Mid Exam - Web Programming

⊙ Class		
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Screenshots of Good UIs
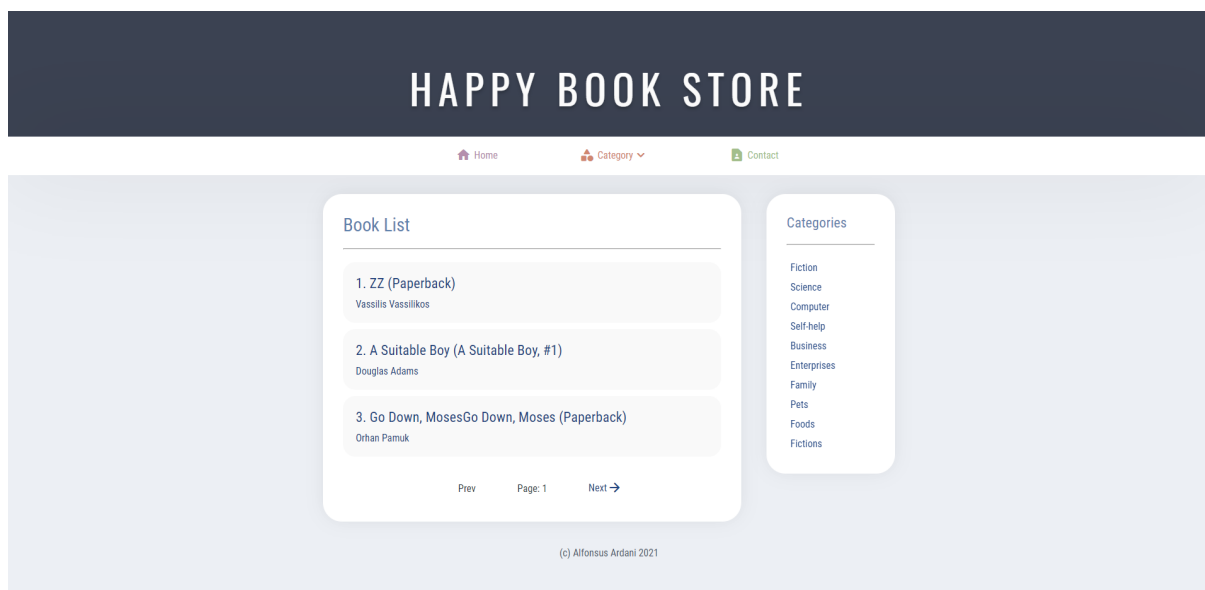

Figure 1. Landing Page (Front Page)
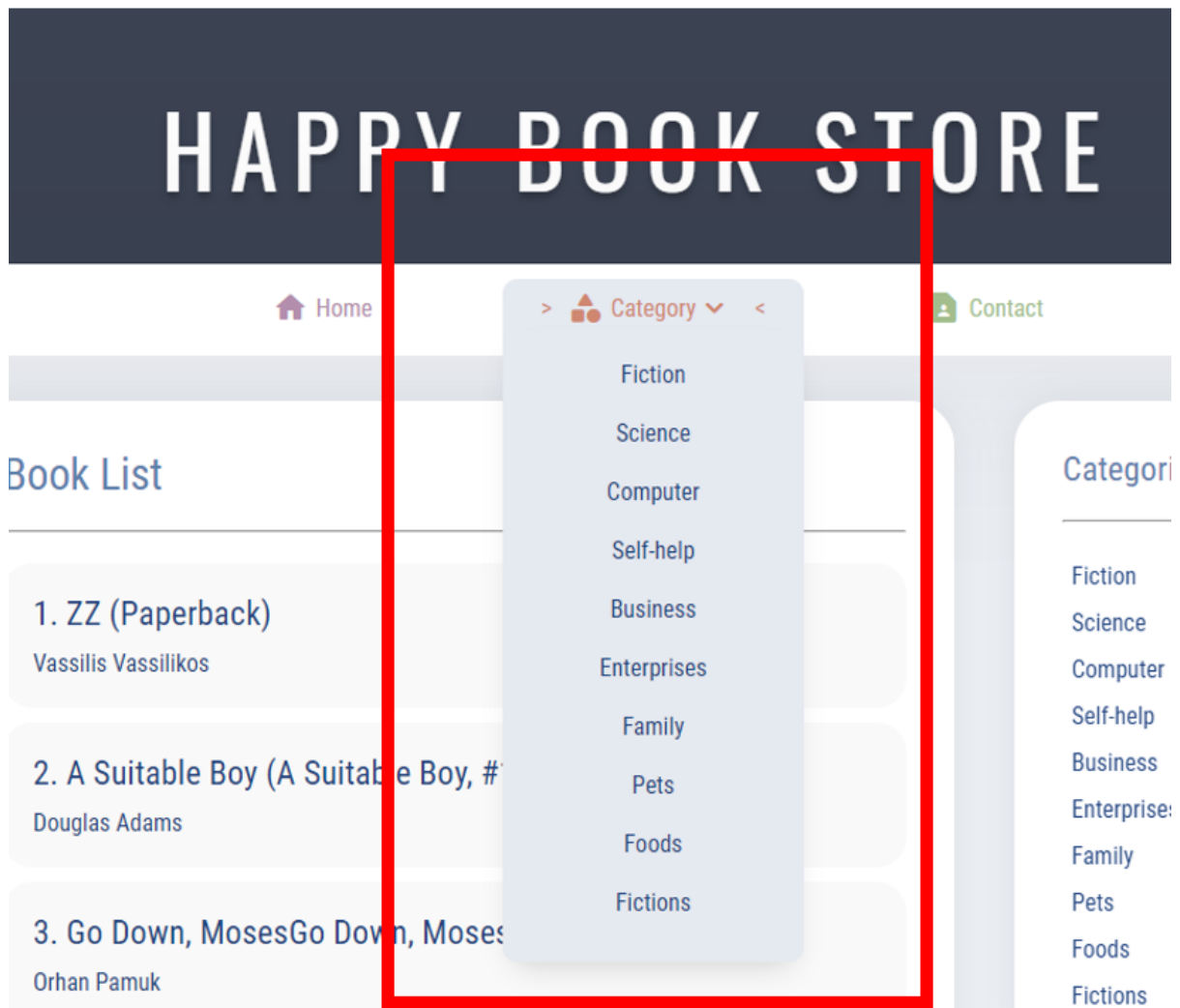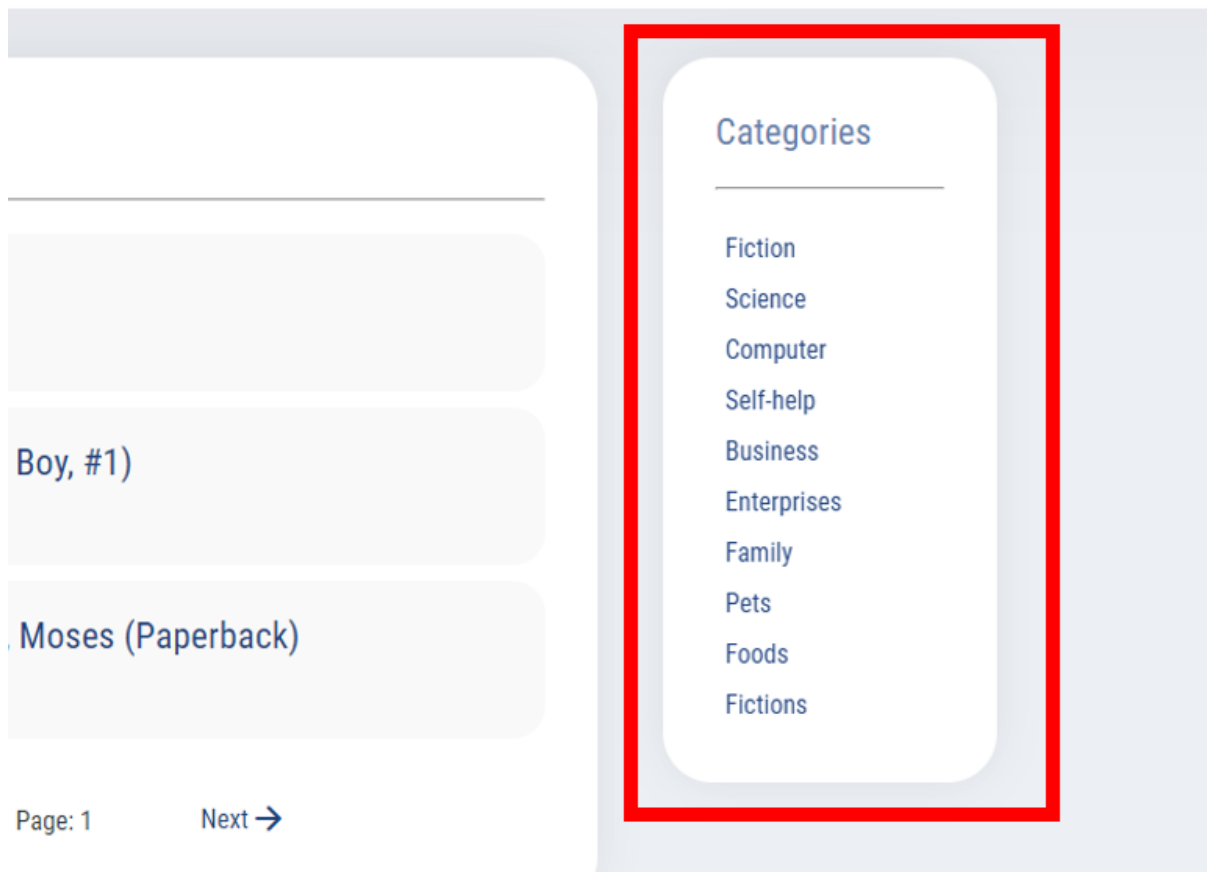
Figure 2. Navigation Area On Header Section

Figure 3. Right Side "Category" Menu

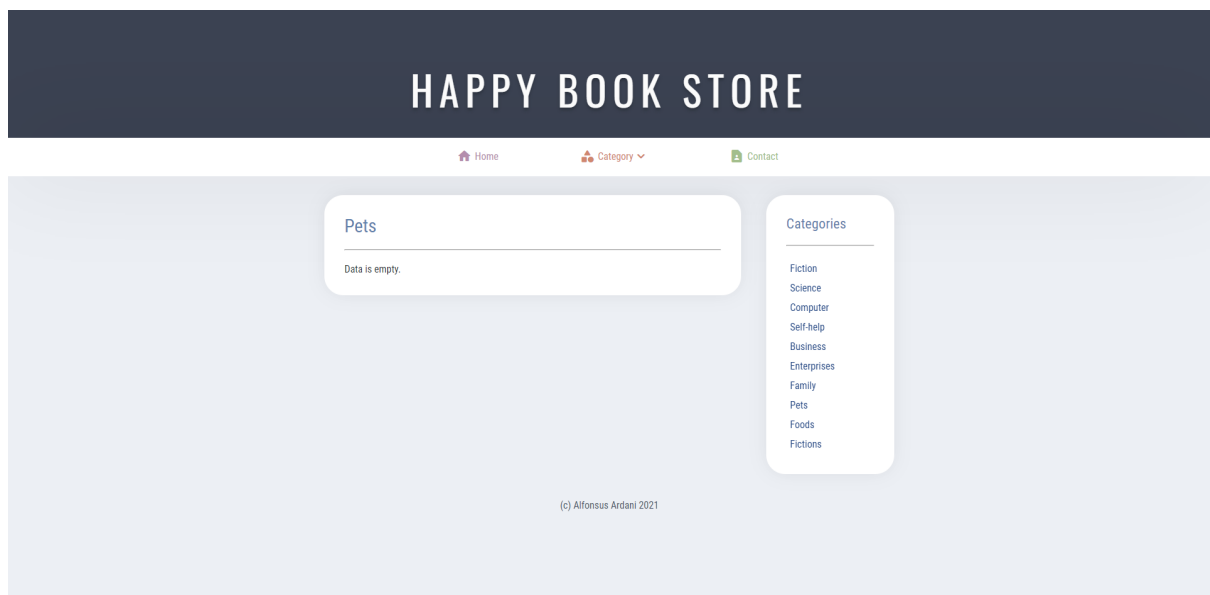Figure 4. The Result Of "Fiction" Category

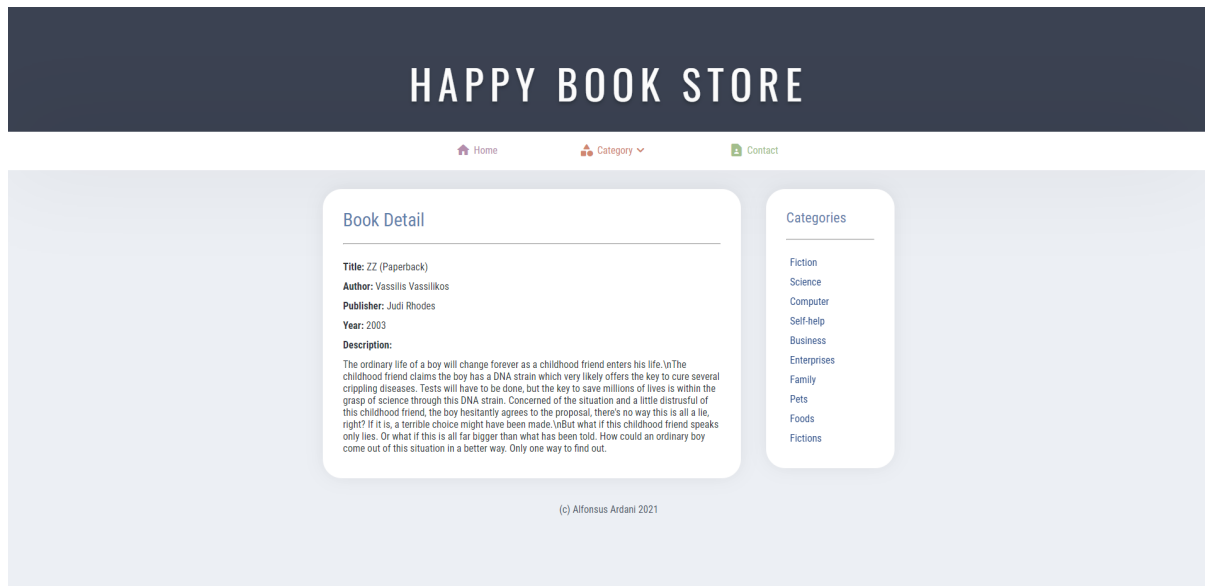Figure 5. The Result If No Data On Certain Category

Figure 7. Book Detail Page
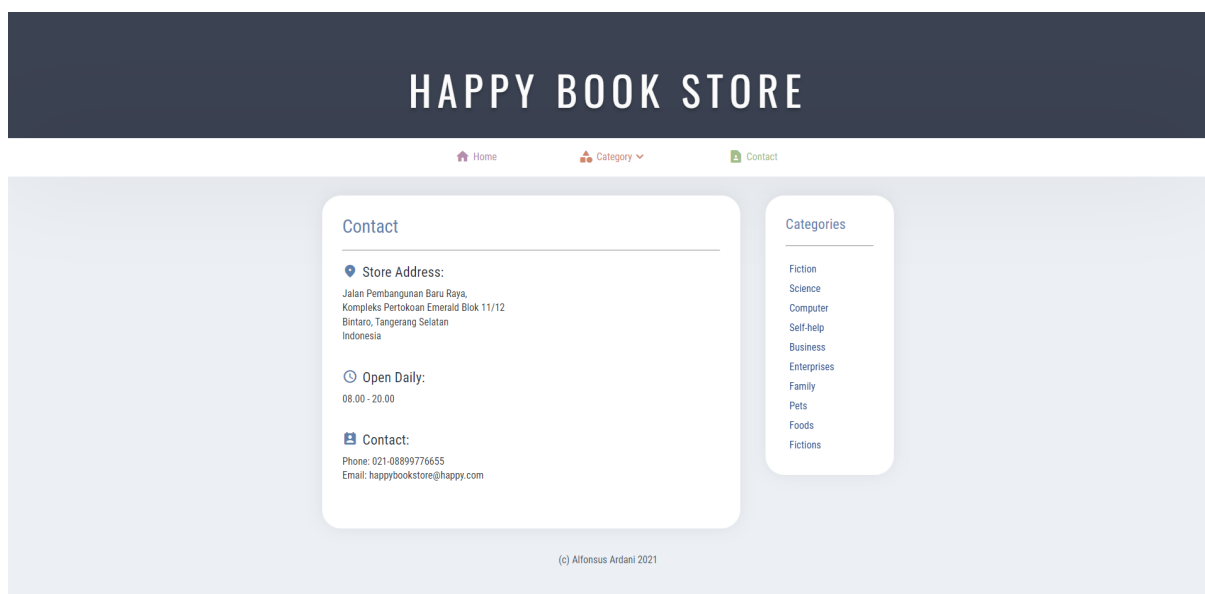
Figure 8. Contact Page

Project Files

https://s3-us-west-2.amazonaws.com/secure.notion-static.com/eb073e33-3dec-41e1-8684-68019dd82f2f/utswebprog.zip

a. Project Initialization

1. Creating Project with Composer

```
composer create-project laravel/laravel utswebprog
```

2. Start XAMPP for Apache and MySQL

3. Create new Database called " `dbutswebprog` "

4. Change `.env` settings to match MySQL credential

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

5. Running the PHP

```
php artisan serve
```

b. Database Configuration

1. Creating model for the table as well as the migration file and the seeder file.

```
php artisan make:model -m -s -c Category
php artisan make:model -m -s -c Book
php artisan make:model -m -s -c Detail
```

Migrations

2. Creating Migration for `categories` table

```php
public function up()
{
    Schema::create('categories', function (Blueprint $table) {
        $table->id();
        $table->string("category",255);
    });
}
```

3. Creating Migration for `books` table

```php
public function up()
{
    Schema::create('books', function (Blueprint $table) {
        $table->id();
        $table->foreignId('category_id');
        $table->foreign('category_id')->references('id')->on('categories');
        $table->string('title',255);
    });
}
```

4. Creating Migration for `details` table

```php
public function up()
{
    Schema::create('details', function (Blueprint $table) {
        $table->id();
        $table->foreignId('book_id');
        $table->foreign('book_id')->references('id')->on('books');
        $table->string('author',255);
        $table->string('publisher', 255);
        $table->integer('year');
        $table->longText('description');
    });
}
```

c. SQL ERD

d. Seeders

5. Filling up seeders for `details` table

```php
public function run()
{
    $data = [
        ['category' => "Fiction"],
        ['category' => "Science"],
        ['category' => "Computer"],
        ['category' => "Self-help"],
        ['category' => "Business"],
        // ...
    ];
    DB::table('categories')->insert($data); // Query Builder approach
}
```

6. Filling up seeders for `books` table

```php
public function run()
{
    $data = [
        ['category_id'⟹ "1", 'title'⟹ "ZZ (Paperback)"],
        ['category_id'⟹ "1", 'title'⟹ "A Suitable Boy (A Suitable Boy, #1)"],
        ['category_id'⟹ "2", 'title'⟹ "Go Down, MosesGo Down, Moses (Paperback)"],
        ['category_id'⟹ "2", 'title'⟹ "CigarettesCigarettes (Paperback)"],
        ['category_id'⟹ "3", 'title'⟹ "The Savage DetectivesThe Savage Detectives (Hardcover)"],
        ['category_id'⟹ "3", 'title'⟹ "The False Prince"],
        ['category_id'⟹ "4", 'title'⟹ "Fifty Shades of Grey"],
        ['category_id'⟹ "4", 'title'⟹ "Act Your Age, Eve Brown: A Novel"],
        ['category_id'⟹ "5", 'title'⟹ "American Dirt (Oprah's Book Club): A Novel"],
        ['category_id'⟹ "5", 'title'⟹ "Bowlaway: A Novel"],
        // ...
    ];
    DB::table('books')→insert($data); // Query Builder approach
}
```

7. Filling up seeders for `details` table

```php
public function run()
{
    $data = [
        ['book_id'⟹ "1",  'author'⟹ "Vassilis Vassilikos" ,'publisher'⟹'Judi Rhodes','year'⟹2003,'description'⟹'The ord
        ['book_id'⟹ "2",  'author'⟹ "Douglas Adams" ,'publisher'⟹'Illinois Historic Preservation Agency','year'⟹2010,'de
        ['book_id'⟹ "3",  'author'⟹ "Orhan Pamuk" ,'publisher'⟹'Rabenold&binder P.c','year'⟹2021,'description'⟹'The sec
        ['book_id'⟹ "4",  'author'⟹ "Alejo Carpentier" ,'publisher'⟹'Advanced Multimedia Concepts Inc','year'⟹2007,'desc
        ['book_id'⟹ "5",  'author'⟹ "Ally Carter" ,'publisher'⟹'Liftedsites','year'⟹2004,'description'⟹'The carefree li
        ['book_id'⟹ "6",  'author'⟹ "Karen Russell" ,'publisher'⟹'Cosmos Systems Softwares Ltd','year'⟹2008,'description
        ['book_id'⟹ "7",  'author'⟹ "Melissa Broder" ,'publisher'⟹'Stewart Enterprises','year'⟹2002,'description'⟹'The
        ['book_id'⟹ "8",  'author'⟹ "Nathan Hill" ,'publisher'⟹'Modern Machine Shop','year'⟹2007,'description'⟹'The sec
        ['book_id'⟹ "9",  'author'⟹ "Henry Miller" ,'publisher'⟹'Cfa Corporation','year'⟹2006,'description'⟹'The laid-b
        ['book_id'⟹ "10", 'author'⟹ "Marcel Proust" ,'publisher'⟹'Os Lubrano','year'⟹2015,'description'⟹'The relaxed li
        // ...
    ];
    DB::table('details')→insert($data); // Query Builder approach
}
```

8. Configuring the Central `DatabaseSeeder.php`

```php
public function run()
{
    $this→call(CategorySeeder::class);
    $this→call(BookSeeder::class);
    $this→call(DetailSeeder::class);
}
```

e. Model Configuration

1. Creating relationship of the `Detail` model using `HasFactory`

```php
class Detail extends Model
{
    use HasFactory;
    public function detail(){
        return $this→belongsTo(Book::class);
    }
}
```

2. Creating relationship of the `Book` model using `HasFactory`

```php
class Book extends Model
{
    use HasFactory;
    public function detail(){
        return $this→hasOne(Detail::class);
    }
    public function category(){
        return $this→belongsTo(Category::class);
    }
}
```

f. Route Configuration

```php
Route::get('/', [ViewController::class, 'displayHome']);
Route::redirect('/category', '/');
Route::redirect('/book', '/');

Route::get('/category/{category}', [ViewController::class, 'displayCategory']);
Route::get('/book/{book}', [ViewController::class, 'displayBook']);

Route::get('/contact', [ViewController::class, 'displayContact']);
```

g. View Controller

1. Create Controller

```php
<?php

namespace App\Http\Controllers;

use App\Models\Book;
use App\Models\Category;
use Exception;
use Illuminate\Support\Facades\DB;

class ViewController extends Controller
{

}
```

2. Get and Set Category (so that it supports dynamic category)

```php
private $cached_category;

public function setCategory(){
    $this→cached_category = DB::table('categories')→get();
}

public function getCategory(){
    return $this→cached_category;
}
```

3. Create controller function to display per-category book list

```php
public function displayCategory(int $category){
    $data = [];
    $this→setCategory();
    try{
        $data = Category::where('id',$category)→get();
    }catch(Exception $e){
    }
    return view('category',['data'⇒$data]);
}
```

4. Create controller function to display home page

```php
public function displayHome(){
    $this→setCategory();
    return view('home',[
        'data'⇒Book::paginate(3)
    ]);
}
```

5. Create controller functions to display book details

```php
public function displayBook(int $book){
    $data = [];
    $this→setCategory();
    try{
        $data = Book::where('id',$book)→get();
    }catch(Exception $e){
    }
    return view('book',['data'⇒$data]);
}
```

6. Create controller function to display the contact page view

```php
public function displayContact(){
    return view('contact');
}
```

h. Creating the Blade View

1. Creating a global variable that can be used in every blade view

In `app/Providers/AppServiceProvider.php`,

```php
public function boot()
{
    $view = new ViewController();
    $view->setCategory();
    $data = $view->getCategory();
    View::share('categories',$data);
}
```

2. Creating the layout template blade page so that every page can have the same sidebar, header and footer

    a. Importing fonts

```html
<link rel="preconnect" href="https://fonts.googleapis.com">
<link rel="preconnect" href="https://fonts.gstatic.com" crossorigin>
<link href="https://fonts.googleapis.com/css2?family=Oswald:wght@200;300;400;500;600;700&
family=Roboto+Condensed:ital,wght@0,300;0,400;0,700;1,300;1,400;1,700&display=swap"
rel="stylesheet">
```

    b. Importing icons

```html
<link href="https://fonts.googleapis.com/css2?family=Material+Icons+Round" rel="stylesheet">
```

    c. Creating a stylesheet

```css
a{text-decoration: none;color:#204380;font-weight: 500;}
hr{margin:20px 0 20px 0;}
.heading-2{font-size:1.8em;font-weight: 500;margin-bottom:10px;color:#5E81AC}
.heading-3{font-size:1.4em;font-weight: 500;margin:0px 0px 10px 0px;display:flex;align-items: cen
.heading-3 span{margin-right:8px;color:#5E81AC}
.paragraph{margin-bottom:40px;line-height: 1.4em;}
.navbar-item-dropdown {display:none;position: absolute;background-color: #E5E9F0;z-index: 1;wid
.navbar-item-dropdown-item{padding:10px 0px;}
.navbar-item span{padding-right:5px;}
.navbar-item{display:flex;flex-direction: row;justify-content: center;width:100px;text-align:cent
.navbar-item:hover{background-color: #E5E9F0;}
.navbar-item:hover::before{content:'>';padding:0px 10px;}
.navbar-item:hover::after{content:'<';padding:0px 10px;}
.navbar-dropdown{ border-radius:10px 10px 0 0; }
.navbar-dropdown:hover{background-color: #E5E9F0;}
.navbar-dropdown:hover .navbar-item-dropdown{display:block;box-shadow:0px 10px 20px -10px rgba(
.navbar-item-dropdown-item{width:100%;will-change: background-color;transition: background-color
.navbar-item-dropdown-item:hover{border-radius:10px;background-color:#E5E9F0;color:#112d5e;}
```

```
.navbar-item-dropdown-item:hover{border-radius:10px;background-color: #E5E9F0;color: #112d
.navbar-item-dropdown-item:hover::before{content:'>';padding:0px 10px;}
.navbar-item-dropdown-item:hover::after{content:'<';padding:0px 10px;}
.content-box{padding:32px;border-radius: 30px;background-color: white;margin: 20px 20px;he
.sidebar-item{will-change: transform;transition: transform 150ms ease-out;}
.sidebar-item:hover::before{position:absolute;margin-left:-10px;content:'>  ';}
.sidebar-item:hover{transform: translateX(10px);}
.sidebar-item::before{content:'';position:absolute;margin-left:-10px;}
.material-icons-round{margin-top:-3px;}
.book-item{background-color: #f9f9f9}
.book-item:hover{background-color: #E5E9F0}
.book-detail{padding:6px 0px;}
```

d. Creating the header

```
<div class="header" style="text-align:center; font-family: 'Oswald', 'Segoe UI', Tahoma, Geneva,
    HAPPY BOOK STORE
</div>
```

e. Creating the Navbar

```
<a href="/"><div class="navbar-item" style="color: #B48EAD;"><span class="material-icons-r
<a href="#"><div class="navbar-item navbar-dropdown" style="color: #D08770;"> ...
</div></a>
<a href="/contact"><div class="navbar-item" style="color: #A3BE8C;"><span class="material-i
```

i. Creating the dropdown

```
<a href="#"><div class="navbar-item navbar-dropdown" style="color: #D08770;">
    <div class="" style="border-radius:10px 10px 0px 0px; display:flex;flex-direction:row;col
        <span class="material-icons-round">category</span>
        <div>Category</div>
        <span class="material-icons-round">expand_more</span>
    </div>
    <div class="navbar-item-dropdown">
        @foreach ($categories as $category)
            <a href="/category/{{$category→id}}"><div class="navbar-item-dropdown-item">{{$c
        @endforeach
    </div>
</div></a>
```

f. Creating Placeholder for body of the template

```
<div class="content-box" style="width:600px;"">
    @yield('body')
</div>
```

g. Creating Sidebar

```
<div class="content-box">
    <div class="heading-3" style="color:■#5E81AC">Categories</div>
    <hr>
    <div style="display:flex;flex-direction:column;width:140px">
    @foreach ($categories as $category)
        <a href="/category/{{$category→id}}" style="padding:6px;" class="sidebar-item">
            {{$category→category}}
        </a>
    @endforeach
    </div>
</div>
```

h. Creating Footer

```
<div class="footer" style="width:100%;text-align:center;padding:10px 0px;color:■#4C566A">
    (c) Alfonsus Ardani 2021
</div>
```

3. Creating home page using blade template

```
@extends('layout')
@section('body')
    <div class="heading-2"> Book List</div><hr>
    @foreach ($data as $d)···
    @endforeach
    <div class="pagination" style="display:flex;flex-direction:row; justify-content:center; align-item
    </div>
@endsection
```

a. Listing all of the book entries

```
<div class="heading-2"> Book List</div><hr>
@foreach ($data as $d)
    <a href="/book/{{$d→id}}">
        <div class="book-item" style="border-radius:20px;padding:20px;margin-bottom:10px">
            <div class="heading-3 book-title" style="padding:0px;">{{$d→id}}. {{$d→title}}</div>
            <div class="book-author" style="padding:0px;">{{$d→detail→author}}</div>
        </div>
    </a>
@endforeach
```

b. Pagination

```
<div class="pagination" style="display:flex;flex-direction:row; justify-content:center; align-items
    @if ( empty($data→previousPageUrl()) )
        <div class="navbar-item" style="padding:10px;display:flex;">Prev</div>
    @else
        <a href="{{ $data→previousPageUrl() }}"><div class="navbar-item" style="width:30px"><span
    @endif
    <div style="padding:10px 10px 10px 20px;">Page: {{ $data→currentPage() }}</div>
    @if ( empty($data→nextPageUrl()) )
        <div class="navbar-item" style="padding:10px;display:flex;">Next</div>
    @else
        <a href="{{ $data→nextPageUrl() }}"><div class="navbar-item" style="width:30px">Next<span
    @endif
</div>
```

4. Creating per-category using blade template

```
@extends('layout')
@section('body')
    <div class="heading-2">{{$data[0]→category}}</div><hr>
    @if ($data[0]→book→isEmpty())
        Data is empty.
    @else
        @foreach ($data[0]→book as $d)
        <a href="/book/{{$d→id}}">
            <div class="book-item" style="border-radius:20px;padding:20px;margin-bottom:10px">
                <div class="heading-3 book-title" style="padding:0px;">{{$d→id}}. {{$d→title}}</div>
                <div class="book-author" style="padding:0px;">{{$d→detail→author}}</div>
            </div>
        </a>
        @endforeach
    @endif
@endsection
```

5. Creating book details using blade template

```
@extends('layout')
@section('body')
    <div class="heading-2">Book Detail</div><hr>
    <div class="book-detail"><b>Title: </b>{{$data[0]→title}}</div>
    <div class="book-detail"><b>Author: </b>{{$data[0]→detail→author}}</div>
    <div class="book-detail"><b>Publisher: </b>{{$data[0]→detail→publisher}}</div>
    <div class="book-detail"><b>Year: </b>{{$data[0]→detail→year}}</div>
    <div class="book-detail"><b>Description: </b></div>
    <div class="book-detail">{{$data[0]→detail→description}}</div>
@endsection
```

6. Creating Contact Details using Blade Template

```blade
@extends('layout')
@section('body')
    <div class="heading-2"> Contact</div><hr>
    <div class="heading-3"><span class="material-icons-round">location_on</span><div>Store Address:</div>
    <div class="paragraph">
        Jalan Pembangunan Baru Raya,<br>
        Kompleks Pertokoan Emerald Blok 11/12<br>
        Bintaro, Tangerang Selatan<br>
        Indonesia <br>
    </div>
    <div class="heading-3"><span class="material-icons-round">schedule</span><div>Open Daily:</div></div>
    <div class="paragraph">
        08.00 - 20.00
    </div>
    <div class="heading-3"><span class="material-icons-round">perm_contact_calendar</span><div>Contact:</
    <div class="paragraph">
        Phone: 021-08899776655<br>
        Email: happybookstore@happy.com
    </div>
@endsection
```