

## Web Programming Advanced Job Sheet 2



**From:**

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2 I

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## Routing

### Basic Routing

Practicum Steps:

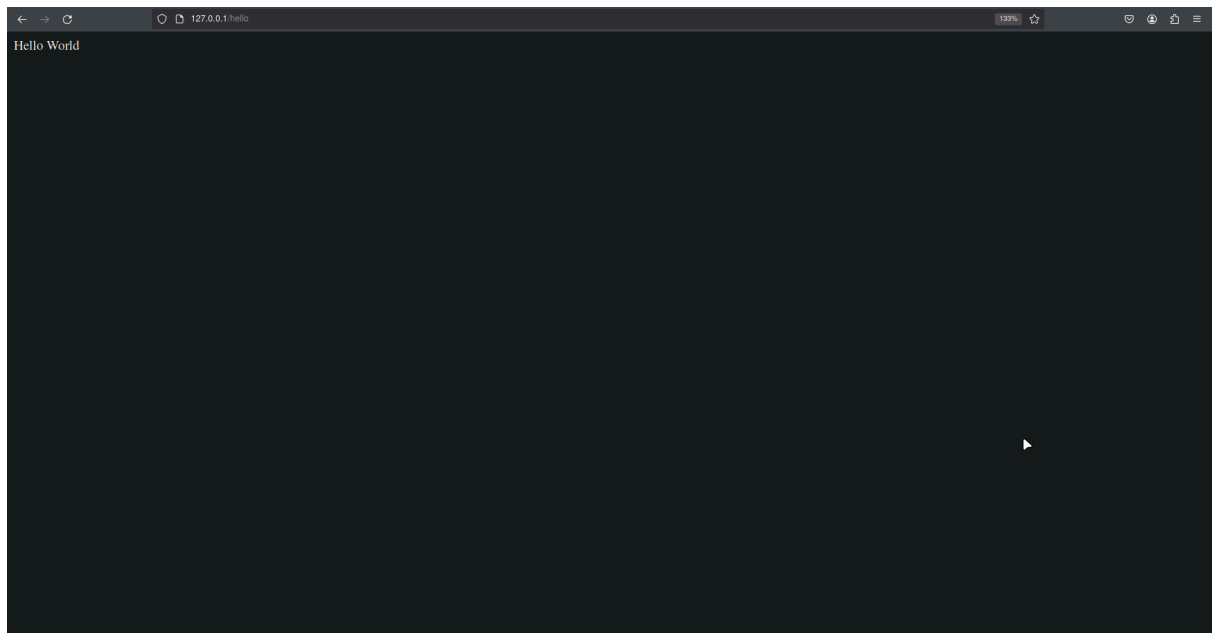
- a. In this section, we will create two routes with the following conditions.

No	Http Verb	Url	Function
1	get	/hello	Display String Hello to the browser.
2	get	/world	Show String World to browser

- b. Open the routes/web.php file. Add a route for number 1 as below:

```
20 Route::get('/hello', function () {  
21     return 'Hello World';  
22 });  
23
```

- c. Open a browser, write the URL to call the route: localhost/PWL\_2024/public/hello. Pay attention to the page that appears to see if it is appropriate and describe your observations.



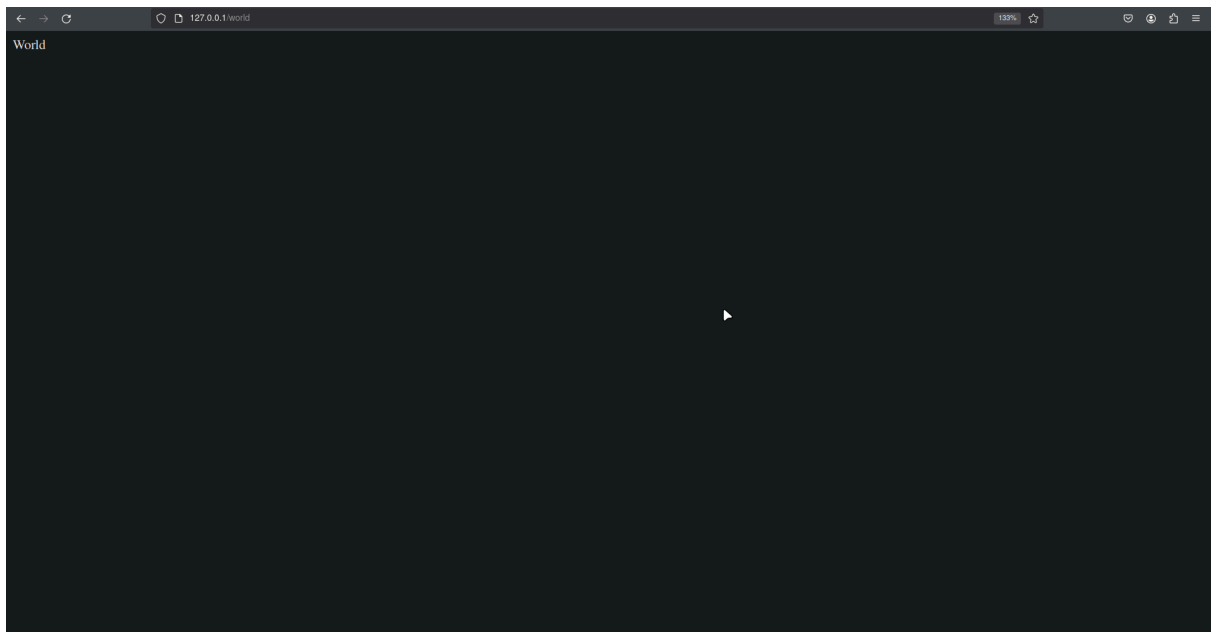
- When we write route with /hello path and get method, then we write function with return hello world message. When we type localhost:80/hello or 127.0.0.1:80/hello, it will be return hellow world message as same with that function return.
- d. To create a second route, add the /world route as below:

```

24 Route::get('/world', function () {
25     return 'World';
26 });
27

```

- e. Open your browser, write the URL to call the route: localhost/PWL\_2024/public/world. Pay attention to the page that appears to see if it is appropriate and describe your observations.



- Same with previous steps, when we change the URL path from /hello to /world, the message will be changed because both functions return a different message.

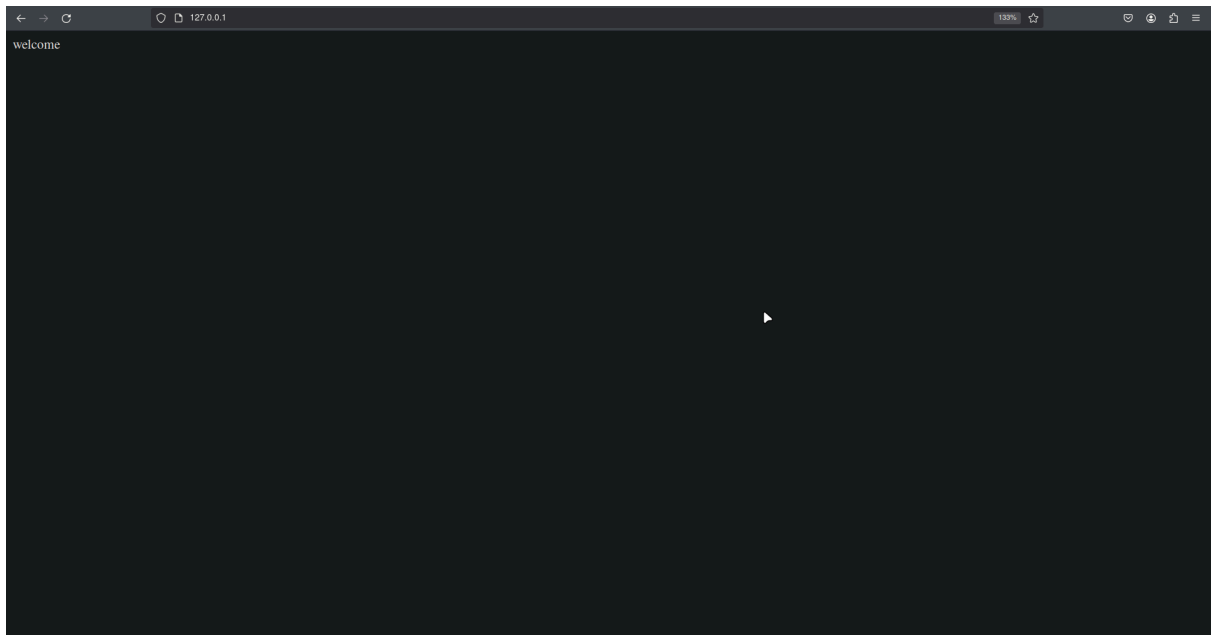
- f. Code :

```

16 Route::get('/', function () {
17     return 'welcome';
18 });
19

```

Result :



g. Code :

```
20 Route::get('/about', function () {  
21     $name = "AL AZHAR RIZQI RIFA'I FIRDAUS";  
22     $nim = "2241720263";  
23     return "Name: " . $name . "<br> NIM: " . $nim;  
24 });  
25
```

Result :



## Route Parameters

Practicum Steps:

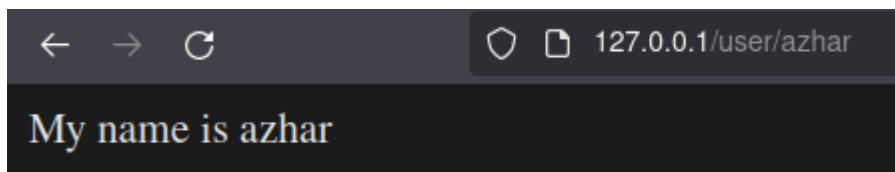
- We will call route `/user/{name}` as well as send parameters in the form of user names `$name` as the code below.

```

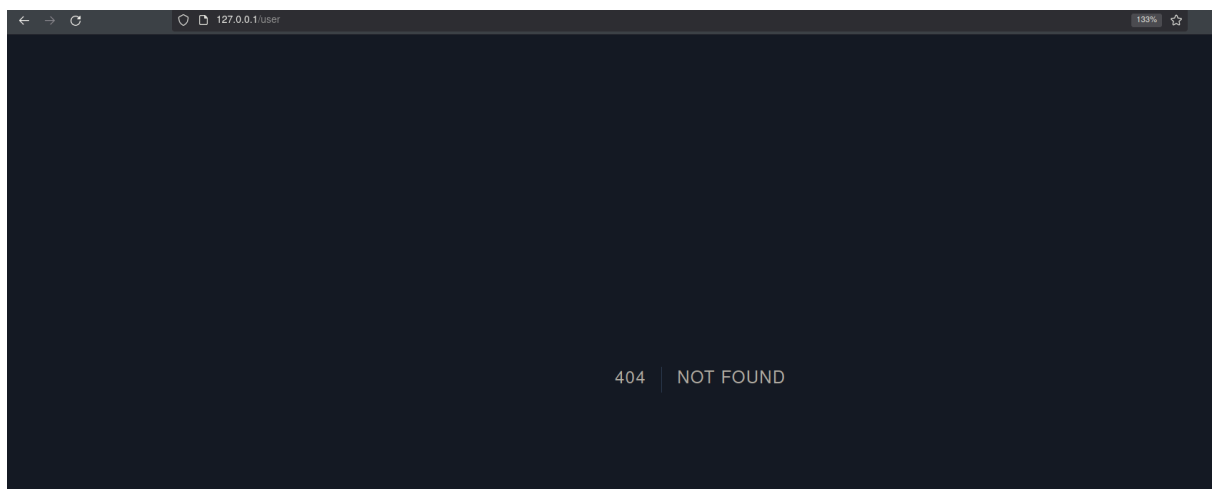
36 // Route with parameter
37 Route::get('/user/{name}', function ($name) {
38     return 'My name is ' . $name;
39 });

```

- b. Run the code by writing the URL to call the route:  
localhost/PWL\_2024/public/user/yourname. Pay attention to the page that appears and describe your observations.



- Different with previous steps, we write url path with /user/{name}, it means “name” is parameter that fetch from user input. Then on callback function, there is name parameter, it receive from url parameter, then it will be return on callback function it self as message.
- c. Next, try writing the URL: localhost/PWL\_2024/public/user/. Pay attention to the page that appears and describe your observations.



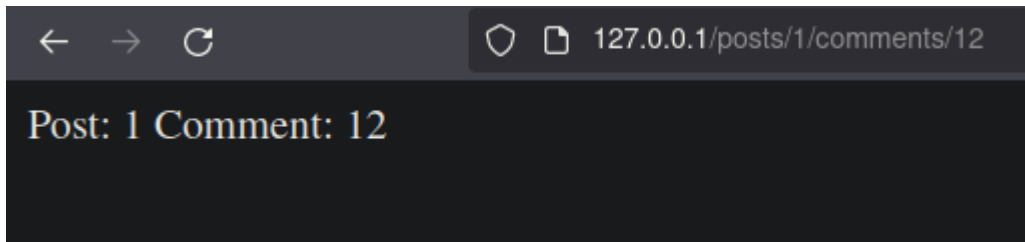
- The result is 404 not found. It means url path that client request which is /user is doesn't exist on the server because we don't already write the /user route.
- d. A route, can also accept more than 1 parameter as the following code. The route accepts \$postId parameters and also \$comment.

```

41 Route::get('/posts/{post}/comments/{comment}', function ($postId, $commentId) {
42     return 'Post: ' . $postId . ' Comment: ' . $commentId;
43 });

```

- e. Run the code by writing the URL to call the route:  
localhost/PWL\_2024/public/posts/1/comments/5. Pay attention to the page that appears and describe your observations.

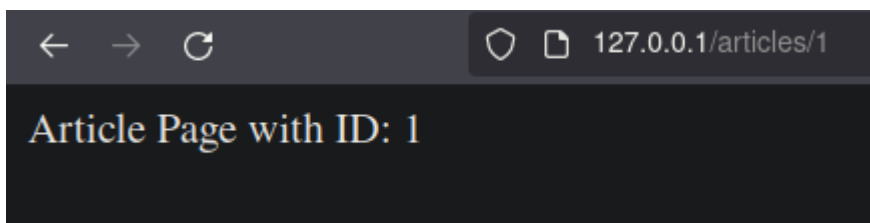


- Same with before, we add one more parameter on route.

f. Code :

```
45 Route::get('/articles/{id}', function ($id) {  
46     return 'Article Page with ID: ' . $id;  
47 });
```

Result :



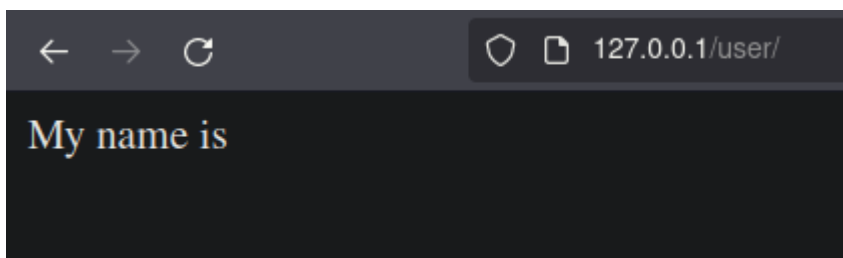
## Optional Parameters

Practicum Steps:

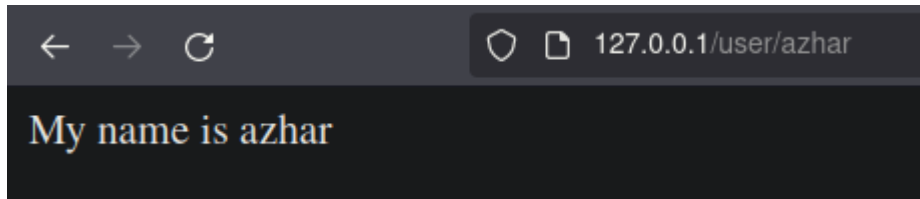
- We will call route /user as well as send a parameter in the form of a username \$name where the parameter is optional.

```
49 // optional parameter  
50 Route::get('/user/{name?}', function ($name = null) {  
51     return 'My name is ' . $name;  
52 });
```

- Run the code by typing the URL: localhost/PWL\_2024/public/user/. Pay attention to the page that appears and describe your observations.



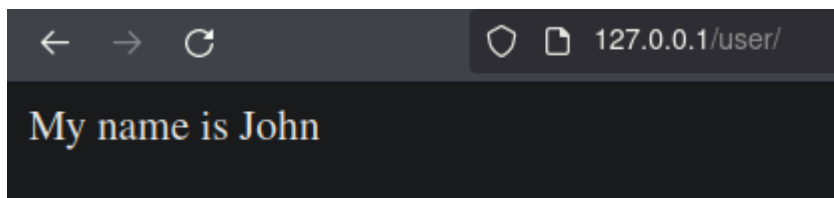
- Different with before, when we type url path /user is not found, now there is message result because we set on name parameter the default is null on callback function.
- c. Next write the URL: localhost/PWL\_2024/public/user/yourname. Pay attention to the page that appears and describe your observations.



- The result still appear because the default value from name parameter is null. when we type anything we want, the result will be the same as we type.
- d. Change the code in the /user route to as below.

```
49 // optional parameter
50 Route::get('/user/{name?}', function ($name = 'John') {
51     return 'My name is ' . $name;
52 });
```

- e. Run the code by typing the URL: localhost/PWL\_2024/public/user/. Pay attention to the page that appears and describe your observations.



- The result is John, because we set the default value on name parameter is john.

## Router Name

Route names are usually used to make it easier for us to call routes when building applications. We simply call the name of the route.




- Code :

```

55 // router name
56 Route::get('/user/profile', function () {
57     //
58 })->name('profile');
59
60 Route::get(
61     '/user/profile',
62     [UserProfileController::class, 'show']
63 )->name('profile');
64
65 // generating urls...
66 $url = route('profile');
67
68 // generating redirects...
69 return redirect () -> route('profile');

```

```

app > Http > Controllers >  UserProfileController.php >  UserProfileController >  show
1  <?php
2
3  namespace App\Http\Controllers;
4
5  use Illuminate\Foundation\Auth\Access\AuthorizesRequests;
6  use Illuminate\Foundation\Validation\ValidatesRequests;
7  use Illuminate\Routing\Controller as BaseController;
8
9  class UserProfileController extends BaseController {
10     use AuthorizesRequests, ValidatesRequests;
11
12     public function show() {
13         return 'show user profile';
14     }
15
16 }
17

```




## Route Group dan Route Prefixes




Several routes that have the same attributes as the same middleware can be grouped into one group to make it easier to write routes, in addition to being used for middleware, there is still the use of



route groups for routes that are under one subdomain. Examples of using route groups are as follows:

```
74 // Route Group dan Route Prefixes
75 Route::middleware(['first', 'second'])->group(function () {
76     Route::get('/', function () {
77         // Uses first & second Middleware
78     });
79 Route::get('/user/profile', function () {
80     // Uses first & second Middleware
81     });
82 });
83
84 Route::domain('{account}.example.com')->group(function () {
85     Route::get('user/{id}', function ($account, $id) {
86         //
87     });
88 });
89
90 Route::middleware('auth')->group(function () {
91     Route::get('/user', [UserController::class, 'index']);
92     Route::get('/post', [PostController::class, 'index']);
93     Route::get('/event', [EventController::class, 'index']);
94 });
95
```

```
app > Http > Controllers >  EventController.php >  EventController >  index
1  <?php
2
3  namespace App\Http\Controllers;
4
5  use Illuminate\Foundation\Auth\Access\AuthorizesRequests;
6  use Illuminate\Foundation\Validation\ValidatesRequests;
7  use Illuminate\Routing\Controller as BaseController;
8
9  class EventController extends BaseController {
10     use AuthorizesRequests, ValidatesRequests;
11
12     public function index() {
13         return 'This is index';
14     }
15
16 }
17
```

```
app > Http > Controllers >  PostController.php >  PostController >  index
1  <?php
2
3  namespace App\Http\Controllers;
4
5  use Illuminate\Foundation\Auth\Access\AuthorizesRequests;
6  use Illuminate\Foundation\Validation\ValidatesRequests;
7  use Illuminate\Routing\Controller as BaseController;
8
9  class PostController extends BaseController {
10     use AuthorizesRequests, ValidatesRequests;
11
12     public function index() {
13         return 'This is index';
14     }
15
16 }
17
```

```

app > Http > Controllers > UserController.php > UserController > index
1  <?php
2
3  namespace App\Http\Controllers;
4
5  use Illuminate\Foundation\Auth\Access\AuthorizesRequests;
6  use Illuminate\Foundation\Validation\ValidatesRequests;
7  use Illuminate\Routing\Controller as BaseController;
8
9  class UserController extends BaseController {
10     use AuthorizesRequests, ValidatesRequests;
11
12     public function index() {
13         return 'This is index';
14     }
15
16 }
17

```

## Route Prefix

Route grouping can also be done for routes that have the same prefix. For route creation with prefix can be seen the code as below.

```

96 // route prefix
97 Route::prefix('admin')->group(function () {
98     Route::get('/user', [UserController::class, 'index']);
99     Route::get('/post', [PostController::class, 'index']);
100    Route::get('/event', [EventController::class, 'index']);
101 });

```

## Redirect Routes

To redirect Laravel can be done using Route::redirect how to use it can be seen in the program code below.

```

103 // redirect route
104 Route::redirect('/here', '/there');

```

## View Routes

Laravel also provides a special route that makes it easy to create a route without using controllers or callback functions. These routes directly accept input in the form of urls and return views. Here's how to create view routes.

```
106 // view route
107 Route::view('/welcome', 'welcome');
108 Route::view('/welcome', 'welcome', ['name' => 'Taylor']);
```

## Controller

Creating a Controller

Practicum Steps:

- a. To create a controller in Laravel a command is provided to generate its basic structure. We can use the artisan command followed by the definition of the name of the controller to be created.

```
→ zharsuke@box ~/Documents/college-stuff/Semester_4/web-programming-advanced/meet-1/demo git:(master) ✗ php artisan make:controller WelcomeController
INFO Controller [app/Http/Controllers/WelcomeController.php] created successfully.
→ zharsuke@box ~/Documents/college-stuff/Semester_4/web-programming-advanced/meet-1/demo git:(master) ✗
```

- b. Open the file in app/Http/Controllers/WelcomeController.php. The structure on the controller can be described as follows:

```
app > Http > Controllers > WelcomeController.php > WelcomeController
1  <?php
2
3  namespace App\Http\Controllers;
4
5  use Illuminate\Http\Request;
6
7  class WelcomeController extends Controller
8  {
9      //
10 }
11
```

- c. To define an action, please add a function with public access. So that the controller above becomes as follows:

```

app > Http > Controllers > WelcomeController.php > WelcomeController > hello
1  <?php
2
3  namespace App\Http\Controllers;
4
5  use Illuminate\Http\Request;
6
7  class WelcomeController extends Controller
8  {
9      public function hello() {
10         return 'Hello, World!';
11     }
12 }
13

```

- d. Once a controller has defined an action, we can add that controller to the route. Change the /hello route to something like this:

```

110
111 Route::get('/hello', [WelcomeController::class, 'hello']);

```

- e. Open a browser, write the URL to call the route: localhost/PWL\_2024/public/hello. Pay attention to the page that appears and describe your observations.



- Different with before, we write route with callback function. But now we separated it, store the function inside controller.
- f. Modification of results in practicum point 2 (Routing) with the concept of controller. Move the execution logic into the controller with the name PageController.




Resource	POST	GET	PUT	DELETE
/		Show 'Welcome' Message PageController : index		
/about		Show Name and NIM PageController : about		
/articles/{id}		Display dynamic page 'Article Page with Id {id}' id replaced as per input from url PageController : articles		

```

114 Route::get('/', [PageController::class, 'index']);
115 Route::get('/about', [PageController::class, 'about']);
116 Route::get('/articles/{id}', [PageController::class, 'articles']);

```




```

app > Http > Controllers >  PageController.php >  PageController >  articles
1  <?php
2
3  namespace App\Http\Controllers;
4
5  use Illuminate\Http\Request;
6
7  class PageController extends Controller
8  {
9      public function index() {
10         return 'Welcome';
11     }
12
13     public function about() {
14         $name = "AL AZHAR RIZQI RIFA'I FIRDAUS";
15         $nim = "2241720263";
16         return "Name: " . $name . "<br> NIM: " . $nim;
17     }
18
19     public function articles($id) {
20         return 'Article Page with ID: ' . $id;
21     }
22 }
23

```

- g. Modify the previous implementation with the concept of Single Action Controller. So for the final result obtained there will be HomeController, AboutController and ArticleController. Modifications are also the routes used.

```
117 Route::get('/', [HomeController::class, 'index']);
118 Route::get('/about', [AboutController::class, 'about']);
119 Route::get('/articles/{id}', [ArticleController::class, 'articles']);
```

```
app > Http > Controllers >  AboutController.php >  AboutController >  about
```

```
1  <?php
2
3  namespace App\Http\Controllers;
4
5  use Illuminate\Http\Request;
6
7  class AboutController extends Controller
8  {
9      public function about() {
10         $name = "AL AZHAR RIZQI RIFA'I FIRDAUS";
11         $nim = "2241720263";
12         return "Name: " . $name . "<br> NIM: " . $nim;
13     }
14 }
15
```

```

app > Http > Controllers > ArticleController.php > ArticleController > articles
1  <?php
2
3  namespace App\Http\Controllers;
4
5  use Illuminate\Http\Request;
6
7  class ArticleController extends Controller
8  {
9      public function articles($id) {
10         return 'Article Page with ID: ' . $id;
11     }
12 }
13

```

```

app > Http > Controllers > HomeController.php > HomeController > index
1  <?php
2
3  namespace App\Http\Controllers;
4
5  use Illuminate\Http\Request;
6
7  class HomeController extends Controller
8  {
9      public function index() {
10         return 'Welcome';
11     }
12 }
13

```

## Resource Controller

### Practicum Steps:

- To create it is done by running the following command in the terminal.

```

➔ zharsuke@box ~/Documents/college-stuff/Semester_4/web-programming-advanced/meet-1/demo git:(master) X php artisan make:controller PhotoController --resource
INFO  Controller [app/Http/Controllers/PhotoController.php] created successfully.
➔ zharsuke@box ~/Documents/college-stuff/Semester_4/web-programming-advanced/meet-1/demo git:(master) X
[mundane] 0:work* "box" 19:49 23-Feb-24

```

- After the controller is successfully degenerated, a route must be created so that it can connect to the frontend. Add the following program code to the web.php file.



```

121
122 Route::resource('photos', PhotoController::class);

```

- c. Run the list route check (php artisan route:list) the following route will be generated.

```

➔ zharsuke@box ~/Documents/college-stuff/Semester_4/web-programming-advanced/meet-1/demo git:(master) X php artisan route:list

GET|HEAD / ..... HomeController@index
POST _ignition/execute-solution ..... Ignition\ExecuteSolutionController
GET|HEAD _ignition/health-check ..... Ignition\HealthCheckController
POST _ignition/update-config ..... Ignition\UpdateConfigController
GET|HEAD about ..... AboutController@about
GET|HEAD admin/event ..... EventController@index
GET|HEAD admin/post ..... PostController@index
GET|HEAD admin/user ..... UserController@index
GET|HEAD api/user .....
GET|HEAD articles/{id} ..... ArticleController@articles
GET|HEAD event ..... EventController@index
GET|HEAD hello ..... WelcomeController@hello
ANY here ..... Illuminate\Routing\RedirectController
GET|HEAD photos ..... photos.index > PhotoController@index
POST photos ..... photos.store > PhotoController@store
GET|HEAD photos/create ..... photos.create > PhotoController@create
GET|HEAD photos/{photo} ..... photos.show > PhotoController@show
PUT|PATCH photos/{photo} ..... photos.update > PhotoController@update
DELETE photos/{photo} ..... photos.destroy > PhotoController@destroy
GET|HEAD photos/{photo}/edit ..... photos.edit > PhotoController@edit
POST post ..... PostController@index
GET|HEAD posts/{post}/comments/{comment} .....
GET|HEAD sanctum/csrf-cookie ..... sanctum.csrf-cookie > Laravel\Sanctum\CsrfCookieController@show
GET|HEAD user ..... UserController@index
GET|HEAD user/profile .....
GET|HEAD {account}.example.com/user/{id} .....
GET|HEAD user/{name?} .....
GET|HEAD user/{name} .....
GET|HEAD welcome .....
GET|HEAD world .....

Showing [30] routes

```

- d. In the route list all routes related to crud photos have been generated by laravel. If not all routes in the resource controller are needed, it can be reduced by updating the routes in theweb.php to resemble the following.

```

124 Route::resource('photos', PhotoController::class)->only(['index', 'show']);
125
126 Route::resource('photos', PhotoController::class)->except(['create', 'store', 'update', 'destroy']);

```

## View

Creating a View

Practicum Steps:

- a. In the app/resources/views directory, create a hello.blade.php file.

```

resources > views > hello.blade.php > html

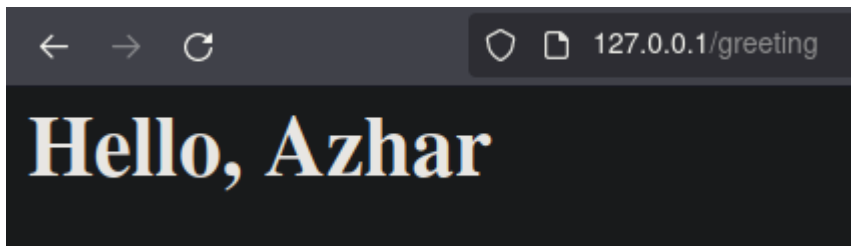
1 <!-- View pada resources/views/hello.blade.php -->
2 <html>
3 <body>
4 <h1>Hello, {{ $name }}</h1>
5 </body>
6 </html>

```

- b. The View can be run via Routing, where the route will call the View according to the file name without the 'blade.php'. (Note: Replace Andi with your name)

```
128
129 Route::get('/greeting', function () {
130     return view('hello', ['name' => 'Azhar']);
131 });
```

- c. Run the code by opening the url localhost/PWL\_2024/public/greeting. Pay attention to the page that appears and describe your observations.

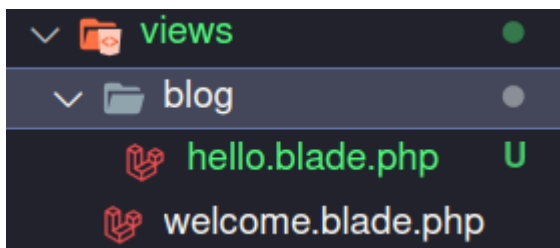


- We create hello views to display web interface. Then in route, we write callback function, then return hello view and fill name parameter with Azhar.

View in Directory

Practicum Steps:

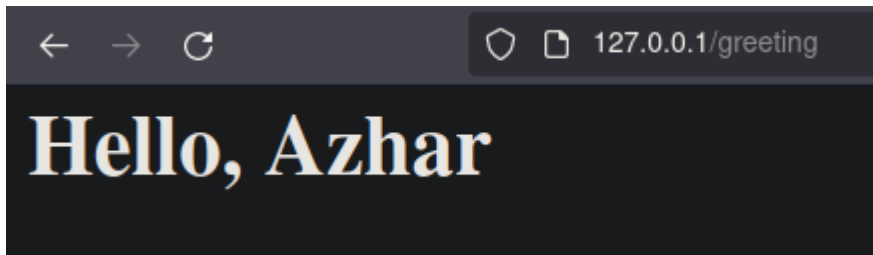
- Create a blog directory within the views directory.
- Move the hello.blade.php file into the blog directory.



- c. Next, make changes to the route.

```
132
133 Route::get('/greeting', function () {
134     return view('blog.hello', ['name' => 'Azhar']);
135 });
```

- d. Run the code by opening the url localhost/PWL\_2024/public/greeting. Pay attention to the page that appears and describe your observations.



- The result and url path still same, but the difference is hello blade that we create, it moves to inside blog directory. Then we add blog.hello on router view.

Displaying a View from a Controller

Practicum Steps:

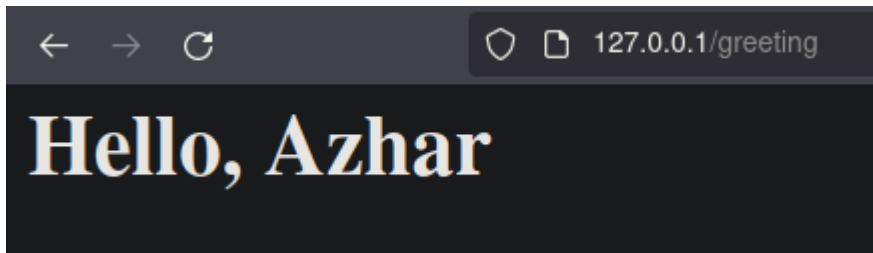
- Open WelcomeController.php and add a new function, greeting.

```
app > Http > Controllers > WelcomeController.php > ...
1  <?php
2
3  namespace App\Http\Controllers;
4
5  use Illuminate\Http\Request;
6
7  class WelcomeController extends Controller
8  {
9      public function hello() {
10         return 'Hello, World!';
11     }
12
13     public function greeting() {
14         return view('blog.hello', ['name' => 'Azhar']);
15     }
16 }
17
```

- Change the /greeting route and navigate to the WelcomeController in the greeting function.

```
132
133 Route::get('/greeting', [WelcomeController::class, 'greeting']);
```

- Run the code by opening the url localhost/PWL\_2024/public/greeting. Pay attention to the page that appears and describe your observations.



- The result and url path still same with previous. But now, we call view inside controller, then we call controller inside routes.

Forward data to view

Practicum Steps:

- Open WelcomeController.php and add change greeting function.

```
7  class WelcomeController extends Controller
8  {
9      public function hello() {
10         return 'Hello, World!';
11     }
12
13     public function greeting() {
14         return view('blog.hello')
15             ->with('name', 'AL AZHAR RIZQI RIFA\I FIRDAUS')
16             ->with('occupation', 'Student');
17     }
18 }
19
```

- Change the hello.blade.php to display two parameters.

```
resources > views > blog > hello.blade.php > html
1  <html>
2  <body>
3  <h1>Hello, {{ $name }}</h1>
4  <h1>You are {{ $occupation }}</h1>
5  </body>
6  </html>
```

- Run the code by opening the url localhost/PWL\_2024/public/greeting. Pay attention to the page that appears and describe your observations.

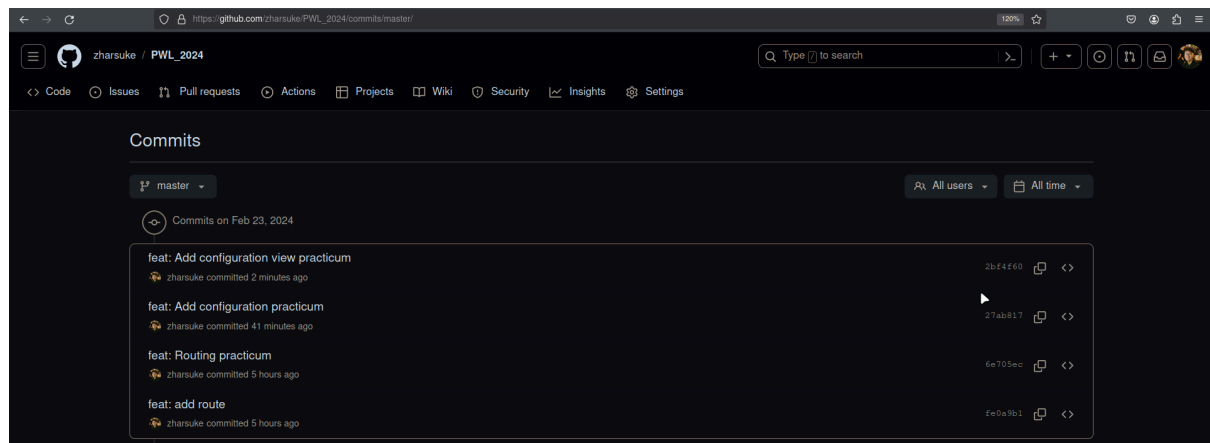


- Inside greeting function, we use with() method to make array that contains key value. Then we call both key to view, to display it.

## PRACTICUM QUESTIONS

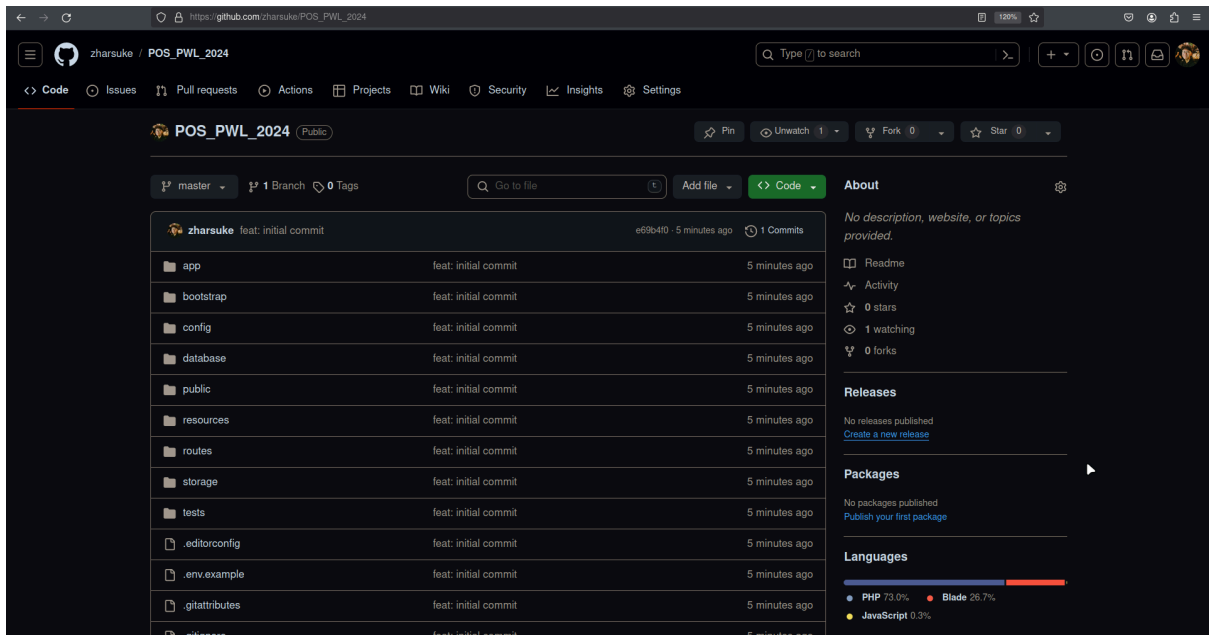
1. Run the Practicum steps on the jobsheet above. Sync changes to PWL\_2024 project to Github.

Link repository github: [https://github.com/zharsuke/PWL\\_2024](https://github.com/zharsuke/PWL_2024)



2. Create a new project named POS. This project is a Point of Sales application that is used to help sales.

Link repository github: [https://github.com/zharsuke/POS\\_PWL\\_2024](https://github.com/zharsuke/POS_PWL_2024)



3. Create several routes, controllers, and views according to the following conditions.

1	Home Page Display the start page of the website
2	Halaman Products Display product list (route prefix) /category/food-beverage /category/beauty-health /category/home-care /category/baby-kid
3	User Page Display user profiles (route param) /user/{id}/name/{name}
4	Sales Page Display the POS transaction page

4. The route performs functions on different controllers on each page.

Code :

```

web.php x CategoryController.php HomeController.php SalesController.php UserContro
routes > web.php > ...
1  <?php
2
3  use App\Http\Controllers\CategoryController;
4  use App\Http\Controllers\HomeController;
5  use App\Http\Controllers\SalesController;
6  use App\Http\Controllers\UserController;
7  use App\Models\User;
8  use Illuminate\Support\Facades\Route;
9
10 /*
11 |-----
12 |  Web Routes
13 |-----
14 |
15 |  Here is where you can register web routes for your application. These
16 |  routes are loaded by the RouteServiceProvider and all of them will
17 |  be assigned to the "web" middleware group. Make something great!
18 |
19 */
20
21 // home
22 Route::get('/', [HomeController::class, 'getHome']);
23
24 // products (route prefix)
25 Route::prefix('category')->group(function () {
26     Route::get('/food-beverage', [CategoryController::class, 'getFoodBeverage']);
27     Route::get('/beauty-health', [CategoryController::class, 'getBeautyHealth']);
28     Route::get('/home-care', [CategoryController::class, 'getHomeCare']);
29     Route::get('/baby-kid', [CategoryController::class, 'getBabyKid']);
30 });
31
32 // user page (route parameter)
33 Route::get('/user/{id}/name/{name}', [UserController::class, 'getUser']);
34
35 // sales page
36 Route::get('/sales', [SalesController::class, 'getSales']);

```

5. The function on the Controller will call the view according to the page to be displayed.

web.php

CategoryController.php M x

UserController.php

app > Http > Controllers > CategoryController.php > CategoryController

```
1  <?php
2
3  namespace App\Http\Controllers;
4
5  use Illuminate\Http\Request;
6
7  class CategoryController extends Controller {
8      public function getBeautyHealth() {
9          return view('category.beautyHealth');
10     }
11
12     public function getFoodBeverage() {
13         return view('category.foodBeverage');
14     }
15
16     public function getHomeCare() {
17         return view('category.homeCare');
18     }
19
20     public function getBabyKid() {
21         return view('category.babyKid');
22     }
23 }
24
```

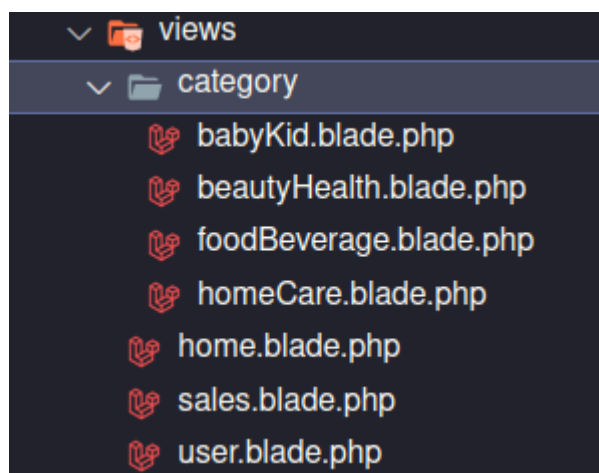


```
web.php CategoryController.php HomeController.php x
app > Http > Controllers > HomeController.php > HomeController > get
1 <?php
2
3 namespace App\Http\Controllers;
4
5 use Illuminate\Http\Request;
6
7 class HomeController extends Controller
8 {
9     public function getHome() {
10         return view('home');
11     }
12 }
13
```

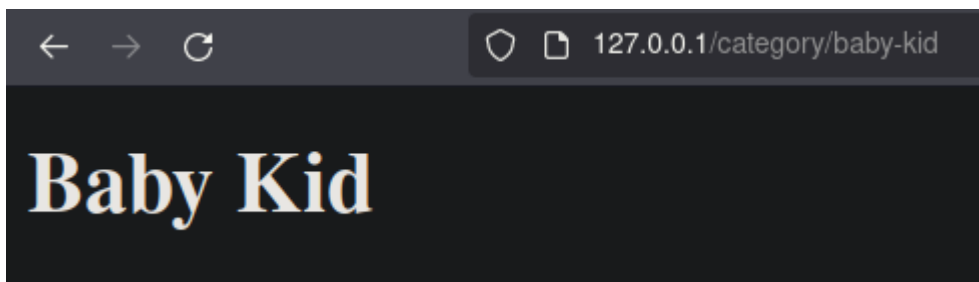
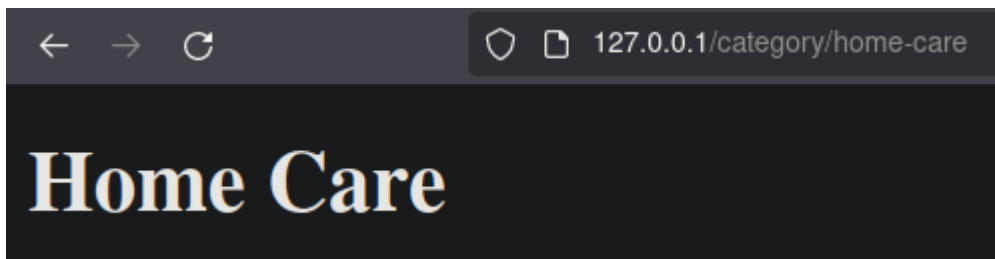
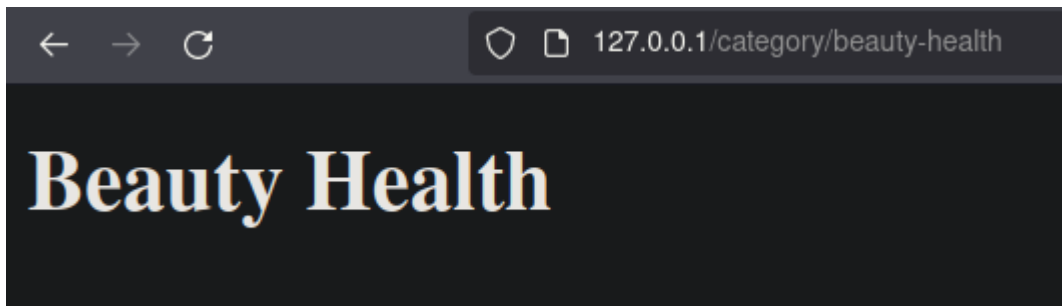
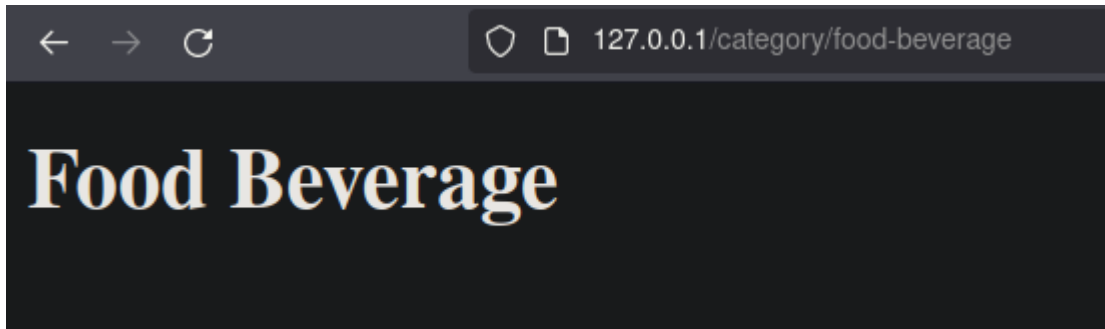
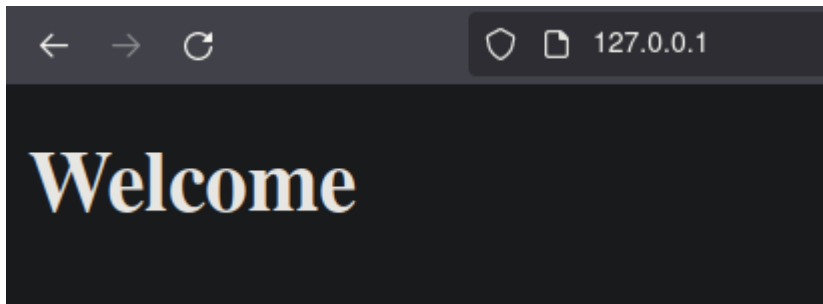
```
web.php SalesController.php x CategoryController.php
app > Http > Controllers > SalesController.php > SalesController
1 <?php
2
3 namespace App\Http\Controllers;
4
5 use Illuminate\Http\Request;
6
7 class SalesController extends Controller
8 {
9     public function getSales() {
10         return view('sales');
11     }
12 }
13
```

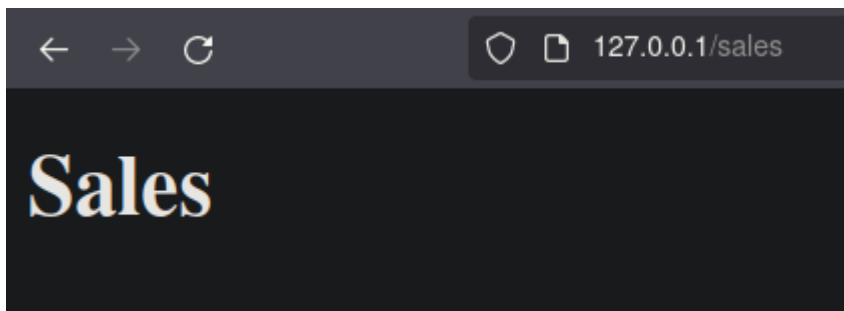
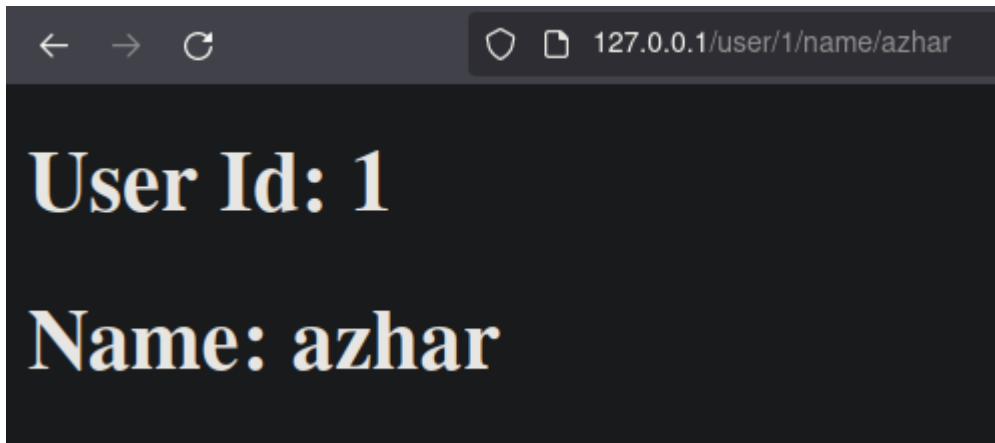
```
web.php  UserController.php x  SalesController.php  CategoryContro
app > Http > Controllers > UserController.php > UserController > getUser
1  <?php
2
3  namespace App\Http\Controllers;
4
5  use Illuminate\Http\Request;
6
7  class UserController extends Controller
8  {
9      public function getUser($id, $name) {
10         return view('user', ['id' => $id, 'name' => $name]);
11     }
12 }
13
```

Views Folder Structure:



Result:





6. Save any changes made to the POS project in Git, sync the changes to Github.

