Answer To the Question of assignment-21

Create a multi-user todo backend API using Laravel, implementing a JWT token-based authentication system. The API will allow users to create, read, update, and delete their todo items securely using JWT for authentication.

1. Set up the Laravel project

composer create-project laravel/laravel main-app

1. Edit .env with

DB\_DATABASE=pos

And

MAIL\_MAILER=smtp

MAIL\_HOST=mail.teamrabbil.com

MAIL\_PORT=25

MAIL\_USERNAME=info@teamrabbil.com

MAIL\_PASSWORD=~sR4[bhaC[Qs

MAIL\_ENCRYPTION=tls

MAIL\_FROM\_ADDRESS="info@teamrabbil.com"

MAIL\_FROM\_NAME="POS PROJECT"

1. Create Table

php artisan make:migration create\_users\_table

and edit scama

Schema::create('users', function (Blueprint $table) {

$table->id();

$table->string('firstName',50);

$table->string('lastName',50);

$table->string('email',50)->unique();

$table->string('mobile',50);

$table->string('password',50);

$table->string('otp',10);

$table->timestamp('created\_at')->useCurrent();

$table->timestamp('updated\_at')->useCurrent()->useCurrentOnUpdate();

1. Create Model

php artisan make:model User –a

\*\*\* Add below code in UserController.php

<?php

namespace App\Http\Controllers;

use App\Models\User;

use Exception;

use App\Mail\OTPEmail;

use App\Helper\JWTToken;

use Illuminate\View\View;

use Illuminate\Http\Request;

use Illuminate\Support\Facades\Mail;

class UserController extends Controller

{

function LoginPage():View{

return view('pages.auth.login-page');

}

function RegistrationPage():View{

return view('pages.auth.registration-page');

}

function SendOtpPage():View{

return view('pages.auth.send-otp-page');

}

function VerifyOTPPage():View{

return view('pages.auth.verify-otp-page');

}

function ResetPasswordPage():View{

return view('pages.auth.reset-pass-page');

}

function UserLogin(Request $request){

$count=User::where('email','=',$request->input('email'))

->where('password','=',$request->input('password'))

->count();

if($count==1){

// User Login-> JWT Token Issue

$token=JWTToken::CreateToken($request->input('email'));

return response()->json([

'status' => 'success',

'message' => 'User Login Successful',

'token' => $token

],200)->cookie('token',$token,60\*60\*24);

}

else{

return response()->json([

'status' => 'failed',

'message' => 'unauthorized'

],401);

}

}

function UserRegistration(Request $request){

try {

User::create([

'firstName' => $request->input('firstName'),

'lastName' => $request->input('lastName'),

'email' => $request->input('email'),

'mobile' => $request->input('mobile'),

'password' => $request->input('password'),

]);

return response()->json([

'status' => 'success',

'message' => 'User Registration Successfully'

],200);

} catch (Exception $e) {

return response()->json([

'status' => 'failed',

'message' => 'User Registration Failed ! From Back-End'

],400);

}

}

function SendOTPCode(Request $request){

$email=$request->input('email');

$otp=rand(1000,9999);

$count=User::where('email','=',$email)->count();

if($count==1){

// OTP Email Address

Mail::to($email)->send(new OTPEmail($otp));

// OTO Code Table Update

User::where('email','=',$email)->update(['otp'=>$otp]);

return response()->json([

'status' => 'success',

'message' => '4 Digit OTP Code has been send to your email !'

],200);

}

else{

return response()->json([

'status' => 'failed',

'message' => 'unauthorized'

],401);

}

}

function VerifyOTP(Request $request){

$email=$request->input('email');

$otp=$request->input('otp');

$count=User::where('email','=',$email)

->where('otp','=',$otp)->count();

if($count==1){

// Database OTP Update

User::where('email','=',$email)->update(['otp'=>'0']);

// Pass Reset Token Issue

$token=JWTToken:: CreateTokenForSetPassword ($request->input('email'));

return response()->json([

'status' => 'success',

'message' => 'OTP Verification Successful',

// 'token'=> $token

],200)->cookie('token',$token,60\*60\*24);

}

else{

return response()->json([

'status' => 'failed',

'message' => 'unauthorized'

],401);

}

}

// function SetPassword(Request $request){

// User::where($request->input())->update(['password'=>$request->input('password')]);

// return response()->json(['msg'=>"success",'data'=>'updated']);

// }

function ResetPassword(Request $request){

try{

$email=$request->header('email');

$password=$request->input('password');

User::where('email','=',$email)->update(['password'=>$password]);

// Remove Cookie...

return response()->json([

'status' => 'success',

'message' => 'Request Successful',

],200);

}catch (Exception $exception){

return response()->json([

'status' => 'fail',

'message' => 'Something Went Wrong',

],200);

}

}

// After Login

function ProfileUpdate(){

}

}

\*\*\*\*\*\*Create

DashboardController.php

\*\*\* Add below code in DashboardController.php

<?php

namespace App\Http\Controllers;

use Illuminate\View\View;

use Illuminate\Http\Request;

class DashboardController extends Controller

{

function DashboardPage():View{

return view('pages.dashboard.dashboard-page');

}

}

\*\*\* Add below code in User.php

<?php

namespace App\Models;

// use Illuminate\Contracts\Auth\MustVerifyEmail;

use Illuminate\Database\Eloquent\Factories\HasFactory;

use Illuminate\Foundation\Auth\User as Authenticatable;

use Illuminate\Notifications\Notifiable;

use Laravel\Sanctum\HasApiTokens;

class User extends Authenticatable

{

use HasApiTokens, HasFactory, Notifiable;

/\*\*

\* The attributes that are mass assignable.

\*

\* @var array<int, string>

\*/

protected $fillable = ['firstName','lastName','email','mobile','password','otp' ];

protected $attributes = ['otp'=>'0'];

/\*\*

\* The attributes that should be hidden for serialization.

\*

\* @var array<int, string>

\*/

// protected $hidden = [

// 'password',

// 'remember\_token',

// ];

/\*\*

\* The attributes that should be cast.

\*

\* @var array<string, string>

\*/

// protected $casts = [

// 'email\_verified\_at' => 'datetime',

// 'password' => 'hashed',

// ];

}

1. Create PHP-JWT

composer require firebase/php-jwt

app-> Helper-> JWTToken.php

add below code in JWTToken.php

<?php

namespace App\Helper;

use Firebase\JWT\JWT;

use Firebase\JWT\Key;

use PHPUnit\Metadata\Exception;

class JWTToken{

public static function CreateToken($userEmail):string{

$key=env('JWT\_KEY');

$payload = [

'iss' => "laravel-jwt",

'iat' => time(),

'exp' => time() + 60\*60,

'userEmail' => $userEmail

];

return JWT::encode($payload, $key,'HS256');

}

public static function DecodeToken($token):string{

try {

$key=env('JWT\_KEY');

$decoded=JWT::decode($token, new Key($key,'HS256'));

return $decoded->userEmail;

}

catch(Exception $e){

return "unauthorized";

}

}

public static function CreateTokenForSetPassword($userEmail):string{

$key =env('JWT\_KEY');

$payload=[

'iss'=>'laravel-token',

'iat'=>time(),

'exp'=>time()+60\*20,

'userEmail'=>$userEmail

];

return JWT::encode($payload,$key,'HS256');

}

public static function VerifyToken($token):string

{

try {

$key =env('JWT\_KEY');

$decode=JWT::decode($token,new Key($key,'HS256'));

return $decode->userEmail;

}

catch (Exception $e){

return 'unauthorized';

}

}

}

1. Add below code in web.php

<?php

use Illuminate\Support\Facades\Route;

use App\Http\Controllers\UserController;

use App\Http\Controllers\DashboardController;

use App\Http\Middleware\TokenVerificationMiddleware;

/\*

|--------------------------------------------------------------------------

| Web Routes

|--------------------------------------------------------------------------

|

| Here is where you can register web routes for your application. These

| routes are loaded by the RouteServiceProvider and all of them will

| be assigned to the "web" middleware group. Make something great!

|

\*/

Route::get('/', function () {

return view('welcome');

});

// API Routes

Route::post('/user-registration',[UserController::class,'UserRegistration']);

Route::post('/user-login',[UserController::class,'UserLogin']);

Route::post('/send-otp',[UserController::class,'SendOTPCode']);

Route::post('/verify-otp',[UserController::class,'VerifyOTP']);

Route::post('/reset-password',[UserController::class,'ResetPassword'])->middleware([TokenVerificationMiddleware::class]);

// Page Routes

Route::get('/userLogin',[UserController::class,'LoginPage']);

Route::get('/userRegistration',[UserController::class,'RegistrationPage']);

Route::get('/sendOtp',[UserController::class,'SendOtpPage']);

Route::get('/verifyOtp',[UserController::class,'VerifyOTPPage']);

Route::get('/resetPassword',[UserController::class,'ResetPasswordPage']);

Route::get('/dashboard',[DashboardController::class,'DashboardPage']);

1. Create

app/Http/ Middleware/ TokenVerificationMiddleware.php

Add below code in TokenVerificationMiddleware.php

<?php

namespace App\Http\Middleware;

use App\Helper\JWTToken;

use Closure;

use Illuminate\Http\Request;

use Symfony\Component\HttpFoundation\Response;

class TokenVerificationMiddleware

{

/\*\*

\* Handle an incoming request.

\*

\* @param \Closure(\Illuminate\Http\Request): (\Symfony\Component\HttpFoundation\Response) $next

\*/

public function handle(Request $request, Closure $next): Response

{

$token=$request->cookie('token');

$result=JWTToken::VerifyToken($token);

if($result=="unauthorized"){

return response()->json([

'status' => 'failed',

'message' => 'unauthorized'

],401);

}

else{

$request->headers->set('email',$result);

return $next($request);

}

}

}

8. Create

app/Http/Controllers/ DashboardController.php

Add below code in DashboardController.php

<?php

namespace App\Http\Middleware;

use App\Helper\JWTToken;

use Closure;

use Illuminate\Http\Request;

use Symfony\Component\HttpFoundation\Response;

class TokenVerificationMiddleware

{

/\*\*

\* Handle an incoming request.

\*

\* @param \Closure(\Illuminate\Http\Request): (\Symfony\Component\HttpFoundation\Response) $next

\*/

public function handle(Request $request, Closure $next): Response

{

$token=$request->cookie('token');

$result=JWTToken::VerifyToken($token);

if($result=="unauthorized"){

return response()->json([

'status' => 'failed',

'message' => 'unauthorized'

],401);

}

else{

$request->headers->set('email',$result);

return $next($request);

}

}}

8. Create

Resources->views->components

->email

->layout

->pages

Resources->views-> Components->auth

->dashboard

auth -> login-form.blade.php

-> registration-form.blade.php

-> reset-pass-form.blade.php

-> send-otp-form.blade.php

-> verify-otp-form.blade.php

dashboard ->summary.blade.php

Resources->views->email->OTPMail.blade.php

Resources->views-> layout-> app.blade.php

-> sidenav-layout.blade.php

Resources->views-> pages-> auth

-> dashboard

auth -> login-page.blade.php

-> registration-page.blade.php

-> reset-pass-page.blade.php

-> send-otp-page.blade.php

-> verify-otp-page.blade.php

dashboard -> dashboard-page.blade.php

9. Create Model Category create Category.php

<?php

namespace App\Models;

use Illuminate\Database\Eloquent\Factories\HasFactory;

use Illuminate\Database\Eloquent\Model;

class Category extends Model

{

protected $fillable = ['name', 'user\_id'];

}

10. Create Model Customer create Customer.php

<?php

namespace App\Models;

use Illuminate\Database\Eloquent\Model;

class Customer extends Model

{

protected $fillable = ['name','email','mobile','user\_id'];

}

11. Create Model Product create Product.php

<?php

namespace App\Models;

use Illuminate\Database\Eloquent\Factories\HasFactory;

use Illuminate\Database\Eloquent\Model;

class Product extends Model

{

protected $fillable = ['user\_id', 'category\_id', 'name', 'price', 'unit', 'img\_url'];

}

12. Create migration file for table Categories, Customers, Products table

For customers Table

<?php

use Illuminate\Database\Migrations\Migration;

use Illuminate\Database\Schema\Blueprint;

use Illuminate\Support\Facades\Schema;

return new class extends Migration

{

/\*\*

\* Run the migrations.

\*/

public function up(): void

{

Schema::create('customers', function (Blueprint $table) {

$table->id();

$table->string('name',50);

$table->string('email',50);

$table->string('mobile',50);

$table->unsignedBigInteger('user\_id');

$table->foreign('user\_id')->references('id')->on('users')

->cascadeOnUpdate()->restrictOnDelete();

$table->timestamp('created\_at')->useCurrent();

$table->timestamp('updated\_at')->useCurrent()->useCurrentOnUpdate();

});

}

/\*\*

\* Reverse the migrations.

\*/

public function down(): void

{

Schema::dropIfExists('customers');

}

};

For categories Table

<?php

use Illuminate\Database\Migrations\Migration;

use Illuminate\Database\Schema\Blueprint;

use Illuminate\Support\Facades\Schema;

return new class extends Migration

{

/\*\*

\* Run the migrations.

\*/

public function up(): void

{

Schema::create('categories', function (Blueprint $table) {

$table->id();

$table->string('name',50);

$table->unsignedBigInteger('user\_id');

$table->foreign('user\_id')->references('id')->on('users')

->cascadeOnUpdate()->restrictOnDelete();

$table->timestamp('created\_at')->useCurrent();

$table->timestamp('updated\_at')->useCurrent()->useCurrentOnUpdate();

});

}

/\*\*

\* Reverse the migrations.

\*/

public function down(): void

{

Schema::dropIfExists('categories');

}

};

For products Table

<?php

use Illuminate\Database\Migrations\Migration;

use Illuminate\Database\Schema\Blueprint;

use Illuminate\Support\Facades\Schema;

return new class extends Migration

{

/\*\*

\* Run the migrations.

\*/

public function up(): void

{

Schema::create('products', function (Blueprint $table) {

$table->id();

$table->unsignedBigInteger('user\_id');

$table->unsignedBigInteger('category\_id');

$table->foreign('user\_id')->references('id')->on('users')

->cascadeOnUpdate()->restrictOnDelete();

$table->foreign('category\_id')->references('id')->on('categories')

->cascadeOnUpdate()->restrictOnDelete();

$table->string('name',100);

$table->string('price',50);

$table->string('unit',50);

$table->string('img\_url',100);

$table->timestamp('created\_at')->useCurrent();

$table->timestamp('updated\_at')->useCurrent()->useCurrentOnUpdate();

});

}

/\*\*

\* Reverse the migrations.

\*/

public function down(): void

{

Schema::dropIfExists('products');

}

};

Run command:

Php artisan migrate

13 Create CategoryController.php

<?php

namespace App\Http\Controllers;

use App\Models\Category;

use Illuminate\Http\Request;

class CategoryController extends Controller

{

function CategoryList(Request $request){

$user\_id=$request->header('id');

return Category::where('user\_id',$user\_id)->get();

}

function CategoryCreate(Request $request){

$user\_id=$request->header('id');

return Category::create([

'name'=>$request->input('name'),

'user\_id'=>$user\_id

]);

}

function CategoryDelete(Request $request){

$category\_id=$request->input('id');

$user\_id=$request->header('id');

return Category::where('id',$category\_id)->where('user\_id',$user\_id)->delete();

}

function CategoryUpdate(Request $request){

$category\_id=$request->input('id');

$user\_id=$request->header('id');

return Category::where('id',$category\_id)->where('user\_id',$user\_id)->update([

'name'=>$request->input('name'),

]);

}

}

\*\*\*\*\* Create controller CustomerController.php

<?php

namespace App\Http\Controllers;

use App\Models\Customer;

use Illuminate\Http\Request;

class CustomerController extends Controller

{

function CustomerCreate(Request $request){

$user\_id=$request->header('id');

return Customer::create([

'name'=>$request->input('name'),

'email'=>$request->input('email'),

'mobile'=>$request->input('mobile'),

'user\_id'=>$user\_id

]);

}

function CustomerList(Request $request){

$user\_id=$request->header('id');

return Customer::where('user\_id',$user\_id)->get();

}

function CustomerDelete(Request $request){

$customer\_id=$request->input('id');

$user\_id=$request->header('id');

return Customer::where('id',$customer\_id)->where('user\_id',$user\_id)->delete();

}

function CustomerUpdate(Request $request){

$customer\_id=$request->input('id');

$user\_id=$request->header('id');

return Customer::where('id',$customer\_id)->where('user\_id',$user\_id)->update([

'name'=>$request->input('name'),

'email'=>$request->input('email'),

'mobile'=>$request->input('mobile'),

]);

}

}

Create controller name ProductController.php

<?php

namespace App\Http\Controllers;

use App\Models\Product;

use Illuminate\Http\Request;

use Illuminate\Support\Facades\File;

class ProductController extends Controller

{

function CreateProduct(Request $request)

{

$user\_id=$request->header('id');

// Prepare File Name & Path

$img=$request->file('img');

$t=time();

$file\_name=$img->getClientOriginalName();

$img\_name="{$user\_id}-{$t}-{$file\_name}";

$img\_url="uploads/{$img\_name}";

// Upload File

$img->move(public\_path('uploads'),$img\_name);

// Save To Database

return Product::create([

'name'=>$request->input('name'),

'price'=>$request->input('price'),

'unit'=>$request->input('unit'),

'img\_url'=>$img\_url,

'category\_id'=>$request->input('category\_id'),

'user\_id'=>$user\_id

]);

}

function DeleteProduct(Request $request)

{

$user\_id=$request->header('id');

$product\_id=$request->input('id');

$filePath=$request->input('file\_path');

File::delete($filePath);

return Product::where('id',$product\_id)->where('user\_id',$user\_id)->delete();

}

function ProductList(Request $request)

{

$user\_id=$request->header('id');

return Product::where('user\_id',$user\_id)->get();

}

function UpdateProduct(Request $request)

{

$user\_id=$request->header('id');

$product\_id=$request->input('id');

if ($request->hasFile('img')) {

// Upload New File

$img=$request->file('img');

$t=time();

$file\_name=$img->getClientOriginalName();

$img\_name="{$user\_id}-{$t}-{$file\_name}";

$img\_url="uploads/{$img\_name}";

$img->move(public\_path('uploads'),$img\_name);

// Delete Old File

$filePath=$request->input('file\_path');

File::delete($filePath);

// Update Product

return Product::where('id',$product\_id)->where('user\_id',$user\_id)->update([

'name'=>$request->input('name'),

'price'=>$request->input('price'),

'unit'=>$request->input('unit'),

'img\_url'=>$img\_url,

'category\_id'=>$request->input('category\_id')

]);

} else {

return Product::where('id',$product\_id)->where('user\_id',$user\_id)->update([

'name'=>$request->input('name'),

'price'=>$request->input('price'),

'unit'=>$request->input('unit'),

'category\_id'=>$request->input('category\_id'),

]);

}

}

}

Create controller name DashboardController.php

<?php

namespace App\Http\Controllers;

use App\Models\Category;

use App\Models\Customer;

use App\Models\Product;

use Illuminate\Http\Request;

use Illuminate\View\View;

class DashboardController extends Controller

{

function DashboardPage():View{

return view('pages.dashboard.dashboard-page');

}

function TotalCustomer(Request $request){

$id=$request->header('id');

return Customer::where('user\_id',$id)->count();

}

function TotalCategory(Request $request){

$id=$request->header('id');

return Category::where('user\_id',$id)->count();

}

function TotalProduct(Request $request){

$id=$request->header('id');

return Product::where('user\_id',$id)->count();

}

}

\*\*Add new code to web.php

<?php

use Illuminate\Support\Facades\Route;

use App\Http\Controllers\UserController;

use App\Http\Controllers\ProductController;

use App\Http\Controllers\CategoryController;

use App\Http\Controllers\CustomerController;

use App\Http\Controllers\DashboardController;

use App\Http\Middleware\TokenVerificationMiddleware;

/\*

|--------------------------------------------------------------------------

| Web Routes

|--------------------------------------------------------------------------

|

| Here is where you can register web routes for your application. These

| routes are loaded by the RouteServiceProvider and all of them will

| be assigned to the "web" middleware group. Make something great!

|

\*/

Route::get('/', function () {

return view('welcome');

});

// API Routes

Route::post('/user-registration',[UserController::class,'UserRegistration']);

Route::post('/user-login',[UserController::class,'UserLogin']);

Route::post('/send-otp',[UserController::class,'SendOTPCode']);

Route::post('/verify-otp',[UserController::class,'VerifyOTP']);

Route::post('/reset-password',[UserController::class,'ResetPassword'])->middleware([TokenVerificationMiddleware::class]);

// After Authentication

Route::get("/user-profile-details",[UserController::class,'UserProfile'])->middleware([TokenVerificationMiddleware::class]);

Route::post("/user-update",[UserController::class,'UserUpdate'])->middleware([TokenVerificationMiddleware::class]);

// Logout

Route::get('/logout',[UserController::class,'UserLogout']);

// Page Routes

Route::get('/userLogin',[UserController::class,'LoginPage']);

Route::get('/userRegistration',[UserController::class,'RegistrationPage']);

Route::get('/sendOtp',[UserController::class,'SendOtpPage']);

Route::get('/verifyOtp',[UserController::class,'VerifyOTPPage']);

Route::get('/resetPassword',[UserController::class,'ResetPasswordPage'])->middleware([TokenVerificationMiddleware::class]);

Route::get('/userProfile',[UserController::class,'ProfilePage'])->middleware([TokenVerificationMiddleware::class]);

Route::get('/dashboard',[DashboardController::class,'DashboardPage'])->middleware([TokenVerificationMiddleware::class]);

// Customer API

Route::post("/create-customer",[CustomerController::class,'CustomerCreate'])->middleware([TokenVerificationMiddleware::class]);

Route::get("/list-customer",[CustomerController::class,'CustomerList'])->middleware([TokenVerificationMiddleware::class]);

Route::post("/delete-customer",[CustomerController::class,'CustomerDelete'])->middleware([TokenVerificationMiddleware::class]);

Route::post("/update-customer",[CustomerController::class,'CustomerUpdate'])->middleware([TokenVerificationMiddleware::class]);

// Category API

Route::post("/create-category",[CategoryController::class,'CategoryCreate'])->middleware([TokenVerificationMiddleware::class]);

Route::get("/list-category",[CategoryController::class,'CategoryList'])->middleware([TokenVerificationMiddleware::class]);

Route::post("/delete-category",[CategoryController::class,'CategoryDelete'])->middleware([TokenVerificationMiddleware::class]);

Route::post("/update-category",[CategoryController::class,'CategoryUpdate'])->middleware([TokenVerificationMiddleware::class]);

// Product API

Route::post("/create-product",[ProductController::class,'CreateProduct'])->middleware([TokenVerificationMiddleware::class]);

Route::post("/delete-product",[ProductController::class,'DeleteProduct'])->middleware([TokenVerificationMiddleware::class]);

Route::post("/update-product",[ProductController::class,'UpdateProduct'])->middleware([TokenVerificationMiddleware::class]);

Route::get("/list-product",[ProductController::class,'ProductList'])->middleware([TokenVerificationMiddleware::class]);

// Dashboard API

Route::get("/total-customer",[DashboardController::class,'TotalCustomer'])->middleware([TokenVerificationMiddleware::class]);

Route::get("/total-category",[DashboardController::class,'TotalCategory'])->middleware([TokenVerificationMiddleware::class]);

Route::get("/total-product",[DashboardController::class,'TotalProduct'])->middleware([TokenVerificationMiddleware::class]);