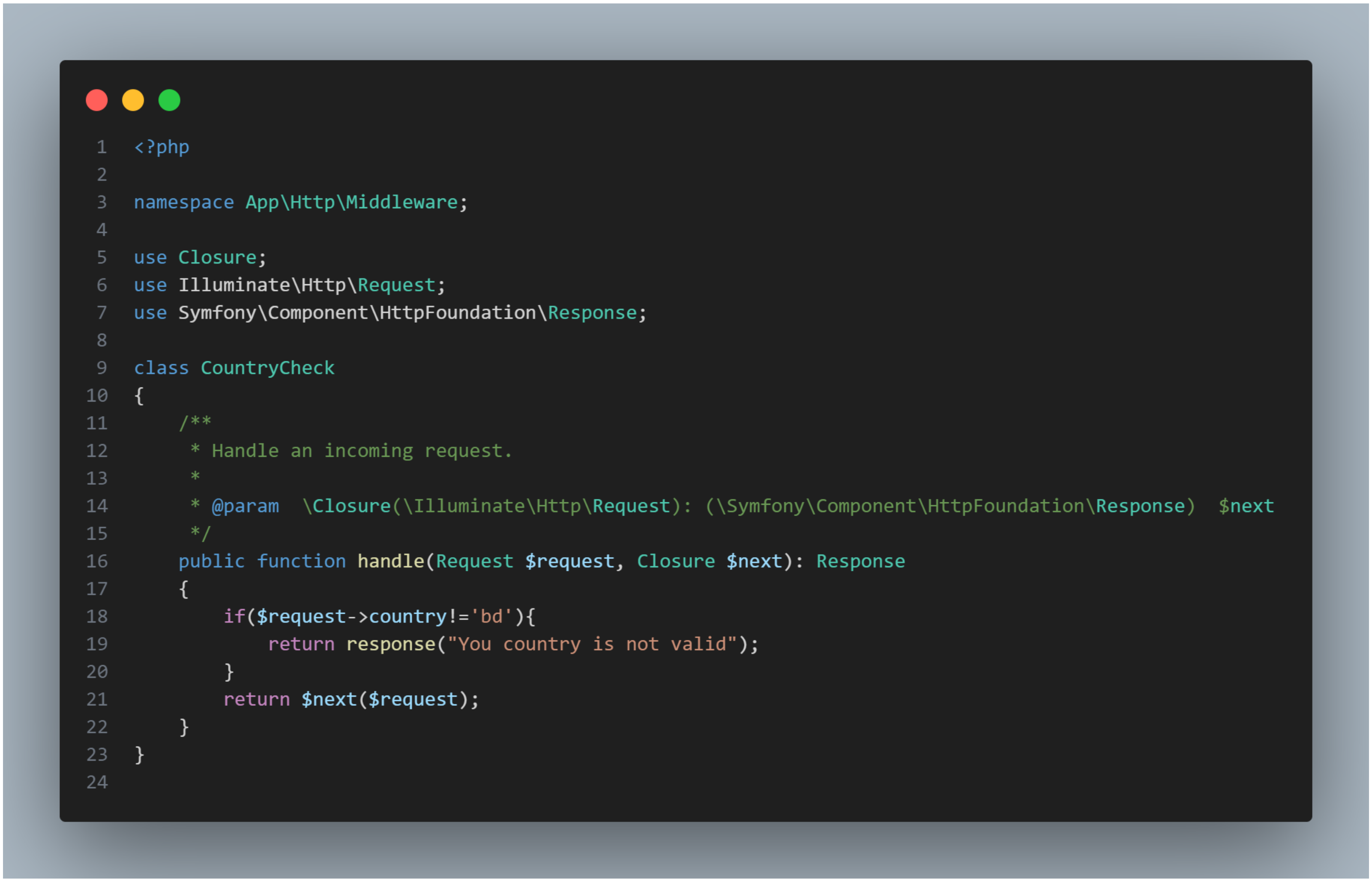


```
User@DESKTOP-TSJIMAQ MINGW64 /c/xampp/htdocs/Module16AllCode
$ php artisan make:middleware AgeCheck

   INFO  Middleware [C:\xampp\htdocs\Module16AllCode\app\Http\Middleware\AgeCheck.php] created successfully.


User@DESKTOP-TSJIMAQ MINGW64 /c/xampp/htdocs/Module16AllCode
$ php artisan make:middleware CountryCheck
```

৫.২ AgeCheck CountryCheck দুটি MiddleWare তৈরি করব।

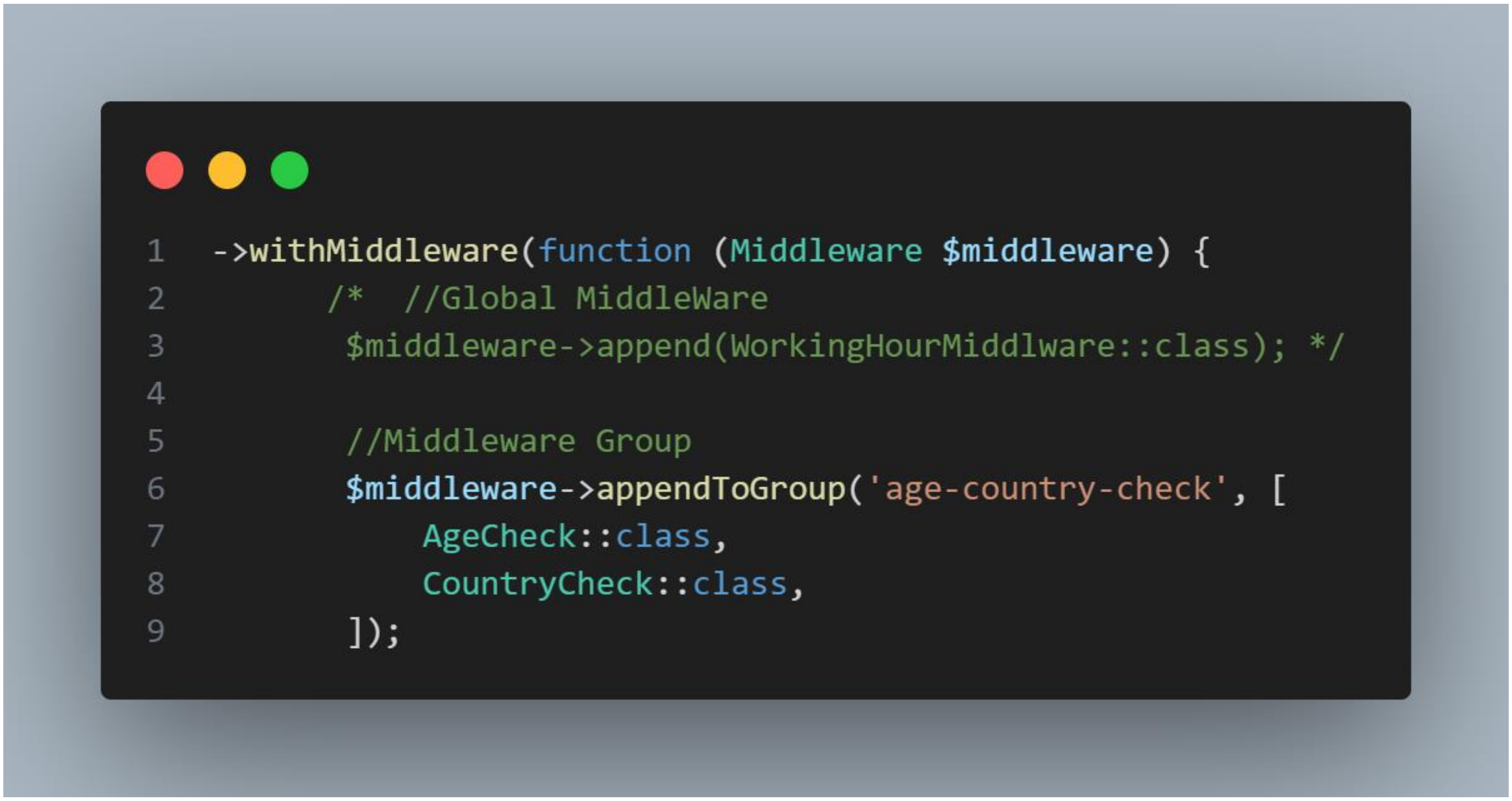


```php
<?php

namespace App\Http\Middleware;

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

class AgeCheck
{
    /**
     * Handle an incoming request.
     *
     * @param  \Closure(\Illuminate\Http\Request): (\Symfony\Component\HttpFoundation\Response)  $next
     */
    public function handle(Request $request, Closure $next): Response
    {
        $age = $request->input('age');
        if($age<=18){
            //return $request->age;
            return response("You are not allowed this page Age Restriction".$age);
        }
        return $next($request);
    }
}

```



```php
<?php

namespace App\Http\Middleware;

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

class CountryCheck
{
    /**
     * Handle an incoming request.
     *
     * @param  \Closure(\Illuminate\Http\Request): (\Symfony\Component\HttpFoundation\Response)  $next
     */
    public function handle(Request $request, Closure $next): Response
    {
        if($request->country!='bd'){
            return response("You country is not valid");
        }
        return $next($request);
    }
}

```

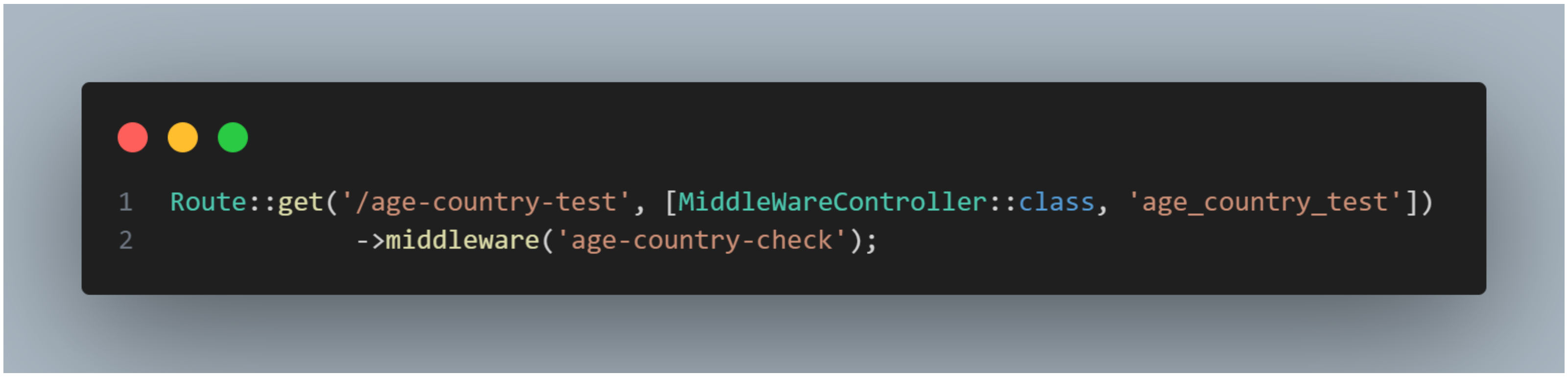
৫.৩ Group বানাব MiddleWare এর।



```php
->withMiddleware(function (Middleware $middleware) {
        /*  //Global MiddleWare
         $middleware->append(WorkingHourMiddlware::class); */

         //Middleware Group
         $middleware->appendToGroup('age-country-check', [
             AgeCheck::class,
             CountryCheck::class,
         ]);
```

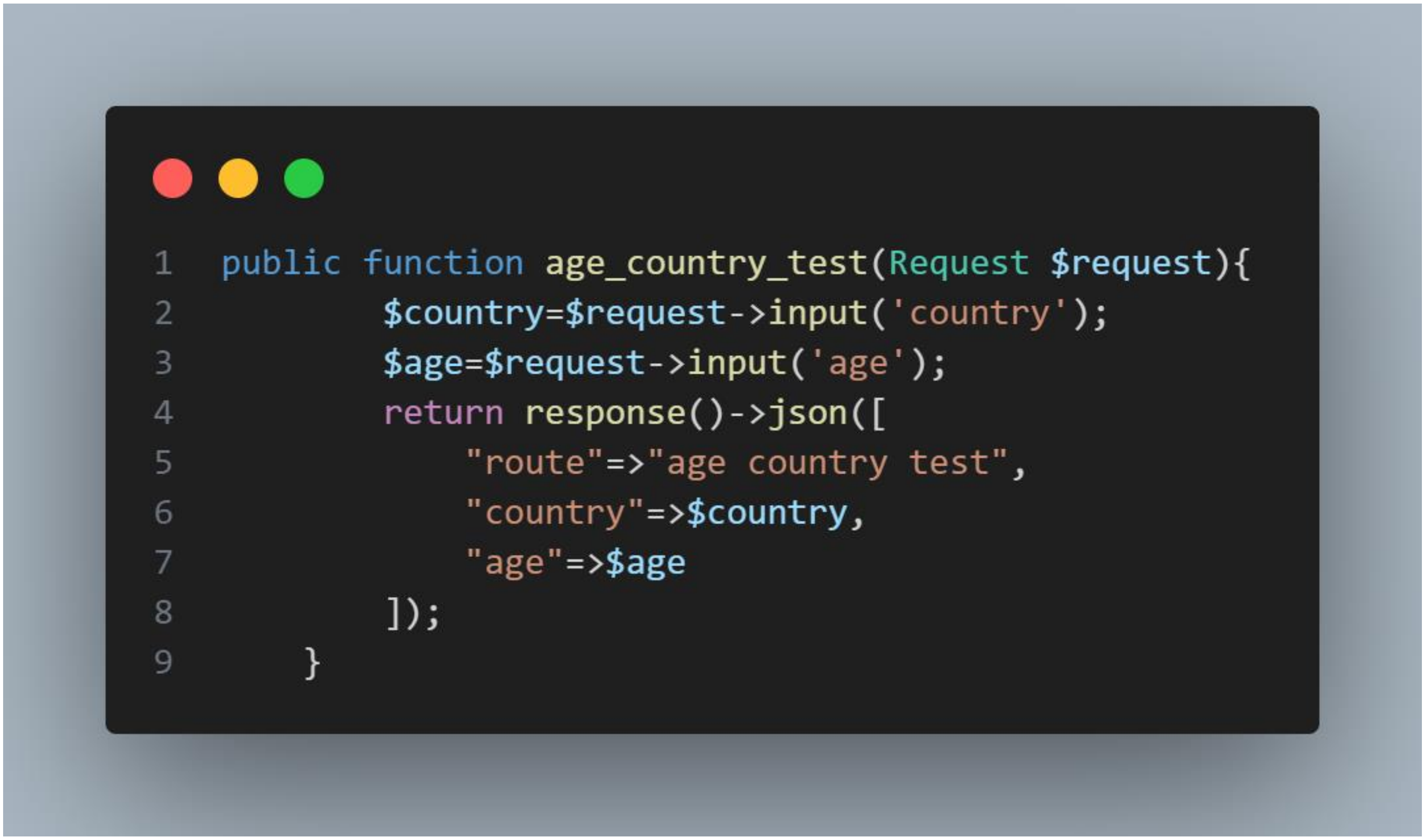
৫.৪

এখানে /age-country-test এর জন্য গ্রুপ/দুটি MiddleWare apply করা হয়েছে।



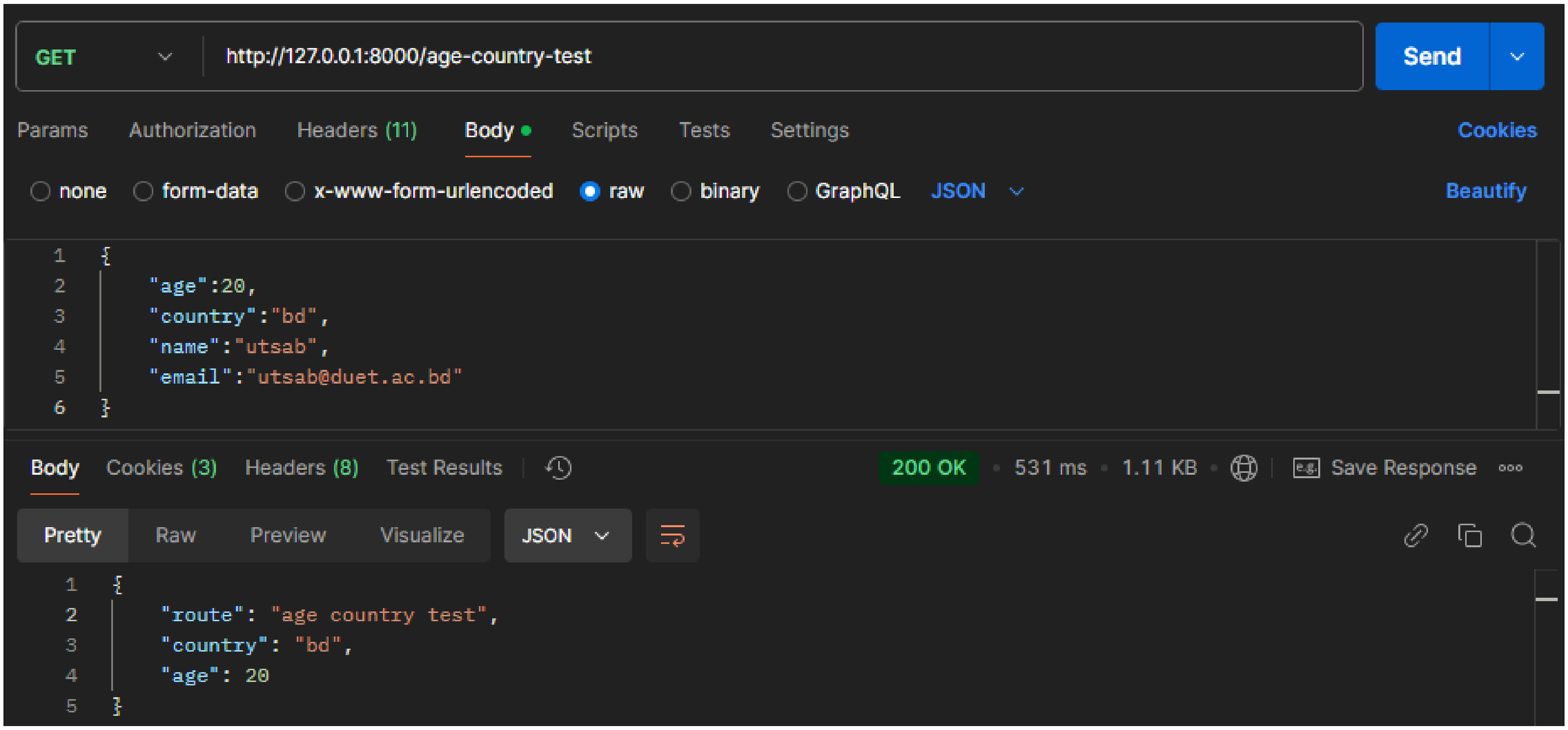
```php
Route::get('/age-country-test', [MiddleWareController::class, 'age_country_test'])
            ->middleware('age-country-check');
```

৫.৫ controller এ মেথড বানানো হয়েছে।



```php
public function age_country_test(Request $request){
        $country=$request->input('country');
        $age=$request->input('age');
        return response()->json([
            "route"=>"age country test",
            "country"=>$country,
            "age"=>$age
        ]);
    }
```

৫.৬ আউটপুট



GET http://127.0.0.1:8000/age-country-test

● raw JSON

```
{
    "age":20,
    "country":"bd",
    "name":"utsab",
    "email":"utsab@duet.ac.bd"
}
```

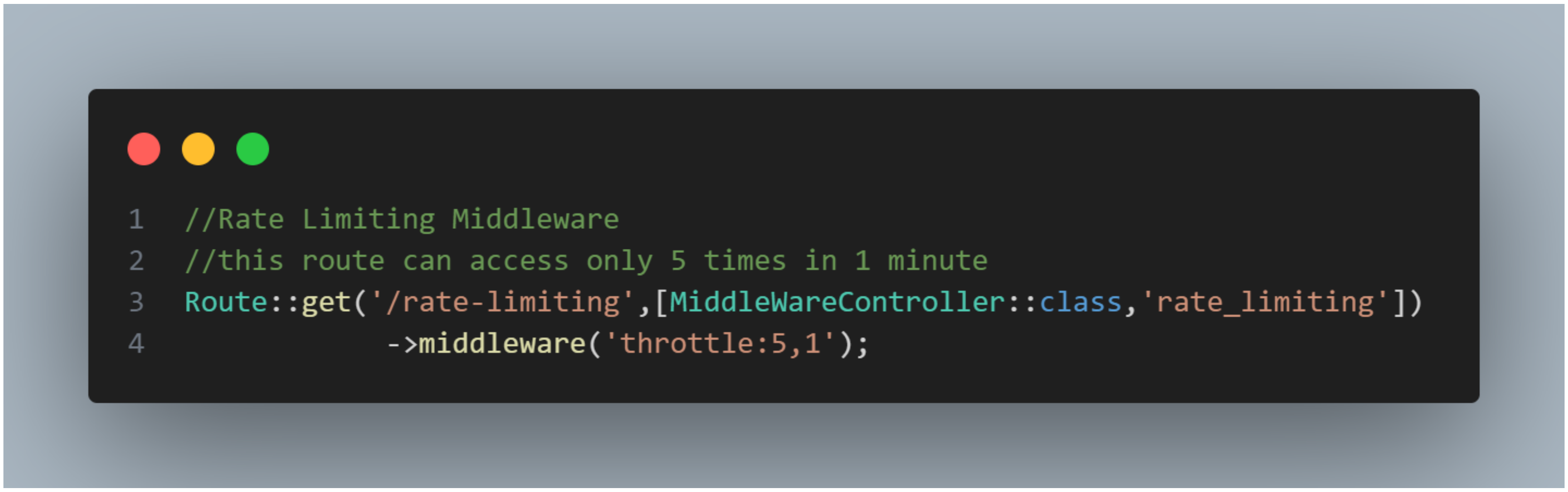
200 OK • 531 ms • 1.11 KB

```
{
    "route": "age country test",
    "country": "bd",
    "age": 20
}
```

LARAVEL RATE LIMITING:

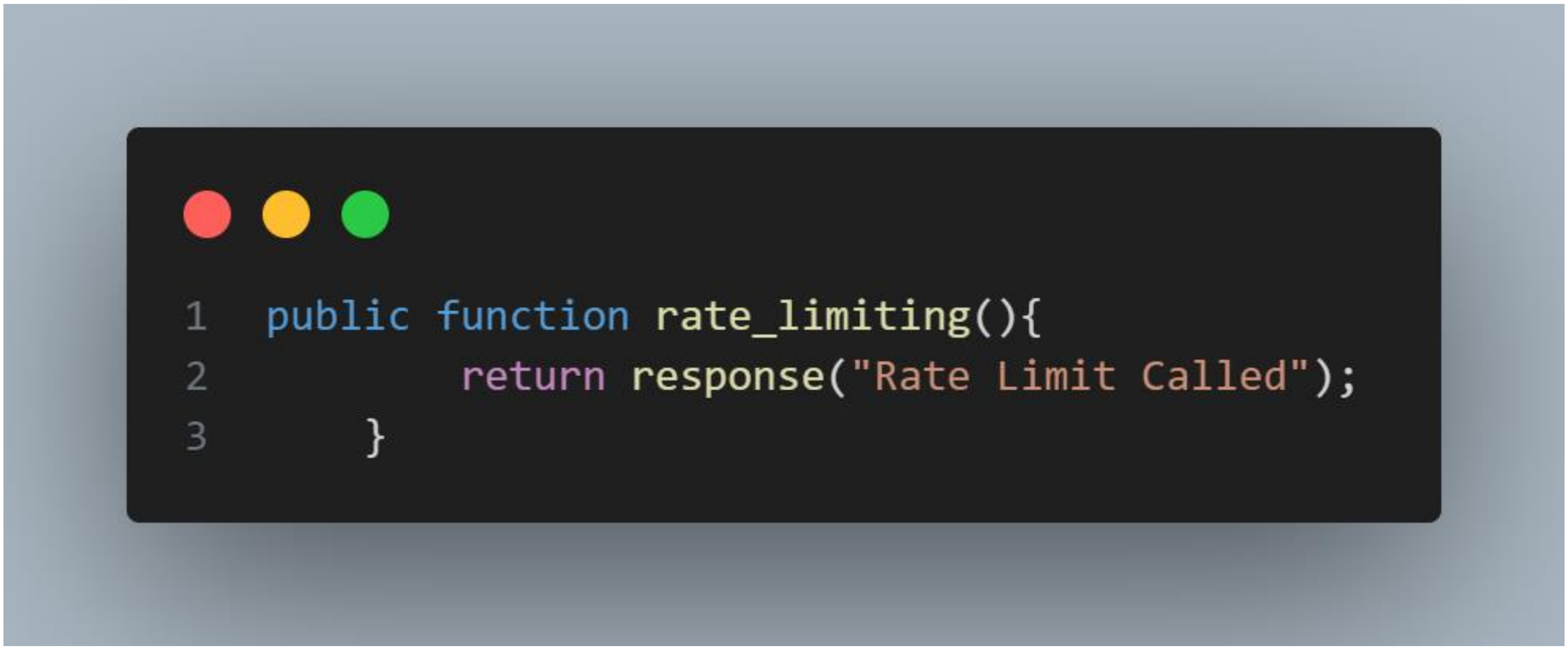
এর মাধ্যমে আমরা একটা রাউট এ রিকোয়েস্ট সংখ্যা লিমিট করে দিতে পারি।অর্থাৎ একটা রাউট এ মিনিটে ৫ বার এর বেশী রিকোয়েস্ট যাবে না।

১.রাউট তৈরি করব যেখানে Middleware এর কোড এ্যাড করে দিব।মিনিটে ৫ বার এর বেশী এই রাউট রিকোয়েস্ট করলে আর যাবে না।



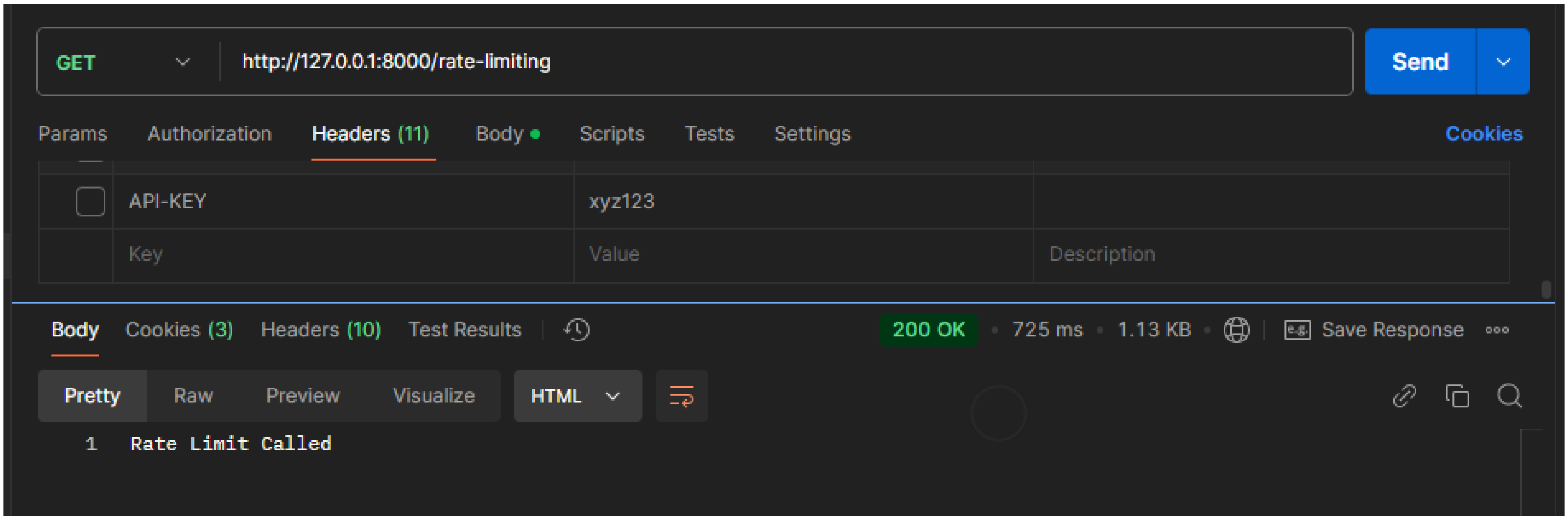
```php
//Rate Limiting Middleware
//this route can access only 5 times in 1 minute
Route::get('/rate-limiting',[MiddleWareController::class,'rate_limiting'])
            ->middleware('throttle:5,1');
```

২.Controller এর কোড লিখব।



```php
public function rate_limiting(){
        return response("Rate Limit Called");
    }
```

৩.আউটপুট

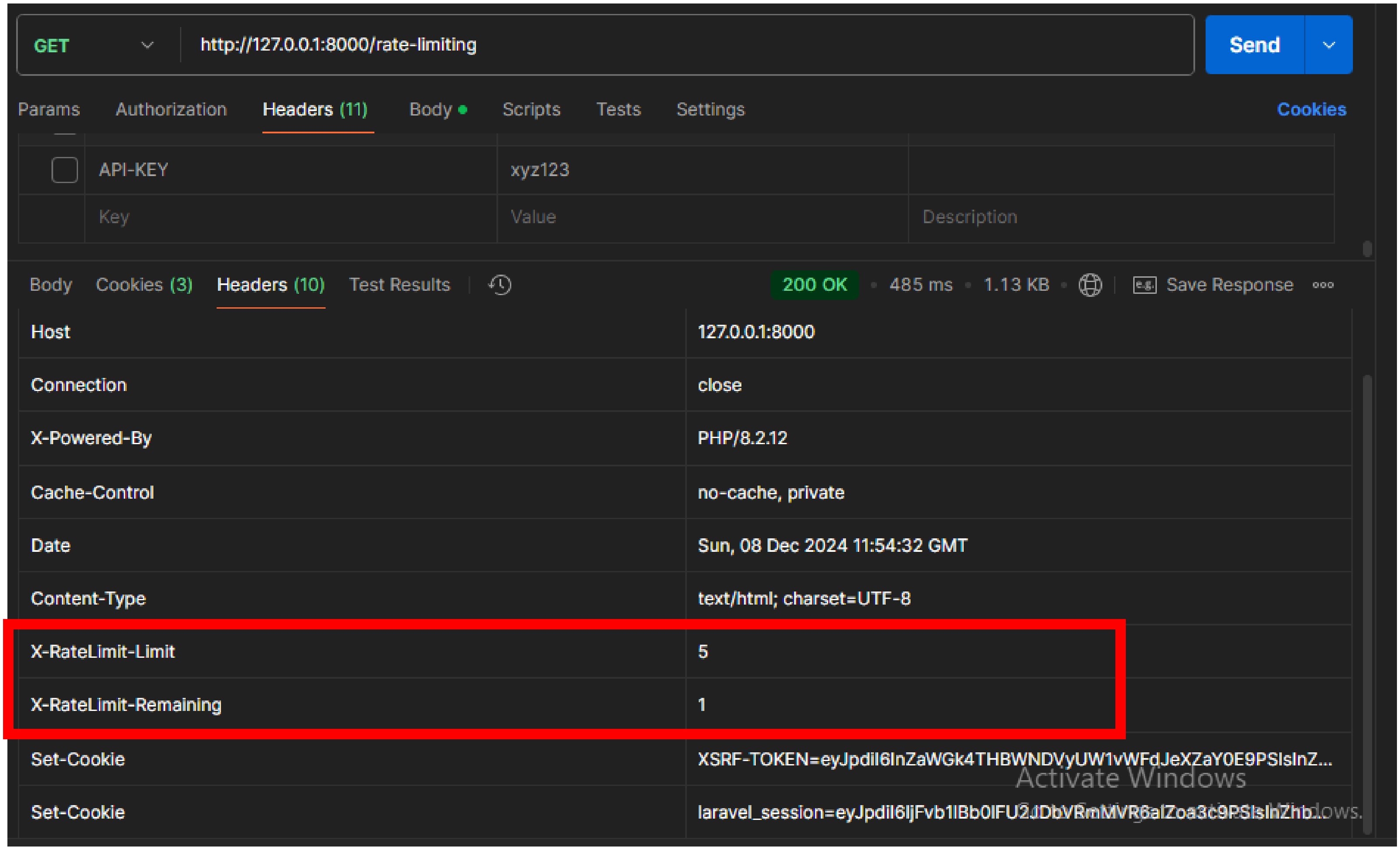


http://127.0.0.1:8000/rate-limiting

API-KEY	xyz123	
Key	Value	Description

200 OK • 725 ms • 1.13 KB

```
Rate Limit Called
```



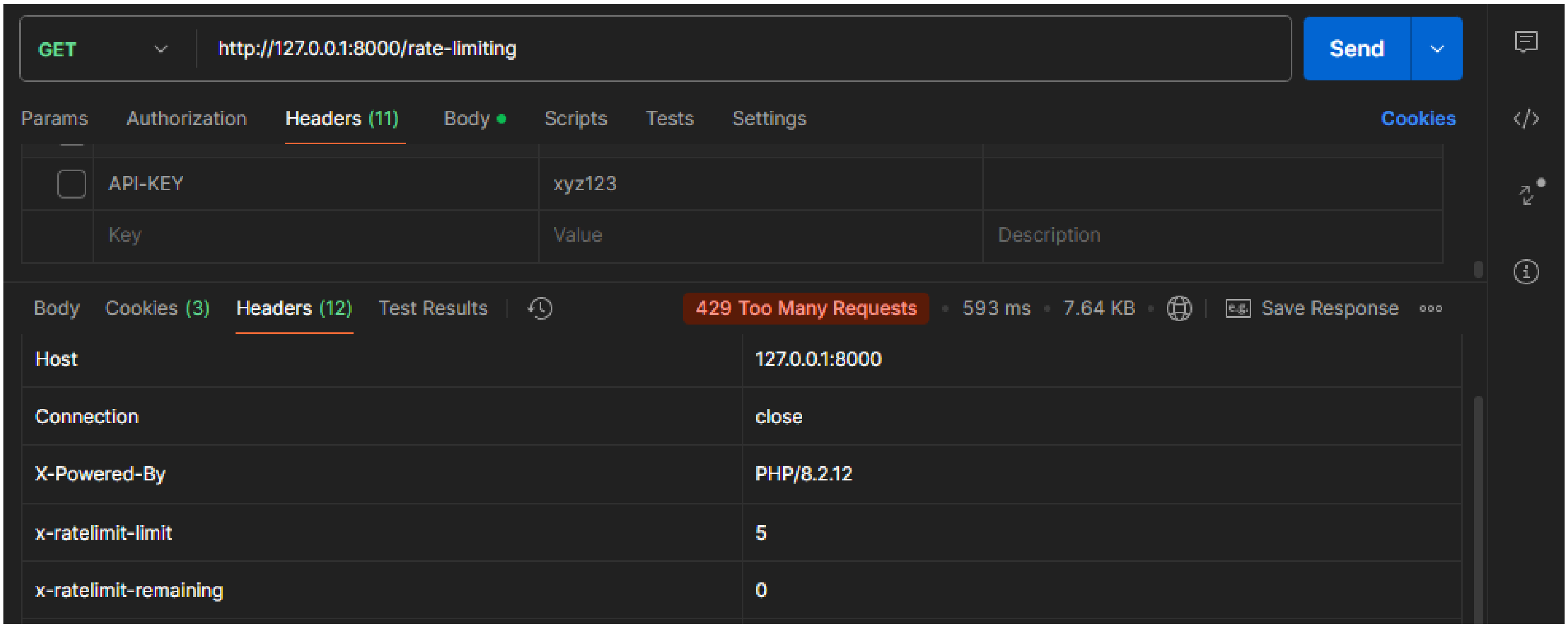
http://127.0.0.1:8000/rate-limiting

API-KEY	xyz123	
Key	Value	Description

200 OK • 485 ms • 1.13 KB

Host	127.0.0.1:8000
Connection	close
X-Powered-By	PHP/8.2.12
Cache-Control	no-cache, private
Date	Sun, 08 Dec 2024 11:54:32 GMT
Content-Type	text/html; charset=UTF-8
X-RateLimit-Limit	5
X-RateLimit-Remaining	1
Set-Cookie	XSRF-TOKEN=eyJpdiI6InZaWGk4THBWNDVyUW1vWFdJeXZaY0E9PSIsInZ...
Set-Cookie	laravel_session=eyJpdiI6IjFvb1lBb0lFU2JDbVRmMVR6alZoa3c9PSIsInZhb...

৫ বার Request পাঠানোর পর আর যাবে না রিকোয়েস্ট

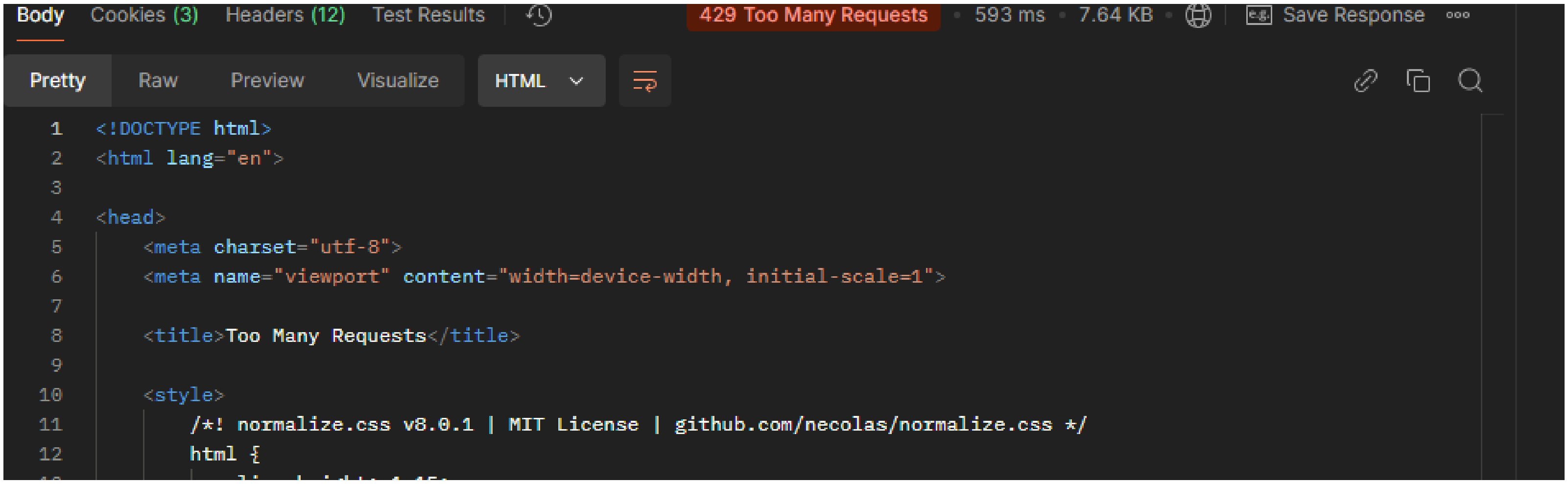


GET http://127.0.0.1:8000/rate-limiting

	Key	Value	Description
□	API-KEY	xyz123	

429 Too Many Requests • 593 ms • 7.64 KB

Host	127.0.0.1:8000
Connection	close
X-Powered-By	PHP/8.2.12
x-ratelimit-limit	5
x-ratelimit-remaining	0

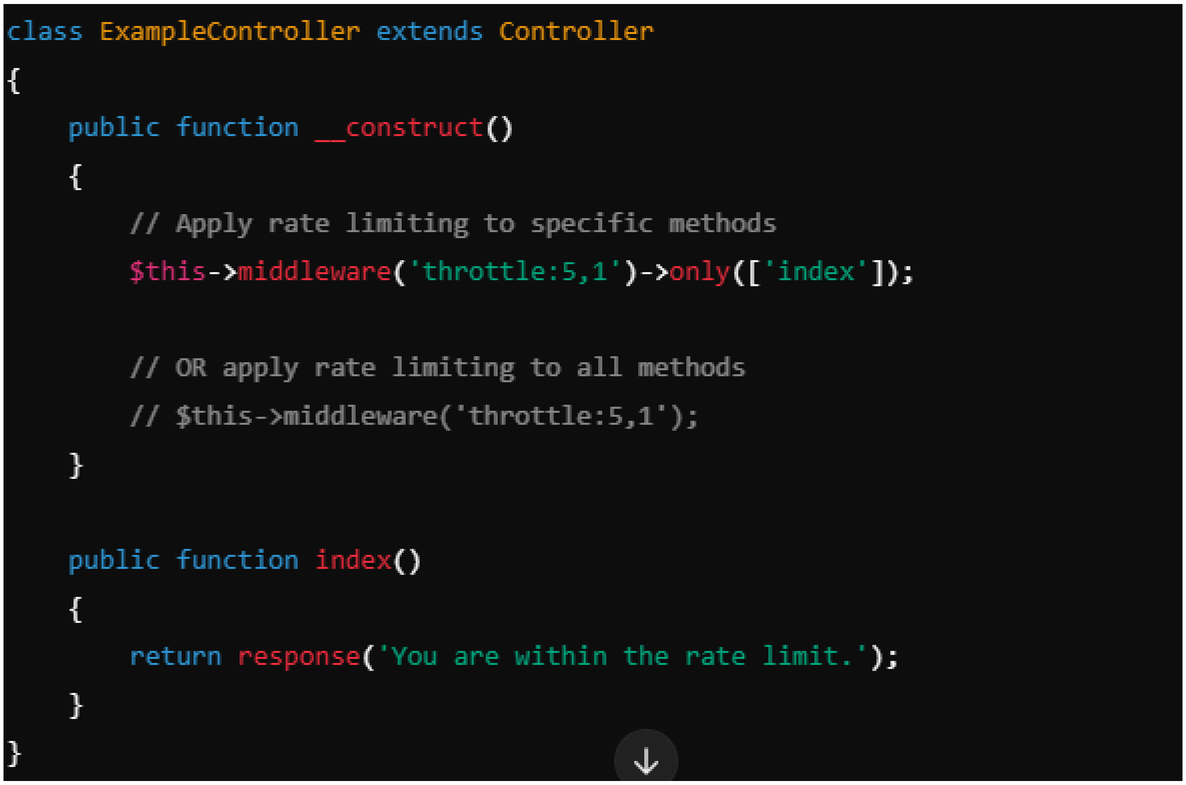


429 Too Many Requests • 593 ms • 7.64 KB

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

<head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">

    <title>Too Many Requests</title>

    <style>
        /*! normalize.css v8.0.1 | MIT License | github.com/necolas/normalize.css */
        html {
            line-height: 1.15;
```

Controller থেকে আমরা চাইলে ডিফাইন করে দিতে পারি।

$this->middleware('throttle:5,1'); এর মাধ্যমে একটা Controller এর সব মেথড এর জন্য Rate Limiting add করতে পারি।



```php
class ExampleController extends Controller
{
    public function __construct()
    {
        // Apply rate limiting to specific methods
        $this->middleware('throttle:5,1')->only(['index']);

        // OR apply rate limiting to all methods
        // $this->middleware('throttle:5,1');
    }

    public function index()
    {
        return response('You are within the rate limit.');
    }
}
```