Web Programming Final Exam

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1. Initialization

Requirement:

- Laravel 9
- XAMPP (MySQL + Apache)

Workspace Initialization

- Create new workspace

```
composer create-project laravel/laravel webproguas
```

- Connect to MySQL

```
xampp\mysql\bin\mysql.exe -h localhost -u root -p
```

- Create Database

```
MariaDB [(none)]> CREATE DATABASE webproguas;
```

- Configure .env file

```
DB_CONNECTION=mysql
DB_HOST=127.0.0.1
DB_PORT=3306
DB_DATABASE=webproguas
DB_USERNAME=root
DB_PASSWORD=
```

Serve the website

```
php artisan serve
```

2. Migration

Create Models, Migrations, and Seeders

```
php artisan make:model Gender -ms
php artisan make:model Role -ms
php artisan make:model EBook -ms
php artisan make:model Order -ms
php artisan make:model OrderHistory -ms
```

File Structure:

```
    migrations
    2022_02_10_231855_create_roles_table.php
    2022_02_10_232502_create_genders_table.php
    2022_02_10_232536_create_e_books_table.php
    2022_02_11_000000_create_users_table.php
    2022_02_11_143832_create_order_histories_table.php
    2022_02_12_232546_create_orders_table.php
```

Migration Files

Roles Table

```
// 2022_02_10_231855_create_roles_table.php
public function up()
{
    Schema::create('roles', function (Blueprint $table) {
        $table->id();
        $table->string("desc",25);
        $table->timestamps();
    });
}
```

Genders Table

```
// 2022_02_10_232502_create_genders_table.php
public function up()
{
    Schema::create('genders', function (Blueprint $table) {
        $table->id();
        $table->string('desc',25);
        $table->timestamps();
    });
}
```

E-Books Table

```
// 2022_02_10_232536_create_e_books_table.php
public function up()
{
    Schema::create('e_books', function (Blueprint $table) {
        $table->id();
        $table->string('title',255);
        $table->string('author',255);
        $table->longText('description',255);
        $table->timestamps();
    });
}
```

Users Table

```
// 2022 02 11 000000 create users table.php
public function up()
    Schema::create('users', function (Blueprint $table) {
       $table->foreignId('role_id');
       $table->foreign('role_id')->references('id')->on('roles')->onDelete('cascade');
        $table->foreignId('gender_id');
        $table->foreign('gender_id')->references('id')->on('genders')->onDelete('cascade');
        $table->string('first_name',25);
        $table->string('middle_name',25);
       $table->string('last_name',25);
       $table->string('email',50)->unique();
       $table->string('password');
       $table->string('display_picture_link',255);
       $table->integer('deleted_flag')->default(0);
        $table->date('modified_at');
        $table->string('modified_by',255)->default('migrated');
        $table->timestamps();
    });
}
```

Order Histories Table

Orders Table

```
// 2022_02_12_232546_create_orders_table.php
public function up()
{
     Schema::create('orders', function (Blueprint $table) {
          $table->id();
          $table->foreignId('account_id');
          $table->foreign('account_id')->references('id')->on('users')->onDelete('cascade');
          $table->foreignId('ebook_id');
          $table->foreign('ebook_id')->references('id')->on('e_books')->onDelete('cascade');
          $table->date('order_date');
          $table->timestamps();
     });
}
```

Migrating

```
php migrate:fresh
```

3. Seeders

Only table genders, roles, and few records of users are generated manually. The rest is done by Factories.

On DatabaseSeeder.php

```
public function run()
{
   $this->call([
     EBookSeeder::class,
     GenderSeeder::class,
     OrderHistorySeeder::class,
     OrderSeeder::class,
     RoleSeeder::class,
   DB::table('users')->insert([
                       => '1',
      'role_id'
     'display_picture_link' => 'images/person.jpg',
     'deleted_flag' => '0',
'modified_at' => Date::now(),
   ]);
   DB::table('users')->insert([
     'display_picture_link' => 'images/person2.jpg',
      ]);
  User::factory()->count(10)->create();
}
```

EBookSeeder::class

```
public function run()
{
    EBook::factory()->count(10)->create();
}
```

RoleSeeder::class

```
public function run()
{
    DB::table('roles')->insert([
          ['desc' => 'member'],
          ['desc' => 'admin']
    ]);
}
```

GenderSeeder::class

```
public function run()
{
    DB::table('genders')->insert([
          ['desc' => 'male'],
          ['desc' => 'female']
    ]);
}
```

4. Factories

There are two factories that are used to generate the records. User factory, and EBook factory. Each of these factory uses the faker module (built-in) to generate datas automatically.

UserFactory.php

EBookFactory.php

Calling the factories

```
EBook::factory()->count(10)->create();
User::factory()->count(10)->create();
```

5. Model

After setting up the database, we also have to setup the eloquent ORM using HasFactory to make programming more elegant.

EBook.php

Gender.php

```
class Gender extends Model
{
    use HasFactory;
    public function users(){
        return $this->hasMany(User::class);
    }
}
```

Order.php

OrderHistory.php

```
class OrderHistory extends Model
{
    use HasFactory;
    public function user(){
        return $this
        ->belongsTo(User::class,'account_id');
    }
    public function book(){
        return $this
        ->belongsTo(EBook::class,'ebook_id');
    }
}
```

Role.php

```
class Role extends Model
{
    use HasFactory;
    public function users()
    {
        return $this->hasMany(User::class);
    }
}
```

User.php

```
public function role()
{
    return $this->belongsTo(Role::class);
}
public function gender()
{
    return $this->belongsTo(Gender::class);
}
public function orders()
{
    return $this->hasMany(Order::class,'account_id');
}
public function orderhistories()
{
    return $this->hasMany(OrderHistory::class);
}
```

6. Middleware

There will be two middleware used for this project. One is for role access and authoring user to pages. Second one is to handle localization for all requests

Creating Middleware

```
php artisan make:Middleware Access
php artisan make:Middleware LocaleGlobal
```

For the Access Middleware, first we want to know what it does and the logic can be determined by the overall requirement from the question.

The question wants to add authorization system which required the website to do the following:

- Redirect User to Home if user is authenticated but not authorized to certain page
- Redirect User to Index if user is not authenticated to certain page
- Continue if User is authenticated to a certain page that needs authentication

Hence I came into the following logic for Access.php. It acts as a route middleware hence I also add the middleware in \$routeMiddleware in Kernel.php

```
public function handle(Request $request, Closure $next, ... $roles)
   $user = Auth::user();
   // if its meant for people who are not authorized
   if( (empty($roles) && $user==null) ){
       return $next($request);
    // if its meant for authorized page
    }elseif($user != null){
       // if a page is meant for someone
        foreach($roles as $role){
           if($role == $user->role->deAsc){
                return $next($request);
       }
       // if a page is not meant for someone
       return redirect('home');
    // if not authorized
    return redirect('/');
}
```

Source: https://stackoverflow.com/questions/43901719/laravel-middleware-with-multiple-roles

And then I can use the following syntax to group the routing with middleware.

```
Route::middleware('access:member,admin')->group(function () {
    ...
});
```

For Localization, It will be discussed in the Localization Section

7. Routing

For the Routing, it is divided into controllers and each access types.

```
Route::controller(PageController::class)->group(function (){
   Route::middleware('access')->group(function () {
       Route::get ('/',
                                        'viewindex');
       Route::get ('/signup',
                                        'viewsignup');
       Route::get ('/login',
                                        'viewlogin');
                                        'signup');
       Route::post ('/signup',
       Route::post ('/login',
                                        'login');
   Route::middleware('access:member,admin')->group(function () {
       Route::get ('/home',
                                        'viewhome');
                                        'viewbookdetail');
       Route::get ('/book/{id}',
       Route::get ('/cart',
                                        'viewcart');
       Route::get ('/success',
                                        'viewsuccess');
       Route::get ('/profile',
                                        'viewprofile');
       Route::get ('/saved',
                                        'viewsaved');
       Route::get ('/logout',
                                        'logout');
       Route::post ('/book/{id}/rent', 'rent');
       Route::delete('/cart/{id}',
                                        'deletecartitem');
       Route::post ('/cart/submit',
                                        'submitcart');
                                        'updateprofile');
       Route::post ('/profile',
   });
   Route::get('{locale}/locale', 'changelocale');
});
Route::controller(AdminController::class)->group(function (){
   Route::middleware('access:admin')->group(function () {
       Route::get ('/maccount',
                                            'viewmanageaccount');
       Route::get ('/user/{id}/updaterole','viewupdaterole');
       Route::delete('/user/{id}/delete',
                                           'deleteuser');
       Route::put ('/user/{id}/updaterole','updateroleuser');
   });
});
Route::redirect('/', '/en/');
```

The routes that is using middleware 'access' are only checking if the user is NOT authenticated to access the page. The routes that is using middleware 'access:member,admin' are for the pages that can be accessed by members and admin. The routes that is using middleware 'access:admin' are for pages that can be accessed ONLY by admins.

8. Controllers

I use 2 controllers. One for general purpose controllers, the other one is for admin pages.

PageController.php

```
// shows the index page
public function viewindex()
    return view('index');
// shows the signup page
public function viewsignup()
    $roles = Role::all();
    $genders = Gender::all();
    return view('signup',compact('roles','genders'));
// attempt to sign up the user
public function signup(Request $request)
    $validator = Validator::make($request->all(), [
        'firstname' => 'required|alpha_num|max:25',
        'middlename' => 'required|alpha_num|max:25',
'lastname' => 'required|alpha_num|max:25',
        'gender'
                      => 'required',
        'email'
                      => 'required|email|unique:users,email',
                      => 'required|exists:roles,id',
        'password' => 'required|min:8|regex:/.*[0-9].*/i',
        'displaypicture'=> 'required|file|mimes:jpg,bmp,png',
        'password.regex' => 'The password needs to atleast have 1 number',
    ],[
        'displaypicture' => 'display picture',
        'firstname' => 'first name',
        'lastname'
                        => 'last name',
    ]);
    if($validator->fails()){
        return back()
        ->withErrors($validator)
        ->withInput();
    $validated = $validator->validated();
    $user = new User;
    $user->first_name = $validated['firstname'];
    $user->middle_name = $validated['middlename'];
    $user->last name = $validated['lastname'];
```

```
$user->gender_id = $validated['gender'];
    $user->email
                      = $validated['email'];
    $user->password
                      = Hash::make($request->password);
   $user->role_id = $validated['role'];
    $user->modified at = Date::now();
    $user->modified_by = "user";
    $file = $request->file('displaypicture');
    $imageName = time().".".$file->getClientOriginalExtension();
    Storage::putFileAs('public/images',$file, $imageName);
    $user->display_picture_link = 'images/'.$imageName;
    $user->save();
    return redirect('/');
// shows the login page
public function viewlogin()
    return view('login');
// attempt to authenticate the user
public function login(Request $request)
   // validation
   // attempt
    $validator = Validator::make($request->all(), [
        'email' => 'required|email',
        'password' => 'required'
    ]);
    if($validator->fails()){
        return back()->withErrors($validator)->withInput();
    if(Auth::attempt([
        'email' => $request->email, 'password' => $request->password
    ])){
        $request->session()->regenerate();
        return redirect()->intended('home');
    return back()->withErrors([
        'email' => 'The provided credentials do not match our records.'
    ]);
```

```
// PAGES FOR REGISTERED MEMBER
// show the home page as a registered user
public function viewhome()
    $books = EBook::all();
   return view('home',compact('books'));
// Show the detail of the book
public function viewbookdetail(Request $request)
   // TODO:
    // pass book model to view
    $book = EBook::find($request->id);
    return view('bookdetail', compact('book'));
// Rent the selected book
public function rent(Request $request)
   // TODO:
   // add selected book to the current order
    $order = new Order;
    $order->account_id = Auth::user()->id;
    $order->ebook_id = $request->id;
    $order->order_date = Date::now();
    $order->save();
    return redirect('/cart');
public function viewcart(Request $request)
   return view('cart');
public function deletecartitem(Request $request)
   Order::destroy($request->id);
   return redirect()->back();
// Proceed user's cart to checkout
```

```
public function submitcart(Request $request)
    // delete user cart and move it to order history
    foreach (Auth::user()->orders as $order) {
        $orderhist = new OrderHistory;
        $orderhist->account_id = $order->account_id;
        $orderhist->ebook_id = $order->ebook_id;
        $orderhist->order date = Date::now();
       $orderhist->save();
        $order->delete();
   return view('success');
// View user's profile
public function viewprofile(Request $request)
    $user = Auth::user();
   $roles = Role::all();
    $genders = Gender::all();
    return view('profile', compact('user', 'roles', 'genders'));
// Update's the user's profile
public function updateprofile(Request $request)
    $validator = Validator::make($request->all(), [
        'firstname'
                      => 'required|alpha_num|max:25',
        'middlename' => 'alpha_num|max:25',
        'lastname'
                      => 'required|alpha num|max:25',
        'gender'
                       => 'required',
        'email'
                       => 'required|email',
        'password'
                       => 'required|min:8|regex:/.*[0-9].*/i',
        'displaypicture'=> 'required|file|mimes:jpg,bmp,png',
    ],[
        'password.regex' => 'The password needs to atleast have 1 number',
    ],[
        'displaypicture' => 'display picture',
        'firstname'
                       => 'first name',
        'lastname'
    ]);
    if($validator->fails()){
        return back()
        ->withErrors($validator)
        ->withInput();
    $validated = $validator->validated();
    $user = User::find(Auth::user()->id);
```

```
$user->first_name = $validated['firstname'];
    $user->middle_name = $validated['middlename'];
                      = $validated['lastname'];
    $user->last_name
                      = $validated['gender'];
    $user->gender id
    if(Auth::user()->email != $request->email){
        $validator = Validator::make($request->all(), [
            'email' => 'required|email|unique:users,email'
        ]);
        if($validator->fails()){
            return back()
            ->withErrors($validator)
            ->withInput();
        $user->email
                           = $validated['email'];
    $user->password = Hash::make($request->password);
    $user->modified at = Date::now();
    $user->modified by = "user";
    $file = $request->file('displaypicture');
    $imageName = time().".".$file->getClientOriginalExtension();
    Storage::putFileAs('public/images',$file, $imageName);
    $user->display_picture_link = 'images/'.$imageName;
    $user->save();
    return view('saved');
// Log the authenticated user out
public function logout(Request $request)
    Auth::logout();
    $request->session()->invalidate();
    $request->session()->regenerateToken();
    return view('logout');
```

```
// -----
// CHANGE LOCALE
// -----

public function changelocale(Request $request){
    Cookie::queue('locale',$request->locale);
    App::setlocale($request->locale);
    return redirect()->back();
}
```

AdminController.php

```
public function viewmanageaccount(Request $request)
   $users = User::all();
   return view('admin.manageaccount',compact('users'));
// Delete the user
public function deleteuser(Request $request)
   $user = User::find($request->id);
   $user->delete();
   return redirect()->back();
public function viewupdaterole(Request $request)
    $user = User::find($request->id);
    $roles = Role::all();
    return view('admin.changerole',compact('user','roles'));
public function updateroleuser(Request $request)
   $user = User::find($request->id);
    $user->role_id = $request->role;
    $user->save();
    return redirect()->back();
```

9. View

- Index Page

My **Amazing Bookstore**

Masuk Daftar

Cari dan Sewa E-bookmu





- > Daftar
- > Saya sudah memiliki akun, ayo masuk!

- Login Page



Masuk Daftar

Login

admin@a.com			
Masuk			
Tidak punya akun? Klik di sini untuk mendaftar.			

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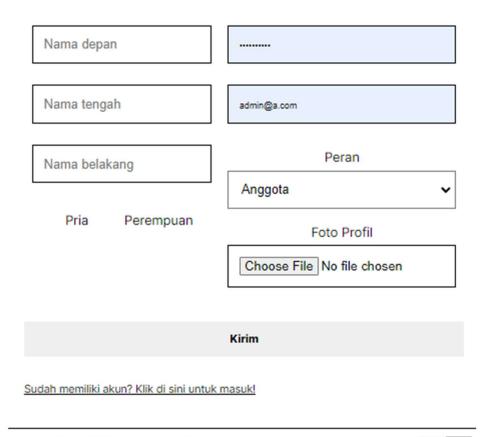






Masuk Daftar

Register





Keluar

Beranda

Keranjang

Profil

Beranda

Pilih buku untuk disewa

Quae perspicia tis voluptas.

oleh Prof. Hilario Jacobson

Nobis tenetur ut.

oleh Chase Wolf

Qui iusto.

oleh Dell Brakus

Sed occaecat i est error.

oleh Garland Harber

Perspicia tis delectus et.

oleh Laury Hane III

Exercitati onem aperiam sit necessit atibus.

oleh Cloyd Cremin

Providen ducimus segui numqua m.

oleh Dr. Florencio Dare

Rerum ratione

oleh Kurtis Mayer II

Nulla molestia e odit numqua m enim.

oleh Ila Leannon

Pariatur quo optio qui.

oleh Jermain Trantow MD



Keluar

Beranda

Keranjang

Profil

E-Book Detail

Nobis tenetur ut.

PENGARANG KETERANGAN Chase Wolf

Consequatur voluptas sequi sit eum omnis aut autem. Est suscipit sunt dolor amet nisi laudantium. Nostrum neque eaque iste quae. Quisquam explicabo animi laboriosam optio delectus corrupti et. Quam a consequuntur ipsa facilis sit eum ullam. Non ut suscipit nostrum deleniti minus ipsam. Quaerat repellat sint soluta voluptatem nesciunt. Quia delectus dolor repudiandae sunt dolores vero. Minus voluptate velit quis id est eveniet. Consectetur facilis ea optio doloremque enim. Est qui totam explicabo sit in. Et et corrupti similique laudantium facilis eos labore. Nulla id quis numquam quo expedita maiores.

Sewa

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EN



- Cart Page



Keluar

Beranda

Keranjang

Profil

Keranjang

Keranjang Anda kosong

Kembali Belanja

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- Cart Page when rented



Keluar

Beranda

Keranjang

Profil

Keranjang

Kirim pesanan atau hapus item dari keranjang

Nobis tenetur ut.

Hapus

oleh Chase Wolf

Kirim and Checkout

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- Cart Checkout Confirmation Page



Keluar

Beranda

Keranjang

Profil

Sukses!

Keranjang Anda telah berhasil diperiksa dan disimpan!

> Klik Di Sini untuk kembali ke rumah

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- Profile Page



Keluar

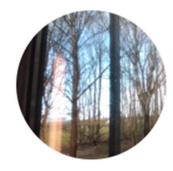
Beranda

Keranjang

Profil

Profil

sunting profilmu



Bill

Microsoft

Gates

Pria

Perempuan

Kata sandi

admin@a.com

Foto Profil

Choose File No file chosen

Kirim

- Profile Edit Confirmation



Keluar

Beranda

Keranjang

Profil

Tersimpan!

Profil Anda telah berhasil disimpan!

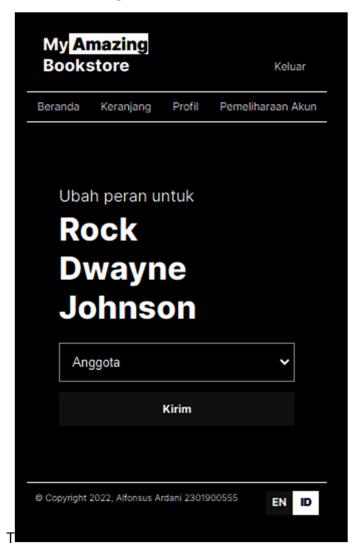
> Klik Di Sini untuk kembali ke rumah

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My Amazing Bookstore Keluar			
Beranda Keranjang Profil	Pemeliharaan Akun		
Kelola Akun			
#1 Anggota Rock Dwayne Johnson	Perbarui Peran	Hapus	
#2 Admin Bill Microsoft Gates	Perbarui Peran		
#3 Anggota Tatyana Oswald Schowalter	Perbarui Peran	Hapus	
#4 Anggota Elias Maybell Sauer	Perbarui Peran	Hapus	
#5 Anggota Bradford Jaylan Hodkiewicz	Perbarui Peran	Hapus	
#6 Anggota Clementine Royce Douglas	Perbarui Peran	Hapus	
#7 Anggota Angela Jazmyne Miller	Perbarui Peran	Hapus	
#8 Anggota Dolores Murray D'Amore	Perbarui Peran	Hapus	
#9 Anggota Leopold George Treutel	Perbarui Peran	Hapus	
#10 Anggota Rigoberto Madaline Vandervort	Perbarui Peran	Hapus	
#11 Anggota Michael Jolie Ritchie	Perbarui Peran	Hapus	
#12 Anggota	Dorharui Doran	Hanus	

Update Role Page



- Log out Confirmation



Logged out!

You have been successfully logged out!

> Click Here to go to index



10. Localization

For Localization, you need the language file, the middleware and the button to change the locale.

lang/id.json (The Language File)

```
"Log-in": "Masuk",
"Find":"Cari",
"your E-Book": "E-bookmu",
"I already have an account, sign me in!":"Saya sudah memiliki akun, ayo masuk!",
"Middle Name": "Nama tengah",
"Last Name": "Nama belakang",
"E-mail":"Surel",
"Role": "Peran",
"Female": "Perempuan",
"Member": "Anggota",
"Profile Picture": "Foto Profil",
"No file chosen": "No file chosen",
"Already have an account? Click here to log in!":"Sudah memiliki akun? Klik di sini untuk masuk!",
"Cart": "Keranjang",
"Log-out": "Keluar",
"Select a book for rent": "Pilih buku untuk disewa",
"Author": "Pengarang",
"Description": "Keterangan",
"Submit order or delete item from cart":"Kirim pesanan atau hapus item dari keranjang",
"Submit and Checkout": "Kirim dan Checkout",
"Your cart has been successfully checked out and saved!":"Keranjang Anda telah berhasil diperiksa dan
"Click Here to go back home": "Klik Di Sini untuk kembali ke rumah",
"Edit your profile": "sunting profilmu",
,"Manage Account":"Kelola Akun"
,"Change the role for":"Ubah peran untuk"
,"Your cart is empty":"Keranjang Anda kosong"
,"Back to Shopping": "Kembali Belanja"
```

The Button, the language selector

Which sends request to route

```
Route::get('{locale}/locale', 'changelocale');
```

Which calls the changelocale function

```
public function changelocale(Request $request){
    Cookie::queue('locale',$request->locale);
    App::setlocale($request->locale);
    return redirect()->back();
}
```

The Middleware that changes the locale everytime a route actions is called

```
public function handle(Request $request, Closure $next)
{
    if(Cookie::has('locale')){
        App::setLocale(Cookie::get('locale'));
    }else{
        App::setLocale(App::currentLocale());
        Cookie::queue('locale',App::currentLocale(), 2147483647);
    }
    return $next($request);
}
```

11. Contact

Private Email: <u>Alfonsusac@gmail.com</u>

Binusian Email: Alfonsus.chendrawan@binus.ac.id

Phone/Whatsapp: +62 812 600 3290

LineID: alfonsusac

LINK:

https://binusianorg-

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