# Índice

Contenido

[Índice 1](#_Toc147405492)

[Modelo de datos 4](#_Toc147405493)

[Arquitectura del proyecto 4](#_Toc147405494)

[Crear la base de datos con EF 10](#_Toc147405495)

[Clase DataContext 11](#_Toc147405496)

[Appsettings 12](#_Toc147405497)

[Inyección de dependencias Servicio SQlServer 13](#_Toc147405498)

[Ejecutar proyectos de forma múltiple 13](#_Toc147405499)

[Migración de entidades hacia la base de datos SQL SERVER 14](#_Toc147405500)

[Crear un nuevo Branch en GIT para publicar la nueva versión del proyecto en el repositorio GIT. 14](#_Toc147405501)

[Creando los primeros métodos en el primer controlador 17](#_Toc147405502)

[Creando nuestros primeros componentes en Blazor 20](#_Toc147405503)

[Completando las acciones de crear, editar y borrar países 32](#_Toc147405504)

[Solucionando el problema de países con el mismo nombre y adicionando un Seeder a la base de datos 50](#_Toc147405505)

[Relación uno a muchos e índice compuesto 54](#_Toc147405506)

[Creando un CRUD multinivel 64](#_Toc147405507)

[Poblar los Países, Estados y Ciudades con un API externa 97](#_Toc147405508)

[CRUD de Categorías 107](#_Toc147405509)

[Creando tablas de productos y listando productos 109](#_Toc147405510)

[Ejemplo adicional relación de muchos a muchos para una Biblioteca 116](#_Toc147405511)

[Agregando paginación 118](#_Toc147405512)

[Agregando filtros 139](#_Toc147405513)

[Creando las tablas de usuarios 163](#_Toc147405514)

[Creando sistema de seguridad 173](#_Toc147405515)

[Seguridad desde el backend(API) 182](#_Toc147405516)

[Implementando el registro de usuarios, login & logout 192](#_Toc147405517)

[Habilitando tokens en swagger 205](#_Toc147405518)

[Mejorando el registro de usuarios con drop-down-lists en cascada 207](#_Toc147405519)

[Mejorando un poco la interfaz de usuario 213](#_Toc147405520)

[Lista de íconos para usar: 217](#_Toc147405521)

[´Almacenando la foto del usuario 224](#_Toc147405522)

[Editando el usuario 238](#_Toc147405523)

[Cambiando password del usuario 251](#_Toc147405524)

[Confirmar el registro de usuarios 256](#_Toc147405525)

[Reenviar correo de confirmación 275](#_Toc147405526)

[Actualización de la foto del usuario luego de editar usuario 281](#_Toc147405527)

[Recuperación de contraseña 283](#_Toc147405528)

[Solución del problema de la paginación 292](#_Toc147405529)

[CRUD de Categorías 296](#_Toc147405530)

[Implementación de ventanas modales 319](#_Toc147405531)

[Creando tablas de productos y listando productos 324](#_Toc147405532)

[Creando nuevos productos 355](#_Toc147405533)

[Empezar con la edición de productos y colocar las imágenes en un carrusel 371](#_Toc147405534)

[Agregando y eliminando imágenes a los productos y terminando la edición de producto 381](#_Toc147405535)

[Creando el “Home” de nuestra aplicación 387](#_Toc147405536)

[Agregando productos al carro de compras 393](#_Toc147405537)

[Mostrando y modificando el carro de compras 414](#_Toc147405538)

[Procesando el pedido 430](#_Toc147405539)

[Administrar pedidos 441](#_Toc147405540)

[Ver estado de mis pedidos 460](#_Toc147405541)

[Administrar usuarios y crear nuevos administradores 463](#_Toc147405542)

[Corrección para que corrar el App en Mac 472](#_Toc147405543)

# Modelo de datos

Vamos a crear un sencillo sistema de ventas que va a utilizar el siguiente modelo de datos:Diagrama

Descripción generada automáticamente

# Arquitectura del proyecto

SQL Server on Azure

.NET Core 7 API

Blazor WEB Application

MAUI Mobile Application

Windows

Android

iOS

Mac



Crear proyecto

Vamos a crear esta estructura en Visual Studio (asegúrese de poner todos los proyectos en el mismo directorio C://Projects

Crear un nuevo repositorio GITHUB, usar gitignore, copiar ruta, repositorio público

Clonar proyecto git desde Visual Studio C://Projects/Market

* Nuevo proyecto Solution Blank llamado **Market**. Dentro de C://Projects al final la .sln queda el ícono dentro de Projects🡪(Market.sln)

Interfaz de usuario gráfica, Tabla

Descripción generada automáticamente

* Sobre el ícono Market.sln del explorador de soluciones oprimimos click derecho y presionamos Open
* Click derecho sobre la solución y agregamos un nuevo proyecto tipo: **Class Library**, llamado **Market.Shared**

Ubicación: C:\Projects/Market (Borramos la class1.cs que se genera)

* Click derecho sobre la solución y agregamos un nuevo proyecto tipo: **ASP.NET Core Web API**, llamado **Market.API** Ubicación: C:\Projects/Market
* Click derecho sobre la solución y agregamos un nuevo proyecto tipo: **Blazor WebAssembly App**, llamado **Market.WEB** Ubicación: C:\Projects/Market

* Click derecho sobre la solución y agregamos un nuevo proyecto tipo: **.NET MAUI App**, llamado **Market.Mobile**. Ubicación: C:\Projects/Market

Después de la creación del proyecto Market.Mobile , debemos aceptar la licencia del SDK de Android:

Interfaz de usuario gráfica, Texto, Aplicación

Descripción generada automáticamente

Así debe verse al final , la estructura de los proyectos en el Solution Explorer:

Interfaz de usuario gráfica, Texto, Aplicación, Correo electrónico

Descripción generada automáticamente

Hacemos el primer commit en nuestro repositorio. Pestaña Git Changes

\*(Si en Git Changes no se visualiza el árbol de carpetas de los proyectos, será necesario cerrar la solución, y abrirla de nuevamente) Commit All and Sync

Interfaz de usuario gráfica, Aplicación

Descripción generada automáticamente

# Crear la base de datos con EF

Diagrama

Descripción generada automáticamente

Code First y Database First. En este curso trabajaremos con EF Code First,

Documentación: <https://docs.microsoft.com/en-us/ef/core/get-started/aspnetcore/existing-db>

1. Empecemos creando en el proyecto **Market.Shared** la carpeta **Entities** y dentro de esta carpeta la entidad **Country**:

using System.ComponentModel.DataAnnotations;

namespace Market.Shared.Entities

{

public class Country

{

public int Id { get; set; }

[Display(Name = "País")]

[MaxLength(100, ErrorMessage = "El campo {0} debe tener máximo {1} caractéres.")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public string Name { get; set; } = null!;

}

}

# Clase DataContext

1. En el proyecto **API** creamos la carpeta **Data** y dentro de esta la clase **DataContext**:

using Microsoft.EntityFrameworkCore;

using Market.Shared.Entities;

namespace Market.API.Data

{

public class DataContext : DbContext

{

public DataContext(DbContextOptions<DataContext> options) : base(options)

{

}

public DbSet<Country> Countries { get; set; }

protected override void OnModelCreating(ModelBuilder modelBuilder)

{

base.OnModelCreating(modelBuilder);

modelBuilder.Entity<Country>().HasIndex(c => c.Name).IsUnique();

}

}

}

# Appsettings

1. Configurar el string de conexión en el **appsettings.Development.json** y en **appsettings.json** del proyecto **API**:

{

"ConnectionStrings": {

"DefaultConnection": "Server= MyServer;Database=Market;Encrypt=False;User Id=dba;Password=Abcd1234\*;"

},

"Logging": {

"LogLevel": {

"Default": "Information",

"Microsoft.AspNetCore": "Warning"

}

},

"AllowedHosts": "\*"

}

1. Agregar/verificar los paquetes al proyecto **API**:

Microsoft.EntityFrameworkCore.SqlServer

Microsoft.EntityFrameworkCore.Tools

# Inyección de dependencias Servicio SQlServer

1. Configurar la inyección del DataContext en la clase **Program** del proyecto **API**:

builder.Services.AddSwaggerGen();

builder.Services.AddDbContext<DataContext>(x => x.UseSqlServer("name=DefaultConnection"));

var app = builder.Build();

# Ejecutar proyectos de forma múltiple

1. En el desplegable Startup Projects seleccionar Market.API como proyecto de inicio, abrir Package Manager Console(Tool) , e igualmente elegir Market.API ,como Default Project

# Migración de entidades hacia la base de datos SQL SERVER

1. Correr los siguientes comandos en Package Manager Console:

Interfaz de usuario gráfica, Texto, Aplicación, Correo electrónico

Descripción generada automáticamente

add-migration InitialDb

update-database

# Crear un nuevo Branch en GIT para publicar la nueva versión del proyecto en el repositorio GIT.

Interfaz de usuario gráfica, Texto, Aplicación

Descripción generada automáticamente

Tabla

Descripción generada automáticamente

Una captura de pantalla de una computadora

Descripción generada automáticamente

Interfaz de usuario gráfica, Texto, Aplicación, Correo electrónico

Descripción generada automáticamente

1. Hacemos nuestro segundo **Commit**. All and Sync y luego el Push en una nuevo branch(Si en Git Changes no se visualiza el árbol de carpetas de los proyectos, será necesario cerrar la solución, y abrirla de nuevamente)

Creando los primeros métodos en el primer controlador

1. En el proyecto **API** en la carpeta **Controllers** creamos la clase **CountriesController**:

using Microsoft.AspNetCore.Mvc;

using Microsoft.EntityFrameworkCore;

using Market.API.Data;

using Market.Shared.Entities;

namespace Market.API.Controllers

{

[ApiController]

[Route("/api/countries")]

public class CountriesController : ControllerBase

{

private readonly DataContext \_context.

public CountriesController(DataContext context)

{

\_context = context;

}

[HttpGet]

public async Task<ActionResult> Get()

{

return Ok(await \_context.Countries.ToListAsync());

}

}

}

[HttpGet("{id:int}")]

public async Task<ActionResult> Get(int id)

{

var country = await \_context.Countries.FirstOrDefaultAsync(x => x.Id == id);

if (country is null)

{

return NotFound();

}

return Ok(country);

}

[HttpPost]

public async Task<ActionResult> Post(Country country)

{

\_context.Add(country);

await \_context.SaveChangesAsync();

return Ok(country);

}

1. Agregamos estas líneas al **Program** del proyecto **API** para habilitar su consumo:

app.MapControllers();

app.UseCors(x => x

.AllowAnyMethod()

.AllowAnyHeader()

.SetIsOriginAllowed(origin => true)

.AllowCredentials());

app.Run();

1. Borramos las clases de **WeatherForecast**.
2. Probamos la creación y listado de paises por el **swagger** y por **Postman**.
3. Hacemos el **commit** de lo que llevamos.

# Creando nuestros primeros componentes en Blazor

1. Ahora vamos listar y crear países por la interfaz WEB.

Primero configuramos en el proyecto **WEB** la dirección por la cual sale nuestra **API**.

Verificar en cada proyecto el puerto por el cual se despliega, pues el puerto cambia en cada solución.

En mi caso la uri es: https://localhost:7000

**Market.WEB🡪 Program**

builder.Services.AddScoped(sp => new HttpClient { BaseAddress = new Uri("https://localhost:7000/") });

1. En el proyecto **WEB** creamos a carpeta **Repositories** y dentro de esta creamos la clase **HttpResponseWrapper** con el siguiente código:

using System.Net;

namespace Market.WEB.Repositories {

public class HttpResponseWrapper<T>

{

public HttpResponseWrapper(T? response, bool error, HttpResponseMessage httpResponseMessage)

{

Error = error;

Response = response;

HttpResponseMessage = httpResponseMessage;

}

public bool Error { get; set; }

public T? Response { get; set; }

public HttpResponseMessage HttpResponseMessage { get; set; }

public async Task<string?> GetErrorMessage()

{

if (!Error)

{

return null;

}

var codigoEstatus = HttpResponseMessage.StatusCode;

if (codigoEstatus == HttpStatusCode.NotFound)

{

return "Recurso no encontrado";

}

else if (codigoEstatus == HttpStatusCode.BadRequest)

{

return await HttpResponseMessage.Content.ReadAsStringAsync();

}

else if (codigoEstatus == HttpStatusCode.Unauthorized)

{

return " Debes loguearte para realizar esta acción";

}

else if (codigoEstatus == HttpStatusCode.Forbidden)

{

return " No tienes permisos para ejecutar esta acción";

}

return "Ha ocurrido un error inesperado";

}

}

}

1. En la misma carpeta creamos la interfaz **IRepository**:

namespace Market.WEB.Repositories{

public interface IRepository

{

Task<HttpResponseWrapper<T>> Get<T>(string url);

Task<HttpResponseWrapper<object>> Post<T>(string url, T model);

Task<HttpResponseWrapper<TResponse>> Post<T, TResponse>(string url, T model);

}

}

1. En la misma carpeta creamos la clase **Repository**:

using System.Text;

using System.Text.Json;

namespace Market.WEB.Repositories

{

public class Repository : IRepository

{

private readonly HttpClient \_httpClient;

private JsonSerializerOptions \_jsonDefaultOptions => new JsonSerializerOptions

{

PropertyNameCaseInsensitive = true,

};

public Repository(HttpClient httpClient)

{

\_httpClient = httpClient;

}

public async Task<HttpResponseWrapper<T>> Get<T>(string url)

{

var responseHttp = await \_httpClient.GetAsync(url);

if (responseHttp.IsSuccessStatusCode)

{

var response = await UnserializeAnswer<T>(responseHttp, \_jsonDefaultOptions);

return new HttpResponseWrapper<T>(response, false, responseHttp);

}

return new HttpResponseWrapper<T>(default, true, responseHttp);

}

public async Task<HttpResponseWrapper<object>> Post<T>(string url, T model)

{

var mesageJSON = JsonSerializer.Serialize(model);

var messageContet = new StringContent(mesageJSON, Encoding.UTF8, "application/json");

var responseHttp = await \_httpClient.PostAsync(url, messageContet);

return new HttpResponseWrapper<object>(null, !responseHttp.IsSuccessStatusCode, responseHttp);

}

public async Task<HttpResponseWrapper<TResponse>> Post<T, TResponse>(string url, T model)

{

var messageJSON = JsonSerializer.Serialize(model);

var messageContet = new StringContent(messageJSON, Encoding.UTF8, "application/json");

var responseHttp = await \_httpClient.PostAsync(url, messageContet);

if (responseHttp.IsSuccessStatusCode)

{

var response = await UnserializeAnswer<TResponse>(responseHttp, \_jsonDefaultOptions);

return new HttpResponseWrapper<TResponse>(response, false, responseHttp);

}

return new HttpResponseWrapper<TResponse>(default, !responseHttp.IsSuccessStatusCode, responseHttp);

}

private async Task<T> UnserializeAnswer<T>(HttpResponseMessage httpResponse, JsonSerializerOptions jsonSerializerOptions)

{

var respuestaString = await httpResponse.Content.ReadAsStringAsync();

return JsonSerializer.Deserialize<T>(respuestaString, jsonSerializerOptions)!;

}

}

}

8

1. **En el Program del proyecto WEB** configuramos la inyección del **Repository**:

builder.Services.AddScoped(sp => new HttpClient { BaseAddress = new Uri("https://localhost:7000/") });

builder.Services.AddScoped<IRepository, Repository>();

await builder.Build().RunAsync();

1. En la carpeta **Shared del proyecto WEB** creamos el componente razor **GenericList**:

@typeparam Titem

@if(MyList is null)

{

@if(Loading is null)

{

<div class="align-items-center">

<img src=" https://img.pikbest.com/png-images/20190918/cartoon-snail-loading-loading-gif-animation\_2734139.png!bw700 " />

</div>

}

else

{

@Loading

}

}

else if(MyList.Count == 0)

{

@if(NoRecords is null)

{

<p>No hay registros para mostrar...</p>

}

else

{

@NoRecords

}

}

else

{

@Body

}

@code {

[Parameter]

public RenderFragment? Loading { get; set; }

[Parameter]

public RenderFragment? NoRecords { get; set; }

[Parameter]

[EditorRequired]

public RenderFragment Body { get; set; } = null!;

[Parameter]

[EditorRequired]

public List<Titem> MyList { get; set; } = null!;

}

1. En el proyecto **WEB** Dentro de **Pages** creamos la carpeta **Countries** y dentro de esta carpeta creamos la página **CountriesIndex**:

@page "/countries"

@inject IRepository repository

<h3>Paises</h3>

<div class="mb-3">

<a class="btn btn-primary" href="/countries/create">Nuevo País</a>

</div>

<**GenericList** **MyList**="Countries">

<**Body**>

<table class="table table-striped">

<thead>

<tr>

<th>País</th>

<th></th>

</tr>

</thead>

<tbody>

@foreach (var country in Countries!)

{

<tr>

<td>

@country.Name

</td>

<td>

<a class="btn btn-warning">Editar</a>

<button class="btn btn-danger">Borrar</button>

</td>

</tr>

}

</tbody>

</table>

</**Body**>

</**GenericList**>

@code {

public List<Country>? Countries { get; set; }

protected async override Task OnInitializedAsync()

{

var responseHppt = await repository.Get<List<Country>>("/api/countries");

Countries = responseHppt.Response!;

}

}

\*Importante:

Agregamos una referencia al proyecto Web para que obtenga comunicación con el proyecto Shared (Click derecho sobre el proyecto Market.WEB Add reference>

Market.Shares

1. Agregamos los problemas de los usings y luego movemos esos using al **\_Imports.razor**:

@using Market.WEB.Shared

@using Market.Shared.Entities

@using Market.WEB.Repositories

1. Cambiamos el menú en el **NavMenu.razor**:

<div class="nav-item px-3">

<NavLink class="nav-link" href="counter">

<span class="oi oi-plus" aria-hidden="true"></span> Counter

</NavLink>

</div>

<div class="nav-item px-3">

<NavLink class="nav-link" href="countries">

<span class="oi oi-list-rich" aria-hidden="true"></span> Países

</NavLink>

</div>

1. Configuramos nuestra solución para que inicie al mismo tiempo el proyecto **API** y el proyecto **WEB**:

Vamos a las Solution Market, click derecho properties:

Interfaz de usuario gráfica

Descripción generada automáticamente

1. Probamos y hacemos nuestro commit.

# Completando las acciones de crear, editar y borrar países

1. En el proyecto **API** vamos adicionar estos métodos al **CountriesController**:

[HttpPut]

public async Task<ActionResult> Put(Country country)

{

\_context.Update(country);

await \_context.SaveChangesAsync();

return Ok(country);

}

[HttpDelete("{id:int}")]

public async Task<ActionResult> Delete(int id)

{

var afectedRows = await \_context.Countries

.Where(x => x.Id == id)

.ExecuteDeleteAsync();

if (afectedRows == 0)

{

return NotFound();

}

return NoContent();

}

1. Probamos estos métodos por **Swagger** o por **Postman**.
2. Agregamos estos métodos a la interfaz **IRepository**.

Task<HttpResponseWrapper<object>> Delete(string url);

Task<HttpResponseWrapper<object>> Put<T>(string url, T model);

Task<HttpResponseWrapper<TResponse>> Put<T, TResponse>(string url, T model);

1. Luego los implementamos en el **Repository**.

public async Task<HttpResponseWrapper<object>> Delete(string url)

{

var responseHTTP = await \_httpClient.DeleteAsync(url);

return new HttpResponseWrapper<object>(null, !responseHTTP.IsSuccessStatusCode, responseHTTP);

}

public async Task<HttpResponseWrapper<object>> Put<T>(string url, T model)

{

var messageJSON = JsonSerializer.Serialize(model);

var messageContent = new StringContent(messageJSON, Encoding.UTF8, "application/json");

var responseHttp = await \_httpClient.PutAsync(url, messageContent);

return new HttpResponseWrapper<object>(null, !responseHttp.IsSuccessStatusCode, responseHttp);

}

public async Task<HttpResponseWrapper<TResponse>> Put<T, TResponse>(string url, T model)

{

var messageJSON = JsonSerializer.Serialize(model);

var messageContent = new StringContent(messageJSON, Encoding.UTF8, "application/json");

var responseHttp = await \_httpClient.PutAsync(url, messageContent);

if (responseHttp.IsSuccessStatusCode)

{

var response = await UnserializeAnswer<TResponse>(responseHttp, \_jsonDefaultOptions);

return new HttpResponseWrapper<TResponse>(response, false, responseHttp);

}

return new HttpResponseWrapper<TResponse>(default, !responseHttp.IsSuccessStatusCode, responseHttp);

}

1. Vamos agregarle al proyecto **WEB** el nugget **CurrieTechnologies.Razor.SweetAlert2**, que nos va a servir para mostrar alertas muy bonitas.
2. Vamos a la página de Sweet Alert 2 ([Basaingeal/Razor.SweetAlert2: A Razor class library for interacting with SweetAlert2 (github.com)](https://github.com/Basaingeal/Razor.SweetAlert2) y copiamos el script que debemos de agregar al **index.html** que está en el **wwwroot** de nuestro proyecto **WEB**.

<script src="\_framework/blazor.webassembly.js"></script>

<script src="\_content/CurrieTechnologies.Razor.SweetAlert2/sweetAlert2.min.js"></script>

</body>

1. En el program del proyecto **WEB** configuramos la inyección del servicio de alertas:

builder.Services.AddScoped<IRepository, Repository>();

builder.Services.AddSweetAlert2();

Insertar lo siguiente en el archivo imports del proyecto Web

@using CurrieTechnologies.Razor.SweetAlert2;

1. En la carpeta **Countries** agregar el componente **CountryForm**:

<EditForm Model="Country" OnValidSubmit="OnSubmit">

<DataAnnotationsValidator />

<div class="mb-3">

<label>País:</label>

<div>

<InputText class="form-control" @bind-Value="@Country.Name" />

<ValidationMessage For="@(() => Country.Name)" />

</div>

</div>

<button class="btn btn-primary" type="submit">Guardar Cambios</button>

<button class="btn btn-success" @onclick="ReturnAction">Regresar</button>

</EditForm>

@code {

[EditorRequired]

[Parameter]

public Country Country { get; set; } = null!;

[EditorRequired]

[Parameter]

public EventCallback OnSubmit { get; set; }

[EditorRequired]

[Parameter]

public EventCallback ReturnAction { get; set; }

}

1. En la carpeta **Countries** agregar el componente **CountryCreate**:

@page "/countries/create"

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

<h3>Crear País</h3>

<CountryForm Country="country" OnSubmit="Create" ReturnAction="Return"/>

@code {

private Country country = new();

private async Task Create()

{

var responseHttp = await repository.Post("/api/countries", country);

if (responseHttp.Error)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message);

return;

}

navigationManager.NavigateTo("/countries");

}

private void Return()

{

navigationManager.NavigateTo("/countries");

}

}

1. Agregamos el boton de crear país en **CountriesIndex**:

<h3>Países</h3>

<a class="btn btn-primary" href="/countries/create">Nuevo País</a>

<GenericList MyList="Countries">

1. Probamos la creación de países por interfaz.
2. Mejoremos el formulario previniendo que el usuario salga y deje el formulario incompleto, modificamos nuestro componente **CountryForm**:

@inject SweetAlertService swal

<NavigationLock OnBeforeInternalNavigation="OnBeforeInternalNavigation"></NavigationLock>

<EditForm EditContext="editContext" OnSubmit="OnSubmit">

<DataAnnotationsValidator />

<div class="mb-3">

<label>País:</label>

<div>

<InputText class="form-control" @bind-Value="@Country.Name" />

<ValidationMessage For="@(() => Country.Name)" />

</div>

</div>

<button class="btn btn-primary" type="submit">Guardar Cambios</button>

<button class="btn btn-success" @onclick="ReturnAction">Regresar</button>

</EditForm>

@code {

private EditContext editContext = null!;

protected override void OnInitialized()

{

editContext = new(Country);

}

[EditorRequired]

[Parameter]

public Country Country { get; set; } = null!;

[EditorRequired]

[Parameter]

public EventCallback OnValidSubmit { get; set; }

[EditorRequired]

[Parameter]

public EventCallback ReturnAction { get; set; }

public bool FormPostedSuccessfully { get; set; } = false;

private async Task OnBeforeInternalNavigation(LocationChangingContext context)

{

var formWasEdited = editContext.IsModified();

if (!formWasEdited)

{

return;

}

if (FormPostedSuccessfully)

{

return;

}

var result = await swal.FireAsync(new SweetAlertOptions

{

Title = "Confirmación",

Text = "¿Deseas abandonar la página y perder los cambios?",

Icon = SweetAlertIcon.Warning,

ShowCancelButton = true

});

var confirm = !string.IsNullOrEmpty(result.Value);

if (confirm)

{

return;

}

context.PreventNavigation();

}

}

1. Y hacemos este cambio en **CountryCreate**:

@page "/countries/create"

@inject NavigationManager navigationManager

@inject IRepository repository

@inject SweetAlertService swal

<h3>Crear País</h3>

<CountryForm @ref="countryForm" Country="country" OnSubmit="Create" ReturnAction="Return" />

@code {

private Country country = new();

private CountryForm? countryForm;

private async Task Create()

{

var httpResponse = await repository.Post("api/countries", country);

if (httpResponse.Error)

{

var mensajeError = await httpResponse.GetErrorMessageAsync();

await swal.FireAsync("Error", mensajeError, SweetAlertIcon.Error);

}

else

{

countryForm!.FormPostedSuccessfully = true;

navigationManager.NavigateTo("countries");

}

}

private void Return()

{

navigationManager.NavigateTo("countries");

}

}

1. Probamos la creación de países por interfaz y luego hacemos nuestro **commit**. **Asegúrate de presionar Ctrl + F5, para que te tome los cambios**.
2. Ahora creamos el componente **CountryEdit**:

@page "/countries/edit/{Id:int}"

@inject NavigationManager navigationManager

@inject IRepository repository

@inject SweetAlertService swal

<h3>Editar País</h3>

@if (country is null)

{

<p>Cargando...</p>

}

else

{

<CountryForm @ref="countryForm" Country="country" OnValidSubmit="Edit" ReturnAction="Return" />

}

@code {

private Country? country;

private CountryForm? countryForm;

[Parameter]

public int Id { get; set; }

protected override async Task OnInitializedAsync()

{

var responseHTTP = await repository.Get<Country>($"api/countries/{Id}");

if (responseHTTP.Error)

{

if (responseHTTP.HttpResponseMessage.StatusCode == System.Net.HttpStatusCode.NotFound)

{

navigationManager.NavigateTo("countries");

}

else

{

var messageError = await responseHTTP.GetErrorMessage();

await swal.FireAsync("Error", messageError, SweetAlertIcon.Error);

}

}

else

{

country = responseHTTP.Response;

}

}

private async Task Edit()

{

var responseHTTP = await repository.Put("api/countries", country);

if (responseHTTP.Error)

{

var mensajeError = await responseHTTP.GetErrorMessage();

await swal.FireAsync("Error", mensajeError, SweetAlertIcon.Error);

}

else

{

countryForm!.FormPostedSuccessfully = true;

navigationManager.NavigateTo("countries");

}

}

private void Return()

{

navigationManager.NavigateTo("countries");

}

}

1. Luego modificamos el componente **CountriesIndex**:

@page "/countries"

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService swal

<h3>Paises</h3>

<div class="mb-3">

<a class="btn btn-primary" href="/countries/create">Nuevo País</a>

</div>

<GenericList MyList="Countries">

<Body>

<table class="table table-striped">

<thead>

<tr>

<th>País</th>

<th></th>

</tr>

</thead>

<tbody>

@foreach (var country in Countries!)

{

<tr>

<td>

@country.Name

</td>

<td>

<a href="/countries/edit/@country.Id" class="btn btn-warning">Editar</a>

<button class="btn btn-danger" @onclick=@(() => Delete(country))>Borrar</button>

</td>

</tr>

}

</tbody>

</table>

</Body>

</GenericList>

@code {

public List<Country>? Countries { get; set; }

protected async override Task OnInitializedAsync()

{

await Load();

}

private async Task Load()

{

var responseHppt = await repository.Get<List<Country>>("api/countries");

Countries = responseHppt.Response!;

}

private async Task Delete(Country country)

{

var result = await swal.FireAsync(new SweetAlertOptions

{

Title = "Confirmación",

Text = "¿Esta seguro que quieres borrar el registro?",

Icon = SweetAlertIcon.Question,

ShowCancelButton = true

});

var confirm = string.IsNullOrEmpty(result.Value);

if (confirm)

{

return;

}

var responseHTTP = await repository.Delete($"api/countries/{country.Id}");

if (responseHTTP.Error)

{

if (responseHTTP.HttpResponseMessage.StatusCode == System.Net.HttpStatusCode.NotFound)

{

navigationManager.NavigateTo("/");

}

else

{

var mensajeError = await responseHTTP.GetErrorMessageAsync();

await swal.FireAsync("Error", mensajeError, SweetAlertIcon.Error);

}

}

else

{

await Load();

}

}

}

1. Y probamos la edición y eliminación de países por interfaz. No olvides hacer el **commit**.

# Solucionando el problema de países con el mismo nombre y adicionando un Seeder a la base de datos

1. Si intentamos crear un país con el mismo nombre, sale un error no muy claro para el cliente. Vamos a solucionar esto, lo primero que vamos hacer es corregir el **Post** y el **Put** en el controlador de países:

[HttpPost]

public async Task<ActionResult> Post(Country country)

{

\_context.Add(country);

try

{

await \_context.SaveChangesAsync();

return Ok(country);

}

catch (DbUpdateException dbUpdateException)

{

if (dbUpdateException.InnerException!.Message.Contains("duplicate"))

{

return BadRequest("Ya existe un país con el mismo nombre.");

}

else

{

return BadRequest(dbUpdateException.InnerException.Message);

}

}

catch (Exception exception)

{

return BadRequest(exception.Message);

}

}

[HttpPut]

public async Task<ActionResult> Put(Country country)

{

\_context.Update(country);

try

{

await \_context.SaveChangesAsync();

return Ok(country);

}

catch (DbUpdateException dbUpdateException)

{

if (dbUpdateException.InnerException!.Message.Contains("duplicate"))

{

return BadRequest("Ya existe un registro con el mismo nombre.");

}

else

{

return BadRequest(dbUpdateException.InnerException.Message);

}

}

catch (Exception exception)

{

return BadRequest(exception.Message);

}

}

1. Probamos. Ahora vamos a adicionar un alimentador de la base de datos. Para esto primero creamos en el proyecto **API** dentro de la carpeta **Data** la clase **SeedDb**:

using Market.Shared.Entities;

namespace Market.API.Data

{

public class SeedDb

{

private readonly DataContext \_context;

public SeedDb(DataContext context)

{

\_context = context;

}

public async Task SeedAsync()

{

await \_context.Database.EnsureCreatedAsync();

await CheckCountriesAsync();

}

private async Task CheckCountriesAsync()

{

if (!\_context.Countries.Any())

{

\_context.Countries.Add(new Country { Name = "Colombia" });

\_context.Countries.Add(new Country { Name = "USA" });

}

await \_context.SaveChangesAsync();

}

}

}

1. Luego modificamos el **Program** del proyecto **API** para llamar el alimentador de la BD:

builder.Services.AddDbContext<DataContext>(x => x.UseSqlServer("name=DockerConnection"));

builder.Services.AddTransient<SeedDb>();

var app = builder.Build();

SeedData(app);

void SeedData(WebApplication app)

{

IServiceScopeFactory? scopedFactory = app.Services.GetService<IServiceScopeFactory>();

using (IServiceScope? scope = scopedFactory!.CreateScope())

{

SeedDb? service = scope.ServiceProvider.GetService<SeedDb>();

service!.SeedAsync().Wait();

}

}

1. Borramos la base de datos con el comando **drop-database**.
2. Probamos y hacemos el **commit**.

# Relación uno a muchos e índice compuesto

1. Creamos la entidad **State**:

using System.ComponentModel.DataAnnotations;

namespace Market.Shared.Entities

{

public class State

{

public int Id { get; set; }

[Display(Name = "Departamento/Estado")]

[MaxLength(100, ErrorMessage = "El campo {0} debe tener máximo {1} caractéres.")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public string Name { get; set; } = null!;

public int CountryId { get; set; }

public Country? Country { get; set; }

}

}

1. Modificamos la entidad **Country**:

public string Name { get; set; } = null!;

public ICollection<State>? States { get; set; }

[Display(Name = "Estados/Departamentos")]

public int StatesNumber => States == null ? 0 : States.Count;

1. Creamos la entidad **City**:

using System.ComponentModel.DataAnnotations;

namespace Market.Shared.Entities

{

public class City

{

public int Id { get; set; }

[Display(Name = "Ciudad")]

[MaxLength(100, ErrorMessage = "El campo {0} debe tener máximo {1} caractéres.")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public string Name { get; set; } = null!;

public int StateId { get; set; }

public State? State { get; set; }

}

}

1. Modificamos la entidad **State**:

public Country Country { get; set; } = null!;

public ICollection<City>? Cities { get; set; }

[Display(Name = "Ciudades")]

public int CitiesNumber => Cities == null ? 0 : Cities.Count;

1. Modificamos el **DataContext**:

public DataContext(DbContextOptions<DataContext> options) : base(options)

{

}

public DbSet<City> Cities { get; set; }

public DbSet<Country> Countries { get; set; }

public DbSet<State> States { get; set; }

protected override void OnModelCreating(ModelBuilder modelBuilder)

{

base.OnModelCreating(modelBuilder);

modelBuilder.Entity<Country>().HasIndex(c => c.Name).IsUnique();

modelBuilder.Entity<State>().HasIndex("CountryId","Name",).IsUnique();

modelBuilder.Entity<City>().HasIndex("StateId","Name").IsUnique();

}

1. Para evitar la redundancia cíclica en la respuesta de los JSON vamos a agregar la siguiente configuración, modificamos el **Program** del **API**:

builder.Services.AddControllers()

.AddJsonOptions(x => x.JsonSerializerOptions.ReferenceHandler = ReferenceHandler.IgnoreCycles);

1. Modificamos el Seeder:

private async Task CheckCountriesAsync()

{

if (!\_context.Countries.Any())

{

\_context.Countries.Add(new Country

{

Name = "Colombia",

States = new List<State>()

{

new State()

{

Name = "Antioquia",

Cities = new List<City>() {

new City() { Name = "Medellín" },

new City() { Name = "Itagüí" },

new City() { Name = "Envigado" },

new City() { Name = "Bello" },

new City() { Name = "Rionegro" },

}

},

new State()

{

Name = "Bogotá",

Cities = new List<City>() {

new City() { Name = "Usaquen" },

new City() { Name = "Champinero" },

new City() { Name = "Santa fe" },

new City() { Name = "Useme" },

new City() { Name = "Bosa" },

}

},

}

});

\_context.Countries.Add(new Country

{

Name = "Estados Unidos",

States = new List<State>()

{

new State()

{

Name = "Florida",

Cities = new List<City>() {

new City() { Name = "Orlando" },

new City() { Name = "Miami" },

new City() { Name = "Tampa" },

new City() { Name = "Fort Lauderdale" },

new City() { Name = "Key West" },

}

},

new State()

{

Name = "Texas",

Cities = new List<City>() {

new City() { Name = "Houston" },

new City() { Name = "San Antonio" },

new City() { Name = "Dallas" },

new City() { Name = "Austin" },

new City() { Name = "El Paso" },

}

},

}

});

}

await \_context.SaveChangesAsync();

}

1. Modificamos los **Get** del controlador de países:

[HttpGet]

public async Task<ActionResult> Get()

{

return Ok(await \_context.Countries

.Include(x => x.States)

.ToListAsync());

}

[HttpGet("{id:int}")] ///api/countries/1

public async Task<ActionResult> Get(int id)

{

var country = await \_context.Countries

.Include (x => x.States!)

.ThenInclude(x => x.Cities!)

.FirstOrDefaultAsync(x => x.Id == id);

if (country is null)

{

return NotFound();

}

return Ok(country);

}

[HttpGet("full")]

public async Task<ActionResult> GetFull()

{

return Ok(await \_context.Countries

.Include(x => x.States!)

.ThenInclude(x => x.Cities)

.ToListAsync());

}

1. Borramos la base de datos con el comando **drop-database** para que el Seeder vuelva a ejecutarse
2. Adicionamos la nueva migración de la base de datos con el comando: **add-migration AddStatesAndCities** y aunque el Seeder corre automáticamente el Update Database, prefiero correrlo manualmente para asegurarme que no genere ningun error: **update-database**.
3. Cambiemos el **CountryIndex** para ver el número de departamentos/estados de cada país y adicionar el botón de detalles:

<GenericList MyList="Countries">

<RecordsComplete>

<table class="table table-striped">

<thead>

<tr>

<th>País</th>

<th>Departamentos/Estados</th>

<th></th>

</tr>

</thead>

<tbody>

@foreach (var country in Countries!)

{

<tr>

<

<td>

@country.Name

</td>

<td>

@country.StatesNumber

</td>

td>

<a href="/countries/details/@country.Id" class="btn btn-info">Detalles</a>

<a href="/countries/edit/@country.Id" class="btn btn-warning">Editar</a>

<button class="btn btn-danger" @onclick=@(() => Delete(country))>Borrar</button>

</td>

</tr>

}

</tbody>

</table>

</RecordsComplete>

</GenericList>

1. Probamos y hacemos el **commit**.

# Creando un CRUD multinivel

1. Vamos ahora a tener la posibilidad de crear, editar, borrar estados y ciudades. Empecemos creando el **StatesController**

using Microsoft.AspNetCore.Mvc;

using Microsoft.EntityFrameworkCore;

using Market.API.Data;

using Market.Shared.Entities;

namespace Market.API.Controllers

{

[ApiController]

[Route("/api/states")]

public class StatesController : ControllerBase

{

private readonly DataContext \_context;

public StatesController(DataContext context)

{

\_context = context;

}

[HttpGet]

public async Task<IActionResult> GetAsync()

{

return Ok(await \_context.States

.Include(x => x.Cities)

.ToListAsync());

}

[HttpGet("{id:int}")]

public async Task<IActionResult> GetAsync(int id)

{

var state = await \_context.States

.Include(x => x.Cities)

.FirstOrDefaultAsync(x => x.Id == id);

if (state == null)

{

return NotFound();

}

return Ok(state);

}

[HttpPost]

public async Task<ActionResult> PostAsync(State state)

{

try

{

\_context.Add(state);

await \_context.SaveChangesAsync();

return Ok(state);

}

catch (DbUpdateException dbUpdateException)

{

if (dbUpdateException.InnerException!.Message.Contains("duplicate"))

{

return BadRequest("Ya existe un estado/departamento con el mismo nombre.");

}

return BadRequest(dbUpdateException.Message);

}

catch (Exception exception)

{

return BadRequest(exception.Message);

}

}

[HttpPut]

public async Task<ActionResult> PutAsync(State state)

{

try

{

\_context.Update(state);

await \_context.SaveChangesAsync();

return Ok(state);

}

catch (DbUpdateException dbUpdateException)

{

if (dbUpdateException.InnerException!.Message.Contains("duplicate"))

{

return BadRequest("Ya existe un estado/departamento con el mismo nombre.");

}

return BadRequest(dbUpdateException.Message);

}

catch (Exception exception)

{

return BadRequest(exception.Message);

}

}

[HttpDelete("{id:int}")]

public async Task<IActionResult> DeleteAsync(int id)

{

var state = await \_context.States.FirstOrDefaultAsync(x => x.Id == id);

if (state == null)

{

return NotFound();

}

\_context.Remove(state);

await \_context.SaveChangesAsync();

return NoContent();

}

}

}

1. Luego creamos el **CitiesController**

using Microsoft.AspNetCore.Mvc;

using Microsoft.EntityFrameworkCore;

using Market.API.Data;

using Market.Shared.Entities;

namespace Market.API.Controllers

{

[ApiController]

[Route("/api/cities")]

public class CitiesController : ControllerBase

{

private readonly DataContext \_context;

public CitiesController(DataContext context)

{

\_context = context;

}

[HttpGet]

public async Task<IActionResult> GetAsync()

{

return Ok(await \_context.Cities.ToListAsync());

}

[HttpGet("{id:int}")]

public async Task<IActionResult> GetAsync(int id)

{

var city = await \_context.Cities.FirstOrDefaultAsync(x => x.Id == id);

if (city == null)

{

return NotFound();

}

return Ok(city);

}

[HttpPost]

public async Task<ActionResult> PostAsync(City city)

{

try

{

\_context.Add(city);

await \_context.SaveChangesAsync();

return Ok(city);

}

catch (DbUpdateException dbUpdateException)

{

if (dbUpdateException.InnerException!.Message.Contains("duplicate"))

{

return BadRequest("Ya existe una ciudad con el mismo nombre.");

}

return BadRequest(dbUpdateException.Message);

}

catch (Exception exception)

{

return BadRequest(exception.Message);

}

}

[HttpPut]

public async Task<ActionResult> PutAsync(City city)

{

try

{

\_context.Update(city);

await \_context.SaveChangesAsync();

return Ok(city);

}

catch (DbUpdateException dbUpdateException)

{

if (dbUpdateException.InnerException!.Message.Contains("duplicate"))

{

return BadRequest("Ya existe una ciudad con el mismo nombre.");

}

return BadRequest(dbUpdateException.Message);

}

catch (Exception exception)

{

return BadRequest(exception.Message);

}

}

[HttpDelete("{id:int}")]

public async Task<IActionResult> DeleteAsync(int id)

{

var city = await \_context.Cities.FirstOrDefaultAsync(x => x.Id == id);

if (city == null)

{

return NotFound();

}

\_context.Remove(city);

await \_context.SaveChangesAsync();

return NoContent();

}

}

}

1. En el proyecto **WEB** en la carpeta **Pages/Countries** vamos a crear la página **CountryDetails**

@page "/countries/details/{Id:int}"

@using Market.Shared.Entities;

@using System.Net;

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

@if(country is null)

{

<p>Cargando...</p>

} else

{

<h3>@country.Name</h3>

<div class="mb-2">

<a class="btn btn-primary" href="/states/create/@country.Id">Nuevo Estado/Departamento</a>

<a class="btn btn-success" href="/countries">Regresar</a>

</div>

<GenericList MyList="states">

<Body>

<table class="table table-striped">

<thead>

<tr>

<th>Estado / Departamento</th>

<th>Ciudades</th>

<th></th>

</tr>

</thead>

<tbody>

@foreach (var state in states!)

{

<tr>

<td>

@state.Name

</td>

<td>

@state.CitiesNumber

</td>

<td>

<a class="btn btn-info" href="/states/details/@state.Id">Detalles</a>

<a class="btn btn-warning" href="/states/edit/@state.Id">Editar</a>

<button class="btn btn-danger" @onclick=@(() => DeleteAsync(state.Id))>Borrar</button>

</td>

</tr>

}

</tbody>

</table>

</Body>

</GenericList>

}

@code {

private Country? country;

private List<State>? states;

[Parameter]

public int Id { get; set; }

protected override async Task OnInitializedAsync()

{

await LoadAsync();

}

private async Task LoadAsync()

{

var responseHttp = await repository.Get<Country>($"/api/countries/{Id}");

if (responseHttp.Error)

{

if (responseHttp.HttpResponseMessage.StatusCode == HttpStatusCode.NotFound)

{

navigationManager.NavigateTo("/countries");

return;

}

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

country = responseHttp.Response;

states = country!.States!.ToList();

}

private async Task DeleteAsync(int id)

{

var result = await sweetAlertService.FireAsync(new SweetAlertOptions

{

Title = "Confirmación",

Text = "¿Realmente deseas eliminar el registro?",

Icon = SweetAlertIcon.Question,

ShowCancelButton = true,

CancelButtonText = "No",

ConfirmButtonText = "Si"

});

var confirm = string.IsNullOrEmpty(result.Value);

if (confirm)

{

return;

}

var responseHttp = await repository.Delete($"/api/states/{id}");

if (responseHttp.Error)

{

if (responseHttp.HttpResponseMessage.StatusCode != HttpStatusCode.NotFound)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

}

await LoadAsync();

}

}

1. Modificamos CountriesController para agregar el **.Include** con States y Cities

[HttpGet("{id:int}")] ///api/countries/1

public async Task<ActionResult> Get(int id)

{

var country = await \_context.Countries

.Include (x => x.States!)

.ThenInclude(x => x.Cities!)

.FirstOrDefaultAsync(x => x.Id == id);

if (country is null)

{

return NotFound();

}

return Ok(country);

}

1. Probamos lo que llevamos hasta el momento.
2. Ahora vamos a implementar la creación de estados. En el proyecto **WEB** en la carpeta **Pages** la carpeta **States** y dentro de esta creamos el componente **StateForm**

@inject SweetAlertService sweetAlertService

@using Market.Shared.Entities;

<NavigationLock OnBeforeInternalNavigation="OnBeforeInternalNavigation" />

<EditForm EditContext="editContext" OnValidSubmit="OnValidSubmit">

<DataAnnotationsValidator/>

<div class="mb-3">

<label>Estado/Departamento:</label>

<div>

<InputText class="form-control" @bind-Value="@State.Name"/>

<ValidationMessage For="@(() => State.Name)" />

</div>

</div>

<button class="btn btn-primary" type="submit">Guardar Cambios</button>

<button class="btn btn-success" type="button" @onclick="ReturnAction">Regresar</button>

</EditForm>

@code {

private EditContext editContext = null!;

[Parameter]

[EditorRequired]

public State State { get; set; } = null!;

[Parameter]

[EditorRequired]

public EventCallback OnValidSubmit { get; set; }

[Parameter]

[EditorRequired]

public EventCallback ReturnAction { get; set; }

public bool FormPostedSuccessfully { get; set; }

protected override void OnInitialized()

{

editContext = new(State);

}

private async Task OnBeforeInternalNavigation(LocationChangingContext context)

{

var formWasMofied = editContext.IsModified();

if (!formWasMofied || FormPostedSuccessfully)

{

return;

}

var result = await sweetAlertService.FireAsync(new SweetAlertOptions

{

Title = "Confirmación",

Text = "¿Deseas abandonar la página y perder los cambios?",

Icon = SweetAlertIcon.Question,

ShowCancelButton = true,

CancelButtonText = "No",

ConfirmButtonText = "Si"

});

var confirm = !string.IsNullOrEmpty(result.Value);

if (confirm)

{

return;

}

context.PreventNavigation();

}

}

1. En el proyecto **WEB** en la carpeta **Pages** la carpeta **States** y dentro de esta creamos el componente **StateCreate**

@using Market.Shared.Entities;

@page "/states/create/{CountryId:int}"

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

<h3>Crear Estado/Departamento</h3>

<StateForm @ref="stateForm" State="state" OnValidSubmit="CreateAsync" ReturnAction="Return" />

@code {

private State state = new();

private StateForm? stateForm;

[Parameter]

public int CountryId { get; set; }

private async Task CreateAsync()

{

state.CountryId = CountryId;

var httpResponse = await repository.Post("/api/states", state);

if (httpResponse.Error)

{

var message = await httpResponse.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

Return();

}

private void Return()

{

stateForm!.FormPostedSuccessfully = true;

navigationManager.NavigateTo($"/countries/details/{CountryId}");

}

}

1. En el proyecto **WEB** en la carpeta **Pages** la carpeta **States** y dentro de esta creamos el componente **EditState**

@using Market.Shared.Entities;

@page "/states/edit/{StateId:int}"

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

@inject NavigationManager navigationManager

@using System.Net;

<h3>Editar Estado/Departamento</h3>

@if (state is null)

{

<p>Cargando...</p>

}

else

{

<StateForm @ref="stateForm" State="state" OnValidSubmit="EditAsync" ReturnAction="Return" />

}

@code {

private State? state;

private StateForm? stateForm;

[Parameter]

public int StateId { get; set; }

protected override async Task OnInitializedAsync()

{

var responseHttp = await repository.Get<State>($"/api/states/{StateId}");

if (responseHttp.Error)

{

if (responseHttp.HttpResponseMessage.StatusCode == HttpStatusCode.NotFound)

{

navigationManager.NavigateTo("/countries");

return;

}

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

state = responseHttp.Response;

}

private async Task EditAsync()

{

var responseHttp = await repository.Put("/api/states", state);

if (responseHttp.Error)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

Return();

}

private void Return()

{

stateForm!.FormPostedSuccessfully = true;

navigationManager.NavigateTo($"/countries/details/{state!.CountryId}");

}

}

1. En el proyecto **WEB** en la carpeta **Pages** la carpeta **States** y dentro de esta creamos el componente **StateDetails**

@page "/states/details/{StateId:int}"

@using System.Net;

@using Market.Shared.Entities;

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

@if (state is null)

{

<p>Cargando...</p>

}

else

{

<h3>@state.Name</h3>

<div class="mb-2">

<a class="btn btn-primary" href="/cities/create/@state.Id">Nueva Ciudad</a>

<a class="btn btn-success" href="/countries/details/@state.CountryId">Regresar</a>

</div>

<GenericList MyList="cities">

<Body>

<table class="table table-striped">

<thead>

<tr>

<th>Ciudad</th>

<th></th>

</tr>

</thead>

<tbody>

@foreach (var city in cities!)

{

<tr>

<td>

@city.Name

</td>

<td>

<a class="btn btn-warning" href="/cities/edit/@city.Id">Editar</a>

<button class="btn btn-danger" @onclick=@(() => DeleteAsync(city.Id))>Borrar</button>

</td>

</tr>

}

</tbody>

</table>

</Body>

</GenericList>

}

@code {

private State? state;

private List<City>? cities;

[Parameter]

public int StateId { get; set; }

protected override async Task OnInitializedAsync()

{

await LoadAsync();

}

private async Task LoadAsync()

{

var responseHttp = await repository.Get<State>($"/api/states/{StateId}");

if (responseHttp.Error)

{

if (responseHttp.HttpResponseMessage.StatusCode == HttpStatusCode.NotFound)

{

navigationManager.NavigateTo("/countries");

return;

}

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

state = responseHttp.Response;

cities = state!.Cities!.ToList();

}

private async Task DeleteAsync(int cityId)

{

var result = await sweetAlertService.FireAsync(new SweetAlertOptions

{

Title = "Confirmación",

Text = "¿Realmente deseas eliminar el registro?",

Icon = SweetAlertIcon.Question,

ShowCancelButton = true,

CancelButtonText = "No",

ConfirmButtonText = "Si"

});

var confirm = string.IsNullOrEmpty(result.Value);

if (confirm)

{

return;

}

var responseHttp = await repository.Delete($"/api/cities/{cityId}");

if (responseHttp.Error)

{

if (responseHttp.HttpResponseMessage.StatusCode != HttpStatusCode.NotFound)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

}

await LoadAsync();

}

}

1. En el proyecto **WEB** en la carpeta **Pages** creamos la carpeta **Cities** y dentro de esta creamos el componente **CityForm**

@inject SweetAlertService sweetAlertService

@using Market.Shared.Entities;

<NavigationLock OnBeforeInternalNavigation="OnBeforeInternalNavigation" />

<EditForm EditContext="editContext" OnValidSubmit="OnValidSubmit">

<DataAnnotationsValidator />

<div class="mb-3">

<label>Cuidad:</label>

<div>

<InputText class="form-control" @bind-Value="@City.Name" />

<ValidationMessage For="@(() => City.Name)" />

</div>

</div>

<button class="btn btn-primary" type="submit">Guardar Cambios</button>

<button class="btn btn-success" @onclick="ReturnAction">Regresar</button>

</EditForm>

@code {

private EditContext editContext = null!;

[Parameter]

[EditorRequired]

public City City { get; set; } = null!;

[Parameter]

[EditorRequired]

public EventCallback OnValidSubmit { get; set; }

[Parameter]

[EditorRequired]

public EventCallback ReturnAction { get; set; }

public bool FormPostedSuccessfully { get; set; }

protected override void OnInitialized()

{

editContext = new(City);

}

private async Task OnBeforeInternalNavigation(LocationChangingContext context)

{

var formWasMofied = editContext.IsModified();

if (!formWasMofied || FormPostedSuccessfully)

{

return;

}

var result = await sweetAlertService.FireAsync(new SweetAlertOptions

{

Title = "Confirmación",

Text = "¿Deseas abandonar la página y perder los cambios?",

Icon = SweetAlertIcon.Question,

ShowCancelButton = true,

CancelButtonText = "No",

ConfirmButtonText = "Si"

});

var confirm = !string.IsNullOrEmpty(result.Value);

if (confirm)

{

return;

}

context.PreventNavigation();

}

}

1. En el proyecto **WEB** en la carpeta **Pages** en la carpeta **Cities** y dentro de esta creamos el componente **CityCreate**

@page "/cities/create/{StateId:int}"

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

@using Market.Shared.Entities;

<h3>Crear Ciudad</h3>

<CityForm @ref="cityForm" City="city" OnValidSubmit="CreateAsync" ReturnAction="Return" />

@code {

private City city = new();

private CityForm? cityForm;

[Parameter]

public int StateId { get; set; }

private async Task CreateAsync()

{

city.StateId = StateId;

var httpResponse = await repository.Post("/api/cities", city);

if (httpResponse.Error)

{

var message = await httpResponse.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

Return();

}

private void Return()

{

cityForm!.FormPostedSuccessfully = true;

navigationManager.NavigateTo($"/states/details/{StateId}");

}

}

1. En el proyecto **WEB** en la carpeta **Pages** en la carpeta **Cities** y dentro de esta creamos el componente **CityEdit**

@page "/cities/edit/{CityId:int}"

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

@inject NavigationManager navigationManager

@using Market.Shared.Entities;

@using System.Net;

<h3>Editar Ciudad</h3>

@if (city is null)

{

<p>Cargando...</p>

}

else

{

<CityForm @ref="cityForm" City="city" OnValidSubmit="EditAsync" ReturnAction="Return" />

}

@code {

private City? city;

private CityForm? cityForm;

[Parameter]

public int CityId { get; set; }

protected override async Task OnInitializedAsync()

{

var responseHttp = await repository.Get<City>($"/api/cities/{CityId}");

if (responseHttp.Error)

{

if (responseHttp.HttpResponseMessage.StatusCode == HttpStatusCode.NotFound)

{

navigationManager.NavigateTo("/countries");

return;

}

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

city = responseHttp.Response;

}

private async Task EditAsync()

{

var responseHttp = await repository.Put("/api/cities", city);

if (responseHttp.Error)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

Return();

}

private void Return()

{

cityForm!.FormPostedSuccessfully = true;

navigationManager.NavigateTo($"/states/details/{city!.StateId}");

}

}

1. Probamos y hacemos el **commit**.

# Poblar los Países, Estados y Ciudades con un API externa

1. Para llenar la información de todos, o al menos la mayoría de países, estados y ciudades del mundo. Vamos a utilizar esta API: <https://countrystatecity.in/docs/api/all-countries/> Para poderla utilizar vas a necesitar un token, puedes solicitar tu propio token en: <https://docs.google.com/forms/d/e/1FAIpQLSciOf_227-3pKGKJok6TM0QF2PZhSgfQwy-F-bQaBj0OUgMmA/viewform> llena el formulario y en pocas horas te lo enviarán , luego de tener tu token has los siguientes cambios al proyecto:
2. Al proyecto **API** agrega al **appstettings.json** los siguientes parámetros. No olvides cambiar el valor del **TokenValue** que ha recibido:

{

"ConnectionStrings": {

"DefaultConnection": "Server= OALARCON;Database=Market;Encrypt=False;User Id=dba;Password=Abcd1234\*;"

},

"CountriesAPI": {

"urlBase": "https://api.countrystatecity.in",

"tokenName": "X-CSCAPI-KEY",

"tokenValue": "T29KVmZZUTIyVkRmVVF5OXV2b0tNSnBxNERvY2cyQ295YmhHT0dzQQ=="

},

"Logging": {

"LogLevel": {

"Default": "Information",

"Microsoft.AspNetCore": "Warning"

}

},

"AllowedHosts": "\*"

}

1. Dentro del proyecto **Shared** creamos la carpeta **Responses** Empecemos primero con la clase genérica para todas las respuestas , creamos dentro la clase **Response**

namespace Market.Shared.Responses

{

public class Response

{

public bool IsSuccess { get; set; }

public string? Message { get; set; }

public object? Result { get; set; }

}

}

1. Luego continuamos con **CountryResponse**

**Instalamos el Nugget** Newtonsoft.Json dentro del proyecto **Shared**

using Newtonsoft.Json;

namespace Market.Shared.Responses

{

public class CountryResponse

{

[JsonProperty("id")]

public long Id { get; set; }

[JsonProperty("name")]

public string? Name { get; set; }

[JsonProperty("iso2")]

public string? Iso2 { get; set; }

}

}

1. Creamos la clase **StateResponse**

using Newtonsoft.Json;

namespace Market.Shared.Responses

{

public class StateResponse

{

[JsonProperty("id")]

public long Id { get; set; }

[JsonProperty("name")]

public string? Name { get; set; }

[JsonProperty("iso2")]

public string? Iso2 { get; set; }

}

}

1. Y luego creamos la clase **CityResponse**

using Newtonsoft.Json;

namespace Market.Shared.Responses

{

public class CityResponse

{

[JsonProperty("id")]

public long Id { get; set; }

[JsonProperty("name")]

public string? Name { get; set; }

}

}

1. En el proyecto **API** creamos la carpeta **Services** y dentro de esta, la interfaz **IApiService**

using Market.Shared.Responses;

namespace Market.API.Services

{

public interface IApiService

{

Task<Response> GetListAsync<T>(string servicePrefix, string controller);

}

}

1. Luego en la misma carpeta creamos la implementación en el **ApiService**

using Newtonsoft.Json;

using Market.Shared.Responses;

namespace Market.API.Services

{

public class ApiService : IApiService

{

private readonly IConfiguration \_configuration;

private readonly string \_urlBase;

private readonly string \_tokenName;

private readonly string \_tokenValue;

public ApiService(IConfiguration configuration)

{

\_configuration = configuration;

\_urlBase = \_configuration["CountriesAPI:urlBase"]!;

\_tokenName = \_configuration["CountriesAPI:tokenName"]!;

\_tokenValue = \_configuration["CountriesAPI:tokenValue"]!;

}

public async Task<Response> GetListAsync<T>(string servicePrefix, string controller)

{

try

{

HttpClient client = new()

{

BaseAddress = new Uri(\_urlBase),

};

client.DefaultRequestHeaders.Add(\_tokenName, \_tokenValue);

string url = $"{servicePrefix}{controller}";

HttpResponseMessage response = await client.GetAsync(url);

string result = await response.Content.ReadAsStringAsync();

if (!response.IsSuccessStatusCode)

{

return new Response

{

IsSuccess = false,

Message = result,

};

}

List<T> list = JsonConvert.DeserializeObject<List<T>>(result)!;

return new Response

{

IsSuccess = true,

Result = list

};

}

catch (Exception ex)

{

return new Response

{

IsSuccess = false,

Message = ex.Message

};

}

}

}

}

1. Y la inyectamos en el **Program** del proyecto **API**:

builder.Services.AddTransient<SeedDb>();

builder.Services.AddScoped<IApiService, ApiService>();

1. Luego modificamos el **SeedDb**:

using Microsoft.EntityFrameworkCore;

using Market.API.Services;

using Market.Shared.Entities;

using Market.Shared.Responses;

namespace Market.API.Data

{

public class SeedDb

{

private readonly DataContext \_context;

private readonly IApiService \_apiService;

public SeedDb(DataContext context, IApiService apiService)

{

\_context = context;

\_apiService = apiService;

}

public async Task SeedAsync()

{

await \_context.Database.EnsureCreatedAsync();

await CheckCountriesAsync();

}

private async Task CheckCountriesAsync()

{

if (!\_context.Countries.Any())

{

Response responseCountries = await \_apiService.GetListAsync<CountryResponse>("/v1", "/countries");

if (responseCountries.IsSuccess)

{

List<CountryResponse> countries = (List<CountryResponse>)responseCountries.Result!;

foreach (CountryResponse countryResponse in countries)

{

Country country = await \_context.Countries!.FirstOrDefaultAsync(c => c.Name == countryResponse.Name!)!;

if (country == null)

{

country = new() { Name = countryResponse.Name!, States = new List<State>() };

Response responseStates = await \_apiService.GetListAsync<StateResponse>("/v1", $"/countries/{countryResponse.Iso2}/states");

if (responseStates.IsSuccess)

{

List<StateResponse> states = (List<StateResponse>)responseStates.Result!;

foreach (StateResponse stateResponse in states!)

{

State state = country.States!.FirstOrDefault(s => s.Name == stateResponse.Name!)!;

if (state == null)

{

state = new() { Name = stateResponse.Name!, Cities = new List<City>() };

Response responseCities = await \_apiService.GetListAsync<CityResponse>("/v1", $"/countries/{countryResponse.Iso2}/states/{stateResponse.Iso2}/cities");

if (responseCities.IsSuccess)

{

List<CityResponse> cities = (List<CityResponse>)responseCities.Result!;

foreach (CityResponse cityResponse in cities)

{

City city = state.Cities!.FirstOrDefault(c => c.Name == cityResponse.Name!)!;

if (city == null)

{

state.Cities.Add(new City() { Name = cityResponse.Name! });

}

}

}

if (state.CitiesNumber > 0)

{

country.States.Add(state);

}

}

}

}

if (country.StatesNumber > 0)

{

\_context.Countries.Add(country);

await \_context.SaveChangesAsync();

}

}

}

}

}

}

}

}

1. Borramos la base de datos con **drop-database**
2. Se puede demorar varias horas para llenar la mayoría de los países con sus estados y ciudades. Digo la mayoría porque la lógica deshecha algunos países o estados que no tienen ciudades devueltas por la API.
3. Probamos y hacemos el **commit**.

## CRUD de Categorías

1. En **MarketG1.Shared.Entities** adicionamos la entidad **Category**:

using System.ComponentModel.DataAnnotations;

namespace MarketG1.Shared.Entities

{

public class Category

{

public int Id { get; set; }

[Display(Name = "Categoría")]

[MaxLength(100, ErrorMessage = "El campo {0} debe tener máximo {1} caractéres.")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public string Name { get; set; } = null!;

}

}

1. Modificamos el **DataContext**:

public class DataContext : IdentityDbContext<User>

{

public DataContext(DbContextOptions<DataContext> options) : base(options)

{

}

public DbSet<Category> Categories { get; set; }

public DbSet<City> Cities { get; set; }

public DbSet<Country> Countries { get; set; }

public DbSet<State> States { get; set; }

protected override void OnModelCreating(ModelBuilder modelBuilder)

{

base.OnModelCreating(modelBuilder);

modelBuilder.Entity<Country>().HasIndex(x => x.Name).IsUnique();

modelBuilder.Entity<Category>().HasIndex(x => x.Name).IsUnique();

modelBuilder.Entity<State>().HasIndex("CountryId", "Name").IsUnique();

modelBuilder.Entity<City>().HasIndex("StateId", "Name").IsUnique();

}

}

1. Corremos los comandos para crear la nueva migración y aplicarla:

PM> add-migration AddCategories

PM> update-database

## Creando tablas de productos y listando productos

1. Creamos la entidad **Product**:

using Microsoft.EntityFrameworkCore.Metadata.Internal;

using System.ComponentModel.DataAnnotations;

using System.ComponentModel.DataAnnotations.Schema;

namespace MarketG1.Shared.Entities

{

public class Product

{

public int Id { get; set; }

[Display(Name = "Nombre")]

[MaxLength(50, ErrorMessage = "El campo {0} debe tener máximo {1} caractéres.")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public string Name { get; set; } = null!;

[DataType(DataType.MultilineText)]

[Display(Name = "Descripción")]

[MaxLength(500, ErrorMessage = "El campo {0} debe tener máximo {1} caractéres.")]

public string Description { get; set; } = null!;

[Column(TypeName = "decimal(18,2)")]

[DisplayFormat(DataFormatString = "{0:C2}")]

[Display(Name = "Precio")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public decimal Price { get; set; }

[DisplayFormat(DataFormatString = "{0:N2}")]

[Display(Name = "Inventario")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public float Stock { get; set; }

}

}

1. Creamos la entidad **ProductImage**:

using System.ComponentModel.DataAnnotations;

namespace MarketG1.Shared.Entities

{

public class ProductImage

{

public int Id { get; set; }

public Product Product { get; set; } = null!;

public int ProductId { get; set; }

[Display(Name = "Imagen")]

public string Image { get; set; } = null!;

}

}

1. Creamos la entidad **ProductCategory**:

namespace MarketG1.Shared.Entities

{

public class ProductCategory

{

public int Id { get; set; }

public Product Product { get; set; } = null!;

public int ProductId { get; set; }

public Category Category { get; set; } = null!;

public int CategoryId { get; set; }

}

}

1. Modificamos la entidad **Category**:

public class Category

{

public int Id { get; set; }

[Display(Name = "Categoría")]

[MaxLength(100, ErrorMessage = "El campo {0} debe tener máximo {1} caractéres.")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public string Name { get; set; } = null!;

public ICollection<ProductCategory>? ProductCategories { get; set; }

[Display(Name = "Productos")]

public int ProductCategoriesNumber => ProductCategories == null ? 0 : ProductCategories.Count;

}

1. Modificamos la entidad **Product**:

public class Product

{

public int Id { get; set; }

[Display(Name = "Nombre")]

[MaxLength(50, ErrorMessage = "El campo {0} debe tener máximo {1} caractéres.")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public string Name { get; set; } = null!;

[DataType(DataType.MultilineText)]

[Display(Name = "Descripción")]

[MaxLength(500, ErrorMessage = "El campo {0} debe tener máximo {1} caractéres.")]

public string Description { get; set; } = null!;

[Column(TypeName = "decimal(18,2)")]

[DisplayFormat(DataFormatString = "{0:C2}")]

[Display(Name = "Precio")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public decimal Price { get; set; }

[DisplayFormat(DataFormatString = "{0:N2}")]

[Display(Name = "Inventario")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public float Stock { get; set; }

public ICollection<ProductCategory>? ProductCategories { get; set; }

[Display(Name = "Categorías")]

public int ProductCategoriesNumber => ProductCategories == null ? 0 : ProductCategories.Count;

public ICollection<ProductImage>? ProductImages { get; set; }

[Display(Name = "Imágenes")]

public int ProductImagesNumber => ProductImages == null ? 0 : ProductImages.Count;

[Display(Name = "Imagén")]

public string MainImage => ProductImages == null ? string.Empty : ProductImages.FirstOrDefault()!.Image;

}

1. Modificamos el **DataContext**.

public class DataContext : IdentityDbContext<User>

{

public DataContext(DbContextOptions<DataContext> options) : base(options)

{

}

public DbSet<Category> Categories { get; set; }

public DbSet<City> Cities { get; set; }

public DbSet<Country> Countries { get; set; }

public DbSet<Product> Products { get; set; }

public DbSet<ProductCategory> ProductCategories { get; set; }

public DbSet<ProductImage> ProductImages { get; set; }

public DbSet<State> States { get; set; }

protected override void OnModelCreating(ModelBuilder modelBuilder)

{

base.OnModelCreating(modelBuilder);

modelBuilder.Entity<Country>().HasIndex(x => x.Name).IsUnique();

modelBuilder.Entity<Category>().HasIndex(x => x.Name).IsUnique();

modelBuilder.Entity<Product>().HasIndex(x => x.Name).IsUnique();

modelBuilder.Entity<State>().HasIndex("CountryId", "Name").IsUnique();

modelBuilder.Entity<City>().HasIndex("StateId", "Name").IsUnique();

}

}

1. Corremos los siguientes comandos para aplicar la migracion y correrla:

PM> add-migration AddProductsTables

PM> update-database

## Ejemplo adicional relación de muchos a muchos para una Biblioteca

using System.ComponentModel.DataAnnotations;

using System.ComponentModel.DataAnnotations.Schema;

using System.Text.Json.Serialization;

public class Libro

{

public int Id { get; set; }

[Required]

[StringLength(40)]

public string Titulo { get; set; }

[Required]

public DateTime FechaPublicacion { get; set; }

//public List<Comentario> Comentarios { get; set; }

[NotMapped]

[JsonIgnore]

public List<AutorLibro>? AutorLibros { get; set; }

}

using System.ComponentModel.DataAnnotations;

using System.ComponentModel.DataAnnotations.Schema;

using System.Text.Json.Serialization;

namespace MarketG1.Shared.Entities

{

public class Autor

{

public int Id { get; set; }

[Required]

[StringLength(40)]

public string Nombre { get; set; }

[NotMapped]

[JsonIgnore]

public List<AutorLibro> ?AutorLibros { get; set; }

}

}

System.ComponentModel.DataAnnotations.Schema;

using System.Text.Json.Serialization;

namespace MarketG1.Shared.Entities

{

public class AutorLibro

{

public int Id { get; set; }

public int Orden { get; set; }

public int ?LibroId { get; set; }

[JsonIgnore]

public Libro Libro { get; set; }

public int ?AutorId { get; set; }

[JsonIgnore]

public Autor Autor { get; set; }

}

}

## Agregando paginación

1. En el projecto **Shared** creamos la carpeta **DTOs** y dentro de esta creamos la clase **PaginationDTO**:

namespace MarketG1.Shared.DTOs

{

public class PaginationDTO

{

public int Id { get; set; }

public int Page { get; set; } = 1;

public int RecordsNumber { get; set; } = 10;

}

}

1. En el proyecto **API** creamos el folder **Helpers** y dentro de este la clase **QueryableExtensions**:

using MarketG1.Shared.DTOs;

namespace MarketG1.API.Helpers

{

public static class QueryableExtensions

{

public static IQueryable<T> Paginate<T>(this IQueryable<T> queryable,

PaginationDTO pagination)

{

return queryable

.Skip((pagination.Page - 1) \* pagination.RecordsNumber)

.Take(pagination.RecordsNumber);

}

}

}

1. Modificamos el **CountriesController** para agregar la paginación en el método **GET** y de paso agregamos el método **GetPages**:

[HttpGet]

public async Task<IActionResult> GetAsync([FromQuery] PaginationDTO pagination)

{

var queryable = \_context.Countries

.Include(x => x.States)

.AsQueryable();

return Ok(await queryable

.OrderBy(x => x.Name)

.Paginate(pagination)

.ToListAsync());

}

[HttpGet("totalPages")]

public async Task<ActionResult> GetPages([FromQuery] PaginationDTO pagination)

{

var queryable = \_context.Countries.AsQueryable();

double count = await queryable.CountAsync();

double totalPages = Math.Ceiling(count / pagination.RecordsNumber);

return Ok(totalPages);

}

1. Probamos la paginación con Swagger.
2. Creamos en el proyecto **WEB** en la carpeta **Shared** el componente **Pagination**:

<nav>

<ul class="pagination">

@foreach (var link in Links)

{

<li @onclick=@(() => InternalSelectedPage(link)) style="cursor: pointer" class="page-item @(link.Enable ? null : "disabled") @(link.Enable ? "active" : null)">

<a class="page-link">@link.Text</a>

</li>

}

</ul>

</nav>

@code {

[Parameter] public int CurrentPage { get; set; } = 1;

[Parameter] public int TotalPages { get; set; }

[Parameter] public int Radio { get; set; } = 5;

[Parameter] public EventCallback<int> SelectedPage { get; set; }

List<PageModel> Links = new();

protected override void OnParametersSet()

{

Links = new List<PageModel>();

var previousLinkEnable = CurrentPage != 1;

var previousLinkPage = CurrentPage - 1;

Links.Add(new PageModel

{

Text = "Anterior",

Page = previousLinkPage,

Enable = previousLinkEnable

});

for (int i = 1; i <= TotalPages; i++)

{

if (i >= CurrentPage - Radio && i <= CurrentPage + Radio)

{

Links.Add(new PageModel

{

Page = i,

Enable = CurrentPage == i,

Text = $"{i}"

});

}

}

var linkNextEnable = CurrentPage != TotalPages;

var linkNextPage = CurrentPage + 1;

Links.Add(new PageModel

{

Text = "Siguiente",

Page = linkNextPage,

Enable = linkNextEnable

});

}

private async Task InternalSelectedPage(PageModel pageModel)

{

if (pageModel.Page == CurrentPage || pageModel.Page == 0)

{

return;

}

await SelectedPage.InvokeAsync(pageModel.Page);

}

class PageModel

{

public string Text { get; set; } = null!;

public int Page { get; set; }

public bool Enable { get; set; } = true;

public bool Active { get; set; } = false;

}

}

1. Modificamos nuestro componente **CountriesIndex**:

@page "/countries"

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

<h3>Países</h3>

<Pagination CurrentPage="currentPage"

TotalPages="totalPages"

SelectedPage="SelectedPage" />

<GenericList MyList="Countries">

<Body>

<table class="table table-striped">

<thead>

<tr>

<th>País</th>

<th style="width:220px">Estados / Departamentos</th>

<th style="width:280px"></th>

</tr>

</thead>

<tbody>

@foreach (var country in Countries!)

{

<tr>

<td>

@country.Name

</td>

<td>

@country.StatesNumber

</td>

<td>

<a class="btn btn-info" href="/countries/details/@country.Id">Detalles</a>

<a class="btn btn-warning" href="/countries/edit/@country.Id">Editar</a>

<button class="btn btn-danger" @onclick=@(() => DeleteAsync(country.Id))>Borrar</button>

</td>

</tr>

}

</tbody>

</table>

</Body>

</GenericList>

@code {

public List<Country>? Countries { get; set; }

private int currentPage = 1;

private int totalPages;

protected override async Task OnInitializedAsync()

{

await LoadAsync();

}

private async Task SelectedPage(int page)

{

currentPage = page;

await LoadAsync(page);

}

private async Task LoadAsync(int page = 1)

{

string url1 = $"api/countries?page={page}";

string url2 = $"api/countries/totalPages";

var responseHppt = await repository.Get<List<Country>>(url1);

var responseHppt2 = await repository.Get<int>(url2);

Countries = responseHppt.Response!;

totalPages = responseHppt2.Response!;

}

private async Task DeleteAsync(int id)

{

var result = await sweetAlertService.FireAsync(new SweetAlertOptions

{

Title = "Confirmación",

Text = "¿Realmente deseas eliminar el registro?",

Icon = SweetAlertIcon.Question,

ShowCancelButton = true,

CancelButtonText = "No",

ConfirmButtonText = "Si"

});

var confirm = string.IsNullOrEmpty(result.Value);

if (confirm)

{

return;

}

var responseHttp = await repository.Delete($"/api/countries/{id}");

if (responseHttp.Error)

{

if(responseHttp.HttpResponseMessage.StatusCode != HttpStatusCode.NotFound)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

}

await LoadAsync();

}

}

1. Probamos.
2. Ahora vamos a hacer lo mismo para estados. Empezamos modificando el GET del **StatesController** y de paso creamos el método para obtener el número de página:

[HttpGet]

public async Task<ActionResult> Get([FromQuery] PaginationDTO pagination)

{

var queryable = \_context.States

.Include(x => x.Cities)

.Where(x => x.Country!.Id == pagination.Id)

.AsQueryable();

return Ok(await queryable

.OrderBy(x => x.Name)

.Paginate(pagination)

.ToListAsync());

}

[HttpGet("totalPages")]

public async Task<ActionResult> GetPages([FromQuery] PaginationDTO pagination)

{

var queryable = \_context.States

.Where(x => x.Country!.Id == pagination.Id)

.AsQueryable();

double count = await queryable.CountAsync();

double totalPages = Math.Ceiling(count / pagination.RecordsNumber);

return Ok(totalPages);

}

1. Probamos en swagger:
2. Luego modificamos el **CountryDetails**:

@page "/countries/details/{Id:int}"

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

@if(country is null)

{

<p>Cargando...</p>

} else

{

<h3>@country.Name</h3>

<Pagination CurrentPage="currentPage"

TotalPages="totalPages"

SelectedPage="SelectedPage" />

<GenericList MyList="sates!">

<Body>

<table class="table table-striped">

<thead>

<tr>

<th>Estado / Departamento</th>

<th style="width:140px">Ciudades</th>

<th style="width:260px"></th>

</tr>

</thead>

<tbody>

@foreach (var state in states!)

{

<tr>

<td>

@state.Name

</td>

<td>

@state.CitiesNumber

</td>

<td>

<a class="btn btn-info" href="/states/details/@state.Id">Detalles</a>

<a class="btn btn-warning" href="/states/edit/@state.Id">Editar</a>

<button class="btn btn-danger" @onclick=@(() => DeleteAsync(state.Id))>Borrar</button>

</td>

</tr>

}

</tbody>

</table>

</Body>

</GenericList>

}

@code {

private Country? country;

private List<State>? states;

private int currentPage = 1;

private int totalPages;

[Parameter]

public int Id { get; set; }

protected override async Task OnInitializedAsync()

{

await LoadAsync();

}

private async Task SelectedPage(int page)

{

currentPage = page;

await LoadAsync(page);

}

private async Task LoadAsync(int page = 1)

{

string url1 = $"api/states?id={Id}&page={page}";

string url2 = $"api/states/totalPages?id={Id}";

var responseHppt = await repository.Get<Country>($"api/countries/{Id}");

var responseHppt2 = await repository.Get<List<State>>(url1);

var responseHppt3 = await repository.Get<int>(url2);

country = responseHppt.Response;

states = responseHppt2.Response;

totalPages = responseHppt3.Response;

}

private async Task DeleteAsync(int id)

{

var result = await sweetAlertService.FireAsync(new SweetAlertOptions

{

Title = "Confirmación",

Text = "¿Realmente deseas eliminar el registro?",

Icon = SweetAlertIcon.Question,

ShowCancelButton = true,

CancelButtonText = "No",

ConfirmButtonText = "Si"

});

var confirm = string.IsNullOrEmpty(result.Value);

if (confirm)

{

return;

}

var responseHttp = await repository.Delete($"/api/states/{id}");

if (responseHttp.Error)

{

if (responseHttp.HttpResponseMessage.StatusCode != HttpStatusCode.NotFound)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

}

await LoadAsync();

}

}

1. Probamos.
2. Ahora vamos a hacer lo mismo para ciudades. Empezamos modificando el GET del **CitiesController** y de paso creamos el método para obtener el número de página:

[HttpGet]

public async Task<ActionResult> Get([FromQuery] PaginationDTO pagination)

{

var queryable = \_context.Cities

.Where(x => x.State!.Id == pagination.Id)

.AsQueryable();

return Ok(await queryable

.OrderBy(x => x.Name)

.Paginate(pagination)

.ToListAsync());

}

[HttpGet("totalPages")]

public async Task<ActionResult> GetPages([FromQuery] PaginationDTO pagination)

{

var queryable = \_context.Cities

.Where(x => x.State!.Id == pagination.Id)

.AsQueryable();

double count = await queryable.CountAsync();

double totalPages = Math.Ceiling(count / pagination.RecordsNumber);

return Ok(totalPages);

}

1. Probamos en swagger:
2. Luego modificamos el **StateDetail**:

@page "/states/details/{StateId:int}"

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

@if (state is null)

{

<p>Cargando...</p>

}

else

{

<h3>@state.Name</h3>

<Pagination CurrentPage="currentPage"

TotalPages="totalPages"

SelectedPage="SelectedPage" />

<GenericList MyList="cities!">

<Body>

<table class="table table-striped">

<thead>

<tr>

<th>Ciudad</th>

<th style="width:180px"></th>

</tr>

</thead>

<tbody>

@foreach (var city in cities!)

{

<tr>

<td>

@city.Name

</td>

<td>

<a class="btn btn-warning" href="/cities/edit/@city.Id">Editar</a>

<button class="btn btn-danger" @onclick=@(() => DeleteAsync(city.Id))>Borrar</button>

</td>

</tr>

}

</tbody>

</table>

</Body>

</GenericList>

}

@code {

private State? state;

private List<City>? cities;

private int currentPage = 1;

private int totalPages;

[Parameter]

public int StateId { get; set; }

protected override async Task OnInitializedAsync()

{

await LoadAsync();

}

private async Task SelectedPage(int page)

{

currentPage = page;

await LoadAsync(page);

}

private async Task LoadAsync(int page = 1)

{

string url1 = $"api/cities?id={StateId}&page={page}";

string url2 = $"api/cities/totalPages?id={StateId}";

var responseHppt = await repository.Get<State>($"api/states/{StateId}");

var responseHppt2 = await repository.Get<List<City>>(url1);

var responseHppt3 = await repository.Get<int>(url2);

state = responseHppt.Response;

cities = responseHppt2.Response;

totalPages = responseHppt3.Response;

}

private async Task DeleteAsync(int CityId)

{

var result = await sweetAlertService.FireAsync(new SweetAlertOptions

{

Title = "Confirmación",

Text = "¿Realmente deseas eliminar el registro?",

Icon = SweetAlertIcon.Question,

ShowCancelButton = true,

CancelButtonText = "No",

ConfirmButtonText = "Si"

});

var confirm = string.IsNullOrEmpty(result.Value);

if (confirm)

{

return;

}

var responseHttp = await repository.Delete($"/api/cities/{CityId}");

if (responseHttp.Error)

{

if (responseHttp.HttpResponseMessage.StatusCode != HttpStatusCode.NotFound)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

}

await LoadAsync();

}

private async Task CleanFilterAsync()

{

Filter = string.Empty;

await ApplyFilterAsync();

}

}

1. Probamos y hacemos el **commit**.

## Agregando filtros

1. En el projecto **Shared** modificamos la clase **PaginationDTO**:

public int RecordsNumber { get; set; } = 10;

public string? Filter { get; set; }

1. En el projecto **API** modificamos los métodos **Get** y **GetPages** del controlador **CountriesController**:

[HttpGet]

public async Task<IActionResult> GetAsync([FromQuery] PaginationDTO pagination)

{

var queryable = \_context.Countries

.Include(x => x.States)

.AsQueryable();

if (!string.IsNullOrWhiteSpace(pagination.Filter))

{

queryable = queryable.Where(x => x.Name.ToLower().Contains(pagination.Filter.ToLower()));

}

return Ok(await queryable

.OrderBy(x => x.Name)

.Paginate(pagination)

.ToListAsync());

}

[HttpGet("totalPages")]

public async Task<ActionResult> GetPages([FromQuery] PaginationDTO pagination)

{

var queryable = \_context.Countries.AsQueryable();

if (!string.IsNullOrWhiteSpace(pagination.Filter))

{

queryable = queryable.Where(x => x.Name.ToLower().Contains(pagination.Filter.ToLower()));

}

double count = await queryable.CountAsync();

double totalPages = Math.Ceiling(count / pagination.RecordsNumber);

return Ok(totalPages);

}

1. En el projecto **WEB** modificamos el **CountriesIndex**:

@page "/countries"

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

<h3>Países</h3>

<div class="mb-2" style="display: flex; flex-wrap:wrap; align-items: center;">

<div>

<a class="btn btn-primary" href="/countries/create">Nuevo País</a>

</div>

<div class="mx-2">

<input style="width: 400px;" type="text" class="form-control" id="titulo" placeholder="Buscar país..." @bind-value="Filter" />

</div>

<div>

<button type="button" class="btn btn-outline-primary" @onclick="ApplyFilterAsync">Filtrar</button>

<button type="button" class="btn btn-outline-danger" @onclick="CleanFilterAsync">Limpiar</button>

</div>

</div>

<Pagination CurrentPage="currentPage"

TotalPages="totalPages"

SelectedPage="SelectedPage" />

<GenericList MyList="Countries">

<Body>

<table class="table table-striped">

<thead>

<tr>

<th>País</th>

<th style="width:220px">Estados / Departamentos</th>

<th style="width:260px"></th>

</tr>

</thead>

<tbody>

@foreach (var country in Countries!)

{

<tr>

<td>

@country.Name

</td>

<td>

@country.StatesNumber

</td>

<td>

<a class="btn btn-info" href="/countries/details/@country.Id">Detalles</a>

<a class="btn btn-warning" href="/countries/edit/@country.Id">Editar</a>

<button class="btn btn-danger" @onclick=@(() => DeleteAsync(country.Id))>Borrar</button>

</td>

</tr>

}

</tbody>

</table>

</Body>

</GenericList>

@code {

public List<Country>? Countries { get; set; }

private int currentPage = 1;

private int totalPages;

[Parameter]

[SupplyParameterFromQuery]

public string Page { get; set; } = "";

[Parameter]

[SupplyParameterFromQuery]

public string Filter { get; set; } = "";

protected override async Task OnInitializedAsync()

{

await LoadAsync();

}

private async Task SelectedPage(int page)

{

currentPage = page;

await LoadAsync(page);

}

private async Task LoadAsync(int page = 1)

{

if (!string.IsNullOrWhiteSpace(Page))

{

page = Convert.ToInt32(Page);

}

string url1 = string.Empty;

string url2 = string.Empty;

if (string.IsNullOrEmpty(Filter))

{

url1 = $"api/countries?page={page}";

url2 = $"api/countries/totalPages";

}

else

{

url1 = $"api/countries?page={page}&filter={Filter}";

url2 = $"api/countries/totalPages?filter={Filter}";

}

var responseHppt = await repository.Get<List<Country>>(url1);

var responseHppt2 = await repository.Get<int>(url2);

Countries = responseHppt.Response!;

totalPages = responseHppt2.Response!;

}

private async Task DeleteAsync(int id)

{

var result = await sweetAlertService.FireAsync(new SweetAlertOptions

{

Title = "Confirmación",

Text = "¿Realmente deseas eliminar el registro?",

Icon = SweetAlertIcon.Question,

ShowCancelButton = true,

CancelButtonText = "No",

ConfirmButtonText = "Si"

});

var confirm = string.IsNullOrEmpty(result.Value);

if (confirm)

{

return;

}

var responseHttp = await repository.Delete($"/api/countries/{id}");

if (responseHttp.Error)

{

if(responseHttp.HttpResponseMessage.StatusCode != HttpStatusCode.NotFound)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

}

await LoadAsync();

}

private async Task CleanFilterAsync()

{

Filter = string.Empty;

await ApplyFilterAsync();

}

private async Task ApplyFilterAsync()

{

int page = 1;

await LoadAsync(page);

await SelectedPage(page);

}

}

1. Probamos y hacemos el **commit**.
2. Replicamos para estados y ciudades, primero modificamos el **StatesController**:

[HttpGet]

public async Task<ActionResult> Get([FromQuery] PaginationDTO pagination)

{

var queryable = \_context.States

.Include(x => x.Cities)

.Where(x => x.Country!.Id == pagination.Id)

.AsQueryable();

if (!string.IsNullOrWhiteSpace(pagination.Filter))

{

queryable = queryable.Where(x => x.Name.ToLower().Contains(pagination.Filter.ToLower()));

}

return Ok(await queryable

.OrderBy(x => x.Name)

.Paginate(pagination)

.ToListAsync());

}

[HttpGet("totalPages")]

public async Task<ActionResult> GetPages([FromQuery] PaginationDTO pagination)

{

var queryable = \_context.States

.Where(x => x.Country!.Id == pagination.Id)

.AsQueryable();

if (!string.IsNullOrWhiteSpace(pagination.Filter))

{

queryable = queryable.Where(x => x.Name.ToLower().Contains(pagination.Filter.ToLower()));

}

double count = await queryable.CountAsync();

double totalPages = Math.Ceiling(count / pagination.RecordsNumber);

return Ok(totalPages);

}

1. Luego modificamos el **CitiesController**:

[HttpGet]

public async Task<ActionResult> Get([FromQuery] PaginationDTO pagination)

{

var queryable = \_context.Cities

.Where(x => x.State!.Id == pagination.Id)

.AsQueryable();

if (!string.IsNullOrWhiteSpace(pagination.Filter))

{

queryable = queryable.Where(x => x.Name.ToLower().Contains(pagination.Filter.ToLower()));

}

return Ok(await queryable

.OrderBy(x => x.Name)

.Paginate(pagination)

.ToListAsync());

}

[HttpGet("totalPages")]

public async Task<ActionResult> GetPages([FromQuery] PaginationDTO pagination)

{

var queryable = \_context.Cities

.Where(x => x.State!.Id == pagination.Id)

.AsQueryable();

if (!string.IsNullOrWhiteSpace(pagination.Filter))

{

queryable = queryable.Where(x => x.Name.ToLower().Contains(pagination.Filter.ToLower()));

}

double count = await queryable.CountAsync();

double totalPages = Math.Ceiling(count / pagination.RecordsNumber);

return Ok(totalPages);

}

1. Modificamos el **CountryDetails**.

@page "/countries/details/{Id:int}"

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

@if(country is null)

{

<p>Cargando...</p>

} else

{

<h3>@country.Name</h3>

<div class="mb-2" style="display: flex; flex-wrap:wrap; align-items: center;">

<div>

<a class="btn btn-primary" href="/states/create/@country.Id">Nuevo Estado/Departamento</a>

<a class="btn btn-success" href="/countries">Regresar</a>

</div>

<div class="mx-2">

<input style="width: 400px;" type="text" class="form-control" id="titulo" placeholder="Buscar estado/departamento..." @bind-value="Filter" />

</div>

<div>

<button type="button" class="btn btn-outline-primary" @onclick="ApplyFilterAsync">Filtrar</button>

<button type="button" class="btn btn-outline-danger" @onclick="CleanFilterAsync">Limpiar</button>

</div>

</div>

<Pagination CurrentPage="currentPage"

TotalPages="totalPages"

SelectedPage="SelectedPage" />

<GenericList MyList="states!">

<Body>

<table class="table table-striped">

<thead>

<tr>

<th>Estado / Departamento</th>

<th style="width:140px">Ciudades</th>

<th style="width:260px"></th>

</tr>

</thead>

<tbody>

@foreach (var state in states!)

{

<tr>

<td>

@state.Name

</td>

<td>

@state.CitiesNumber

</td>

<td>

<a class="btn btn-info" href="/states/details/@state.Id">Detalles</a>

<a class="btn btn-warning" href="/states/edit/@state.Id">Editar</a>

<button class="btn btn-danger" @onclick=@(() => DeleteAsync(state.Id))>Borrar</button>

</td>

</tr>

}

</tbody>

</table>

</Body>

</GenericList>

}

@code {

private Country? country;

private List<State>? states;

private int currentPage = 1;

private int totalPages;

[Parameter]

public int Id { get; set; }

[Parameter]

[SupplyParameterFromQuery]

public string Page { get; set; } = "";

[Parameter]

[SupplyParameterFromQuery]

public string Filter { get; set; } = "";

protected override async Task OnInitializedAsync()

{

await LoadAsync();

}

private async Task SelectedPage(int page)

{

currentPage = page;

await LoadAsync(page);

}

private async Task LoadAsync(int page = 1)

{

if (!string.IsNullOrWhiteSpace(Page))

{

page = Convert.ToInt32(Page);

}

string url1 = string.Empty;

string url2 = string.Empty;

if (string.IsNullOrEmpty(Filter))

{

url1 = $"api/states?id={Id}&page={page}";

url2 = $"api/states/totalPages?id={Id}";

}

else

{

url1 = $"api/states?id={Id}&page={page}&filter={Filter}";

url2 = $"api/states/totalPages?id={Id}&filter={Filter}";

}

var responseHppt = await repository.Get<Country>($"api/countries/{Id}");

var responseHppt2 = await repository.Get<List<State>>(url1);

var responseHppt3 = await repository.Get<int>(url2);

country = responseHppt.Response;

states = responseHppt2.Response;

totalPages = responseHppt3.Response;

}

private async Task DeleteAsync(int id)

{

var result = await sweetAlertService.FireAsync(new SweetAlertOptions

{

Title = "Confirmación",

Text = "¿Realmente deseas eliminar el registro?",

Icon = SweetAlertIcon.Question,

ShowCancelButton = true,

CancelButtonText = "No",

ConfirmButtonText = "Si"

});

var confirm = string.IsNullOrEmpty(result.Value);

if (confirm)

{

return;

}

var responseHttp = await repository.Delete($"/api/states/{id}");

if (responseHttp.Error)

{

if (responseHttp.HttpResponseMessage.StatusCode != HttpStatusCode.NotFound)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

}

await LoadAsync();

}

private async Task CleanFilterAsync()

{

Filter = string.Empty;

await ApplyFilterAsync();

}

private async Task ApplyFilterAsync()

{

int page = 1;

await LoadAsync(page);

await SelectedPage(page);

}

}

1. Modificamos el **StateDetails**.

@page "/states/details/{StateId:int}"

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

@if (state is null)

{

<p>Cargando...</p>

}

else

{

<h3>@state.Name</h3>

<div class="mb-2" style="display: flex; flex-wrap:wrap; align-items: center;">

<div>

<a class="btn btn-primary" href="/cities/create/@StateId">Nueva Ciudad</a>

<a class="btn btn-success" href="/countries/details/@state.CountryId">Regresar</a>

</div>

<div class="mx-2">

<input style="width: 400px;" type="text" class="form-control" id="titulo" placeholder="Buscar ciudad..." @bind-value="Filter" />

</div>

<div>

<button type="button" class="btn btn-outline-primary" @onclick="ApplyFilterAsync">Filtrar</button>

<button type="button" class="btn btn-outline-danger" @onclick="CleanFilterAsync">Limpiar</button>

</div>

</div>

<Pagination CurrentPage="currentPage"

TotalPages="totalPages"

SelectedPage="SelectedPage" />

<GenericList MyList="cities!">

<Body>

<table class="table table-striped">

<thead>

<tr>

<th>Ciudad</th>

<th style="width:180px"></th>

</tr>

</thead>

<tbody>

@foreach (var city in cities!)

{

<tr>

<td>

@city.Name

</td>

<td>

<a class="btn btn-warning" href="/cities/edit/@city.Id">Editar</a>

<button class="btn btn-danger" @onclick=@(() => DeleteAsync(city.Id))>Borrar</button>

</td>

</tr>

}

</tbody>

</table>

</Body>

</GenericList>

}

@code {

private State? state;

private List<City>? cities;

private int currentPage = 1;

private int totalPages;

[Parameter]

public int StateId { get; set; }

[Parameter]

[SupplyParameterFromQuery]

public string Page { get; set; } = "";

[Parameter]

[SupplyParameterFromQuery]

public string Filter { get; set; } = "";

protected override async Task OnInitializedAsync()

{

await LoadAsync();

}

private async Task SelectedPage(int page)

{

currentPage = page;

await LoadAsync(page);

}

private async Task LoadAsync(int page = 1)

{

if (!string.IsNullOrWhiteSpace(Page))

{

page = Convert.ToInt32(Page);

}

string url1 = string.Empty;

string url2 = string.Empty;

if (string.IsNullOrEmpty(Filter))

{

url1 = $"api/cities?id={StateId}&page={page}";

url2 = $"api/cities/totalPages?id={StateId}";

}

else

{

url1 = $"api/cities?id={StateId}&page={page}&filter={Filter}";

url2 = $"api/cities/totalPages?id={StateId}&filter={Filter}";

}

var responseHppt = await repository.Get<State>($"api/states/{StateId}");

var responseHppt2 = await repository.Get<List<City>>(url1);

var responseHppt3 = await repository.Get<int>(url2);

state = responseHppt.Response;

cities = responseHppt2.Response;

totalPages = responseHppt3.Response;

}

private async Task DeleteAsync(int CityId)

{

var result = await sweetAlertService.FireAsync(new SweetAlertOptions

{

Title = "Confirmación",

Text = "¿Realmente deseas eliminar el registro?",

Icon = SweetAlertIcon.Question,

ShowCancelButton = true,

CancelButtonText = "No",

ConfirmButtonText = "Si"

});

var confirm = string.IsNullOrEmpty(result.Value);

if (confirm)

{

return;

}

var responseHttp = await repository.Delete($"/api/cities/{CityId}");

if (responseHttp.Error)

{

if (responseHttp.HttpResponseMessage.StatusCode != HttpStatusCode.NotFound)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

}

await LoadAsync();

}

private async Task CleanFilterAsync()

{

Filter = string.Empty;

await ApplyFilterAsync();

}

private async Task ApplyFilterAsync()

{

int page = 1;

await LoadAsync(page);

await SelectedPage(page);

}

}

## Creando las tablas de usuarios

1. Como vamos a tener dos tipos de usuarios; administradores y usuarios. Vamos a crear una enumeración para diferenciarlos. Creamos la carpeta **Enums** en el proyecto **Shared** y dentro de esta carpeta la enumeración **UserType**:

namespace Market.Shared.Enums

{

public enum UserType

{

Admin,

User

}

}

1. En el proyecto **Shared** instalar el nuget **Microsoft.AspNetCore.Identity.EntityFrameworkCore** última versión (hoy es 7.0.11)
2. En el proyecto **Shared** en la carpeta **Entities**, crear la entidad **User**:

using Microsoft.AspNetCore.Identity;

using Market.Shared.Enums;

using System.ComponentModel.DataAnnotations;

namespace Market.Shared.Entities

{

public class User : IdentityUser

{

[Display(Name = "Documento")]

[MaxLength(20, ErrorMessage = "El campo {0} debe tener máximo {1} caractéres.")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public string Document { get; set; } = null!;

[Display(Name = "Nombres")]

[MaxLength(50, ErrorMessage = "El campo {0} debe tener máximo {1} caractéres.")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public string FirstName { get; set; } = null!;

[Display(Name = "Apellidos")]

[MaxLength(50, ErrorMessage = "El campo {0} debe tener máximo {1} caractéres.")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public string LastName { get; set; } = null!;

[Display(Name = "Dirección")]

[MaxLength(200, ErrorMessage = "El campo {0} debe tener máximo {1} caractéres.")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public string Address { get; set; } = null!;

[Display(Name = "Foto")]

public string? Photo { get; set; }

[Display(Name = "Tipo de usuario")]

public UserType UserType { get; set; }

public City? City { get; set; }

[Display(Name = "Ciudad")]

[Range(1, int.MaxValue, ErrorMessage = "Debes seleccionar una {0}.")]

public int CityId { get; set; }

[Display(Name = "Usuario")]

public string FullName => $"{FirstName} {LastName}";

}

}

1. Modificamos la entidad **City** para definir la relación a ambos lados de esta:

public State? State { get; set; }

public ICollection<User>? Users { get; set; }

1. En el proyecto **API** instalar el nugget **Microsoft.AspNetCore.Identity.EntityFrameworkCore** la última versión(hoy es la 7.0.5)
2. Modificar el **DataContext**:

public class DataContext : IdentityDbContext<User>

1. Crear la interfaz **IUserHelper** en **API.Helpers**:

using Microsoft.AspNetCore.Identity;

using Market.Shared.Entities;

namespace Market.API.Helpers

{

public interface IUserHelper

{

Task<User> GetUserAsync(string email);

Task<IdentityResult> AddUserAsync(User user, string password);

Task CheckRoleAsync(string roleName);

Task AddUserToRoleAsync(User user, string roleName);

Task<bool> IsUserInRoleAsync(User user, string roleName);

}

}

1. Luego hacemos la implementación de dicha interfaz:

using Microsoft.AspNetCore.Identity;

using Microsoft.EntityFrameworkCore;

using Market.API.Data;

using Market.Shared.Entities;

namespace Market.API.Helpers

{

public class UserHelper : IUserHelper

{

private readonly DataContext \_context;

private readonly UserManager<User> \_userManager;

private readonly RoleManager<IdentityRole> \_roleManager;

public UserHelper(DataContext context, UserManager<User> userManager, RoleManager<IdentityRole> roleManager)

{

\_context = context;

\_userManager = userManager;

\_roleManager = roleManager;

}

public async Task<IdentityResult> AddUserAsync(User user, string password)

{

return await \_userManager.CreateAsync(user, password);

}

public async Task AddUserToRoleAsync(User user, string roleName)

{

await \_userManager.AddToRoleAsync(user, roleName);

}

public async Task CheckRoleAsync(string roleName)

{

bool roleExists = await \_roleManager.RoleExistsAsync(roleName);

if (!roleExists)

{

await \_roleManager.CreateAsync(new IdentityRole

{

Name = roleName

});

}

}

public async Task<User> GetUserAsync(string email)

{

return await \_context.Users

.Include(u => u.City)

.ThenInclude(c => c.State)

.ThenInclude(s => s.Country)

.FirstOrDefaultAsync(x => x.Email == email);

}

public async Task<bool> IsUserInRoleAsync(User user, string roleName)

{

return await \_userManager.IsInRoleAsync(user, roleName);

}

}

}

1. Modificamos el **Program** del proyecto **API**:

builder.Services.AddScoped<IApiService, ApiService>();

builder.Services.AddIdentity<User, IdentityRole>(x =>

{

x.User.RequireUniqueEmail = true;

x.Password.RequireDigit = false;

x.Password.RequiredUniqueChars = 0;

x.Password.RequireLowercase = false;

x.Password.RequireNonAlphanumeric = false;

x.Password.RequireUppercase = false;

})

.AddEntityFrameworkStores<DataContext>()

.AddDefaultTokenProviders();

builder.Services.AddScoped<IUserHelper, UserHelper>();

var app = builder.Build();

SeedData(app);

void SeedData(WebApplication app)

{

IServiceScopeFactory? scopedFactory = app.Services.GetService<IServiceScopeFactory>();

using (IServiceScope? scope = scopedFactory!.CreateScope())

{

SeedDb? service = scope.ServiceProvider.GetService<SeedDb>();

service!.SeedAsync().Wait();

}

}

if (app.Environment.IsDevelopment())

{

app.UseSwagger();

app.UseSwaggerUI();

}

app.UseHttpsRedirection();

app.UseAuthentication();

app.UseAuthorization();

1. Modificamos el **SeedDb**:

public class SeedDb

{

private readonly DataContext \_context;

private readonly IApiService \_apiService;

private readonly IUserHelper \_userHelper;

public SeedDb(DataContext context, IApiService apiService, IUserHelper userHelper)

{

\_context = context;

\_apiService = apiService;

\_userHelper = userHelper;

}

public async Task SeedAsync()

{

await \_context.Database.EnsureCreatedAsync();

await CheckCountriesAsync();

await CheckRolesAsync();

await CheckUserAsync("1", "OAP", "OAP", "oap@yopmail.com", "300445555", "CR 78 9687", UserType.Admin);

}

private async Task<User> CheckUserAsync(string document, string firstName, string lastName, string email, string phone, string address, UserType userType)

{

var user = await \_userHelper.GetUserAsync(email);

if (user == null)

{

user = new User

{

FirstName = firstName,

LastName = lastName,

Email = email,

UserName = email,

PhoneNumber = phone,

Address = address,

Document = document,

City = \_context.Cities.FirstOrDefault(),

UserType = userType,

};

await \_userHelper.AddUserAsync(user, "123456");

await \_userHelper.AddUserToRoleAsync(user, userType.ToString());

}

return user;

}

private async Task CheckRolesAsync()

{

await \_userHelper.CheckRoleAsync(UserType.Admin.ToString());

await \_userHelper.CheckRoleAsync(UserType.User.ToString());

}

1. Corremos los siguientes comandos:

PM> drop-database

PM> add-migration Users

PM> update-database

1. Probamos y hacemos el **commit**.

## Creando sistema de seguridad

1. Al proyecto **WEB** agregamos el paquete: **Microsoft.AspNetCore.Components.WebAssembly.Authentication** ver **7.0.5**.
2. Agregamos este using en el **\_Imports**:

@using Microsoft.AspNetCore.Components.Authorization

1. En el proyecto **WEB** creamos la carpeta **Auth** y dentro de esta la clase **AuthenticationProviderTest**:

using Microsoft.AspNetCore.Components.Authorization;

using System.Security.Claims;

namespace MarketWEB.Auth

{

public class AuthenticationProviderTest : AuthenticationStateProvider

{

public override async Task<AuthenticationState> GetAuthenticationStateAsync()

{

var anonimous = new ClaimsIdentity();

return await Task.FromResult(new AuthenticationState(new ClaimsPrincipal(anonimous)));

}

}

}

1. Modificamos el **Program** del proyecto **WEB**:

builder.Services.AddSingleton(sp => new HttpClient { BaseAddress = new Uri("https://localhost:7201/") });

builder.Services.AddScoped<IRepository, Repository>();

builder.Services.AddSweetAlert2();

builder.Services.AddAuthorizationCore();

builder.Services.AddScoped<AuthenticationStateProvider, AuthenticationProviderTest>();

1. Modificamos el **App.razor**:

@using Microsoft.AspNetCore.Components.Authorization

<Router AppAssembly="@typeof(App).Assembly">

<Found Context="routeData">

<AuthorizeRouteView RouteData="@routeData" DefaultLayout="@typeof(MainLayout)" />

<FocusOnNavigate RouteData="@routeData" Selector="h1" />

</Found>

<NotFound>

<CascadingAuthenticationState>

<PageTitle>No encontrado</PageTitle>

<LayoutView Layout="@typeof(MainLayout)">

<p role="alert">Lo sentimos no hay nada en esta ruta.</p>

</LayoutView>

</CascadingAuthenticationState>

</NotFound>

</Router>

1. Probamos y vemos que aparentemente no pasa nada, ahora a nuestro **AuthenticationProviderTest** le vamos a colocar un tiempo de espera:

public override async Task<AuthenticationState> GetAuthenticationStateAsync()

{

await Task.Delay(3000);

var anonimous = new ClaimsIdentity();

return await Task.FromResult(new AuthenticationState(new ClaimsPrincipal(anonimous)));

}

1. Probamos de nuevo y vemos que tarda los 3 segundos haciendo la autorización.
2. Si queremos cambiar el mensaje, modificamos el **App.razor**:

<AuthorizeRouteView RouteData="@routeData" DefaultLayout="@typeof(MainLayout)">

<Authorizing>

<p>Autorizando...</p>

</Authorizing>

</AuthorizeRouteView>

1. Probamos de nuevo.
2. Modificamos el **Index.razor**.

@page "/"

@using Microsoft.AspNetCore.Components.Authorization

<PageTitle>Index</PageTitle>

<AuthorizeView>

<p>Estas autenticado</p>

</AuthorizeView>

<h1>Hello, world!</h1>

Welcome to your new app.

<SurveyPrompt Title="How is Blazor working for you?" />

1. Modificamos el **AuthenticationProviderTest**:

public override async Task<AuthenticationState> GetAuthenticationStateAsync()

{

var anonimous = new ClaimsIdentity();

var oapUser = new ClaimsIdentity(authenticationType: "test");

return await Task.FromResult(new AuthenticationState(new ClaimsPrincipal(oapUser)));

}

1. Cambiamos el **Index.razor**.

<AuthorizeView>

<Authorized>

<p>Estas autenticado</p>

</Authorized>

<NotAuthorized>

<p>No estas autorizado</p>

</NotAuthorized>

</AuthorizeView>

1. Y jugamos con el **AuthenticationProviderTest** para ver que pasa con el usuario **anonimous** y con el usuario **oapUser**.
2. Modificamos nuestro **AuthenticationProviderTest**, para agregar algunos **Claims**:

public override async Task<AuthenticationState> GetAuthenticationStateAsync()

{

var anonimous = new ClaimsIdentity();

var oapUser = new ClaimsIdentity(new List<Claim>

{

new Claim("FirstName", "Luis"),

new Claim("LastName", "O"),

new Claim(ClaimTypes.Name, "oap@yopmail.com")

},

authenticationType: "test");

return await Task.FromResult(new AuthenticationState(new ClaimsPrincipal(oapUser)));

}

1. Modificamos el **Index.razor** y probamos:

<AuthorizeView>

<Authorized>

<p>Estas autenticado, @context.User.Identity?.Name</p>

</Authorized>

<NotAuthorized>

<p>No estas autorizado</p>

</NotAuthorized>

</AuthorizeView>

1. Modificamos de nuevo el **Index.razor** para crear un **Role** y probamos:

<AuthorizeView Roles="Admin">

<Authorized>

<p>Estas autenticado y autorizado, @context.User.Identity?.Name</p>

</Authorized>

<NotAuthorized>

<p>No estas autorizado</p>

</NotAuthorized>

</AuthorizeView>

1. Modificamos nuestro **AuthenticationProviderTest**, para agregar el **Claim** de **Role** y probamos:

var oapUser = new ClaimsIdentity(new List<Claim>

{

new Claim("FirstName", "Orlando"),

new Claim("LastName", "Oap"),

new Claim(ClaimTypes.Name, "oap@yopmail.com"),

new Claim(ClaimTypes.Role, "Admin")

},

authenticationType: "test");

1. Ahora cambiamos nuestro **NavMenu** para mostrar la opción de países solo a los administradores, y jugamos con nuestro **AuthenticationProviderTest** para cambiarle el rol al usuario:

@using Microsoft.AspNetCore.Components.Authorization

<div class="@NavMenuCssClass nav-scrollable" @onclick="ToggleNavMenu">

<nav class="flex-column">

<div class="nav-item px-3">

<NavLink class="nav-link" href="" Match="NavLinkMatch.All">

<span class="oi oi-home" aria-hidden="true"></span> Home

</NavLink>

</div>

<div class="nav-item px-3">

<NavLink class="nav-link" href="counter">

<span class="oi oi-plus" aria-hidden="true"></span> Counter

</NavLink>

</div>

<AuthorizeView Roles="Admin">

<Authorized>

<div class="nav-item px-3">

<NavLink class="nav-link" href="countries">

<span class="oi oi-list-rich" aria-hidden="true"></span> Países

</NavLink>

</div>

</Authorized>

</AuthorizeView>

</nav>

</div>

1. Pero nótese que solo estamos ocultando la opción, si el usuario por la URL introduce la dirección de países, pues podrá acceder a nuestras páginas, lo cual es algo que no queremos.
2. Para evitar esto le colocamos este atributo a todos los componentes a los que navegamos y queremos proteger Countries:

@using Microsoft.AspNetCore.Authorization;

@attribute [Authorize(Roles = "Admin")]

1. Ahora si queremos personalizar el mensaje de autorización, podemos modificar todo nuestro **App.razor**:

@using Microsoft.AspNetCore.Components.Authorization

<Router AppAssembly="@typeof(App).Assembly">

<Found Context="routeData">

<AuthorizeRouteView RouteData="@routeData" DefaultLayout="@typeof(MainLayout)">

<Authorizing>

<p>Autorizando...</p>

</Authorizing>

<NotAuthorized>

<p>No estas autorizado para ver este contenido...</p>

</NotAuthorized>

</AuthorizeRouteView>

<FocusOnNavigate RouteData="@routeData" Selector="h1" />

</Found>

<NotFound>

<CascadingAuthenticationState>

<PageTitle>No encontrado</PageTitle>

<LayoutView Layout="@typeof(MainLayout)">

<p role="alert">Lo sentimos no hay nada en esta ruta.</p>

</LayoutView>

</CascadingAuthenticationState>

</NotFound>

</Router>

1. Probamos y hacemos el **commit**.

## Seguridad desde el backend(API)

1. Antes de empezar corrijamos el Warnig del **GetUserAsync** en el **UserHelper**,

public async Task<User> GetUserAsync(string email)

{

var user = await \_context.Users

.Include(u => u.City!)

.ThenInclude(c => c.State!)

.ThenInclude(s => s.Country!)

.FirstOrDefaultAsync(u => u.Email! == email);

return user!;

}

1. Agregamos el paquete **Microsoft.AspNetCore.Authentication.JwtBearer** al proyecto **API**, versión 7.0.5.
2. Creamos el parámetro **jwtKey** en el appsettings del proyecto **API** (cualquier cosa, entre más larga mejor):

"AllowedHosts": "\*",

"jwtKey": "sagdsadgfeSDF674545REFG$%FEfgdslkjfglkjhfgdkljhdR5454545\_4TGRGtyo!!kjytkljty"

}

1. Modificamos el **Program** del proyecto **API**:

builder.Services.AddScoped<IUserHelper, UserHelper>();

builder.Services.AddAuthentication(JwtBearerDefaults.AuthenticationScheme)

.AddJwtBearer(x => x.TokenValidationParameters = new TokenValidationParameters

{

ValidateIssuer = false,

ValidateAudience = false,

ValidateLifetime = true,

ValidateIssuerSigningKey = true,

IssuerSigningKey = new SymmetricSecurityKey(Encoding.UTF8.GetBytes(builder.Configuration["jwtKey"]!)),

ClockSkew = TimeSpan.Zero

});

var app = builder.Build();

1. En el proyecto **Shared** en la carpeta **DTOs** creamos el **UserDTO**:

using Market.Shared.Entities;

using System.ComponentModel.DataAnnotations;

using System.Xml.Linq;

namespace Market.Shared.DTOs

{

public class UserDTO : User

{

[DataType(DataType.Password)]

[Display(Name = "Contraseña")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

[StringLength(20, MinimumLength = 6, ErrorMessage = "El campo {0} debe tener entre {2} y {1} carácteres.")]

public string Password { get; set; } = null!;

[Compare("Password", ErrorMessage = "La contraseña y la confirmación no son iguales.")]

[Display(Name = "Confirmación de contraseña")]

[DataType(DataType.Password)]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

[StringLength(20, MinimumLength = 6, ErrorMessage = "El campo {0} debe tener entre {2} y {1} carácteres.")]

public string PasswordConfirm { get; set; } = null!;

}

}

1. En el proyecto **Shared** en la carpeta **DTOs** creamos el **TokenDTO**:

using Market.Shared.Entities;

namespace Market.Shared.DTOs

{

public class TokenDTO

{

public string Token { get; set; } = null!;

public DateTime Expiration { get; set; }

}

}

1. En el proyecto **Shared** en la carpeta **DTOs** creamos el **LoginDTO**:

using System.ComponentModel.DataAnnotations;

namespace Market.Shared.DTOs

{

public class LoginDTO

{

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

[EmailAddress(ErrorMessage = "Debes ingresar un correo válido.")]

public string Email { get; set; } = null!;

[Display(Name = "Contraseña")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

[MinLength(6, ErrorMessage = "El campo {0} debe tener al menos {1} carácteres.")]

public string Password { get; set; } = null!;

}

}

1. Agregamos estos métodos al **IUserHelper**:

Task<SignInResult> LoginAsync(LoginDTO model);

Task LogoutAsync();

1. Los implementamos en el **UserHelper**:

private readonly DataContext \_context;

private readonly UserManager<User> \_userManager;

private readonly RoleManager<IdentityRole> \_roleManager;

private readonly SignInManager<User> \_signInManager;

public UserHelper(DataContext context, UserManager<User> userManager, RoleManager<IdentityRole> roleManager, SignInManager<User> signInManager)

{

\_context = context;

\_userManager = userManager;

\_roleManager = roleManager;

\_signInManager = signInManager;

}

…

public async Task<SignInResult> LoginAsync(LoginDTO model)

{

return await \_signInManager.PasswordSignInAsync(model.Email, model.Password, false, false);

}

public async Task LogoutAsync()

{

await \_signInManager.SignOutAsync();

}

1. Creamos el **AccountsController**:

using Microsoft.AspNetCore.Mvc;

using Microsoft.IdentityModel.Tokens;

using Market.API.Helpers;

using Market.Shared.DTOs;

using Market.Shared.Entities;

using System.IdentityModel.Tokens.Jwt;

using System.Security.Claims;

using System.Text;

namespace Market.API.Controllers

{

[ApiController]

[Route("/api/accounts")]

public class AccountsController : ControllerBase

{

private readonly IUserHelper \_userHelper;

private readonly IConfiguration \_configuration;

public AccountsController(IUserHelper userHelper, IConfiguration configuration)

{

\_userHelper = userHelper;

\_configuration = configuration;

}

[HttpPost("CreateUser")]

public async Task<ActionResult> CreateUser([FromBody] UserDTO model)

{

User user = model;

var result = await \_userHelper.AddUserAsync(user, model.Password);

if (result.Succeeded)

{

await \_userHelper.AddUserToRoleAsync(user, user.UserType.ToString());

return Ok(BuildToken(user));

}

return BadRequest(result.Errors.FirstOrDefault());

}

[HttpPost("Login")]

public async Task<ActionResult> Login([FromBody] LoginDTO model)

{

var result = await \_userHelper.LoginAsync(model);

if (result.Succeeded)

{

var user = await \_userHelper.GetUserAsync(model.Email);

return Ok(BuildToken(user));

}

return BadRequest("Email o contraseña incorrectos.");

}

private TokenDTO BuildToken(User user)

{

var claims = new List<Claim>

{

new Claim(ClaimTypes.Name, user.Email!),

new Claim(ClaimTypes.Role, user.UserType.ToString()),

new Claim("Document", user.Document),

new Claim("FirstName", user.FirstName),

new Claim("LastName", user.LastName),

new Claim("Address", user.Address),

new Claim("Photo", user.Photo ?? string.Empty),

new Claim("CityId", user.CityId.ToString())

};

var key = new SymmetricSecurityKey(Encoding.UTF8.GetBytes(\_configuration["jwtKey"]!));

var credentials = new SigningCredentials(key, SecurityAlgorithms.HmacSha256);

var expiration = DateTime.UtcNow.AddDays(30);

var token = new JwtSecurityToken(

issuer: null,

audience: null,

claims: claims,

expires: expiration,

signingCredentials: credentials);

return new TokenDTO

{

Token = new JwtSecurityTokenHandler().WriteToken(token),

Expiration = expiration

};

}

}

}

1. Luego le colocamos autorización a los 3 controladores **CountriesController**, **StatesController** y **CitiesController**:

[Authorize(AuthenticationSchemes = JwtBearerDefaults.AuthenticationScheme)]

1. Modificamos el **CountriesIndex**:

try

{

var responseHppt = await repository.Get<List<Country>>(url1);

var responseHppt2 = await repository.Get<int>(url2);

Countries = responseHppt.Response!;

totalPages = responseHppt2.Response!;

}

catch (Exception ex)

{

await sweetAlertService.FireAsync("Error", ex.Message, SweetAlertIcon.Error);

}

1. Podemos probar por **POSTMAN** como está funcionando nuestro token, y con <https://jwt.io/> probamos como está quedando nuestro token.
2. Probamos en la interfaz web, y nos debe salir un error porque aun no le mandamos ningún token a nuestra API. Hacemos el **commit**.

## Implementando el registro de usuarios, login & logout

1. En el proyecto **WEB** Instalamos el paquete: **System.IdentityModel.Tokens.Jwt**.
2. En el proyecto **WEB** en la carpeta **Helpers** creamos el **IJSRuntimeExtensionMethods**:

using Microsoft.JSInterop;

namespace Market.WEB.Helpers

{

public static class IJSRuntimeExtensionMethods

{

public static ValueTask<object> SetLocalStorage(this IJSRuntime js, string key, string content)

{

return js.InvokeAsync<object>("localStorage.setItem", key, content);

}

public static ValueTask<object> GetLocalStorage(this IJSRuntime js, string key)

{

return js.InvokeAsync<object>("localStorage.getItem", key);

}

public static ValueTask<object> RemoveLocalStorage(this IJSRuntime js, string key)

{

return js.InvokeAsync<object>("localStorage.removeItem", key);

}

}

}

1. En el proyecto **WEB** en la carpeta **Auth** creamos la interface **ILoginService**:

namespace Market.WEB.Auth

{

public interface ILoginService

{

Task LoginAsync(string token);

Task LogoutAsync();

}

}

1. En el proyecto **WEB** en la carpeta **Auth** creamos el **AuthenticationProviderJWT**:

using Microsoft.AspNetCore.Components.Authorization;

using Microsoft.JSInterop;

using Market.WEB.Helpers;

using System.IdentityModel.Tokens.Jwt;

using System.Net.Http.Headers;

using System.Security.Claims;

namespace Market.WEB.Auth

{

public class AuthenticationProviderJWT : AuthenticationStateProvider, ILoginService

{

private readonly IJSRuntime \_jSRuntime;

private readonly HttpClient \_httpClient;

private readonly String \_tokenKey;

private readonly AuthenticationState \_anonimous;

public AuthenticationProviderJWT(IJSRuntime jSRuntime, HttpClient httpClient)

{

\_jSRuntime = jSRuntime;

\_httpClient = httpClient;

\_tokenKey = "TOKEN\_KEY";

\_anonimous = new AuthenticationState(new ClaimsPrincipal(new ClaimsIdentity()));

}

public async override Task<AuthenticationState> GetAuthenticationStateAsync()

{

var token = await \_jSRuntime.GetLocalStorage(\_tokenKey);

if (token is null)

{

return \_anonimous;

}

return BuildAuthenticationState(token.ToString()!);

}

private AuthenticationState BuildAuthenticationState(string token)

{

\_httpClient.DefaultRequestHeaders.Authorization = new AuthenticationHeaderValue("bearer", token);

var claims = ParseClaimsFromJWT(token);

return new AuthenticationState(new ClaimsPrincipal(new ClaimsIdentity(claims, "jwt")));

}

private IEnumerable<Claim> ParseClaimsFromJWT(string token)

{

var jwtSecurityTokenHandler = new JwtSecurityTokenHandler();

var unserializedToken = jwtSecurityTokenHandler.ReadJwtToken(token);

return unserializedToken.Claims;

}

public async Task LoginAsync(string token)

{

await \_jSRuntime.SetLocalStorage(\_tokenKey, token);

var authState = BuildAuthenticationState(token);

NotifyAuthenticationStateChanged(Task.FromResult(authState));

}

public async Task LogoutAsync()

{

await \_jSRuntime.RemoveLocalStorage(\_tokenKey);

\_httpClient.DefaultRequestHeaders.Authorization = null;

NotifyAuthenticationStateChanged(Task.FromResult(\_anonimous));

}

}

}

1. Modificamos el **Program** del **WEB** para usar nuestro nuevo proveedor de autenticación:

builder.Services.AddSingleton(sp => new HttpClient { BaseAddress = new Uri("https://localhost:7000/") });

builder.Services.AddScoped<IRepository, Repository>();

builder.Services.AddSweetAlert2();

builder.Services.AddAuthorizationCore();

builder.Services.AddScoped<AuthenticationProviderJWT>();

builder.Services.AddScoped<AuthenticationStateProvider, AuthenticationProviderJWT>(x => x.GetRequiredService<AuthenticationProviderJWT>());

builder.Services.AddScoped<ILoginService, AuthenticationProviderJWT>(x => x.GetRequiredService<AuthenticationProviderJWT>());

1. Creamos un componente razor en la carpeta Shared del proyecto WEB, llamado **AuthLinks**:

<AuthorizeView>

<Authorized>

<span>Hola, @context.User.Identity!.Name</span>

<a href="Logout" class="nav-link btn btn-link">Cerrar Sesión</a>

</Authorized>

<NotAuthorized>

<a href="Register" class="nav-link btn btn-link">Registro</a>

<a href="Login" class="nav-link btn btn-link">Iniciar Sesión</a>

</NotAuthorized>

</AuthorizeView>

1. Llamamos el nuevo componente desde el **MainLayout**:.

@inherits LayoutComponentBase

<div class="page">

<div class="sidebar">

<NavMenu />

</div>

<main>

<div class="top-row px-4">

<AuthLinks/>

<a href="https://docs.microsoft.com/aspnet/" target="\_blank">Acerca de</a>

</div>

<article class="content px-4">

@Body

</article>

</main>

</div>

1. Probamos lo que llevamos.
2. Dentro de **Pages** creamos la carpeta **Auth** y dentro de esta el componente **Register**:

@page "/Register"

@using Market.Shared.DTOs;

@using Market.Shared.Enums;

@using Market.WEB.Auth;

@inject IRepository repository

@inject SweetAlertService sweetAlertService

@inject NavigationManager navigationManager

@inject ILoginService loginService

<h3>Registrar Nuevo Usuario</h3>

<EditForm Model="userDTO" OnValidSubmit="CreateUserAsync">

<DataAnnotationsValidator/>

<div class="row">

<div class="col-6">

<div class="mb-3">

<label>Nombres:</label>

<div>

<InputText class="form-control" @bind-Value="@userDTO.FirstName" />

<ValidationMessage For="@(() => userDTO.FirstName)" />

</div>

</div>

<div class="mb-3">

<label>Apellidos:</label>

<div>

<InputText class="form-control" @bind-Value="@userDTO.LastName" />

<ValidationMessage For="@(() => userDTO.LastName)" />

</div>

</div>

<div class="mb-3">

<label>Documento:</label>

<div>

<InputText class="form-control" @bind-Value="@userDTO.Document" />

<ValidationMessage For="@(() => userDTO.Document)" />

</div>

</div>

<div class="mb-3">

<label>Teléfono:</label>

<div>

<InputText class="form-control" @bind-Value="@userDTO.PhoneNumber" />

<ValidationMessage For="@(() => userDTO.PhoneNumber)" />

</div>

</div>

<div class="mb-3">

<label>Dirección:</label>

<div>

<InputText class="form-control" @bind-Value="@userDTO.Address" />

<ValidationMessage For="@(() => userDTO.Address)" />

</div>

</div>

<div class="mb-3">

<label>Email:</label>

<div>

<InputText class="form-control" @bind-Value="@userDTO.Email" />

<ValidationMessage For="@(() => userDTO.Email)" />

</div>

</div>

</div>

<div class="col-6">

<div class="mb-3">

<label>Ciudad:</label>

<div>

<InputNumber class="form-control" @bind-Value="@userDTO.CityId" />

<ValidationMessage For="@(() => userDTO.CityId)" />

</div>

</div>

<div class="mb-3">

<label>Foto:</label>

<div>

<InputText class="form-control" @bind-Value="@userDTO.Photo" />

<ValidationMessage For="@(() => userDTO.Photo)" />

</div>

</div>

<div class="mb-3">

<label>Contraseña:</label>

<div>

<InputText type="password" class="form-control" @bind-Value="@userDTO.Password" />

<ValidationMessage For="@(() => userDTO.Password)" />

</div>

</div>

<div class="mb-3">

<label>Confirmación de contraseña:</label>

<div>

<InputText type="password" class="form-control" @bind-Value="@userDTO.PasswordConfirm" />

<ValidationMessage For="@(() => userDTO.PasswordConfirm)" />

</div>

</div>

</div>

</div>

<button class="btn btn-primary" type="submit">Registrar</button>

</EditForm>

@code {

private UserDTO userDTO = new();

private async Task CreateUserAsync()

{

userDTO.UserName = userDTO.Email;

userDTO.UserType = UserType.User;

var responseHttp = await repository.Post<UserDTO, TokenDTO>("/api/accounts/CreateUser", userDTO);

if (responseHttp.Error)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

await loginService.LoginAsync(responseHttp.Response!.Token);

navigationManager.NavigateTo("/");

}

}

1. Dentro de **Pages** en la carpeta **Auth** creamos el componente **Login**:

@page "/Login"

@using Market.Shared.DTOs;

@using Market.WEB.Auth;

@inject IRepository repository

@inject SweetAlertService sweetAlertService

@inject NavigationManager navigationManager

@inject ILoginService loginService

<h3>Iniciar Sesión</h3>

<EditForm Model="loginDTO" OnValidSubmit="LoginAsync">

<DataAnnotationsValidator />

<div class="row">

<div class="col-4">

<div class="mb-3">

<label>Email:</label>

<div>

<InputText class="form-control" @bind-Value="@loginDTO.Email" />

<ValidationMessage For="@(() => loginDTO.Email)" />

</div>

</div>

<div class="mb-3">

<label>Contraseña:</label>

<div>

<InputText type="password" class="form-control" @bind-Value="@loginDTO.Password" />

<ValidationMessage For="@(() => loginDTO.Password)" />

</div>

</div>

<button class="btn btn-primary" type="submit">Iniciar Sesión</button>

</div>

</div>

</EditForm>

@code {

private LoginDTO loginDTO = new();

private async Task LoginAsync()

{

var responseHttp = await repository.Post<LoginDTO, TokenDTO>("/api/accounts/Login", loginDTO);

if (responseHttp.Error)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

await loginService.LoginAsync(responseHttp.Response!.Token);

navigationManager.NavigateTo("/");

}

}

1. Probemos lo que llevamos.
2. Dentro de **Pages** en la carpeta **Auth** creamos el componente **Logout**:

@page "/logout"

@using Market.WEB.Auth;

@inject ILoginService loginService

@inject NavigationManager navigationManager

<p>Cerrando sesión...</p>

@code {

protected override async Task OnInitializedAsync()

{

await loginService.LogoutAsync();

navigationManager.NavigateTo("/");

}

}

1. Probamos y hacemos el **commit**.

## Habilitando tokens en swagger

1. Modificamos el **Program** del **API**:

builder.Services.AddSwaggerGen();

builder.Services.AddSwaggerGen(c =>

{

c.SwaggerDoc("v1", new OpenApiInfo { Title = "Market API", Version = "v1" });

c.AddSecurityDefinition("Bearer", new OpenApiSecurityScheme

{

Description = @"JWT Authorization header using the Bearer scheme. <br /> <br />

Enter 'Bearer' [space] and then your token in the text input below.<br /> <br />

Example: 'Bearer 12345abcdef'<br /> <br />",

Name = "Authorization",

In = ParameterLocation.Header,

Type = SecuritySchemeType.ApiKey,

Scheme = "Bearer"

});

c.AddSecurityRequirement(new OpenApiSecurityRequirement()

{

{

new OpenApiSecurityScheme

{

Reference = new OpenApiReference

{

Type = ReferenceType.SecurityScheme,

Id = "Bearer"

},

Scheme = "oauth2",

Name = "Bearer",

In = ParameterLocation.Header,

},

new List<string>()

}

});

});

builder.Services.AddDbContext<DataContext>(x => x.UseSqlServer("name=DockerConnection"));

1. Probamos y hacemos el **commit**.

## Mejorando el registro de usuarios con drop-down-lists en cascada

1. Creamos el método **GetCombo** en el **CountriesController**:

[AllowAnonymous]

[HttpGet("combo")]

public async Task<ActionResult> GetCombo()

{

return Ok(await \_context.Countries.ToListAsync());

}

1. Creamos el método **GetCombo** en el **StatesController**:

[AllowAnonymous]

[HttpGet("combo/{countryId:int}")]

public async Task<ActionResult> GetCombo(int countryId)

{

return Ok(await \_context.States

.Where(x => x.CountryId == countryId)

.ToListAsync());

}

1. Creamos el método **GetCombo** en el **CitiesController**:

[AllowAnonymous]

[HttpGet("combo/{stateId:int}")]

public async Task<ActionResult> GetCombo(int stateId)

{

return Ok(await \_context.Cities

.Where(x => x.StateId == stateId)

.ToListAsync());

}

1. Modificamos el **Register.razor**:

…

<div class="col-6">

Eliminamos todo el <Div> de Ciudad, y copiamos el siguiente código:

<div class="mb-3">

<label>País:</label>

<div>

<select class="form-select" @onchange="CountryChangedAsync">

<option value="0">-- Seleccione un país --</option>

@if (countries is not null)

{

@foreach (var country in countries)

{

<option value="@country.Id">@country.Name</option>

}

}

</select>

</div>

</div>

<div class="mb-3">

<label>Estado/Departamento:</label>

<div>

<select class="form-select" @onchange="StateChangedAsync">

<option value="0">-- Seleccione un estado/departamento --</option>

@if (states is not null)

{

@foreach (var state in states)

{

<option value="@state.Id">@state.Name</option>

}

}

</select>

</div>

</div>

<div class="mb-3">

<label>Ciudad:</label>

<div>

<select class="form-select" @bind="userDTO.CityId">

<option value="0">-- Seleccione una ciudad --</option>

@if (cities is not null)

{

@foreach (var city in cities)

{

<option value="@city.Id">@city.Name</option>

}

}

</select>

<ValidationMessage For="@(() => userDTO.CityId)" />

</div>

</div>

<div class="mb-3">

<label>Foto:</label>

…

@code {

private UserDTO userDTO = new();

private List<Country>? countries;

private List<State>? states;

private List<City>? cities;

protected override async Task OnInitializedAsync()

{

await LoadCountriesAsync();

}

private async Task CountryChangedAsync(ChangeEventArgs e)

{

var selectedCountry = Convert.ToInt32(e.Value!);

await LoadStatesAsyn(selectedCountry);

}

private async Task StateChangedAsync(ChangeEventArgs e)

{

var selectedState = Convert.ToInt32(e.Value!);

await LoadCitiesAsyn(selectedState);

}

private async Task LoadCountriesAsync()

{

var responseHttp = await repository.Get<List<Country>>("/api/countries/combo");

if (responseHttp.Error)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

countries = responseHttp.Response;

}

private async Task LoadStatesAsyn(int countryId)

{

var responseHttp = await repository.Get<List<State>>($"/api/states/combo/{countryId}");

if (responseHttp.Error)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

states = responseHttp.Response;

}

private async Task LoadCitiesAsyn(int stateId)

{

var responseHttp = await repository.Get<List<City>>($"/api/cities/combo/{stateId}");

if (responseHttp.Error)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

cities = responseHttp.Response;

}

private async Task CreateUserAsync()

…

1. Probamos y hacemos el **commit**.

## Mejorando un poco la interfaz de usuario

1. Primero vamos a agregar estas líneas al final de nuestro **app.css**:

.spinner {

border: 16px solid silver;

border-top: 16px solid #337AB7;

border-radius: 50%;

width: 80px;

height: 80px;

animation: spin 700ms linear infinite;

top: 40%;

left: 55%;

position: absolute;

}

@keyframes spin {

0% {

transform: rotate(0deg)

}

100% {

transform: rotate(360deg)

}

}

1. Luego modificamos nuestro **CountriesIndex**:

…

@if (Countries is null)

{

<div class="spinner"/>

}

else

{

<GenericList MyList="Countries">

<div class="card">

<div class="card-header">

<span>

<i class="oi oi-globe"></i> Países

<a class="btn btn-sm btn-primary float-end" href="/countries/create"><i class="oi oi-plus"></i> Adicionar País</a>

</span>

</div>

<div class="card-body">

<div class="mb-2" style="display: flex; flex-wrap:wrap; align-items: center;">

<div>

<input style="width: 400px;" type="text" class="form-control" id="titulo" placeholder="Buscar país..." @bind-value="Filter" />

</div>

<div class="mx-1">

<button type="button" class="btn btn-outline-primary" @onclick="ApplyFilterAsync"><i class="oi oi-layers" /> Filtrar</button>

<button type="button" class="btn btn-outline-danger" @onclick="CleanFilterAsync"><i class="oi oi-ban" /> Limpiar</button>

</div>

</div>

<Pagination CurrentPage="currentPage"

TotalPages="totalPages"

SelectedPage="SelectedPage" />

<table class="table table-striped">

<thead>

<tr>

<th>País</th>

<th style="width:220px">Departamentos / Estados</th>

<th style="width:310px"></th>

</tr>

</thead>

<tbody>

@foreach (var country in Countries!)

{

<tr>

<td>

@country.Name

</td>

<td>

@country.StatesNumber

</td>

<td>

<a href="/countries/details/@country.Id" class="btn btn-info btn-sm"><i class="oi oi-list" /> Detalles</a>

<a href="/countries/edit/@country.Id" class="btn btn-warning btn-sm"><i class="oi oi-pencil" /> Editar</a>

<button class="btn btn-danger btn-sm" @onclick=@(() => DeleteAsync(country))><i class="oi oi-trash" /> Borrar</button>

</td>

</tr>

}

</tbody>

</table>

</div>

</div>

</GenericList>

}

…

## Lista de íconos para usar:

<https://kordamp.org/ikonli/cheat-sheet-openiconic.html>

1. Este es un ejemplo de cómo puede quedar la página de **Register**:

<EditForm Model="userDTO" OnValidSubmit="CreateUserAsync">

<DataAnnotationsValidator />

<div class="card">

<div class="card-header">

<span>

<i class="oi oi-person" /> Registrar Nuevo Usuario

<button class="btn btn-sm btn-primary float-end" type="submit"><i class="oi oi-check" /> Registrar</button>

</span>

</div>

<div class="card-body">

<div class="row">

<div class="col-6">

<div class="mb-3">

<label>Nombres:</label>

<div>

<InputText class="form-control" @bind-Value="@userDTO.FirstName" />

<ValidationMessage For="@(() => userDTO.FirstName)" />

</div>

</div>

<div class="mb-3">

<label>Apellidos:</label>

<div>

<InputText class="form-control" @bind-Value="@userDTO.LastName" />

<ValidationMessage For="@(() => userDTO.LastName)" />

</div>

</div>

<div class="mb-3">

<label>Documento:</label>

<div>

<InputText class="form-control" @bind-Value="@userDTO.Document" />

<ValidationMessage For="@(() => userDTO.Document)" />

</div>

</div>

<div class="mb-3">

<label>Teléfono:</label>

<div>

<InputText class="form-control" @bind-Value="@userDTO.PhoneNumber" />

<ValidationMessage For="@(() => userDTO.PhoneNumber)" />

</div>

</div>

<div class="mb-3">

<label>Dirección:</label>

<div>

<InputText class="form-control" @bind-Value="@userDTO.Address" />

<ValidationMessage For="@(() => userDTO.Address)" />

</div>

</div>

<div class="mb-3">

<label>Email:</label>

<div>

<InputText class="form-control" @bind-Value="@userDTO.Email" />

<ValidationMessage For="@(() => userDTO.Email)" />

</div>

</div>

</div>

<div class="col-6">

<div class="mb-3">

<label>País:</label>

<div>

<select class="form-select" @onchange="CountryChangedAsync">

<option value="0">-- Seleccione un país --</option>

@if (countries is not null)

{

@foreach (var country in countries)

{

<option value="@country.Id">@country.Name</option>

}

}

</select>

</div>

</div>

<div class="mb-3">

<label>Estado/Departamento:</label>

<div>

<select class="form-select" @onchange="StateChangedAsync">

<option value="0">-- Seleccione un estado/departamento --</option>

@if (states is not null)

{

@foreach (var state in states)

{

<option value="@state.Id">@state.Name</option>

}

}

</select>

</div>

</div>

<div class="mb-3">

<label>Ciudad:</label>

<div>

<select class="form-select" @bind="userDTO.CityId">

<option value="0">-- Seleccione una ciudad --</option>

@if (cities is not null)

{

@foreach (var city in cities)

{

<option value="@city.Id">@city.Name</option>

}

}

</select>

<ValidationMessage For="@(() => userDTO.CityId)" />

</div>

</div>

<div class="mb-3">

<label>Foto:</label>

<div>

<InputText class="form-control" @bind-Value="@userDTO.Photo" />

<ValidationMessage For="@(() => userDTO.Photo)" />

</div>

</div>

<div class="mb-3">

<label>Contraseña:</label>

<div>

<InputText type="password" class="form-control" @bind-Value="@userDTO.Password" />

<ValidationMessage For="@(() => userDTO.Password)" />

</div>

</div>

<div class="mb-3">

<label>Confirmación de contraseña:</label>

<div>

<InputText type="password" class="form-control" @bind-Value="@userDTO.PasswordConfirm" />

<ValidationMessage For="@(() => userDTO.PasswordConfirm)" />

</div>

</div>

</div>

</div>

</div>

</div>

</EditForm>

1. Y este es un ejemplo de como puede quedar la página de **Login**:

@page "/Login"

@inject IRepository repository

@inject SweetAlertService sweetAlertService

@inject NavigationManager navigationManager

@inject ILoginService loginService

<div class="row">

<div class="col-md-4 offset-md-4">

<EditForm Model="loginDTO" OnValidSubmit="LoginAsync">

<DataAnnotationsValidator />

<div class="card bg-light">

<div class="card-header justify-content-center">

<span>

<i class="oi oi-account-login" /> Iniciar Sesión

<button class="btn btn-sm btn-primary float-end" type="submit"><i class="oi oi-check" /> Iniciar Sesión</button>

</span>

</div>

<div class="card-body">

<div class="mb-3">

<label>Email:</label>

<div>

<InputText class="form-control" @bind-Value="@loginDTO.Email" />

<ValidationMessage For="@(() => loginDTO.Email)" />

</div>

</div>

<div class="card-body">

<label>Contraseña:</label>

<div>

<InputText type="password" class="form-control" @bind-Value="@loginDTO.Password" />

<ValidationMessage For="@(() => loginDTO.Password)" />

</div>

</div>

</div>

</div>

</EditForm>

</div>

</div>

1. También cambiemos todos los **<p>Cargando…</p>** por **<div class="spinner" />**
2. Hacemos el **commit**.

## ´Almacenando la foto del usuario

1. Creamos el componente genérico **InputImg.razor**:

<div>

<label>@Label</label>

<div>

<InputFile OnChange="OnChange" accept=".jpg,.jpeg,.png" />

</div>

</div>

<div>

@if (imageBase64 is not null)

{

<div>

<div style="margin: 10px">

<img src="data:image/jpeg;base64, @imageBase64" style="width:400px" />

</div>

</div>

}

@if (ImageURL is not null)

{

<div>

<div style="margin: 10px">

<img src="@ImageURL" style="width:400px" />

</div>

</div>

}

</div>

@code {

[Parameter] public string Label { get; set; } = "Imagen";

[Parameter] public string? ImageURL { get; set; }

[Parameter] public EventCallback<string> ImageSelected { get; set; }

private string? imageBase64;

async Task OnChange(InputFileChangeEventArgs e)

{

var imagenes = e.GetMultipleFiles();

foreach (var imagen in imagenes)

{

var arrBytes = new byte[imagen.Size];

await imagen.OpenReadStream().ReadAsync(arrBytes);

imageBase64 = Convert.ToBase64String(arrBytes);

ImageURL = null;

await ImageSelected.InvokeAsync(imageBase64);

StateHasChanged();

}

}

}

1. Modificamos nuestra página de **Register.razor**:

@using Market.WEB.Shared;

…

<div class="mb-3">

<label>Confirmación de contraseña:</label>

<div>

<InputText type="password" class="form-control" @bind-Value="@userDTO.PasswordConfirm" />

<ValidationMessage For="@(() => userDTO.PasswordConfirm)" />

</div>

</div>

<div class="mb-3">

<InputImg Label="Foto" ImageSelected="ImageSelected" ImageURL="@imageUrl" />

</div>

</div>

</div>

</div>

</div>

</EditForm>

@code {

private UserDTO userDTO = new();

private List<Country>? countries;

private List<State>? states;

private List<City>? cities;

private bool loading;

private string? imageUrl;

protected override async Task OnInitializedAsync()

{

await LoadCountriesAsync();

if (!string.IsNullOrEmpty(userDTO.Photo))

{

imageUrl = userDTO.Photo;

userDTO.Photo = null;

}

}

private void ImageSelected(string imagenBase64)

{

userDTO.Photo = imagenBase64;

imageUrl = null;

}

…

1. Probamos lo que llevamos hasta el momento.
2. Ahora vamos a crear el **blob** en **Azure**:

Interfaz de usuario gráfica, Texto, Aplicación, Correo electrónico

Descripción generada automáticamente

1. Y luego creamos los contenedores para **users** y **products**:

Interfaz de usuario gráfica, Texto, Aplicación

Descripción generada automáticamente

1. Luego que termine oprimimos el botón **GO TO RESOURCE**, luego buscamos en el menú lateral izquierdo Access Key y copiamos el Connection String que necesitamos para acceder a nuestro blob storage, en mi caso es:

Interfaz de usuario gráfica, Texto, Aplicación, Correo electrónico

Descripción generada automáticamente

DefaultEndpointsProtocol=https;AccountName=Market;AccountKey=JLhN0MRAddCMbjk0a+uQDg0E4pz7mRuva/9hsVGfVurU4DdUV1ILMyRJEeh5Npfl8kyZjpko65WQ+AStqqBcFw==;EndpointSuffix=core.windows.net

1. Agregamos ese connection string en el **appsettings** de nuestro proyecto **API**:

"ConnectionStrings": {

"DefaultConnection": "Server= OALARCON;Database=Market;Encrypt=False;User Id=dba;Password=Abcd1234\*;"

"AzureStorage": "DefaultEndpointsProtocol=https;AccountName=Market;AccountKey=JLhN0MRAddCMbjk0a+uQDg0E4pz7mRuva/9hsVGfVurU4DdUV1ILMyRJEeh5Npfl8kyZjpko65WQ+AStqqBcFw==;EndpointSuffix=core.windows.net"

},

1. En el proyecto **API** en la carpeta **Helpers** creamos la interfaz **IFileStorage**:

namespace Market.API.Helpers

{

public interface IFileStorage

{

Task<string> SaveFileAsync(byte[] content, string extention, string containerName);

Task RemoveFileAsync(string path, string nombreContenedor);

async Task<string> EditFileAsync(byte[] content, string extention, string containerName, string path)

{

if (path is not null)

{

await RemoveFileAsync(path, containerName);

}

return await SaveFileAsync(content, extention, containerName);

}

}

}

1. En la misma carpeta creamos la implementation **FileStorage**:

Instalamos el nugget llamado Azure.Storage,Blobs en el proyecto API

using Azure.Storage.Blobs;

using Azure.Storage.Blobs.Models;

namespace Market.API.Helpers

{

public class FileStorage : IFileStorage

{

private readonly string connectionString;

public FileStorage(IConfiguration configuration)

{

connectionString = configuration.GetConnectionString("AzureStorage")!;

}

public async Task RemoveFileAsync(string path, string containerName)

{

var client = new BlobContainerClient(connectionString, containerName);

await client.CreateIfNotExistsAsync();

var fileName = Path.GetFileName(path);

var blob = client.GetBlobClient(fileName);

await blob.DeleteIfExistsAsync();

}

public async Task<string> SaveFileAsync(byte[] content, string extention, string containerName)

{

var client = new BlobContainerClient(connectionString, containerName);

await client.CreateIfNotExistsAsync();

client.SetAccessPolicy(PublicAccessType.Blob);

var fileName = $"{Guid.NewGuid()}{extention}";

var blob = client.GetBlobClient(fileName);

using (var ms = new MemoryStream(content))

{

await blob.UploadAsync(ms);

}

return blob.Uri.ToString();

}

}

}

1. Configuramos la nueva inyección en el **Program** del **API**:

builder.Services.AddScoped<IUserHelper, UserHelper>();

builder.Services.AddScoped<IFileStorage, FileStorage>();

1. Modificamos el **AccountsController**:

[ApiController]

[Route("/api/accounts")]

public class AccountsController : ControllerBase

{

private readonly IUserHelper \_userHelper;

private readonly IConfiguration \_configuration;

private readonly IFileStorage \_fileStorage;

private readonly string \_container;

public AccountsController(IUserHelper userHelper, IConfiguration configuration, IFileStorage fileStorage)

{

\_userHelper = userHelper;

\_configuration = configuration;

\_fileStorage = fileStorage;

\_container = "users";

}

[HttpPost("CreateUser")]

public async Task<ActionResult> CreateUser([FromBody] UserDTO model)

{

User user = model;

if(!string.IsNullOrEmpty(model.Photo))

{

var photoUser = Convert.FromBase64String(model.Photo);

model.Photo = await \_fileStorage.SaveFileAsync(photoUser, ".jpg", \_container);

}

var result = await \_userHelper.AddUserAsync(user, model.Password);

if (result.Succeeded)

{

await \_userHelper.AddUserToRoleAsync(user, user.UserType.ToString());

return Ok(BuildToken(user));

}

return BadRequest(result.Errors.FirstOrDefault());

}

1. Modificamos el **AuthLinks.razor**:

<AuthorizeView>

<Authorized>

<span>Hola, @context.User.Identity!.Name</span>

@if (!string.IsNullOrEmpty(photoUser))

{

<div class="mx-2">

<img src="@photoUser" width="50" height="50" style="border-radius:50%" />

</div>

}

<a href="Logout" class="nav-link btn btn-link">Cerrar Sesión</a>

</Authorized>

<NotAuthorized>

<a href="Register" class="nav-link btn btn-link">Registro</a>

<a href="Login" class="nav-link btn btn-link">Iniciar Sesión</a>

</NotAuthorized>

</AuthorizeView>

@code {

private string? photoUser;

[CascadingParameter]

private Task<AuthenticationState> authenticationStateTask { get; set; } = null!;

protected async override Task OnParametersSetAsync()

{

var authenticationState = await authenticationStateTask;

var claims = authenticationState.User.Claims.ToList();

var photoClaim = claims.FirstOrDefault(x => x.Type == "Photo");

if (photoClaim is not null)

{

photoUser = photoClaim.Value;

}

}

}

1. Probamos y hacemos el **commit**.

## Editando el usuario

1. A la interfaz **IUserHelper** le adicionamos los siguientes métodos:

Task<IdentityResult> ChangePasswordAsync(User user, string currentPassword, string newPassword);

Task<IdentityResult> UpdateUserAsync(User user);

Task<User> GetUserAsync(Guid userId);

1. Implementamos los nuevos métodos en el **UserHelper**:

public async Task<User> GetUserAsync(string email)

{

var user = await \_context.Users

.Include(u => u.City!)

.ThenInclude(c => c.State!)

.ThenInclude(s => s.Country!)

.FirstOrDefaultAsync(x => x.Email == email);

return user!;

}

public async Task<User> GetUserAsync(Guid userId)

{

var user = await \_context.Users

.Include(u => u.City!)

.ThenInclude(c => c.State!)

.ThenInclude(s => s.Country!)

.FirstOrDefaultAsync(x => x.Id == userId.ToString());

return user!;

}

public async Task<IdentityResult> ChangePasswordAsync(User user, string currentPassword, string newPassword)

{

return await \_userManager.ChangePasswordAsync(user, currentPassword, newPassword);

}

public async Task<IdentityResult> UpdateUserAsync(User user)

{

return await \_userManager.UpdateAsync(user);

}

1. Creamos estos métodos en el **AccountsController**:

[HttpPut]

[Authorize(AuthenticationSchemes = JwtBearerDefaults.AuthenticationScheme)]

public async Task<ActionResult> Put(User user)

{

try

{

if (!string.IsNullOrEmpty(user.Photo))

{

var photoUser = Convert.FromBase64String(user.Photo);

user.Photo = await \_fileStorage.SaveFileAsync(photoUser, ".jpg", \_container);

}

var currentUser = await \_userHelper.GetUserAsync(user.Email!);

if (currentUser == null)

{

return NotFound();

}

currentUser.Document = user.Document;

currentUser.FirstName = user.FirstName;

currentUser.LastName = user.LastName;

currentUser.Address = user.Address;

currentUser.PhoneNumber = user.PhoneNumber;

currentUser.Photo = !string.IsNullOrEmpty(user.Photo) && user.Photo != currentUser.Photo ? user.Photo : currentUser.Photo;

currentUser.CityId = user.CityId;

var result = await \_userHelper.UpdateUserAsync(currentUser);

if (result.Succeeded)

{

return NoContent();

}

return BadRequest(result.Errors.FirstOrDefault());

}

catch (Exception ex)

{

return BadRequest(ex.Message);

}

}

[HttpGet]

[Authorize(AuthenticationSchemes = JwtBearerDefaults.AuthenticationScheme)]

public async Task<ActionResult> Get()

{

return Ok(await \_userHelper.GetUserAsync(User.Identity!.Name!));

}

1. Modificamos el **AuthLinks**:

<Authorized>

Hola, <a href="EditUser" class="nav-link btn btn-link">@context.User.Identity!.Name</a>

@if (!string.IsNullOrEmpty(photoUser))

{

<div class="mx-2">

<img src="@photoUser" width="50" height="50" style="border-radius:50%" />

</div>

}

<a href="Logout" class="nav-link btn btn-link">Cerrar Sesión</a>

</Authorized>

1. Creamos el **EditUser.razor**:

@page "/EditUser"

@using CurrieTechnologies.Razor.SweetAlert2;

@using Market.Shared.Entities;

@using Market.WEB.Auth;

@using Market.WEB.Repositories;

@inject IRepository repository

@inject SweetAlertService sweetAlertService

@inject NavigationManager navigationManager

@inject ILoginService loginService

@if (user is null)

{

<div class="spinner" />

}

else

{

<EditForm Model="user" OnValidSubmit="SaveUserAsync">

<DataAnnotationsValidator />

<div class="card">

<div class="card-header">

<span>

<i class="oi oi-person" /> Editar Usuario

<a class="btn btn-sm btn-secondary float-end" href="/changePassword"><i class="oi oi-key" /> Cambiar Contraseña</a>

<button class="btn btn-sm btn-primary float-end mx-2" type="submit"><i class="oi oi-check" /> Guardar Cambios</button>

</span>

</div>

<div class="card-body">

<div class="row">

<div class="col-6">

<div class="mb-3">

<label>Nombres:</label>

<div>

<InputText class="form-control" @bind-Value="@user.FirstName" />

<ValidationMessage For="@(() => user.FirstName)" />

</div>

</div>

<div class="mb-3">

<label>Apellidos:</label>

<div>

<InputText class="form-control" @bind-Value="@user.LastName" />

<ValidationMessage For="@(() => user.LastName)" />

</div>

</div>

<div class="mb-3">

<label>Documento:</label>

<div>

<InputText class="form-control" @bind-Value="@user.Document" />

<ValidationMessage For="@(() => user.Document)" />

</div>

</div>

<div class="mb-3">

<label>Teléfono:</label>

<div>

<InputText class="form-control" @bind-Value="@user.PhoneNumber" />

<ValidationMessage For="@(() => user.PhoneNumber)" />

</div>

</div>

<div class="mb-3">

<label>Dirección:</label>

<div>

<InputText class="form-control" @bind-Value="@user.Address" />

<ValidationMessage For="@(() => user.Address)" />

</div>

</div>

</div>

<div class="col-6">

<div class="mb-3">

<label>País:</label>

<div>

<select class="form-select" @onchange="CountryChangedAsync">

<option value="0">-- Seleccione un país --</option>

@if (countries is not null)

{

@foreach (var country in countries)

{

<option value="@country.Id" selected="@(country.Id == user.City!.State!.Country!.Id)">@country.Name</option>

}

}

</select>

</div>

</div>

<div class="mb-3">

<label>Estado/Departamento:</label>

<div>

<select class="form-select" @onchange="StateChangedAsync">

<option value="0">-- Seleccione un estado/departamento --</option>

@if (states is not null)

{

@foreach (var state in states)

{

<option value="@state.Id" selected="@(state.Id == user.City!.State!.Id)">@state.Name</option>

}

}

</select>

</div>

</div>

<div class="mb-3">

<label>Ciudad:</label>

<div>

<select class="form-select" @bind="user.CityId">

<option value="0">-- Seleccione una ciudad --</option>

@if (cities is not null)

{

@foreach (var city in cities)

{

<option value="@city.Id" selected="@(city.Id == user.City!.Id)">@city.Name</option>

}

}

</select>

<ValidationMessage For="@(() => user.CityId)" />

</div>

</div>

<div class="mb-3">

<InputImg Label="Foto" ImageSelected="ImageSelected" ImageURL="@imageUrl" />

</div>

</div>

</div>

</div>

</div>

</EditForm>

}

@code {

private User? user;

private List<Country>? countries;

private List<State>? states;

private List<City>? cities;

private string? imageUrl;

protected override async Task OnInitializedAsync()

{

await LoadUserAsyc();

await LoadCountriesAsync();

await LoadStatesAsyn(user!.City!.State!.Country!.Id);

await LoadCitiesAsyn(user!.City!.State!.Id);

if (!string.IsNullOrEmpty(user!.Photo))

{

imageUrl = user.Photo;

user.Photo = null;

}

}

private async Task LoadUserAsyc()

{

var responseHTTP = await repository.Get<User>($"/api/accounts");

if (responseHTTP.Error)

{

if (responseHTTP.HttpResponseMessage.StatusCode == System.Net.HttpStatusCode.NotFound)

{

navigationManager.NavigateTo("/");

return;

}

var messageError = await responseHTTP.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", messageError, SweetAlertIcon.Error);

return;

}

user = responseHTTP.Response;

}

private void ImageSelected(string imagenBase64)

{

user!.Photo = imagenBase64;

imageUrl = null;

}

private async Task CountryChangedAsync(ChangeEventArgs e)

{

var selectedCountry = Convert.ToInt32(e.Value!);

await LoadStatesAsyn(selectedCountry);

}

private async Task StateChangedAsync(ChangeEventArgs e)

{

var selectedState = Convert.ToInt32(e.Value!);

await LoadCitiesAsyn(selectedState);

}

private async Task LoadCountriesAsync()

{

var responseHttp = await repository.Get<List<Country>>("/api/countries/combo");

if (responseHttp.Error)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

countries = responseHttp.Response;

}

private async Task LoadStatesAsyn(int countryId)

{

var responseHttp = await repository.Get<List<State>>($"/api/states/combo/{countryId}");

if (responseHttp.Error)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

states = responseHttp.Response;

}

private async Task LoadCitiesAsyn(int stateId)

{

var responseHttp = await repository.Get<List<City>>($"/api/cities/combo/{stateId}");

if (responseHttp.Error)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

cities = responseHttp.Response;

}

private async Task SaveUserAsync()

{

var responseHttp = await repository.Put<User>("/api/accounts", user!);

if (responseHttp.Error)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

navigationManager.NavigateTo("/");

}

}

1. Probamos.

## Cambiando password del usuario

1. Dentro de **Market.Shared.DTOs** creamos el **ChangePasswordDTO**:

using System.ComponentModel.DataAnnotations;

namespace Market.Shared.DTOs

{

public class ChangePasswordDTO

{

[DataType(DataType.Password)]

[Display(Name = "Contraseña actual")]

[StringLength(20, MinimumLength = 6, ErrorMessage = "El campo {0} debe tener entre {2} y {1} carácteres.")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public string CurrentPassword { get; set; } = null!;

[DataType(DataType.Password)]

[Display(Name = "Nueva contraseña")]

[StringLength(20, MinimumLength = 6, ErrorMessage = "El campo {0} debe tener entre {2} y {1} carácteres.")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public string NewPassword { get; set; } = null!;

[Compare("NewPassword", ErrorMessage = "La nueva contraseña y la confirmación no son iguales.")]

[DataType(DataType.Password)]

[Display(Name = "Confirmación nueva contraseña")]

[StringLength(20, MinimumLength = 6, ErrorMessage = "El campo {0} debe tener entre {2} y {1} carácteres.")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public string Confirm { get; set; } = null!;

}

}

1. En **Market.API.Controllers** en el controlador **AccountsController** adicionamos este método:

[HttpPost("changePassword")]

[Authorize(AuthenticationSchemes = JwtBearerDefaults.AuthenticationScheme)]

public async Task<ActionResult> ChangePasswordAsync(ChangePasswordDTO model)

{

if (!ModelState.IsValid)

{

return BadRequest(ModelState);

}

var user = await \_userHelper.GetUserAsync(User.Identity!.Name!);

if (user == null)

{

return NotFound();

}

var result = await \_userHelper.ChangePasswordAsync(user, model.CurrentPassword, model.NewPassword);

if (!result.Succeeded)

{

return BadRequest(result.Errors.FirstOrDefault().Description);

}

return NoContent();

}

1. Dentro de **Market.WEB.Pages**.**Auth** creamos el **ChangePassword.razor**:

@page "/changePassword"

@using Market.Shared.DTOs;

@inject IRepository repository

@inject SweetAlertService sweetAlertService

@inject NavigationManager navigationManager

@if (loading)

{

<div class="spinner" />

}

<div class="row">

<div class="col-6">

<EditForm Model="changePasswordDTO" OnValidSubmit="ChangePasswordAsync">

<DataAnnotationsValidator />

<div class="card">

<div class="card-header">

<span>

<i class="oi oi-key" /> Cambiar Contraseña

<a class="btn btn-sm btn-success float-end" href="/editUser"><i class="oi oi-arrow-thick-left" /> Regresar</a>

<button class="btn btn-sm btn-primary float-end mx-2" type="submit"><i class="oi oi-check" /> Guardar Cambios</button>

</span>

</div>

<div class="card-body">

<div class="mb-3">

<label>Contraseña actual:</label>

<div>

<InputText type="password" class="form-control" @bind-Value="@changePasswordDTO.CurrentPassword" />

<ValidationMessage For="@(() => changePasswordDTO.CurrentPassword)" />

</div>

</div>

<div class="mb-3">

<label>Nueva contraseña:</label>

<div>

<InputText type="password" class="form-control" @bind-Value="@changePasswordDTO.NewPassword" />

<ValidationMessage For="@(() => changePasswordDTO.CurrentPassword)" />

</div>

</div>

<div class="mb-3">

<label>Confirmación de nueva contraseña:</label>

<div>

<InputText type="password" class="form-control" @bind-Value="@changePasswordDTO.Confirm" />

<ValidationMessage For="@(() => changePasswordDTO.Confirm)" />

</div>

</div>

</div>

</div>

</EditForm>

</div>

</div>

@code {

private ChangePasswordDTO changePasswordDTO = new();

private bool loading;

private async Task ChangePasswordAsync()

{

loading = true;

var responseHttp = await repository.Post("/api/accounts/changePassword", changePasswordDTO);

if (responseHttp.Error)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

loading = false;

return;

}

loading = false;

navigationManager.NavigateTo("/editUser");

var toast = sweetAlertService.Mixin(new SweetAlertOptions

{

Toast = true,

Position = SweetAlertPosition.TopEnd,

ShowConfirmButton = true,

Timer = 5000

});

await toast.FireAsync(icon: SweetAlertIcon.Success, message: "Contraseña cambiada con éxito.");

}

}

1. Probamos y hacemos el **commit**.

## Confirmar el registro de usuarios

1. Cambiamos la configuración de usuarios en el **Program** del **API**:

builder.Services.AddIdentity<User, IdentityRole>(x =>

{

x.Tokens.AuthenticatorTokenProvider = TokenOptions.DefaultAuthenticatorProvider;

x.SignIn.RequireConfirmedEmail = true;

x.User.RequireUniqueEmail = true;

x.Password.RequireDigit = false;

x.Password.RequiredUniqueChars = 0;

x.Password.RequireLowercase = false;

x.Password.RequireNonAlphanumeric = false;

x.Password.RequireUppercase = false;

x.Lockout.DefaultLockoutTimeSpan = TimeSpan.FromMinutes(5);

x.Lockout.MaxFailedAccessAttempts = 3;

x.Lockout.AllowedForNewUsers = true;

})

.AddEntityFrameworkStores<DataContext>()

.AddDefaultTokenProviders();

1. Verificamos que la cuenta de Google tenga activa la verificación en dos pasos.

Interfaz de usuario gráfica, Texto, Aplicación, Correo electrónico

Descripción generada automáticamente

Debemos digitar en la lupa de la cuenta de Google lo siguiente: Contraseñas de aplicaciones, y generamos una nueva contraseña de aplicación, y le colocamos como nombre personalizado: Send Mail, copiamos la contraseña generada y la copiamos en el siguiente paso.

Interfaz de usuario gráfica, Texto, Aplicación

Descripción generada automáticamente

Interfaz de usuario gráfica, Texto, Aplicación, Correo electrónico

Descripción generada automáticamente

Interfaz de usuario gráfica, Texto, Aplicación, Correo electrónico

Descripción generada automáticamente

Interfaz de usuario gráfica, Texto, Aplicación, Correo electrónico

Descripción generada automáticamente

Interfaz de usuario gráfica, Aplicación

Descripción generada automáticamente

1. Adicionamos estos parámetros al Appsettings del **API**:

"Mail": {

"From": "Stores@gmail.com",

"Name": "Soporte Market",

"Smtp": "smtp.gmail.com",

"Port": 587,

"Password": "nniufszzppfuzhxe"

},

"UrlWEB": "localhost:7057"

}

**Nota**: reemplazar el 7057 por el puerto donde sale tu App WEB, y reemplazar el password por el generado de tu cuenta.

1. Adicionamos el nuget “**Mailkit**” al proyecto **API**:

Interfaz de usuario gráfica, Texto, Aplicación

Descripción generada automáticamente

1. En los **Helpers** del **API** adicionamos la interzar **IMailHelper**:

using Market.Shared.Responses;

public interface IMailHelper

{

Response SendMail(string toName, string toEmail, string subject, string body);

}

1. Luego agregamos la implementation **MailHelper**:

using MailKit.Net.Smtp;

using MimeKit;

using Market.Shared.Responses;

namespace Market.API.Helpers

{

public class MailHelper : IMailHelper

{

private readonly IConfiguration \_configuration;

public MailHelper(IConfiguration configuration)

{

\_configuration = configuration;

}

public Response SendMail(string toName, string toEmail, string subject, string body)

{

try

{

var from = \_configuration["Mail:From"];

var name = \_configuration["Mail:Name"];

var smtp = \_configuration["Mail:Smtp"];

var port = \_configuration["Mail:Port"];

var password = \_configuration["Mail:Password"];

var message = new MimeMessage();

message.From.Add(new MailboxAddress(name, from));

message.To.Add(new MailboxAddress(toName, toEmail));

message.Subject = subject;

BodyBuilder bodyBuilder = new BodyBuilder

{

HtmlBody = body

};

message.Body = bodyBuilder.ToMessageBody();

using (var client = new SmtpClient())

{

client.Connect(smtp, int.Parse(port!), false);

client.Authenticate(from, password);

client.Send(message);

client.Disconnect(true);

}

return new Response { IsSuccess = true };

}

catch (Exception ex)

{

return new Response

{

IsSuccess = false,

Message = ex.Message,

Result = ex

};

}

}

}

}

1. Configuramos la inyección del servicio:

builder.Services.AddScoped<IMailHelper, MailHelper>();

1. Add those methods to **IUserHelper**:

Task<string> GenerateEmailConfirmationTokenAsync(User user);

Task<IdentityResult> ConfirmEmailAsync(User user, string token);

Y la implementación en la clase UserHelper:

public async Task<string> GenerateEmailConfirmationTokenAsync(User user)

{

return await \_userManager.GenerateEmailConfirmationTokenAsync(user);

}

public async Task<IdentityResult> ConfirmEmailAsync(User user, string token)

{

return await \_userManager.ConfirmEmailAsync(user, token);

}

1. Modificamos el método **CreateUser** del controlador **AccountsController**

(primero inyectamos el **IMailHelper**):

private readonly IMailHelper \_mailHelper;

public AccountsController(IUserHelper userHelper, IConfiguration configuration, IFileStorage fileStorage,IMailHelper mailHelper)

{

\_userHelper = userHelper;

\_configuration = configuration;

\_fileStorage = fileStorage;

\_container = "users";

this.\_mailHelper = mailHelper;

}

[HttpPost("CreateUser")]

public async Task<ActionResult> CreateUser([FromBody] UserDTO model)

{

User user = model;

if (!string.IsNullOrEmpty(model.Photo))

{

var photoUser = Convert.FromBase64String(model.Photo);

model.Photo = await \_fileStorage.SaveFileAsync(photoUser, ".jpg", \_container);

}

var result = await \_userHelper.AddUserAsync(user, model.Password);

if (result.Succeeded)

{

await \_userHelper.AddUserToRoleAsync(user, user.UserType.ToString());

eliminamos las siguientes líneas:

return Ok(BuildToken(user));

}

return BadRequest(result.Errors.FirstOrDefault());

}

y las reemplazamos por el siguiente código

var myToken = await \_userHelper.GenerateEmailConfirmationTokenAsync(user);

var tokenLink = Url.Action("ConfirmEmail", "accounts", new

{

userid = user.Id,

token = myToken

}, HttpContext.Request.Scheme, \_configuration["UrlWEB"]);

var response = \_mailHelper.SendMail(user.FullName, user.Email!,

$"Markets- Confirmación de cuenta",

$"<h1>Market - Confirmación de cuenta</h1>" +

$"<p>Para habilitar el usuario, por favor hacer clic 'Confirmar Email':</p>" +

$"<b><a href ={tokenLink}>Confirmar Email</a></b>");

if (response.IsSuccess)

{

return NoContent();

}

return BadRequest(response.Message);

}

return BadRequest(result.Errors.FirstOrDefault());

}

1. Crear el método para confirmar el email en el **AccountsController**:

[HttpGet("ConfirmEmail")]

public async Task<ActionResult> ConfirmEmailAsync(string userId, string token)

{

token = token.Replace(" ", "+");

var user = await \_userHelper.GetUserAsync(new Guid(userId));

if (user == null)

{

return NotFound();

}

var result = await \_userHelper.ConfirmEmailAsync(user, token);

if (!result.Succeeded)

{

return BadRequest(result.Errors.FirstOrDefault());

}

return NoContent();

}

1. Modificamos el método **Login** en el **AccountsController**:

[HttpPost("Login")]

public async Task<ActionResult> Login([FromBody] LoginDTO model)

{

var result = await \_userHelper.LoginAsync(model);

if (result.Succeeded)

{

var user = await \_userHelper.GetUserAsync(model.Email);

return Ok(BuildToken(user));

}

if (result.IsLockedOut)

{

return BadRequest("Ha superado el máximo número de intentos, su cuenta está bloqueada, intente de nuevo en 5 minutos.");

}

if (result.IsNotAllowed)

{

return BadRequest("El usuario no ha sido habilitado, debes de seguir las instrucciones del correo enviado para poder habilitar el usuario.");

}

return BadRequest("Email o contraseña incorrectos.");

}

1. Agregamos este método al **IRepository del proyecto Web**:

Task<HttpResponseWrapper<object>> Get(string url);

1. Lo implementamos en el **Repository**:

public async Task<HttpResponseWrapper<object>> Get(string url)

{

var responseHTTP = await \_httpClient.GetAsync(url);

return new HttpResponseWrapper<object>(null, !responseHTTP.IsSuccessStatusCode, responseHTTP);

}

1. Dentro de **Pages/Auth** creamos la página **ConfirmEmail.razor**:

@page "/api/accounts/ConfirmEmail"

@inject IRepository repository

@inject SweetAlertService sweetAlertService

@inject NavigationManager navigationManager

<h3>Confirmación de email</h3>

<p>Presione el botón para confirmar su cuenta</p>

<button class="btn btn-primary" @onclick="ConfirmAccountAsync">Confirmar Cuenta</button>

@code {

private string? message;

[Parameter]

[SupplyParameterFromQuery]

public string UserId { get; set; } = "";

[Parameter]

[SupplyParameterFromQuery]

public string Token { get; set; } = "";

protected async Task ConfirmAccountAsync()

{

var responseHttp = await repository.Get($"/api/accounts/ConfirmEmail/?userId={UserId}&token={Token}");

if (responseHttp.Error)

{

message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

navigationManager.NavigateTo("/");

}

else

{

await sweetAlertService.FireAsync("Confirmación", "Gracias por confirmar su email, ahora puedes ingresar al sistema.", SweetAlertIcon.Info);

navigationManager.NavigateTo("/Login");

}

}

}

1. Borramos los usuarios de la base de datos.
2. Modificamos el alimentador de la base de datos:

private async Task<User> CheckUserAsync(string document, string firstName, string lastName, string email, string phone, string address, UserType userType)

{

var user = await \_userHelper.GetUserAsync(email);

if (user == null)

{

var city = await \_context.Cities.FirstOrDefaultAsync(x => x.Name == "Medellín");

if (city == null)

{

city = await \_context.Cities.FirstOrDefaultAsync();

}

user = new User

{

FirstName = firstName,

LastName = lastName,

Email = email,

UserName = email,

PhoneNumber = phone,

Address = address,

Document = document,

City = city,

UserType = userType,

};

await \_userHelper.AddUserAsync(user, "123456");

await \_userHelper.AddUserToRoleAsync(user, userType.ToString());

var token = await \_userHelper.GenerateEmailConfirmationTokenAsync(user);

await \_userHelper.ConfirmEmailAsync(user, token);

}

return user;

}

1. Modificamos el **Register.razor**:

private async Task CreteUserAsync()

{

loading = true;

userDTO.UserName = userDTO.Email;

userDTO.UserType = UserType.User;

var responseHttp = await repository.Post<UserDTO>("/api/accounts/CreateUser", userDTO);

if (responseHttp.Error)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

loading = false;

return;

}

loading = false;

await sweetAlertService.FireAsync("Confirmación", "Su cuenta ha sido creada con éxito. Se te ha enviado un correo electrónico con las instrucciones para activar tu usuario.", SweetAlertIcon.Info);

navigationManager.NavigateTo("/");

}

1. Probamos y hacemos el **commit**.

## Reenviar correo de confirmación

1. En **Market.Shared.DTOs** creamos la clase **EmailDTO**:

using System.ComponentModel.DataAnnotations;

namespace Market.Shared.DTOs

{

public class EmailDTO

{

[Display(Name = "Email")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

[EmailAddress(ErrorMessage = "Debes ingresar un correo válido.")]

public string Email { get; set; } = null!;

}

}

1. En el **API** creamos este método en el **AccountsController**:

[HttpPost("ResedToken")]

public async Task<ActionResult> ResedToken([FromBody] EmailDTO model)

{

User user = await \_userHelper.GetUserAsync(model.Email);

if (user == null)

{

return NotFound();

}

var myToken = await \_userHelper.GenerateEmailConfirmationTokenAsync(user);

var tokenLink = Url.Action("ConfirmEmail", "accounts", new

{

userid = user.Id,

token = myToken

}, HttpContext.Request.Scheme, \_configuration["UrlWEB"]);

var response = \_mailHelper.SendMail(user.FullName, user.Email!,

$"Markets- Confirmación de cuenta",

$"<h1>Market - Confirmación de cuenta</h1>" +

$"<p>Para habilitar el usuario, por favor hacer clic 'Confirmar Email':</p>" +

$"<b><a href ={tokenLink}>Confirmar Email</a></b>");

if (response.IsSuccess)

{

return NoContent();

}

return BadRequest(response.Message);

}

1. Modificamos nuestro **Login.razor**:

<div class="row">

<div class="col-md-4 offset-md-4">

<EditForm Model="loginDTO" OnValidSubmit="LoginAsync">

<DataAnnotationsValidator />

<div class="card bg-light">

<div class="card-header justify-content-center">

<span>

<i class="oi oi-account-login" /> Iniciar Sesión

<button class="btn btn-sm btn-primary float-end" type="submit"><i class="oi oi-check" /> Iniciar Sesión</button>

</span>

</div>

<div class="card-body">

<div class="mb-3">

<label>Email:</label>

<div>

<InputText class="form-control" @bind-Value="@loginDTO.Email" />

<ValidationMessage For="@(() => loginDTO.Email)" />

</div>

</div>

<div class="mb-3">

<label>Contraseña:</label>

<div>

<InputText type="password" class="form-control" @bind-Value="@loginDTO.Password" />

<ValidationMessage For="@(() => loginDTO.Password)" />

</div>

</div>

</div>

<div class="card-footer">

<a class="bbtn btn-link" href="/ResendToken">Reenviar correro de activación de cuenta</a>

</div>

</div>

</EditForm>

</div>

</div>

1. Dentro de **Pages/Auth** creamos el componente **ResendConfirmationEmailToken.razor**:

@page "/ResendToken"

@using Market.Shared.DTOs;

@inject IRepository repository

@inject SweetAlertService sweetAlertService

@inject NavigationManager navigationManager

@if (loading)

{

<div class="spinner" />

}

<div class="row">

<div class="col-6">

<EditForm Model="emailDTO" OnValidSubmit="ResendConfirmationEmailTokenAsync">

<DataAnnotationsValidator />

<div class="card">

<div class="card-header">

<span>

<i class="oi oi-key" /> Reenviar correo de confirmación de contraseña

<button class="btn btn-sm btn-primary float-end mx-2" type="submit"><i class="oi oi-loop-square" /> Reenviar</button>

</span>

</div>

<div class="card-body">

<div class="mb-3">

<label>Email:</label>

<div>

<InputText class="form-control" @bind-Value="@emailDTO.Email" />

<ValidationMessage For="@(() => emailDTO.Email)" />

</div>

</div>

</div>

</div>

</EditForm>

</div>

</div>

@code {

private EmailDTO emailDTO = new();

private bool loading;

private async Task ResendConfirmationEmailTokenAsync()

{

loading = true;

var responseHttp = await repository.Post("/api/accounts/ResedToken", emailDTO);

if (responseHttp.Error)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

loading = false;

return;

}

loading = false;

await sweetAlertService.FireAsync("Confirmación", "Se te ha enviado un correo electrónico con las instrucciones para activar tu usuario.", SweetAlertIcon.Info);

navigationManager.NavigateTo("/");

}

}

1. Probamos y hacemos el **commit**.

## Actualización de la foto del usuario luego de editar usuario

1. Modificamos el método **PUT** del **AccountsController**:

var result = await \_userHelper.UpdateUserAsync(currentUser);

if (result.Succeeded)

{

return Ok(BuildToken(currentUser));

}

1. Agregamos este método al **IRepository**, si ya está creado, no lo tocamos:

Task<HttpResponseWrapper<TResponse>> Put<T, TResponse>(string url, T model);

1. Y su implementación en el **Repository,** si ya está creado, no lo tocamos::

public async Task<HttpResponseWrapper<TResponse>> Put<T, TResponse>(string url, T model)

{

var messageJSON = JsonSerializer.Serialize(model);

var messageContent = new StringContent(messageJSON, Encoding.UTF8, "application/json");

var responseHttp = await \_httpClient.PutAsync(url, messageContent);

if (responseHttp.IsSuccessStatusCode)

{

var response = await UnserializeAnswer<TResponse>(responseHttp, \_jsonDefaultOptions);

return new HttpResponseWrapper<TResponse>(response, false, responseHttp);

}

return new HttpResponseWrapper<TResponse>(default, !responseHttp.IsSuccessStatusCode, responseHttp);

}

1. Modificamos el **EditUser**:

@using Market.Shared.DTOs;

private async Task SaveUserAsync()

{

var responseHttp = await repository.Put<User, TokenDTO>("/api/accounts", user!);

if (responseHttp.Error)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

await loginService.LoginAsync(responseHttp.Response!.Token);

navigationManager.NavigateTo("/");

}

1. Probamos y hacemos el **Commit**.

## Recuperación de contraseña

1. Modificamos el **Login.razor**:

<div class="card-footer">

<p><a class="bbtn btn-link" href="/ResendToken">Reenviar correro de activación de cuenta</a></p>

<p><a class="bbtn btn-link" href="/RecoverPassword">¿Has olvidado tu contraseña?</a></p>

</div>

1. Adicionamos en **Market.Shared.DTOs** la clase **ResetPasswordDTO**:

using System.ComponentModel.DataAnnotations;

namespace Market.Shared.DTOs

{

public class ResetPasswordDTO

{

[Display(Name = "Email")]

[EmailAddress(ErrorMessage = "Debes ingresar un correo válido.")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public string Email { get; set; } = null!;

[DataType(DataType.Password)]

[Display(Name = "Contraseña")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

[StringLength(20, MinimumLength = 6, ErrorMessage = "El campo {0} debe tener entre {2} y {1} carácteres.")]

public string Password { get; set; } = null!;

[Compare("Password", ErrorMessage = "La nueva contraseña y la confirmación no son iguales.")]

[DataType(DataType.Password)]

[Display(Name = "Confirmación de contraseña")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

[StringLength(20, MinimumLength = 6, ErrorMessage = "El campo {0} debe tener entre {2} y {1} carácteres.")]

public string ConfirmPassword { get; set; } = null!;

public string Token { get; set; } = null!;

}

}

1. Adicionamos estos métodos al **IUserHelper**:

Task<string> GeneratePasswordResetTokenAsync(User user);

Task<IdentityResult> ResetPasswordAsync(User user, string token, string password);

Y la implementación:

public async Task<string> GeneratePasswordResetTokenAsync(User user)

{

return await \_userManager.GeneratePasswordResetTokenAsync(user);

}

public async Task<IdentityResult> ResetPasswordAsync(User user, string token, string password)

{

return await \_userManager.ResetPasswordAsync(user, token, password);

}

1. Adicionamos estos métodos al **AccountController**:

[HttpPost("RecoverPassword")]

public async Task<ActionResult> RecoverPassword([FromBody] EmailDTO model)

{

User user = await \_userHelper.GetUserAsync(model.Email);

if (user == null)

{

return NotFound();

}

var myToken = await \_userHelper.GeneratePasswordResetTokenAsync(user);

var tokenLink = Url.Action("ResetPassword", "accounts", new

{

userid = user.Id,

token = myToken

}, HttpContext.Request.Scheme, \_configuration["UrlWEB"]);

var response = \_mailHelper.SendMail(user.FullName, user.Email!,

$"Market - Recuperación de contraseña",

$"<h1>Market - Recuperación de contraseña</h1>" +

$"<p>Para recuperar su contraseña, por favor hacer clic 'Recuperar Contraseña':</p>" +

$"<b><a href ={tokenLink}>Recuperar Contraseña</a></b>");

if (response.IsSuccess)

{

return NoContent();

}

return BadRequest(response.Message);

}

[HttpPost("ResetPassword")]

public async Task<ActionResult> ResetPassword([FromBody] ResetPasswordDTO model)

{

User user = await \_userHelper.GetUserAsync(model.Email);

if (user == null)

{

return NotFound();

}

var result = await \_userHelper.ResetPasswordAsync(user, model.Token, model.Password);

if (result.Succeeded)

{

return NoContent();

}

return BadRequest(result.Errors.FirstOrDefault()!.Description);

}

1. Dentro de **Pages/Auth** creamos el **RecoverPassword.razor**:

@using Market.Shared.DTOs;

@page "/RecoverPassword"

@inject IRepository repository

@inject SweetAlertService sweetAlertService

@inject NavigationManager navigationManager

@if (loading)

{

<div class="spinner" />

}

<div class="row">

<div class="col-6">

<EditForm Model="emailDTO" OnValidSubmit="SendRecoverPasswordEmailTokenAsync">

<DataAnnotationsValidator />

<div class="card">

<div class="card-header">

<span>

<i class="oi oi-key" /> Enviar email para recuperación de contraseña

<button class="btn btn-sm btn-primary float-end mx-2" type="submit"><i class="oi oi-loop-square" /> Enviar</button>

</span>

</div>

<div class="card-body">

<div class="mb-3">

<label>Email:</label>

<div>

<InputText class="form-control" @bind-Value="@emailDTO.Email" />

<ValidationMessage For="@(() => emailDTO.Email)" />

</div>

</div>

</div>

</div>

</EditForm>

</div>

</div>

@code {

private EmailDTO emailDTO = new();

private bool loading;

private async Task SendRecoverPasswordEmailTokenAsync()

{

loading = true;

var responseHttp = await repository.Post("/api/accounts/RecoverPassword", emailDTO);

if (responseHttp.Error)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

loading = false;

return;

}

loading = false;

await sweetAlertService.FireAsync("Confirmación", "Se te ha enviado un correo electrónico con las instrucciones para recuperar su contraseña.", SweetAlertIcon.Info);

navigationManager.NavigateTo("/");

}

}

1. Dentro de **Pages/Auth** creamos el **ResetPassword.razor**:

@using Market.Shared.DTOs;

@page "/api/accounts/ResetPassword"

@inject IRepository repository

@inject SweetAlertService sweetAlertService

@inject NavigationManager navigationManager

@if (loading)

{

<div class="spinner" />

}

<div class="row">

<div class="col-6">

<EditForm Model="resetPasswordDTO" OnValidSubmit="ChangePasswordAsync">

<DataAnnotationsValidator />

<div class="card">

<div class="card-header">

<span>

<i class="oi oi-key" /> Cambiar Contraseña

<button class="btn btn-sm btn-primary float-end mx-2" type="submit"><i class="oi oi-check" /> Cambiar Contrasña</button>

</span>

</div>

<div class="card-body">

<div class="mb-3">

<label>Email:</label>

<div>

<InputText class="form-control" @bind-Value="@resetPasswordDTO.Email" />

<ValidationMessage For="@(() => resetPasswordDTO.Email)" />

</div>

</div>

<div class="mb-3">

<label>Nueva contraseña:</label>

<div>

<InputText type="password" class="form-control" @bind-Value="@resetPasswordDTO.Password" />

<ValidationMessage For="@(() => resetPasswordDTO.Password)" />

</div>

</div>

<div class="mb-3">

<label>Confirmar contraseña:</label>

<div>

<InputText type="password" class="form-control" @bind-Value="@resetPasswordDTO.ConfirmPassword" />

<ValidationMessage For="@(() => resetPasswordDTO.ConfirmPassword)" />

</div>

</div>

</div>

</div>

</EditForm>

</div>

</div>

@code {

private ResetPasswordDTO resetPasswordDTO = new();

private bool loading;

[Parameter]

[SupplyParameterFromQuery]

public string Token { get; set; } = "";

private async Task ChangePasswordAsync()

{

loading = true;

resetPasswordDTO.Token = Token;

var responseHttp = await repository.Post("/api/accounts/ResetPassword", resetPasswordDTO);

if (responseHttp.Error)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

loading = false;

return;

}

loading = false;

await sweetAlertService.FireAsync("Confirmación", "Contraseña cambiada con éxito, ahora puede ingresar con su nueva contraseña.", SweetAlertIcon.Info);

navigationManager.NavigateTo("/Login");

}

}

1. Probamos y hacemos el **commit**.

## Solución del problema de la paginación

1. Modificamos el componente de **Pagination**:

<nav>

<ul class="pagination">

@foreach (var link in Links)

{

<li @onclick=@(() => InternalSelectedPage(link)) style="cursor: pointer" class="page-item @(link.Enable ? null : "disabled") @(link.Enable ? "active" : null)">

<a class="page-link">@link.Text</a>

</li>

}

</ul>

</nav>

@code {

[Parameter] public int CurrentPage { get; set; } = 1;

[Parameter] public int TotalPages { get; set; }

[Parameter] public int Radio { get; set; } = 10;

[Parameter] public EventCallback<int> SelectedPage { get; set; }

List<PageModel> Links = new();

private async Task InternalSelectedPage(PageModel pageModel)

{

if (pageModel.Page == CurrentPage || pageModel.Page == 0)

{

return;

}

await SelectedPage.InvokeAsync(pageModel.Page);

}

protected override void OnParametersSet()

{

Links = new List<PageModel>();

var previousLinkEnable = CurrentPage != 1;

var previousLinkPage = CurrentPage - 1;

Links.Add(new PageModel

{

Text = "Anterior",

Page = previousLinkPage,

Enable = previousLinkEnable

});

for (int i = 1; i <= TotalPages; i++)

{

if (TotalPages <= Radio)

{

Links.Add(new PageModel

{

Page = i,

Enable = CurrentPage == i,

Text = $"{i}"

});

}

if (TotalPages > Radio && i <= Radio && CurrentPage <= Radio)

{

Links.Add(new PageModel

{

Page = i,

Enable = CurrentPage == i,

Text = $"{i}"

});

}

if (CurrentPage > Radio && i > CurrentPage - Radio && i <= CurrentPage)

{

Links.Add(new PageModel

{

Page = i,

Enable = CurrentPage == i,

Text = $"{i}"

});

}

}

var linkNextEnable = CurrentPage != TotalPages;

var linkNextPage = CurrentPage != TotalPages ? CurrentPage + 1 : CurrentPage;

Links.Add(new PageModel

{

Text = "Siguiente",

Page = linkNextPage,

Enable = linkNextEnable

});

}

class PageModel

{

public string Text { get; set; } = null!;

public int Page { get; set; }

public bool Enable { get; set; } = true;

public bool Active { get; set; } = false;

}

}

## CRUD de Categorías

1. En **Stores.Shared.Entities** adicionamos la entidad **Category**:

using System.ComponentModel.DataAnnotations;

namespace Stores.Shared.Entities

{

public class Category

{

public int Id { get; set; }

[Display(Name = "Categoría")]

[MaxLength(100, ErrorMessage = "El campo {0} debe tener máximo {1} caractéres.")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public string Name { get; set; } = null!;

}

}

1. Modificamos el **DataContext**:

public class DataContext : IdentityDbContext<User>

{

public DataContext(DbContextOptions<DataContext> options) : base(options)

{

}

public DbSet<Category> Categories { get; set; }

public DbSet<City> Cities { get; set; }

public DbSet<Country> Countries { get; set; }

public DbSet<State> States { get; set; }

protected override void OnModelCreating(ModelBuilder modelBuilder)

{

base.OnModelCreating(modelBuilder);

modelBuilder.Entity<Country>().HasIndex(x => x.Name).IsUnique();

modelBuilder.Entity<Category>().HasIndex(x => x.Name).IsUnique();

modelBuilder.Entity<State>().HasIndex("CountryId", "Name").IsUnique();

modelBuilder.Entity<City>().HasIndex("StateId", "Name").IsUnique();

}

}

1. Corremos los comandos para crear la nueva migración y aplicarla:

PM> add-migration AddCategories

PM> update-database

1. En **Market.API.Controllers** adicionamos el controlador **CategoriesController**:

using Microsoft.AspNetCore.Authentication.JwtBearer;

using Microsoft.AspNetCore.Authorization;

using Microsoft.AspNetCore.Mvc;

using Microsoft.EntityFrameworkCore;

using Market.API.Data;

using Market.API.Helpers;

using Market.Shared.DTOs;

using Market.Shared.Entities;

namespace Market.API.Controllers

{

[ApiController]

[Authorize(AuthenticationSchemes = JwtBearerDefaults.AuthenticationScheme)]

[Route("/api/categories")]

public class CategoiresController : ControllerBase

{

private readonly DataContext \_context;

public CategoiresController(DataContext context)

{

\_context = context;

}

[HttpGet]

public async Task<ActionResult> Get([FromQuery] PaginationDTO pagination)

{

var queryable = \_context.Categories

.AsQueryable();

if (!string.IsNullOrWhiteSpace(pagination.Filter))

{

queryable = queryable.Where(x => x.Name.ToLower().Contains(pagination.Filter.ToLower()));

}

return Ok(await queryable

.OrderBy(x => x.Name)

.Paginate(pagination)

.ToListAsync());

}

[HttpGet("totalPages")]

public async Task<ActionResult> GetPages([FromQuery] PaginationDTO pagination)

{

var queryable = \_context.Categories

.AsQueryable();

if (!string.IsNullOrWhiteSpace(pagination.Filter))

{

queryable = queryable.Where(x => x.Name.ToLower().Contains(pagination.Filter.ToLower()));

}

double count = await queryable.CountAsync();

double totalPages = Math.Ceiling(count / pagination.RecordsNumber);

return Ok(totalPages);

}

[HttpGet("{id:int}")]

public async Task<ActionResult> Get(int id)

{

var category = await \_context.Categories

.FirstOrDefaultAsync(x => x.Id == id);

if (category is null)

{

return NotFound();

}

return Ok(category);

}

[HttpPost]

public async Task<ActionResult> Post(Category category)

{

\_context.Add(category);

try

{

await \_context.SaveChangesAsync();

return Ok(category);

}

catch (DbUpdateException dbUpdateException)

{

if (dbUpdateException.InnerException!.Message.Contains("duplicate"))

{

return BadRequest("Ya existe un registro con el mismo nombre.");

}

else

{

return BadRequest(dbUpdateException.InnerException.Message);

}

}

catch (Exception exception)

{

return BadRequest(exception.Message);

}

}

[HttpPut]

public async Task<ActionResult> Put(Category category)

{

\_context.Update(category);

try

{

await \_context.SaveChangesAsync();

return Ok(category);

}

catch (DbUpdateException dbUpdateException)

{

if (dbUpdateException.InnerException!.Message.Contains("duplicate"))

{

return BadRequest("Ya existe un registro con el mismo nombre.");

}

else

{

return BadRequest(dbUpdateException.InnerException.Message);

}

}

catch (Exception exception)

{

return BadRequest(exception.Message);

}

}

[HttpDelete("{id:int}")]

public async Task<IActionResult> DeleteAsync(int id)

{

var category = await \_context.Categories.FirstOrDefaultAsync(x => x.Id == id);

if (category == null)

{

return NotFound();

}

\_context.Remove(category);

await \_context.SaveChangesAsync();

return NoContent();

}

}

}

1. Modificamos el **SeedDb**:

public async Task SeedAsync()

{

await \_context.Database.EnsureCreatedAsync();

await CheckCountriesAsync();

await CheckCategoriesAsync();

await CheckRolesAsync();

await CheckUserAsync("1010", "Orlando", "Alarcon", "oap@yopmail.com", "3001234568", "Calle 78 4424", UserType.Admin);

}

private async Task CheckCategoriesAsync()

{

if (!\_context.Categories.Any())

{

\_context.Categories.Add(new Category { Name = "Deportes" });

\_context.Categories.Add(new Category { Name = "Calzado" });

\_context.Categories.Add(new Category { Name = "Tecnología " });

\_context.Categories.Add(new Category { Name = "Lenceria" });

\_context.Categories.Add(new Category { Name = "Erótica" });

\_context.Categories.Add(new Category { Name = "Comida" });

\_context.Categories.Add(new Category { Name = "Ropa" });

\_context.Categories.Add(new Category { Name = "Jugetes" });

\_context.Categories.Add(new Category { Name = "Mascotas" });

\_context.Categories.Add(new Category { Name = "Autos" });

\_context.Categories.Add(new Category { Name = "Cosmeticos" });

\_context.Categories.Add(new Category { Name = "Hogar" });

\_context.Categories.Add(new Category { Name = "Jardín" });

\_context.Categories.Add(new Category { Name = "Ferreteria" });

\_context.Categories.Add(new Category { Name = "Video Juegos" });

await \_context.SaveChangesAsync();

}

}

1. En **Pages** creamos la carpeta **Categories** y dentro de esta agregamos el **CategoriesIndex.razor**:

@page "/categories"

@using Microsoft.AspNetCore.Authorization;

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

@attribute [Authorize(Roles = "Admin")]

@if (categories is null)

{

<div class="spinner" />

}

else

{

<GenericList MyList="categories">

<Body>

<div class="card">

<div class="card-header">

<span>

<i class="oi oi-list"></i> Castegorías

<a class="btn btn-sm btn-primary float-end" href="/categories/create"><i class="oi oi-plus"></i> Adicionar Categoría</a>

</span>

</div>

<div class="card-body">

<div class="mb-2" style="display: flex; flex-wrap:wrap; align-items: center;">

<div>

<input style="width: 400px;" type="text" class="form-control" id="titulo" placeholder="Buscar categoría..." @bind-value="Filter" />

</div>

<div class="mx-1">

<button type="button" class="btn btn-outline-primary" @onclick="ApplyFilterAsync"><i class="oi oi-layers" /> Filtrar</button>

<button type="button" class="btn btn-outline-danger" @onclick="CleanFilterAsync"><i class="oi oi-ban" /> Limpiar</button>

</div>

</div>

<Pagination CurrentPage="currentPage"

TotalPages="totalPages"

SelectedPage="SelectedPageAsync" />

<table class="table table-striped">

<thead>

<tr>

<th>Categoría</th>

<th style="width:200px"></th>

</tr>

</thead>

<tbody>

@foreach (var category in categories)

{

<tr>

<td>

@category.Name

</td>

<td>

<a href="/categories/edit/@category.Id" class="btn btn-warning"><i class="oi oi-pencil" /> Editar</a>

<button class="btn btn-danger" @onclick=@(() => Delete(category.Id))><i class="oi oi-trash" /> Borrar</button>

</td>

</tr>

}

</tbody>

</table>

</div>

</div>

</Body>

</GenericList>

}

@code {

public List<Category>? categories { get; set; }

private int currentPage = 1;

private int totalPages;

[Parameter]

[SupplyParameterFromQuery]

public string Page { get; set; } = "";

[Parameter]

[SupplyParameterFromQuery]

public string Filter { get; set; } = "";

protected async override Task OnInitializedAsync()

{

await LoadAsync();

}

private async Task SelectedPageAsync(int page)

{

currentPage = page;

await LoadAsync(page);

}

private async Task LoadAsync(int page = 1)

{

if (!string.IsNullOrWhiteSpace(Page))

{

page = Convert.ToInt32(Page);

}

string url1 = string.Empty;

string url2 = string.Empty;

if (string.IsNullOrEmpty(Filter))

{

url1 = $"api/categories?page={page}";

url2 = $"api/categories/totalPages";

}

else

{

url1 = $"api/categories?page={page}&filter={Filter}";

url2 = $"api/categories/totalPages?filter={Filter}";

}

try

{

var responseHppt = await repository.Get<List<Category>>(url1);

var responseHppt2 = await repository.Get<int>(url2);

categories = responseHppt.Response!;

totalPages = responseHppt2.Response!;

}

catch (Exception ex)

{

await sweetAlertService.FireAsync("Error", ex.Message, SweetAlertIcon.Error);

}

}

private async Task Delete(int categoryId)

{

var result = await sweetAlertService.FireAsync(new SweetAlertOptions

{

Title = "Confirmación",

Text = "¿Esta seguro que quieres borrar el registro?",

Icon = SweetAlertIcon.Question,

ShowCancelButton = true

});

var confirm = string.IsNullOrEmpty(result.Value);

if (confirm)

{

return;

}

var responseHTTP = await repository.Delete($"api/categories/{categoryId}");

if (responseHTTP.Error)

{

if (responseHTTP.HttpResponseMessage.StatusCode == System.Net.HttpStatusCode.NotFound)

{

navigationManager.NavigateTo("/");

}

else

{

var mensajeError = await responseHTTP.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", mensajeError, SweetAlertIcon.Error);

}

}

else

{

await LoadAsync();

}

}

private async Task CleanFilterAsync()

{

Filter = string.Empty;

await ApplyFilterAsync();

}

private async Task ApplyFilterAsync()

{

int page = 1;

await LoadAsync(page);

await SelectedPageAsync(page);

}

}

1. Modificamos el **NavMenu.razor**:

<AuthorizeView Roles="Admin">

<Authorized>

<div class="nav-item px-3">

<NavLink class="nav-link" href="categories">

<span class="oi oi-list" aria-hidden="true"></span> Categorías

</NavLink>

</div>

<div class="nav-item px-3">

<NavLink class="nav-link" href="countries">

<span class="oi oi-globe" aria-hidden="true"></span> Países

</NavLink>

</div>

</Authorized>

</AuthorizeView>

1. Probamos lo que llevamos hasta el momento.
2. Creamos el **CategoryForm**:

@inject SweetAlertService sweetAlertService

<NavigationLock OnBeforeInternalNavigation="OnBeforeInternalNavigation" />

<EditForm EditContext="editContext" OnValidSubmit="OnValidSubmit">

<DataAnnotationsValidator />

<div class="mb-3">

<label>Categoría:</label>

<div>

<InputText class="form-control" @bind-Value="@Category.Name" />

<ValidationMessage For="@(() => Category.Name)" />

</div>

</div>

<button class="btn btn-primary" type="submit">Guardar Cambios</button>

<button class="btn btn-success" @onclick="ReturnAction">Regresar</button>

</EditForm>

@code {

private EditContext editContext = null!;

[Parameter]

[EditorRequired]

public Category Category { get; set; } = null!;

[Parameter]

[EditorRequired]

public EventCallback OnValidSubmit { get; set; }

[Parameter]

[EditorRequired]

public EventCallback ReturnAction { get; set; }

public bool FormPostedSuccessfully { get; set; }

protected override void OnInitialized()

{

editContext = new(Category);

}

private async Task OnBeforeInternalNavigation(LocationChangingContext context)

{

var formWasMofied = editContext.IsModified();

if (!formWasMofied || FormPostedSuccessfully)

{

return;

}

var result = await sweetAlertService.FireAsync(new SweetAlertOptions

{

Title = "Confirmación",

Text = "¿Deseas abandonar la página y perder los cambios?",

Icon = SweetAlertIcon.Question,

ShowCancelButton = true,

CancelButtonText = "No",

ConfirmButtonText = "Si"

});

var confirm = !string.IsNullOrEmpty(result.Value);

if (confirm)

{

return;

}

context.PreventNavigation();

}

}

1. Creamos el **CategoryCreate**:

@page "/categories/create"

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

<h3>Crear categoría</h3>

<CategoryForm @ref="categoryForm" Category="category" OnValidSubmit="CreateAsync" ReturnAction="Return" />

@code {

private Category category = new();

private CategoryForm? categoryForm;

[Parameter]

public int StateId { get; set; }

private async Task CreateAsync()

{

var httpResponse = await repository.Post("/api/categories", category);

if (httpResponse.Error)

{

var message = await httpResponse.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

Return();

}

private void Return()

{

categoryForm!.FormPostedSuccessfully = true;

navigationManager.NavigateTo($"/categories");

}

}

1. Creamos el **CategoryEdit**:

@page "/categories/edit/{CategoryId:int}"

@using System.Net;

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

<h3>Editar categoría</h3>

@if (category is null)

{

<div class="spinner" />

}

else

{

<CategoryForm @ref="categoryForm" Category="category" OnValidSubmit="EditAsync" ReturnAction="Return" />

}

@code {

private Category? category;

private CategoryForm? categoryForm;

[Parameter]

public int CategoryId { get; set; }

protected override async Task OnInitializedAsync()

{

var responseHttp = await repository.Get<Category>($"/api/categories/{CategoryId}");

if (responseHttp.Error)

{

if (responseHttp.HttpResponseMessage.StatusCode == HttpStatusCode.NotFound)

{

navigationManager.NavigateTo("/categories");

return;

}

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

category = responseHttp.Response;

}

private async Task EditAsync()

{

var responseHttp = await repository.Put("/api/categories", category);

if (responseHttp.Error)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

Return();

}

private void Return()

{

categoryForm!.FormPostedSuccessfully = true;

navigationManager.NavigateTo($"/categories");

}

}

1. Probamos y hacemos el **commit**.

## Implementación de ventanas modales

Documentación oficial en:<https://blazored.github.io/Modal/>

1. Instalar el Nugget **Blazored.Modal** En Market.WEB
2. Lo inyectamos en el **Program** del proyecto **WEB**:

builder.Services.AddBlazoredModal();

1. Modificamos el **\_Imports.razor**:

@using Blazored.Modal

@using Blazored.Modal.Services

1. Modificamos el **App.razor**:

<CascadingBlazoredModal Position="ModalPosition.Middle" Size="ModalSize.Large" HideHeader="true" DisableBackgroundCancel="true" AnimationType="ModalAnimationType.FadeInOut">

<Router AppAssembly="@typeof(App).Assembly">

<Found Context="routeData">

<AuthorizeRouteView RouteData="@routeData" DefaultLayout="@typeof(MainLayout)">

<Authorizing>

<p>Autorizando...</p>

</Authorizing>

<NotAuthorized>

<p>No estas autorizado para ver este contenido...</p>

</NotAuthorized>

</AuthorizeRouteView>

<FocusOnNavigate RouteData="@routeData" Selector="h1" />

</Found>

<NotFound>

<CascadingAuthenticationState>

<PageTitle>No encontrado</PageTitle>

<LayoutView Layout="@typeof(MainLayout)">

<p role="alert">Lo sentimos no hay nada en esta ruta.</p>

</LayoutView>

</CascadingAuthenticationState>

</NotFound>

</Router>

</CascadingBlazoredModal>

1. Ejemplo con categorías, modificamos el **Categories.index**:

…

<a class="btn btn-sm btn-primary float-end" @onclick=@(() => ShowModal())><i class="oi oi-plus"></i> Adicionar Categoría</a>

…

<a @onclick=@(() => ShowModal(category.Id, true)) class="btn btn-warning"><i class="oi oi-pencil" /> Editar</a>

…

[CascadingParameter]

IModalService Modal { get; set; } = default!;

…

private async Task ShowModal(int id = 0, bool isEdit = false)

{

IModalReference modalReference;

if (isEdit)

{

modalReference = Modal.Show<CategoryEdit>(string.Empty, new ModalParameters().Add("CategoryId", id));

}

else

{

modalReference = Modal.Show<CategoryCreate>();

}

var result = await modalReference.Result;

if (result.Confirmed)

{

await LoadAsync();

}

}

…

1. Modificamos el **CategoriesEdit**:

…

[CascadingParameter]

BlazoredModalInstance BlazoredModal { get; set; } = default!;

…

private async Task EditAsync()

{

var responseHttp = await repository.Put("/api/categories", category);

if (responseHttp.Error)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

await BlazoredModal.CloseAsync(ModalResult.Ok());

Return();

}

…

1. Modificamos el **CategoriesCreate**:

…

[CascadingParameter]

BlazoredModalInstance BlazoredModal { get; set; } = default!;

…

private async Task CreateAsync()

{

var httpResponse = await repository.Post("/api/categories", category);

if (httpResponse.Error)

{

var message = await httpResponse.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

await BlazoredModal.CloseAsync(ModalResult.Ok());

Return();

}

…

1. Probamos (Corremos la App con Ctrl + F5) y hacemos el **commit**.

## Creando tablas de productos y listando productos

1. Creamos la entidad **Product**:

using Microsoft.EntityFrameworkCore.Metadata.Internal;

using System.ComponentModel.DataAnnotations;

using System.ComponentModel.DataAnnotations.Schema;

namespace Stores.Shared.Entities

{

public class Product

{

public int Id { get; set; }

[Display(Name = "Nombre")]

[MaxLength(50, ErrorMessage = "El campo {0} debe tener máximo {1} caractéres.")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public string Name { get; set; } = null!;

[DataType(DataType.MultilineText)]

[Display(Name = "Descripción")]

[MaxLength(500, ErrorMessage = "El campo {0} debe tener máximo {1} caractéres.")]

public string Description { get; set; } = null!;

[Column(TypeName = "decimal(18,2)")]

[DisplayFormat(DataFormatString = "{0:C2}")]

[Display(Name = "Precio")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public decimal Price { get; set; }

[DisplayFormat(DataFormatString = "{0:N2}")]

[Display(Name = "Inventario")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public float Stock { get; set; }

}

}

1. Creamos la entidad **ProductImage**:

using System.ComponentModel.DataAnnotations;

namespace Stores.Shared.Entities

{

public class ProductImage

{

public int Id { get; set; }

public Product Product { get; set; } = null!;

public int ProductId { get; set; }

[Display(Name = "Imagen")]

public string Image { get; set; } = null!;

}

}

1. Creamos la entidad **ProductCategory**:

namespace Stores.Shared.Entities

{

public class ProductCategory

{

public int Id { get; set; }

public Product Product { get; set; } = null!;

public int ProductId { get; set; }

public Category Category { get; set; } = null!;

public int CategoryId { get; set; }

}

}

1. Modificamos la entidad **Category**:

public class Category

{

public int Id { get; set; }

[Display(Name = "Categoría")]

[MaxLength(100, ErrorMessage = "El campo {0} debe tener máximo {1} caractéres.")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public string Name { get; set; } = null!;

public ICollection<ProductCategory>? ProductCategories { get; set; }

[Display(Name = "Productos")]

public int ProductCategoriesNumber => ProductCategories == null ? 0 : ProductCategories.Count;

}

1. Modificamos la entidad **Product**:

public class Product

{

public int Id { get; set; }

[Display(Name = "Nombre")]

[MaxLength(50, ErrorMessage = "El campo {0} debe tener máximo {1} caractéres.")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public string Name { get; set; } = null!;

[DataType(DataType.MultilineText)]

[Display(Name = "Descripción")]

[MaxLength(500, ErrorMessage = "El campo {0} debe tener máximo {1} caractéres.")]

public string Description { get; set; } = null!;

[Column(TypeName = "decimal(18,2)")]

[DisplayFormat(DataFormatString = "{0:C2}")]

[Display(Name = "Precio")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public decimal Price { get; set; }

[DisplayFormat(DataFormatString = "{0:N2}")]

[Display(Name = "Inventario")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public float Stock { get; set; }

public ICollection<ProductCategory>? ProductCategories { get; set; }

[Display(Name = "Categorías")]

public int ProductCategoriesNumber => ProductCategories == null ? 0 : ProductCategories.Count;

public ICollection<ProductImage>? ProductImages { get; set; }

[Display(Name = "Imágenes")]

public int ProductImagesNumber => ProductImages == null ? 0 : ProductImages.Count;

[Display(Name = "Imagén")]

public string MainImage => ProductImages == null ? string.Empty : ProductImages.FirstOrDefault()!.Image;

}

1. Modificamos el **DataContext**.

public class DataContext : IdentityDbContext<User>

{

public DataContext(DbContextOptions<DataContext> options) : base(options)

{

}

public DbSet<Category> Categories { get; set; }

public DbSet<City> Cities { get; set; }

public DbSet<Country> Countries { get; set; }

public DbSet<Product> Products { get; set; }

public DbSet<ProductCategory> ProductCategories { get; set; }

public DbSet<ProductImage> ProductImages { get; set; }

public DbSet<State> States { get; set; }

protected override void OnModelCreating(ModelBuilder modelBuilder)

{

base.OnModelCreating(modelBuilder);

modelBuilder.Entity<Country>().HasIndex(x => x.Name).IsUnique();

modelBuilder.Entity<Category>().HasIndex(x => x.Name).IsUnique();

modelBuilder.Entity<Product>().HasIndex(x => x.Name).IsUnique();

modelBuilder.Entity<State>().HasIndex("CountryId", "Name").IsUnique();

modelBuilder.Entity<City>().HasIndex("StateId", "Name").IsUnique();

}

}

1. Corremos los siguientes comandos para aplicar la migracion y correrla:

PM> add-migration AddProductsTables

PM> update-database

1. Dentro del proyecto **API** copiamos el folder **Images** ,el cual pueden descargar desde el Git, ProgramacionG1.
2. Borramos de la base de datos las **categorías** y **usuarios** que tengamos.
3. Modificamos el **SeedDb** para agregar registros a las nuevas tablas y de paso aprovechamos y creamos los usuarios con foto:

public class SeedDb

{

private readonly DataContext \_context;

private readonly IApiService \_apiService;

private readonly IUserHelper \_userHelper;

private readonly IFileStorage \_fileStorage;

public SeedDb(DataContext context, IApiService apiService, IUserHelper userHelper, IFileStorage fileStorage)

{

\_context = context;

\_apiService = apiService;

\_userHelper = userHelper;

\_fileStorage = fileStorage;

}

public async Task SeedAsync()

{

await \_context.Database.EnsureCreatedAsync();

await CheckCountriesAsync();

await CheckCategoriesAsync();

await CheckRolesAsync();

await CheckUserAsync("1010", "OAP", "Admin", "oap@yopmail.com", "305232456", "Lo que sera", "oap.jpg", UserType.Admin);

await CheckUserAsync("2020", "Adele", "A", "adele@yopmail.com", "304232456", "Lo que sea", "adele.jpg", UserType.User);

await CheckUserAsync("3030", "Brad", "Pitt", "brad@yopmail.com", "303232456", " Lo que sea ", "Brad.jpg", UserType.User);

await CheckUserAsync("4040", "Angelina", "Jolie", "angelina@yopmail.com", "302232456", " Lo que sea ", "Angelina.jpg", UserType.User);

await CheckUserAsync("5050", "Bob", "Marley", "bob@yopmail.com", "310232456", " Lo que sea ", "bob.jpg", UserType.User);

await CheckProductsAsync();

}

private async Task CheckProductsAsync()

{

if (!\_context.Products.Any())

{

await AddProductAsync("Adidas Barracuda", 270000M, 12F, new List<string>() { "Calzado", "Deportes" }, new List<string>() { "adidas\_barracuda.png" });

await AddProductAsync("Adidas Superstar", 250000M, 12F, new List<string>() { "Calzado", "Deportes" }, new List<string>() { "Adidas\_superstar.png" });

await AddProductAsync("AirPods", 1300000M, 12F, new List<string>() { "Tecnología", "Apple" }, new List<string>() { "airpos.png", "airpos2.png" });

await AddProductAsync("Audifonos Bose", 870000M, 12F, new List<string>() { "Tecnología" }, new List<string>() { "audifonos\_bose.png" });

await AddProductAsync("Bicicleta Ribble", 12000000M, 6F, new List<string>() { "Deportes" }, new List<string>() { "bicicleta\_ribble.png" });

await AddProductAsync("Camisa Cuadros", 56000M, 24F, new List<string>() { "Ropa" }, new List<string>() { "camisa\_cuadros.png" });

await AddProductAsync("Casco Bicicleta", 820000M, 12F, new List<string>() { "Deportes" }, new List<string>() { "casco\_bicicleta.png", "casco.png" });

await AddProductAsync("iPad", 2300000M, 6F, new List<string>() { "Tecnología", "Apple" }, new List<string>() { "ipad.png" });

await AddProductAsync("iPhone 13", 5200000M, 6F, new List<string>() { "Tecnología", "Apple" }, new List<string>() { "iphone13.png", "iphone13b.png", "iphone13c.png", "iphone13d.png" });

await AddProductAsync("Mac Book Pro", 12100000M, 6F, new List<string>() { "Tecnología", "Apple" }, new List<string>() { "mac\_book\_pro.png" });

await AddProductAsync("Mancuernas", 370000M, 12F, new List<string>() { "Deportes" }, new List<string>() { "mancuernas.png" });

await AddProductAsync("Mascarilla Cara", 26000M, 100F, new List<string>() { "Belleza" }, new List<string>() { "mascarilla\_cara.png" });

await AddProductAsync("New Balance 530", 180000M, 12F, new List<string>() { "Calzado", "Deportes" }, new List<string>() { "newbalance530.png" });

await AddProductAsync("New Balance 565", 179000M, 12F, new List<string>() { "Calzado", "Deportes" }, new List<string>() { "newbalance565.png" });

await AddProductAsync("Nike Air", 233000M, 12F, new List<string>() { "Calzado", "Deportes" }, new List<string>() { "nike\_air.png" });

await AddProductAsync("Nike Zoom", 249900M, 12F, new List<string>() { "Calzado", "Deportes" }, new List<string>() { "nike\_zoom.png" });

await AddProductAsync("Buso Adidas Mujer", 134000M, 12F, new List<string>() { "Ropa", "Deportes" }, new List<string>() { "buso\_adidas.png" });

await AddProductAsync("Suplemento Boots Original", 15600M, 12F, new List<string>() { "Nutrición" }, new List<string>() { "Boost\_Original.png" });

await AddProductAsync("Whey Protein", 252000M, 12F, new List<string>() { "Nutrición" }, new List<string>() { "whey\_protein.png" });

await AddProductAsync("Arnes Mascota", 25000M, 12F, new List<string>() { "Mascotas" }, new List<string>() { "arnes\_mascota.png" });

await AddProductAsync("Cama Mascota", 99000M, 12F, new List<string>() { "Mascotas" }, new List<string>() { "cama\_mascota.png" });

await AddProductAsync("Teclado Gamer", 67000M, 12F, new List<string>() { "Gamer", "Tecnología" }, new List<string>() { "teclado\_gamer.png" });

await AddProductAsync("Silla Gamer", 980000M, 12F, new List<string>() { "Gamer", "Tecnología" }, new List<string>() { "silla\_gamer.png" });

await AddProductAsync("Mouse Gamer", 132000M, 12F, new List<string>() { "Gamer", "Tecnología" }, new List<string>() { "mouse\_gamer.png" });

await \_context.SaveChangesAsync();

}

}

private async Task AddProductAsync(string name, decimal price, float stock, List<string> categories, List<string> images)

{

Product product = new()

{

Description = name,

Name = name,

Price = price,

Stock = stock,

ProductCategories = new List<ProductCategory>(),

ProductImages = new List<ProductImage>()

};

foreach (var categoryName in categories)

{

var category = await \_context.Categories.FirstOrDefaultAsync(c => c.Name == categoryName);

if (category != null)

{

product.ProductCategories.Add(new ProductCategory { Category = category });

}

}

foreach (string? image in images)

{

var filePath = $"{Environment.CurrentDirectory}\\Images\\products\\{image}";

var fileBytes = File.ReadAllBytes(filePath);

var imagePath = await \_fileStorage.SaveFileAsync(fileBytes, "jpg", "products");

product.ProductImages.Add(new ProductImage { Image = imagePath });

}

\_context.Products.Add(product);

}

private async Task CheckCategoriesAsync()

{

if (!\_context.Categories.Any())

{

\_context.Categories.Add(new Category { Name = "Apple" });

\_context.Categories.Add(new Category { Name = "Autos" });

\_context.Categories.Add(new Category { Name = "Belleza" });

\_context.Categories.Add(new Category { Name = "Calzado" });

\_context.Categories.Add(new Category { Name = "Comida" });

\_context.Categories.Add(new Category { Name = "Cosmeticos" });

\_context.Categories.Add(new Category { Name = "Deportes" });

\_context.Categories.Add(new Category { Name = "Erótica" });

\_context.Categories.Add(new Category { Name = "Ferreteria" });

\_context.Categories.Add(new Category { Name = "Gamer" });

\_context.Categories.Add(new Category { Name = "Hogar" });

\_context.Categories.Add(new Category { Name = "Jardín" });

\_context.Categories.Add(new Category { Name = "Jugetes" });

\_context.Categories.Add(new Category { Name = "Lenceria" });

\_context.Categories.Add(new Category { Name = "Mascotas" });

\_context.Categories.Add(new Category { Name = "Nutrición" });

\_context.Categories.Add(new Category { Name = "Ropa" });

\_context.Categories.Add(new Category { Name = "Tecnología" });

await \_context.SaveChangesAsync();

}

}

private async Task<User> CheckUserAsync(string document, string firstName, string lastName, string email, string phone, string address, string image, UserType userType)

{

var user = await \_userHelper.GetUserAsync(email);

if (user == null)

{

var city = await \_context.Cities.FirstOrDefaultAsync(x => x.Name == "Medellín");

if (city == null)

{

city = await \_context.Cities.FirstOrDefaultAsync();

}

var filePath = $"{Environment.CurrentDirectory}\\Images\\users\\{image}";

var fileBytes = File.ReadAllBytes(filePath);

var imagePath = await \_fileStorage.SaveFileAsync(fileBytes, "jpg", "users");

user = new User

{

FirstName = firstName,

LastName = lastName,

Email = email,

UserName = email,

PhoneNumber = phone,

Address = address,

Document = document,

City = city,

UserType = userType,

Photo= imagePath,

};

await \_userHelper.AddUserAsync(user, "123456");

await \_userHelper.AddUserToRoleAsync(user, userType.ToString());

var token = await \_userHelper.GenerateEmailConfirmationTokenAsync(user);

await \_userHelper.ConfirmEmailAsync(user, token);

}

return user;

}

…

1. Probamos lo que llevamos.
2. Creamos el **ProductDTO**:

using Microsoft.EntityFrameworkCore.Metadata.Internal;

using System.ComponentModel.DataAnnotations;

using System.ComponentModel.DataAnnotations.Schema;

namespace Market.Shared.DTOs

{

public class ProductDTO

{

public int Id { get; set; }

[Display(Name = "Nombre")]

[MaxLength(50, ErrorMessage = "El campo {0} debe tener máximo {1} caractéres.")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public string Name { get; set; } = null!;

[DataType(DataType.MultilineText)]

[Display(Name = "Descripción")]

[MaxLength(500, ErrorMessage = "El campo {0} debe tener máximo {1} caractéres.")]

public string Description { get; set; } = null!;

[Column(TypeName = "decimal(18,2)")]

[DisplayFormat(DataFormatString = "{0:C2}")]

[Display(Name = "Precio")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public decimal Price { get; set; }

[DisplayFormat(DataFormatString = "{0:N2}")]

[Display(Name = "Inventario")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public float Stock { get; set; }

public List<int>? ProductCategoryIds { get; set; }

public List<string>? ProductImages { get; set; }

}

}

1. Creamos el **ProductsController**:

using Microsoft.AspNetCore.Authentication.JwtBearer;

using Microsoft.AspNetCore.Authorization;

using Microsoft.AspNetCore.Mvc;

using Microsoft.EntityFrameworkCore;

using Market.API.Data;

using Market.API.Helpers;

using Market.Shared.DTOs;

using Market.Shared.Entities;

namespace Market.API.Controllers

{

[ApiController]

[Authorize(AuthenticationSchemes = JwtBearerDefaults.AuthenticationScheme)]

[Route("/api/products")]

public class ProductsController : ControllerBase

{

private readonly DataContext \_context;

private readonly IFileStorage \_fileStorage;

public ProductsController(DataContext context, IFileStorage fileStorage)

{

\_context = context;

\_fileStorage = fileStorage;

}

[HttpGet]

public async Task<ActionResult> Get([FromQuery] PaginationDTO pagination)

{

var queryable = \_context.Products

.Include(x => x.ProductImages)

.Include(x => x.ProductCategories)

.AsQueryable();

if (!string.IsNullOrWhiteSpace(pagination.Filter))

{

queryable = queryable.Where(x => x.Name.ToLower().Contains(pagination.Filter.ToLower()));

}

return Ok(await queryable

.OrderBy(x => x.Name)

.Paginate(pagination)

.ToListAsync());

}

[HttpGet("totalPages")]

public async Task<ActionResult> GetPages([FromQuery] PaginationDTO pagination)

{

var queryable = \_context.Products

.AsQueryable();

if (!string.IsNullOrWhiteSpace(pagination.Filter))

{

queryable = queryable.Where(x => x.Name.ToLower().Contains(pagination.Filter.ToLower()));

}

double count = await queryable.CountAsync();

double totalPages = Math.Ceiling(count / pagination.RecordsNumber);

return Ok(totalPages);

}

[HttpGet("{id:int}")]

public async Task<IActionResult> GetAsync(int id)

{

var product = await \_context.Products

.Include(x => x.ProductImages)

.Include(x => x.ProductCategories!)

.ThenInclude(x => x.Category)

.FirstOrDefaultAsync(x => x.Id == id);

if (product == null)

{

return NotFound();

}

return Ok(product);

}

[HttpPost]

public async Task<ActionResult> PostAsync(ProductDTO productDTO)

{

try

{

Product newProduct = new()

{

Name = productDTO.Name,

Description = productDTO.Description,

Price = productDTO.Price,

Stock = productDTO.Stock,

ProductCategories = new List<ProductCategory>(),

ProductImages = new List<ProductImage>()

};

foreach (var productImage in productDTO.ProductImages!)

{

var photoProduct = Convert.FromBase64String(productImage);

newProduct.ProductImages.Add(new ProductImage { Image = await \_fileStorage.SaveFileAsync(photoProduct, ".jpg", "products") });

}

foreach (var productCategoryId in productDTO.ProductCategoryIds!)

{

newProduct.ProductCategories.Add(new ProductCategory { Category = await \_context.Categories.FirstOrDefaultAsync(x => x.Id == productCategoryId) });

}

\_context.Add(newProduct);

await \_context.SaveChangesAsync();

return Ok(productDTO);

}

catch (DbUpdateException dbUpdateException)

{

if (dbUpdateException.InnerException!.Message.Contains("duplicate"))

{

return BadRequest("Ya existe un producto con el mismo nombre.");

}

return BadRequest(dbUpdateException.Message);

}

catch (Exception exception)

{

return BadRequest(exception.Message);

}

}

[HttpPut]

public async Task<ActionResult> PutAsync(Product product)

{

try

{

\_context.Update(product);

await \_context.SaveChangesAsync();

return Ok(product);

}

catch (DbUpdateException dbUpdateException)

{

if (dbUpdateException.InnerException!.Message.Contains("duplicate"))

{

return BadRequest("Ya existe un producto con el mismo nombre.");

}

return BadRequest(dbUpdateException.Message);

}

catch (Exception exception)

{

return BadRequest(exception.Message);

}

}

[HttpDelete("{id:int}")]

public async Task<IActionResult> DeleteAsync(int id)

{

var product = await \_context.Products.FirstOrDefaultAsync(x => x.Id == id);

if (product == null)

{

return NotFound();

}

\_context.Remove(product);

await \_context.SaveChangesAsync();

return NoContent();

}

}

}

1. Dentro de **Pages** creamos la carpeta **Products** y dentro de esta creamos el componente **ProductsIndex**:

@page "/products"

@using Microsoft.AspNetCore.Authorization;

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

@attribute [Authorize(Roles = "Admin")]

@if (Products is null)

{

<div class="spinner" />

}

else

{

<GenericList MyList="Products">

<Body>

<div class="card">

<div class="card-header">

<span>

<i class="oi oi-star"/> Productos

<a class="btn btn-sm btn-primary float-end" href="/products/create"><i class="oi oi-plus"/> Nuevo Producto</a>

</span>

</div>

<div class="card-body">

<div class="mb-2" style="display: flex; flex-wrap:wrap; align-items: center;">

<div>

<input style="width: 400px;" type="text" class="form-control" id="titulo" placeholder="Buscar producto..." @bind-value="Filter" />

</div>

<div class="mx-1">

<button type="button" class="btn btn-outline-primary" @onclick="ApplyFilterAsync"><i class="oi oi-layers" /> Filtrar</button>

<button type="button" class="btn btn-outline-danger" @onclick="CleanFilterAsync"><i class="oi oi-ban" /> Limpiar</button>

</div>

</div>

<Pagination CurrentPage="currentPage"

TotalPages="totalPages"

SelectedPage="SelectedPageAsync" />

<table class="table table-striped">

<thead>

<tr>

<th>Nombre</th>

<th>Descripción</th>

<th>Precio</th>

<th>Inventario</th>

<th>Categorías</th>

<th>Imagenes</th>

<th>Imagen Principal</th>

<th style="width:200px"></th>

</tr>

</thead>

<tbody>

@foreach (var product in Products)

{

<tr>

<td>

@product.Name

</td>

<td>

@product.Description

</td>

<td>

@($"{product.Price:C2}")

</td>

<td>

@($"{product.Stock:N2}")

</td>

<td>

@product.ProductCategoriesNumber

</td>

<td>

@product.ProductImagesNumber

</td>

<td>

<img src="@product.MainImage" style="width:100px;"/>

</td>

<td>

<a href="/products/edit/@product.Id" class="btn btn-warning"><i class="oi oi-pencil" /> Editar</a>

<button class="btn btn-danger" @onclick=@(() => Delete(product.Id))><i class="oi oi-trash" /> Borrar</button>

</td>

</tr>

}

</tbody>

</table>

</div>

</div>

</Body>

</GenericList>

}

@code {

private int currentPage = 1;

private int totalPages;

public List<Product>? Products { get; set; }

[Parameter]

[SupplyParameterFromQuery]

public string Page { get; set; } = "";

[Parameter]

[SupplyParameterFromQuery]

public string Filter { get; set; } = "";

protected async override Task OnInitializedAsync()

{

await LoadAsync();

}

private async Task SelectedPageAsync(int page)

{

currentPage = page;

await LoadAsync(page);

}

private async Task LoadAsync(int page = 1)

{

if (!string.IsNullOrWhiteSpace(Page))

{

page = Convert.ToInt32(Page);

}

string url1 = string.Empty;

string url2 = string.Empty;

if (string.IsNullOrEmpty(Filter))

{

url1 = $"api/products?page={page}";

url2 = $"api/products/totalPages";

}

else

{

url1 = $"api/products?page={page}&filter={Filter}";

url2 = $"api/products/totalPages?filter={Filter}";

}

try

{

var responseHppt = await repository.Get<List<Product>>(url1);

var responseHppt2 = await repository.Get<int>(url2);

Products = responseHppt.Response!;

totalPages = responseHppt2.Response!;

}

catch (Exception ex)

{

await sweetAlertService.FireAsync("Error", ex.Message, SweetAlertIcon.Error);

}

}

private async Task Delete(int productId)

{

var result = await sweetAlertService.FireAsync(new SweetAlertOptions

{

Title = "Confirmación",

Text = "¿Esta seguro que quieres borrar el registro?",

Icon = SweetAlertIcon.Question,

ShowCancelButton = true

});

var confirm = string.IsNullOrEmpty(result.Value);

if (confirm)

{

return;

}

var responseHTTP = await repository.Delete($"api/products/{productId}");

if (responseHTTP.Error)

{

if (responseHTTP.HttpResponseMessage.StatusCode == System.Net.HttpStatusCode.NotFound)

{

navigationManager.NavigateTo("/");

return;

}

var mensajeError = await responseHTTP.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", mensajeError, SweetAlertIcon.Error);

return;

}

await LoadAsync(1);

}

private async Task CleanFilterAsync()

{

Filter = string.Empty;

await ApplyFilterAsync();

}

private async Task ApplyFilterAsync()

{

int page = 1;

await LoadAsync(page);

await SelectedPageAsync(page);

}

}

1. Modificamos el **NavMenu.razor**:

<AuthorizeView Roles="Admin">

<Authorized>

<div class="nav-item px-3">

<NavLink class="nav-link" href="categories">

<span class="oi oi-list" aria-hidden="true"></span> Categorías

</NavLink>

</div>

<div class="nav-item px-3">

<NavLink class="nav-link" href="countries">

<span class="oi oi-globe" aria-hidden="true"></span> Países

</NavLink>

</div>

<div class="nav-item px-3">

<NavLink class="nav-link" href="products">

<span class="oi oi-star" aria-hidden="true"></span> Productos

</NavLink>

</div>

</Authorized>

</AuthorizeView>

1. Probamos y hacemos el **commit**.

## Creando nuevos productos

1. Creamos el componente genérico para poder seleccionar varitas categorías. Primero creamos en **Stores.WEB.Helpers** la clase **MultipleSelectorModel**:

namespace Market.WEB.Helpers

{

public class MultipleSelectorModel

{

public MultipleSelectorModel(string key, string value)

{

Key = key;

Value = value;

}

public string Key { get; set; }

public string Value { get; set; }

}

}

1. Le agregamos estas líneas a nuestro archivo de estilos **app.css**:

.multiple-selector {

display: flex;

}

.selectable-ul {

height: 200px;

overflow-y: auto;

list-style-type: none;

width: 170px;

padding: 0;

border-radius: 3px;

border: 1px solid #ccc;

}

.selectable-ul li {

cursor: pointer;

border-bottom: 1px #eee solid;

padding: 2px 10px;

font-size: 14px;

}

.selectable-ul li:hover {

background-color: #08c

}

.multiple-selector-botones {

display: flex;

flex-direction: column;

justify-content: center;

padding: 5px

}

.multiple-selector-botones button {

margin: 5px;

}

1. Creamos en **Shared.WEB** nuestro **MultipleSelector.razor**:

@using Market.WEB.Helpers;

<div class="multiple-selector">

<ul class="selectable-ul">

@foreach (var item in NonSelected)

{

<li @onclick=@(() => Select(item))>@item.Value</li>

}

</ul>

<div class="selector-multiple-botones">

<div class="mx-2 my-2">

<p><button type="button" @onclick="SelectAll">@addAllText</button></p>

</div>

<div class="mx-2 my-2">

<p><button type="button" @onclick="UnselectAll">@removeAllText</button></p>

</div>

</div>

<ul class="selectable-ul">

@foreach (var item in Selected)

{

<li @onclick=@(() => Unselect(item))>@item.Value</li>

}

</ul>

</div>

@code {

private string addAllText = ">>";

private string removeAllText = "<<";

[Parameter]

public List<MultipleSelectorModel> NonSelected { get; set; } = new();

[Parameter]

public List<MultipleSelectorModel> Selected { get; set; } = new();

private void Select(MultipleSelectorModel item)

{

NonSelected.Remove(item);

Selected.Add(item);

}

private void Unselect(MultipleSelectorModel item)

{

Selected.Remove(item);

NonSelected.Add(item);

}

private void SelectAll()

{

Selected.AddRange(NonSelected);

NonSelected.Clear();

}

private void UnselectAll()

{

NonSelected.AddRange(Selected);

Selected.Clear();

}

}

1. Dentro de **Pages/Products** creamos el **ProductForm.razor**:

@inject SweetAlertService sweetAlertService

@using Market.Shared.DTOs

@using Market.WEB.Helpers;

<NavigationLock OnBeforeInternalNavigation="OnBeforeInternalNavigation"></NavigationLock>

<EditForm EditContext="editContext" OnValidSubmit="OnDataAnnotationsValidatedAsync">

<DataAnnotationsValidator />

<div class="card">

<div class="card-header">

<span>

<i class="oi oi-star" /> Crear Nuevo Producto

<a class="btn btn-sm btn-success float-end" href="/products"><i class="oi oi-arrow-thick-left" /> Regresar</a>

<button class="btn btn-sm btn-primary float-end mx-2" type="submit"><i class="oi oi-check" /> Guardar Cambios</button>

</span>

</div>

<div class="card-body">

<div class="row">

<div class="col-6">

<div class="mb-3">

<label>Nombre:</label>

<div>

<InputText class="form-control" @bind-Value="@ProductDTO.Name" />

<ValidationMessage For="@(() => ProductDTO.Name)" />

</div>

</div>

<div class="mb-3">

<label>Descripción:</label>

<div>

<InputText class="form-control" @bind-Value="@ProductDTO.Description" />

<ValidationMessage For="@(() => ProductDTO.Description)" />

</div>

</div>

<div class="mb-3">

<label>Precio:</label>

<div>

<InputNumber class="form-control" @bind-Value="@ProductDTO.Price" />

<ValidationMessage For="@(() => ProductDTO.Price)" />

</div>

</div>

<div class="mb-3">

<label>Inventario:</label>

<div>

<InputNumber class="form-control" @bind-Value="@ProductDTO.Stock" />

<ValidationMessage For="@(() => ProductDTO.Stock)" />

</div>

</div>

</div>

<div class="col-6">

<div class="mb-3">

<label>Categorías:</label>

<div>

<MultipleSelector NonSelected="nonSelected" Selected="selected" />

</div>

</div>

<div class="mb-3">

<InputImg Label="Foto" ImageSelected="ImageSelected" ImageURL="@imageUrl" />

</div>

@if (IsEdit)

{

<div class="mb-3">

<button type="button" class="btn btn-outline-primary" @onclick="AddImageAction"><i class="oi oi-plus" /> Agregar Imagenes</button>

<button type="button" class="btn btn-outline-danger" @onclick="RemoveImageAction"><i class="oi oi-trash" /> Eliminar Última Imagén</button>

</div>

}

</div>

</div>

</div>

</div>

</EditForm>

@\*@if (IsEdit && ProductDTO.ProductImages is not null)

{

<CarouselView Images="ProductDTO.ProductImages" />

}\*@

@code {

private EditContext editContext = null!;

private List<MultipleSelectorModel> selected { get; set; } = new();

private List<MultipleSelectorModel> nonSelected { get; set; } = new();

private string? imageUrl;

[Parameter]

public bool IsEdit { get; set; } = false;

[EditorRequired]

[Parameter]

public ProductDTO ProductDTO { get; set; } = null!;

[EditorRequired]

[Parameter]

public EventCallback OnValidSubmit { get; set; }

[EditorRequired]

[Parameter]

public EventCallback ReturnAction { get; set; }

[Parameter]

public EventCallback AddImageAction { get; set; }

[Parameter]

public EventCallback RemoveImageAction { get; set; }

[Parameter]

public List<Category> SelectedCategories { get; set; } = new();

[Parameter]

[EditorRequired]

public List<Category> NonSelectedCategories { get; set; } = new();

public bool FormPostedSuccessfully { get; set; } = false;

protected override void OnInitialized()

{

editContext = new(ProductDTO);

selected = SelectedCategories.Select(x => new MultipleSelectorModel(x.Id.ToString(), x.Name)).ToList();

nonSelected = NonSelectedCategories.Select(x => new MultipleSelectorModel(x.Id.ToString(), x.Name)).ToList();

}

private void ImageSelected(string imagenBase64)

{

if (ProductDTO.ProductImages is null)

{

ProductDTO.ProductImages = new List<string>();

}

ProductDTO.ProductImages!.Add(imagenBase64);

imageUrl = null;

}

private async Task OnDataAnnotationsValidatedAsync()

{

ProductDTO.ProductCategoryIds = selected.Select(x => int.Parse(x.Key)).ToList();

await OnValidSubmit.InvokeAsync();

}

private async Task OnBeforeInternalNavigation(LocationChangingContext context)

{

var formWasEdited = editContext.IsModified();

if (!formWasEdited)

{

return;

}

if (FormPostedSuccessfully)

{

return;

}

var result = await sweetAlertService.FireAsync(new SweetAlertOptions

{

Title = "Confirmación",

Text = "¿Deseas abandonar la página y perder los cambios?",

Icon = SweetAlertIcon.Warning,

ShowCancelButton = true

});

var confirm = !string.IsNullOrEmpty(result.Value);

if (confirm)

{

return;

}

context.PreventNavigation();

}

}

1. Dentro de **Pages/Products** creamos el **ProductCreate.razor**:

@page "/products/create"

@using Microsoft.AspNetCore.Authorization;

@using Market.Shared.DTOs;

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

@attribute [Authorize(Roles = "Admin")]

@if (loading)

{

<div class="spinner" />

}

else

{

<ProductForm @ref="productForm" ProductDTO="productDTO" NonSelectedCategories="nonSelectedCategories" OnValidSubmit="CreateAsync" ReturnAction="Return" />

}

@code {

private ProductDTO productDTO = new ProductDTO

{

ProductCategoryIds = new List<int>(),

ProductImages = new List<string>()

};

private ProductForm? productForm;

private List<Category> selectedCategories = new();

private List<Category> nonSelectedCategories = new();

private bool loading = true;

protected async override Task OnInitializedAsync()

{

var httpResponse = await repository.Get<List<Category>>("/api/categories");

loading = false;

if (httpResponse.Error)

{

var message = await httpResponse.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

nonSelectedCategories = httpResponse.Response!;

}

private async Task CreateAsync()

{

var httpResponse = await repository.Post("/api/products", productDTO);

if (httpResponse.Error)

{

var message = await httpResponse.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

Return();

}

private void Return()

{

productForm!.FormPostedSuccessfully = true;

navigationManager.NavigateTo($"/products");

}

}

1. Podemos probar la creación de productos.
2. Modificamos el **HttpPost** del **ProductsController**:

[HttpPost]

public async Task<ActionResult> PostAsync(ProductDTO productDTO)

{

try

{

Product newProduct = new()

{

Name = productDTO.Name,

Description = productDTO.Description,

Price = productDTO.Price,

Stock = productDTO.Stock,

ProductCategories = new List<ProductCategory>(),

ProductImages = new List<ProductImage>()

};

foreach (var productImage in productDTO.ProductImages!)

{

var photoProduct = Convert.FromBase64String(productImage);

newProduct.ProductImages.Add(new ProductImage { Image = await \_fileStorage.SaveFileAsync(photoProduct, ".jpg", "products") });

}

foreach (var productCategoryId in productDTO.ProductCategoryIds!)

{

newProduct.ProductCategories.Add(new ProductCategory { Category = await \_context.Categories.FirstOrDefaultAsync(x => x.Id == productCategoryId) });

}

\_context.Add(newProduct);

await \_context.SaveChangesAsync();

return Ok(productDTO);

}

catch (DbUpdateException dbUpdateException)

{

if (dbUpdateException.InnerException!.Message.Contains("duplicate"))

{

return BadRequest("Ya existe un producto con el mismo nombre.");

}

return BadRequest(dbUpdateException.Message);

}

catch (Exception exception)

{

return BadRequest(exception.Message);

}

}

1. Probamos y hacemos el **commit** de lo que hemos logrado hasta el momento, corra la App con **Ctrl + F5**, para que tome los cambios en el CSS.

## Empezar con la edición de productos y colocar las imágenes en un carrusel

1. Para nuestro componente de Carrusel vamos a utilizar las librerías de **MudBlazor**, la documentación está en <https://mudblazor.com/getting-started/installation#prerequisites> primero procedemos con la instalación.
2. Agregamos el nuget **MudBlazor**.
3. En el **\_Imports.razor** agregamos la línea:

@using MudBlazor

1. Agregamos al **index.html** la hoja de estilos y los scripts:

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="utf-8" />

<meta name="viewport" content="width=device-width, initial-scale=1.0, maximum-scale=1.0, user-scalable=no" />

<title>Stores.WEB</title>

<base href="/" />

<link href="css/bootstrap/bootstrap.min.css" rel="stylesheet" />

<link href="css/app.css" rel="stylesheet" />

<link rel="icon" type="image/png" href="favicon.png" />

<link href="Stores.WEB.styles.css" rel="stylesheet" />

<link href="https://fonts.googleapis.com/css?family=Roboto:300,400,500,700&display=swap" rel="stylesheet" />

<link href="\_content/MudBlazor/MudBlazor.min.css" rel="stylesheet" />

</head>

<body>

<div id="app">

<svg class="loading-progress">

<circle r="40%" cx="50%" cy="50%" />

<circle r="40%" cx="50%" cy="50%" />

</svg>

<div class="loading-progress-text"></div>

</div>

<div id="blazor-error-ui">

An unhandled error has occurred.

<a href="" class="reload">Reload</a>

<a class="dismiss">🗙</a>

</div>

<script src="\_framework/blazor.webassembly.js"></script>

<script src="\_content/CurrieTechnologies.Razor.SweetAlert2/sweetAlert2.min.js"></script>

<script src="\_content/MudBlazor/MudBlazor.min.js"></script>

</body>

</html>

1. Injectamos en el **Program** del proyecto **WEB**:

builder.Services.AddMudServices();

1. Creamos el componente compartido **CarouselView.razor**, Shared.WEB

<div class="my-2">

<MudCarousel Class="mud-width-full" Style="height:200px;" ShowArrows="@arrows" ShowBullets="@bullets" EnableSwipeGesture="@enableSwipeGesture" AutoCycle="@autocycle" TData="object">

@foreach (var image in Images)

{

<MudCarouselItem Transition="transition" Color="@Color.Primary">

<div class="d-flex" style="height:100%; justify-content:center">

<img src="@image" />

</div>

</MudCarouselItem>

}

</MudCarousel>

</div>

@code {

private bool arrows = true;

private bool bullets = true;

private bool enableSwipeGesture = true;

private bool autocycle = true;

private Transition transition = Transition.Slide;

[EditorRequired]

[Parameter]

public List<string> Images { get; set; } = null!;

}

1. Modificamos el **ProductForm**:

…

</EditForm>

@if (IsEdit && ProductDTO.ProductImages is not null)

{

<CarouselView Images="ProductDTO.ProductImages" />

}

…

1. Creamos el **ProductEdit**:

@page "/products/edit/{ProductId:int}"

@using Microsoft.AspNetCore.Authorization;

@using Market.Shared.DTOs;

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

@attribute [Authorize(Roles = "Admin")]

@if (loading)

{

<div class="spinner" />

}

else

{

<ProductForm @ref="productForm" ProductDTO="productDTO" SelectedCategories="selectedCategories" NonSelectedCategories="nonSelectedCategories" OnValidSubmit="SaveChangesAsync" ReturnAction="Return" IsEdit=true AddImageAction="AddImageAsync" RemoveImageAction="RemoveImageAsyc"/>

}

@code {

private ProductDTO productDTO = new ProductDTO

{

ProductCategoryIds = new List<int>(),

ProductImages = new List<string>()

};

private ProductForm? productForm;

private List<Category> selectedCategories = new();

private List<Category> nonSelectedCategories = new();

private bool loading = true;

private Product? product;

[Parameter]

public int ProductId { get; set; }

protected async override Task OnInitializedAsync()

{

await LoadProductAsync();

await LoadCategoriesAsync();

}

private async Task AddImageAsync()

{

}

private async Task RemoveImageAsyc()

{

}

private async Task LoadProductAsync()

{

loading = true;

var httpResponse = await repository.Get<Product>($"/api/products/{ProductId}");

if (httpResponse.Error)

{

loading = false;

var message = await httpResponse.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

product = httpResponse.Response!;

productDTO = ToProductDTO(product);

loading = false;

}

private ProductDTO ToProductDTO(Product product)

{

return new ProductDTO

{

Description = product.Description,

Id = product.Id,

Name = product.Name,

Price = product.Price,

Stock = product.Stock,

ProductCategoryIds = product.ProductCategories!.Select(x => x.CategoryId).ToList(),

ProductImages = product.ProductImages!.Select(x => x.Image).ToList()

};

}

private async Task LoadCategoriesAsync()

{

loading = true;

var httpResponse = await repository.Get<List<Category>>("/api/categories");

if (httpResponse.Error)

{

loading = false;

var message = await httpResponse.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

var categories = httpResponse.Response!;

foreach (var category in categories!)

{

var found = product!.ProductCategories!.FirstOrDefault(x => x.CategoryId == category.Id);

if (found == null)

{

nonSelectedCategories.Add(category);

}

else

{

selectedCategories.Add(category);

}

}

loading = false;

}

private async Task SaveChangesAsync()

{

var httpResponse = await repository.Put("/api/products", productDTO);

if (httpResponse.Error)

{

var message = await httpResponse.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

Return();

}

private void Return()

{

productForm!.FormPostedSuccessfully = true;

navigationManager.NavigateTo($"/products");

}

}

1. Actualizamos el **PUT** en el **ProductsController**:

[HttpPut]

public async Task<ActionResult> PutAsync(ProductDTO productDTO)

{

try

{

var product = await \_context.Products

.Include(x => x.ProductCategories)

.FirstOrDefaultAsync(x => x.Id == productDTO.Id);

if (product == null)

{

return NotFound();

}

product.Name = productDTO.Name;

product.Description = productDTO.Description;

product.Price = productDTO.Price;

product.Stock = productDTO.Stock;

product.ProductCategories = productDTO.ProductCategoryIds!.Select(x => new ProductCategory { CategoryId = x }).ToList();

\_context.Update(product);

await \_context.SaveChangesAsync();

return Ok(productDTO);

}

catch (DbUpdateException dbUpdateException)

{

if (dbUpdateException.InnerException!.Message.Contains("duplicate"))

{

return BadRequest("Ya existe un producto con el mismo nombre.");

}

return BadRequest(dbUpdateException.Message);

}

catch (Exception exception)

{

return BadRequest(exception.Message);

}

}

1. Probamos y hacemos el **commit** de lo que hemos logrado hasta el momento, corra la App con **Ctrl + F5**, para que tome los cambios en el CSS.

## Agregando y eliminando imágenes a los productos y terminando la edición de producto

1. Dento de **Stores.Shared.DTOs** creamos el **ImageDTO**.

using System.ComponentModel.DataAnnotations;

namespace Market.Shared.DTOs

{

public class ImageDTO

{

[Required]

public int ProductId { get; set; }

[Required]

public List<string> Images { get; set; } = null!;

}

}

1. Adicionamos estos métodos al **Httpost** en **ProductsController**.

[HttpPost("addImages")]

public async Task<ActionResult> PostAddImagesAsync(ImageDTO imageDTO)

{

var product = await \_context.Products

.Include(x => x.ProductImages)

.FirstOrDefaultAsync(x => x.Id == imageDTO.ProductId);

if (product == null)

{

return NotFound();

}

if (product.ProductImages is null)

{

product.ProductImages = new List<ProductImage>();

}

for (int i = 0; i < imageDTO.Images.Count; i++)

{

if (!imageDTO.Images[i].StartsWith("https://Market.blob.core.windows.net/products/"))

{

var photoProduct = Convert.FromBase64String(imageDTO.Images[i]);

imageDTO.Images[i] = await \_fileStorage.SaveFileAsync(photoProduct, ".jpg", "products");

product.ProductImages!.Add(new ProductImage { Image = imageDTO.Images[i] });

}

}

\_context.Update(product);

await \_context.SaveChangesAsync();

return Ok(imageDTO);

}

[HttpPost("removeLastImage")]

public async Task<ActionResult> PostRemoveLastImageAsync(ImageDTO imageDTO)

{

var product = await \_context.Products

.Include(x => x.ProductImages)

.FirstOrDefaultAsync(x => x.Id == imageDTO.ProductId);

if (product == null)

{

return NotFound();

}

if (product.ProductImages is null || product.ProductImages.Count == 0)

{

return Ok();

}

var lastImage = product.ProductImages.LastOrDefault();

await \_fileStorage.RemoveFileAsync(lastImage!.Image, "products");

product.ProductImages.Remove(lastImage);

\_context.Update(product);

await \_context.SaveChangesAsync();

imageDTO.Images = product.ProductImages.Select(x => x.Image).ToList();

return Ok(imageDTO);

}

1. Modificamos el **CarouselView.razor**.

<div class="my-2">

<MudCarousel Class="mud-width-full" Style="height:200px;" ShowArrows="@arrows" ShowBullets="@bullets" EnableSwipeGesture="@enableSwipeGesture" AutoCycle="@autocycle" TData="object">

@foreach (var image in Images)

{

@if (image.StartsWith("https://Market.blob.core.windows.net/products/"))

{

<MudCarouselItem Transition="transition" Color="@Color.Primary">

<div class="d-flex" style="height:100%; justify-content:center">

<img src="@image" />

</div>

</MudCarouselItem>

}

}

</MudCarousel>

</div>

1. Modificamos el **ProductEdit.razor**.

private async Task AddImageAsync()

{

if (productDTO.ProductImages is null || productDTO.ProductImages.Count == 0)

{

return;

}

var imageDTO = new ImageDTO

{

ProductId = ProductId,

Images = productDTO.ProductImages!

};

var httpResponse = await repository.Post<ImageDTO, ImageDTO>("/api/products/addImages", imageDTO);

if (httpResponse.Error)

{

var message = await httpResponse.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

productDTO.ProductImages = httpResponse.Response!.Images;

var toast = sweetAlertService.Mixin(new SweetAlertOptions

{

Toast = true,

Position = SweetAlertPosition.TopEnd,

ShowConfirmButton = false,

Timer = 5000

});

await toast.FireAsync(icon: SweetAlertIcon.Success, message: "Imagenes agregadas con éxito.");

}

private async Task RemoveImageAsyc()

{

if (productDTO.ProductImages is null || productDTO.ProductImages.Count == 0)

{

return;

}

var imageDTO = new ImageDTO

{

ProductId = ProductId,

Images = productDTO.ProductImages!

};

var httpResponse = await repository.Post<ImageDTO, ImageDTO>("/api/products/removeLastImage", imageDTO);

if (httpResponse.Error)

{

var message = await httpResponse.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

productDTO.ProductImages = httpResponse.Response!.Images;

var toast = sweetAlertService.Mixin(new SweetAlertOptions

{

Toast = true,

Position = SweetAlertPosition.TopEnd,

ShowConfirmButton = false,

Timer = 5000

});

await toast.FireAsync(icon: SweetAlertIcon.Success, message: "Imagén eliminada con éxito.");

}

1. Probamos y hacemos el **commit** de lo que hemos logrado hasta el momento, corra la App con **Ctrl + F5**, para que tome los cambios en el CSS.

## Creando el “Home” de nuestra aplicación

1. Modificamos el **ProductsController** y le colocamos el **[AllowAnonymous]** a todos los **GET** de este controlador.
2. Modificamos el **Index.razor**.

@page "/"

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

<style type="text/css">

.card {

display: flex;

flex-direction: column;

justify-content: space-between;

border: 1px solid lightgray;

box-shadow: 2px 2px 8px 4px #d3d3d3d1;

border-radius: 15px;

font-family: sans-serif;

margin: 5px;

}

</style>

@if (Products is null)

{

<div class="spinner" />

}

else

{

<div class="mb-2" style="display: flex; flex-wrap:wrap; align-items: center;">

<div>

<input style="width: 400px;" type="text" class="form-control" id="titulo" placeholder="Buscar producto..." @bind-value="Filter" />

</div>

<div class="mx-1">

<button type="button" class="btn btn-outline-primary" @onclick="ApplyFilterAsync"><i class="oi oi-layers" /> Filtrar</button>

<button type="button" class="btn btn-outline-danger" @onclick="CleanFilterAsync"><i class="oi oi-ban" /> Limpiar</button>

</div>

</div>

<Pagination CurrentPage="currentPage"

TotalPages="totalPages"

SelectedPage="SelectedPageAsync" />

<div class="row row-cols-1 row-cols-md-4 g-4 mt-1">

@foreach (var product in Products!)

{

<div class="col">

<div class="card h-100">

<div class="text-center zoom">

<img src="@product.MainImage" style="height:150px; max-width:200px;" class="text-center" alt=@product.Name />

</div>

<div class="card-body">

<h5 class="card-title text-navy"> @product.Name</h5>

<p class="card-text smfnt">@product.Description</p>

<h5 class="text-muted">@($"{product.Price:C2}")</h5>

</div>

<div class="card-footer text-center">

<a href="/products/details/@product.Id" class="btn btn-sm btn-secondary"><i class="oi oi-info" /> Detalles</a>

<button class="btn btn-sm btn-primary" @onclick=@(() => AddToCartAsync(product.Id))><i class="oi oi-plus" /> Agregar al Carro</button>

</div>

</div>

</div>

}

</div>

}

@code {

private int currentPage = 1;

private int totalPages;

public List<Product>? Products { get; set; }

[Parameter]

[SupplyParameterFromQuery]

public string Page { get; set; } = "";

[Parameter]

[SupplyParameterFromQuery]

public string Filter { get; set; } = "";

protected async override Task OnInitializedAsync()

{

await LoadAsync();

}

private async Task SelectedPageAsync(int page)

{

currentPage = page;

await LoadAsync(page);

}

private async Task LoadAsync(int page = 1)

{

if (!string.IsNullOrWhiteSpace(Page))

{

page = Convert.ToInt32(Page);

}

string url1 = string.Empty;

string url2 = string.Empty;

if (string.IsNullOrEmpty(Filter))

{

url1 = $"api/products?page={page}&RecordsNumber=8";

url2 = $"api/products/totalPages/?RecordsNumber=8";

}

else

{

url1 = $"api/products?page={page}&filter={Filter}&RecordsNumber=8";

url2 = $"api/products/totalPages?filter={Filter}&RecordsNumber=8";

}

try

{

var responseHppt = await repository.Get<List<Product>>(url1);

var responseHppt2 = await repository.Get<int>(url2);

Products = responseHppt.Response!;

totalPages = responseHppt2.Response!;

}

catch (Exception ex)

{

await sweetAlertService.FireAsync("Error", ex.Message, SweetAlertIcon.Error);

}

}

private async Task CleanFilterAsync()

{

Filter = string.Empty;

await ApplyFilterAsync();

}

private async Task ApplyFilterAsync()

{

int page = 1;

await LoadAsync(page);

await SelectedPageAsync(page);

}

private void AddToCartAsync(int productId)

{

}

}

1. Probamos y hacemos el **commit**.

## Agregando productos al carro de compras

1. Creamos la entidad **TemporalStore**:

using System.ComponentModel.DataAnnotations;

namespace Market.Shared.Entities

{

public class TemporalStore

{

public int Id { get; set; }

public User? User { get; set; }

public string? UserId { get; set; }

public Product? Product { get; set; }

public int ProductId { get; set; }

[DisplayFormat(DataFormatString = "{0:N2}")]

[Display(Name = "Cantidad")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public float Quantity { get; set; }

[DataType(DataType.MultilineText)]

[Display(Name = "Comentarios")]

public string? Remarks { get; set; }

public decimal Value => Product == null ? 0 : Product.Price \* (decimal)Quantity;

}

}

1. Modificamos la entidad **Product** agregando esta propiedad:

public ICollection<TemporalStore>? TemporalStores { get; set; }

1. Modificamos la entidad **User** agregando esta propiedad:

public ICollection<TemporalStore>? TemporalStores { get; set; }

1. La adicionamos en el **DataContext**:

public DbSet<TemporalStore> TemporalStores { get; set; }

1. Creamos la migración y actualizamos la base de datos.

Add-migration TemporalStore

1. En **Market.Shared.DTOs** creamos el **TemporalStoreDTO**

namespace Market.Shared.DTOs

{

public class TemporalStoreDTO

{

public int Id { get; set; }

public int ProductId { get; set; }

public float Quantity { get; set; } = 1;

public string Remarks { get; set; } = string.Empty;

}

}

1. Creamos el **TemporalStoresController**:

using Microsoft.AspNetCore.Authentication.JwtBearer;

using Microsoft.AspNetCore.Authorization;

using Microsoft.AspNetCore.Mvc;

using Microsoft.EntityFrameworkCore;

using Market.API.Data;

using Market.Shared.DTOs;

using Market.Shared.Entities;

namespace Market.API.Controllers

{

[ApiController]

[Authorize(AuthenticationSchemes = JwtBearerDefaults.AuthenticationScheme)]

[Route("/api/temporalStores")]

public class TemporalStoresController : ControllerBase

{

private readonly DataContext \_context;

public TemporalStoresController(DataContext context)

{

\_context = context;

}

[HttpPost]

public async Task<ActionResult> Post(TemporalStoreDTO temporalStoreDTO)

{

var product = await \_context.Products.FirstOrDefaultAsync(x => x.Id == temporalStoreDTO.ProductId);

if (product == null)

{

return NotFound();

}

var user = await \_context.Users.FirstOrDefaultAsync(x => x.Email == User.Identity!.Name);

if (user == null)

{

return NotFound();

}

var temporalStore = new TemporalStore

{

Product= product,

Quantity= temporalStoreDTO.Quantity,

Remarks = temporalStoreDTO.Remarks,

User = user

};

try

{

\_context.Add(temporalStore);

await \_context.SaveChangesAsync();

return Ok(temporalStoreDTO);

}

catch (Exception ex)

{

return BadRequest(ex.Message);

}

}

[HttpGet]

public async Task<ActionResult> Get()

{

return Ok(await \_context.TemporalStores

.Include(ts => ts.User!)

.Include(ts => ts.Product!)

.ThenInclude(p => p.ProductCategories!)

.ThenInclude(pc => pc.Category)

.Include(ts => ts.Product!)

.ThenInclude(p => p.ProductImages)

.Where(x => x.User!.Email == User.Identity!.Name)

.ToListAsync());

}

[HttpGet("count")]

public async Task<ActionResult> GetCount()

{

return Ok(await \_context.TemporalStores

.Where(x => x.User!.Email == User.Identity!.Name)

.SumAsync(x => x.Quantity));

}

}

}

1. Modificamos el **Index.razor**.

@page "/"

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

<style type="text/css">

.card {

display: flex;

flex-direction: column;

justify-content: space-between;

border: 1px solid lightgray;

box-shadow: 2px 2px 8px 4px #d3d3d3d1;

border-radius: 15px;

font-family: sans-serif;

margin: 5px;

}

</style>

@if (Products is null)

{

<div class="spinner" />

}

else

{

<div class="mb-2" style="display: flex; flex-wrap:wrap; align-items: center;">

<div>

<input style="width: 400px;" type="text" class="form-control" id="titulo" placeholder="Buscar producto..." @bind-value="Filter" />

</div>

<div class="mx-1">

<button type="button" class="btn btn-outline-primary" @onclick="ApplyFilterAsync"><i class="oi oi-layers" /> Filtrar</button>

<button type="button" class="btn btn-outline-danger" @onclick="CleanFilterAsync"><i class="oi oi-ban" /> Limpiar</button>

</div>

<AuthorizeView>

<Authorized>

@if (counter > 0)

{

<a title="Carrito" href="/Orders/ShowCart"><img src="images/shoppingcart.png" alt="Carrito" />Ver Carrito de Compras (@counter)</a>

}

</Authorized>

</AuthorizeView>

</div>

<Pagination CurrentPage="currentPage"

TotalPages="totalPages"

SelectedPage="SelectedPageAsync" />

<div class="row row-cols-1 row-cols-md-4 g-4 mt-1">

@foreach (var product in Products!)

{

<div class="col">

<div class="card h-100">

<div class="text-center zoom">

<img src="@product.MainImage" style="height:150px; max-width:200px;" class="text-center" alt=@product.Name />

</div>

<div class="card-body">

<h5 class="card-title text-navy"> @product.Name</h5>

<p class="card-text smfnt">@product.Description</p>

<h5 class="text-muted">@($"{product.Price:C2}")</h5>

</div>

<div class="card-footer text-center">

<a href="/products/details/@product.Id" class="btn btn-sm btn-secondary"><i class="oi oi-info" /> Detalles</a>

<button class="btn btn-sm btn-primary" @onclick=@(() => AddToCartAsync(product.Id))><i class="oi oi-plus" /> Agregar al Carro</button>

</div>

</div>

</div>

}

</div>

}

@code {

private int currentPage = 1;

private int totalPages;

private int counter = 0;

private bool isAuthenticated;

public List<Product>? Products { get; set; }

[Parameter]

[SupplyParameterFromQuery]

public string Page { get; set; } = "";

[Parameter]

[SupplyParameterFromQuery]

public string Filter { get; set; } = "";

[CascadingParameter]

private Task<AuthenticationState> authenticationStateTask { get; set; } = null!;

protected async override Task OnInitializedAsync()

{

await LoadAsync();

}

protected async override Task OnParametersSetAsync()

{

await CheckIsAuthenticatedAsync();

await LoadCounterAsync();

}

private async Task CheckIsAuthenticatedAsync()

{

var authenticationState = await authenticationStateTask;

isAuthenticated = authenticationState.User.Identity!.IsAuthenticated;

}

private async Task LoadCounterAsync()

{

if (!isAuthenticated)

{

return;

}

var responseHttp = await repository.Get<int>("/api/temporalStores/count");

if (responseHttp.Error)

{

return;

}

counter = responseHttp.Response;

}

private async Task SelectedPageAsync(int page)

{

currentPage = page;

await LoadAsync(page);

}

private async Task LoadAsync(int page = 1)

{

if (!string.IsNullOrWhiteSpace(Page))

{

page = Convert.ToInt32(Page);

}

string url1 = string.Empty;

string url2 = string.Empty;

if (string.IsNullOrEmpty(Filter))

{

url1 = $"api/products?page={page}&RecordsNumber=8";

url2 = $"api/products/totalPages/?RecordsNumber=8";

}

else

{

url1 = $"api/products?page={page}&filter={Filter}&RecordsNumber=8";

url2 = $"api/products/totalPages?filter={Filter}&RecordsNumber=8";

}

try

{

var responseHppt = await repository.Get<List<Product>>(url1);

var responseHppt2 = await repository.Get<int>(url2);

Products = responseHppt.Response!;

totalPages = responseHppt2.Response!;

}

catch (Exception ex)

{

await sweetAlertService.FireAsync("Error", ex.Message, SweetAlertIcon.Error);

}

}

private async Task CleanFilterAsync()

{

Filter = string.Empty;

await ApplyFilterAsync();

}

private async Task ApplyFilterAsync()

{

int page = 1;

await LoadAsync(page);

await SelectedPageAsync(page);

}

private async Task AddToCartAsync(int productId)

{

if (!isAuthenticated)

{

navigationManager.NavigateTo("/Login");

var toast1 = sweetAlertService.Mixin(new SweetAlertOptions

{

Toast = true,

Position = SweetAlertPosition.TopEnd,

ShowConfirmButton = false,

Timer = 5000

});

await toast1.FireAsync(icon: SweetAlertIcon.Error, message: "Debes haber iniciado sesión para poder agregar productos al carrito de compras.");

return;

}

var temporalStoreDTO = new TemporalStoreDTO

{

ProductId = productId

};

var httpResponse = await repository.Post("/api/temporalStores", temporalStoreDTO);

if (httpResponse.Error)

{

var message = await httpResponse.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

await LoadCounterAsync();

var toast2 = sweetAlertService.Mixin(new SweetAlertOptions

{

Toast = true,

Position = SweetAlertPosition.TopEnd,

ShowConfirmButton = false,

Timer = 5000

});

await toast2.FireAsync(icon: SweetAlertIcon.Success, message: "Producto agregado al carro de compras.");

}

}

1. Dentro de **Pages** creamos la carpeta **Orders** y dentro de esta creamos el **ShowCart.razor** temporal.

@page "/Orders/ShowCart"

<h3>ShowCart</h3>

@code {

}

1. Probamos lo que llevamos hasta el momento.
2. Ahora vamos a mostrar los detalles del producto y dar la oportunidad de agregar al carro de compras ingresando una cantidad y un comentario. Primero creamos el **ProductDetails.razor**.

@page "/orders/details/{ProductId:int}"

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

@if (loading)

{

<div class="spinner" />

}

else

{

<div class="card">

<div class="card-header">

<span>

<i class="oi oi-star" /> @product!.Name

<a class="btn btn-sm btn-success float-end" href="/"><i class="oi oi-arrow-thick-left" /> Regresar</a>

</span>

</div>

<div class="card-body">

<div class="row">

<div class="col-6">

<div class="mb-3">

<label>Nombre:</label>

<div>

<b>@product.Name</b>

</div>

</div>

<div class="mb-3">

<label>Descripción:</label>

<div>

<b>@product.Description</b>

</div>

</div>

<div class="mb-3">

<label>Precio:</label>

<div>

<b>@($"{product.Price:C2}")</b>

</div>

</div>

<div class="mb-3">

<label>Inventario:</label>

<div>

<b>@($"{product.Stock:N2}")</b>

</div>

</div>

<div class="mb-3">

<label>Categorías:</label>

<div>

@foreach (var category in categories!)

{

<div class="mx-2">

<b>@category</b>

</div>

}

</div>

</div>

</div>

<div class="col-6">

<EditForm Model="TemporalStoreDTO" OnValidSubmit="AddToCartAsync">

<DataAnnotationsValidator />

<div class="mb-3">

<label>Cantidad:</label>

<div>

<InputNumber class="form-control" @bind-Value="@TemporalStoreDTO.Quantity" />

<ValidationMessage For="@(() => TemporalStoreDTO.Quantity)" />

</div>

<label>Comentarios:</label>

<div>

<InputText class="form-control" @bind-Value="@TemporalStoreDTO.Remarks" />

<ValidationMessage For="@(() => TemporalStoreDTO.Remarks)" />

</div>

</div>

<button class="btn btn-primary" type="submit"><i class="oi oi-plus" /> Agregar Al Carro de Compras</button>

</EditForm>

</div>

</div>

<CarouselView Images="images" />

</div>

</div>

}

@code {

private List<string>? categories;

private List<string>? images;

private bool loading = true;

private Product? product;

private bool isAuthenticated;

[Parameter]

public int ProductId { get; set; }

[CascadingParameter]

private Task<AuthenticationState> authenticationStateTask { get; set; } = null!;

public TemporalStoreDTO TemporalStoreDTO { get; set; } = new();

protected async override Task OnParametersSetAsync()

{

await CheckIsAuthenticatedAsync();

}

private async Task CheckIsAuthenticatedAsync()

{

var authenticationState = await authenticationStateTask;

isAuthenticated = authenticationState.User.Identity!.IsAuthenticated;

}

protected async override Task OnInitializedAsync()

{

await LoadProductAsync();

}

private async Task LoadProductAsync()

{

loading = true;

var httpResponse = await repository.Get<Product>($"/api/products/{ProductId}");

if (httpResponse.Error)

{

loading = false;

var message = await httpResponse.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

product = httpResponse.Response!;

categories = product.ProductCategories!.Select(x => x.Category.Name).ToList();

images = product.ProductImages!.Select(x => x.Image).ToList();

loading = false;

}

public async Task AddToCartAsync()

{

if (!isAuthenticated)

{

navigationManager.NavigateTo("/Login");

var toast1 = sweetAlertService.Mixin(new SweetAlertOptions

{

Toast = true,

Position = SweetAlertPosition.TopEnd,

ShowConfirmButton = false,

Timer = 5000

});

await toast1.FireAsync(icon: SweetAlertIcon.Error, message: "Debes haber iniciado sesión para poder agregar productos al carro de compras.");

return;

}

TemporalStoreDTO.ProductId = ProductId;

var httpResponse = await repository.Post("/api/temporalStores", TemporalStoreDTO);

if (httpResponse.Error)

{

var message = await httpResponse.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

var toast2 = sweetAlertService.Mixin(new SweetAlertOptions

{

Toast = true,

Position = SweetAlertPosition.TopEnd,

ShowConfirmButton = false,

Timer = 5000

});

await toast2.FireAsync(icon: SweetAlertIcon.Success, message: "Producto agregado al carro de compras.");

navigationManager.NavigateTo("/");

}

}

1. Probamos y hacemos el **commit**.

## Mostrando y modificando el carro de compras

1. Agregamos la enumeración **OrderStatus**:

namespace Market.Shared.Enums

{

public enum OrderStatus

{

Nuevo,

Despachado,

Enviado,

Confirmado,

Cancelado

}

}

1. Agregamos el **VentaDTO**:

using Market.Shared.Enums;

namespace Market.Shared.DTOs

{

public class **Venta**DTO

{

public int Id { get; set; }

public OrderStatus OrderStatus { get; set; }

public string Remarks { get; set; } = string.Empty;

}

}

1. Agregamos estos métodos al **TemporalStoresController**:

[HttpGet("{id:int}")]

public async Task<ActionResult> Get(int id)

{

return Ok(await \_context.TemporalStores

.Include(ts => ts.User!)

.Include(ts => ts.Product!)

.ThenInclude(p => p.ProductCategories!)

.ThenInclude(pc => pc.Category)

.Include(ts => ts.Product!)

.ThenInclude(p => p.ProductImages)

.FirstOrDefaultAsync(x => x.Id == id));

}

[HttpPut]

public async Task<ActionResult> Put(TemporalStoreDTO temporalStoreDTO)

{

var currentTemporalStore = await \_context.TemporalStores.FirstOrDefaultAsync(x => x.Id == temporalStoreDTO.Id);

if (currentTemporalStore == null)

{

return NotFound();

}

currentTemporalStore!.Remarks = temporalStoreDTO.Remarks;

currentTemporalStore.Quantity = temporalStoreDTO.Quantity;

\_context.Update(currentTemporalStore);

await \_context.SaveChangesAsync();

return Ok(temporalStoreDTO);

}

[HttpDelete("{id:int}")]

public async Task<IActionResult> DeleteAsync(int id)

{

var temporalStore = await \_context.TemporalStores.FirstOrDefaultAsync(x => x.Id == id);

if (temporalStore == null)

{

return NotFound();

}

\_context.Remove(temporalStore);

await \_context.SaveChangesAsync();

return NoContent();

}

1. Modificamos nuestro **ShowCart.razor**.

@page "/Orders/ShowCart"

@using Microsoft.AspNetCore.Authorization;

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

@attribute [Authorize(Roles = "Admin, User")]

@if (temporalStores is null)

{

<div class="spinner" />

}

else

{

<GenericList MyList="temporalStores">

<Body>

<div class="card">

<div class="card-header">

<span>

<i class="oi oi-cart" /> Carro de Compras

</span>

</div>

<div class="card-body">

<div class="row mb-2">

<div class="col-4">

<h3>Cantidad productos: <strong>@($"{sumQuantity:N2}")</strong></h3>

</div>

<div class="col-4">

<h3>Valor: <strong>@($"{sumValue:C2}")</strong></h3>

</div>

</div>

<EditForm Model="VentaDTO" OnValidSubmit="ConfirmOrderAsync">

<DataAnnotationsValidator />

<div class="mb-3">

<label>Comentarios:</label>

<div>

<InputText class="form-control" @bind-Value="@VentaDTO.Remarks" />

<ValidationMessage For="@(() => VentaDTO.Remarks)" />

</div>

</div>

<button class="btn btn-primary mb-3" type="submit"><i class="oi oi-check" /> Confirmar Pedido</button>

</EditForm>

<table class="table table-striped">

<thead>

<tr>

<th>Nombre</th>

<th>Descripción</th>

<th>Cantidad</th>

<th>Precio</th>

<th>Valor</th>

<th>Comentarios</th>

<th>Imagén</th>

<th style="width:200px"></th>

</tr>

</thead>

<tbody>

@foreach (var temporalStore in temporalStores)

{

<tr>

<td>

@temporalStore.Product!.Name

</td>

<td>

@temporalStore.Product!.Description

</td>

<td>

@($"{temporalStore.Quantity:N2}")

</td>

<td>

@($"{temporalStore.Product!.Price:C2}")

</td>

<td>

@($"{temporalStore.Value:C2}")

</td>

<td>

@temporalStore.Remarks

</td>

<td>

<img src="@temporalStore.Product!.MainImage" style="width:100px;" />

</td>

<td>

<a href="/Orders/ModifyTemporalStore/@temporalStore.Id" class="btn btn-warning"><i class="oi oi-pencil" /> Editar</a>

<button class="btn btn-danger" @onclick=@(() => Delete(temporalStore.Id))><i class="oi oi-trash" /> Borrar</button>

</td>

</tr>

}

</tbody>

</table>

</div>

</div>

</Body>

</GenericList>

}

@code {

public List<TemporalStore>? temporalStores { get; set; }

private float sumQuantity;

private decimal sumValue;

public VentaDTO VentaDTO { get; set; } = new();

protected async override Task OnInitializedAsync()

{

await LoadAsync();

}

private async Task LoadAsync()

{

try

{

var responseHppt = await repository.Get<List<TemporalStore>>("api/temporalStores");

temporalStores = responseHppt.Response!;

sumQuantity = temporalStores.Sum(x => x.Quantity);

sumValue = temporalStores.Sum(x => x.Value);

}

catch (Exception ex)

{

await sweetAlertService.FireAsync("Error", ex.Message, SweetAlertIcon.Error);

}

}

private void ConfirmOrderAsync()

{

//TODO: Pending to implement

}

private async Task Delete(int temporalStoreId)

{

var result = await sweetAlertService.FireAsync(new SweetAlertOptions

{

Title = "Confirmación",

Text = "¿Esta seguro que quieres borrar el registro?",

Icon = SweetAlertIcon.Question,

ShowCancelButton = true

});

var confirm = string.IsNullOrEmpty(result.Value);

if (confirm)

{

return;

}

var responseHTTP = await repository.Delete($"api/temporalStores/{temporalStoreId}");

if (responseHTTP.Error)

{

if (responseHTTP.HttpResponseMessage.StatusCode == System.Net.HttpStatusCode.NotFound)

{

navigationManager.NavigateTo("/");

return;

}

var mensajeError = await responseHTTP.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", mensajeError, SweetAlertIcon.Error);

return;

}

await LoadAsync();

var toast = sweetAlertService.Mixin(new SweetAlertOptions

{

Toast = true,

Position = SweetAlertPosition.TopEnd,

ShowConfirmButton = false,

Timer = 5000

});

await toast.FireAsync(icon: SweetAlertIcon.Success, message: "Producto eliminado del carro de compras.");

}

}

1. Probamos lo que llevamos hasta el momento.
2. Dentro de **Pages/Orders** creamos el **ModifyTemporalStore.razor**.

@page "/Orders/ModifyTemporalStore/{TemporalStoreId:int}"

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

@if (loading)

{

<div class="spinner" />

}

else

{

<div class="card">

<div class="card-header">

<span>

<i class="oi oi-star" /> @product!.Name

<a class="btn btn-sm btn-success float-end" href="/"><i class="oi oi-arrow-thick-left" /> Regresar</a>

</span>

</div>

<div class="card-body">

<div class="row">

<div class="col-6">

<div class="mb-3">

<label>Nombre:</label>

<div>

<b>@product.Name</b>

</div>

</div>

<div class="mb-3">

<label>Descripción:</label>

<div>

<b>@product.Description</b>

</div>

</div>

<div class="mb-3">

<label>Precio:</label>

<div>

<b>@($"{product.Price:C2}")</b>

</div>

</div>

<div class="mb-3">

<label>Inventario:</label>

<div>

<b>@($"{product.Stock:N2}")</b>

</div>

</div>

<div class="mb-3">

<label>Categorías:</label>

<div>

@foreach (var category in categories!)

{

<div class="mx-2">

<b>@category</b>

</div>

}

</div>

</div>

</div>

<div class="col-6">

<EditForm Model="temporalStoreDTO" OnValidSubmit="UpdateCartAsync">

<DataAnnotationsValidator />

<div class="mb-3">

<label>Cantidad:</label>

<div>

<InputNumber class="form-control" @bind-Value="@temporalStoreDTO!.Quantity" />

<ValidationMessage For="@(() => temporalStoreDTO.Quantity)" />

</div>

<label>Comentarios:</label>

<div>

<InputText class="form-control" @bind-Value="@temporalStoreDTO.Remarks" />

<ValidationMessage For="@(() => temporalStoreDTO.Remarks)" />

</div>

</div>

<button class="btn btn-primary" type="submit"><i class="oi oi-check" /> Actualizar Carro de Compras</button>

</EditForm>

</div>

</div>

<CarouselView Images="images" />

</div>

</div>

}

@code {

private List<string>? categories;

private List<string>? images;

private bool loading = true;

private Product? product;

private bool isAuthenticated;

private TemporalStoreDTO? temporalStoreDTO;

[Parameter]

public int TemporalStoreId { get; set; }

protected async override Task OnInitializedAsync()

{

await LoadTemporalStoreAsync();

}

private async Task LoadTemporalStoreAsync()

{

loading = true;

var httpResponse = await repository.Get<TemporalStore>($"/api/temporalStores/{TemporalStoreId}");

if (httpResponse.Error)

{

loading = false;

var message = await httpResponse.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

var temporalStore = httpResponse.Response!;

temporalStoreDTO = new TemporalStoreDTO

{

Id = temporalStore.Id,

ProductId = temporalStore.ProductId,

Remarks = temporalStore.Remarks!,

Quantity = temporalStore.Quantity

};

product = temporalStore.Product;

categories = product!.ProductCategories!.Select(x => x.Category.Name).ToList();

images = product.ProductImages!.Select(x => x.Image).ToList();

loading = false;

}

public async Task UpdateCartAsync()

{

var httpResponse = await repository.Put("/api/temporalStores", temporalStoreDTO);

if (httpResponse.Error)

{

var message = await httpResponse.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

var toast2 = sweetAlertService.Mixin(new SweetAlertOptions

{

Toast = true,

Position = SweetAlertPosition.TopEnd,

ShowConfirmButton = false,

Timer = 5000

});

await toast2.FireAsync(icon: SweetAlertIcon.Success, message: "Producto modificado en el de compras.");

navigationManager.NavigateTo("/");

}

}

1. Probamos y hacemos el **commit**.

## Procesando el pedido

1. Agregamos la entidad **Venta**:

using Market.Shared.Enums;

using System.ComponentModel.DataAnnotations;

namespace Market.Shared.Entities

{

public class Venta {

public int Id { get; set; }

[DisplayFormat(DataFormatString = "{0:yyyy/MM/dd hh:mm tt}")]

[Display(Name = "Inventario")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public DateTime Date { get; set; }

public User? User { get; set; }

public string? UserId { get; set; }

[DataType(DataType.MultilineText)]

[Display(Name = "Comentarios")]

public string? Remarks { get; set; }

public OrderStatus OrderStatus { get; set; }

public ICollection<VentaDetail> VentaDetails { get; set; }

[DisplayFormat(DataFormatString = "{0:N0}")]

[Display(Name = "Líneas")]

public int Lines => VentaDetails == null ? 0 : VentaDetails.Count;

[DisplayFormat(DataFormatString = "{0:N2}")]

[Display(Name = "Cantidad")]

public float Quantity => VentaDetails == null ? 0 : VentaDetails.Sum(sd => sd.Quantity);

[DisplayFormat(DataFormatString = "{0:C2}")]

[Display(Name = "Valor")]

public decimal Value => VentaDetails == null ? 0 : VentaDetails.Sum(sd => sd.Value);

}

}

1. Agregamos la entidad **VentaDetail**:

using System.ComponentModel.DataAnnotations;

namespace Market.Shared.Entities

{

public class VentaDetail

{

public int Id { get; set; }

public Venta? Venta { get; set; }

public int VentaId { get; set; }

[DataType(DataType.MultilineText)]

[Display(Name = "Comentarios")]

public string? Remarks { get; set; }

public Product? Product { get; set; }

public int ProductId { get; set; }

[DisplayFormat(DataFormatString = "{0:N2}")]

[Display(Name = "Cantidad")]

[Required(ErrorMessage = "El campo {0} es obligatorio.")]

public float Quantity { get; set; }

[DisplayFormat(DataFormatString = "{0:C2}")]

[Display(Name = "Valor")]

public decimal Value => Product == null ? 0 : (decimal)Quantity \* Product.Price;

}

}

1. Modificamos la entidad **Product**:

public ICollection<VentaDetail>? VentaDetails { get; set; }

1. Modificamos la entidad **User**:

public ICollection<Venta>? Ventas { get; set; }

1. Agregamos las nuevas entidades al **DataContext**:

public DbSet<Venta> Ventas { get; set; }

public DbSet<VentaDetail> VentaDetails { get; set; }

1. Agregamos la migración y actualizamos la base de datos.
2. En **API/Helpers** creamos la interface **IOrdersHelper**:

using Market.Shared.Responses;

namespace Market.API.Helpers

{

public interface IOrdersHelper

{

Task<Response> ProcessOrderAsync(string email, string remarks);

}

}

1. Luego hacemos la implementación en el **OrdersHelper**:

using Microsoft.EntityFrameworkCore;

using Market.API.Data;

using Market.Shared.Entities;

using Market.Shared.Enums;

using Market.Shared.Responses;

namespace Market.API.Helpers

{

public class OrdersHelper : IOrdersHelper

{

private readonly DataContext \_context;

public OrdersHelper(DataContext context)

{

\_context = context;

}

public async Task<Response> ProcessOrderAsync(string email, string remarks)

{

var user = await \_context.Users.FirstOrDefaultAsync(x => x.Email == email);

if (user == null)

{

return new Response

{

IsSuccess = false,

Message = "Usuario no válido"

};

}

var temporalStores = await \_context.TemporalStores

.Include(x => x.Product)

.Where(x => x.User!.Email == email)

.ToListAsync();

Response response = await CheckInventoryAsync(temporalStores);

if (!response.IsSuccess)

{

return response;

}

Venta Venta = new()

{

Date = DateTime.UtcNow,

User = user,

Remarks =remarks,

VentaDetails = new List<VentaDetail>(),

OrderStatus = OrderStatus.Nuevo

};

foreach (var temporalStore in temporalStores)

{

Venta.VentaDetails.Add(new VentaDetail

{

Product = temporalStore.Product,

Quantity = temporalStore.Quantity,

Remarks = temporalStore.Remarks,

});

Product? product = await \_context.Products.FindAsync(temporalStore.Product!.Id);

if (product != null)

{

product.Stock -= temporalStore.Quantity;

\_context.Products.Update(product);

}

\_context.TemporalStores.Remove(temporalStore);

}

\_context.Ventas.Add(Venta);

await \_context.SaveChangesAsync();

return response;

}

private async Task<Response> CheckInventoryAsync(List<TemporalStore> temporalStores)

{

Response response = new() { IsSuccess = true };

foreach (var temporalStore in temporalStores)

{

Product? product = await \_context.Products.FirstOrDefaultAsync(x => x.Id == temporalStore.Product!.Id);

if (product == null)

{

response.IsSuccess = false;

response.Message = $"El producto {temporalStore.Product!.Name}, ya no está disponible";

return response;

}

if (product.Stock < temporalStore.Quantity)

{

response.IsSuccess = false;

response.Message = $"Lo sentimos no tenemos existencias suficientes del producto {temporalStore.Product!.Name}, para tomar su pedido. Por favor disminuir la cantidad o sustituirlo por otro.";

return response;

}

}

return response;

}

}

}

1. Lo inyectamos en el **Program** del **API**:

builder.Services.AddScoped<IOrdersHelper, OrdersHelper>();

1. Creamos el **VentasController**:

using Microsoft.AspNetCore.Authentication.JwtBearer;

using Microsoft.AspNetCore.Authorization;

using Microsoft.AspNetCore.Mvc;

using Market.API.Helpers;

using Market.Shared.DTOs;

namespace Market.API.Controllers

{

[ApiController]

[Authorize(AuthenticationSchemes = JwtBearerDefaults.AuthenticationScheme)]

[Route("/api/Ventas")]

public class VentasController : ControllerBase

{

private readonly IOrdersHelper \_ordersHelper;

public VentasController(IOrdersHelper ordersHelper)

{

\_ordersHelper = ordersHelper;

}

[HttpPost]

public async Task<ActionResult> Post(VentaDTO VentaDTO)

{

var response = await \_ordersHelper.ProcessOrderAsync(User.Identity!.Name!, VentaDTO.Remarks);

if (response.IsSuccess)

{

return NoContent();

}

return BadRequest(response.Message);

}

}

}

1. Copiamos las imágenes de la carpeta images en el **WWWRoot**.
2. Creamos la página de confirmación de pedido **Pages/Orders/VentaConfirmed**:

@page "/Orders/VentaConfirmed"

<center>

<h3>Pedido Confirmado</h3>

<img src="images/Shopping.png" width="300" />

<p>Su peidido ha sido confirmado. En pronto recibirá sus productos, muchas gracias</p>

<a href="/" class="btn btn-primary">Volver al inicio</a>

</center>

1. Modificamos **ConfirmOrderAsync** del **ShowCart**:

private async Task ConfirmOrderAsync()

{

var result = await sweetAlertService.FireAsync(new SweetAlertOptions

{

Title = "Confirmación",

Text = "¿Esta seguro que quieres confirmar el pedido?",

Icon = SweetAlertIcon.Question,

ShowCancelButton = true

});

var confirm = string.IsNullOrEmpty(result.Value);

if (confirm)

{

return;

}

var httpResponse = await repository.Post("/api/Ventas", VentaDTO);

if (httpResponse.Error)

{

var message = await httpResponse.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

navigationManager.NavigateTo("/Orders/VentaConfirmed");

}

1. Probamos y hacemos el **commit**.

## Administrar pedidos

1. Agregamos estos métodos al **VentasController**, primero inyectamos el **DataContext** y el **IUserHelper**:

private readonly DataContext \_context;

private readonly IUserHelper \_userHelper;

public VentasController(IOrdersHelper ordersHelper, DataContext context, IUserHelper userHelper)

{

\_ordersHelper = ordersHelper;

\_context = context;

\_userHelper = userHelper;

}

[HttpGet]

public async Task<ActionResult> Get([FromQuery] PaginationDTO pagination)

{

var user = await \_context.Users.FirstOrDefaultAsync(x => x.Email == User.Identity!.Name);

if (user == null)

{

return BadRequest("User not valid.");

}

var queryable = \_context.Ventas

.Include(s => s.User)

.Include(s => s.VentaDetails)

.ThenInclude(sd => sd.Product)

.AsQueryable();

var isAdmin = await \_userHelper.IsUserInRoleAsync(user, UserType.Admin.ToString());

if (!isAdmin)

{

queryable = queryable.Where(s => s.User!.Email == User.Identity!.Name);

}

return Ok(await queryable

.OrderByDescending(x => x.Date)

.Paginate(pagination)

.ToListAsync());

}

[HttpGet("totalPages")]

public async Task<ActionResult> GetPages([FromQuery] PaginationDTO pagination)

{

var user = await \_context.Users.FirstOrDefaultAsync(x => x.Email == User.Identity!.Name);

if (user == null)

{

return BadRequest("User not valid.");

}

var queryable = \_context.Ventas

.AsQueryable();

var isAdmin = await \_userHelper.IsUserInRoleAsync(user, UserType.Admin.ToString());

if (!isAdmin)

{

queryable = queryable.Where(s => s.User!.Email == User.Identity!.Name);

}

double count = await queryable.CountAsync();

double totalPages = Math.Ceiling(count / pagination.RecordsNumber);

return Ok(totalPages);

}

1. Creamos en **Pages/Orders** el **VentaIndex**:

@page "/ventas"

@using Microsoft.AspNetCore.Authorization;

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

@attribute [Authorize(Roles = "Admin")]

@if (Ventas is null)

{

<div class="spinner" />

}

else

{

<GenericList MyList="Ventas">

<Body>

<div class="card">

<div class="card-header">

<span>

<i class="oi oi-dollar" /> Pedidos

</span>

</div>

<div class="card-body">

<Pagination CurrentPage="currentPage"

TotalPages="totalPages"

SelectedPage="SelectedPageAsync" />

<table class="table table-striped">

<thead>

<tr>

<th>Fecha</th>

<th>Usuario</th>

<th>Comentario</th>

<th>Estado</th>

<th>Líneas</th>

<th>Cantidad</th>

<th>Valor</th>

<th></th>

</tr>

</thead>

<tbody>

@foreach (var venta in Ventas)

{

<tr>

<td>

@($"{venta.Date:yyyy/MM/dd hh:mm tt}")

</td>

<td>

@venta.User!.FullName

</td>

<td>

@venta.Remarks

</td>

<td>

@venta.OrderStatus

</td>

<td>

@venta.Lines

</td>

<td>

@($"{venta.Quantity:N2}")

</td>

<td>

@($"{venta.Value:C2}")

</td>

<td>

<a href="/orders/ventaDetails/@venta.Id" class="btn btn-info"><i class="oi oi-info" /> Detalles</a>

</td>

</tr>

}

</tbody>

</table>

</div>

</div>

</Body>

</GenericList>

}

@code {

private int currentPage = 1;

private int totalPages;

public List<Venta>? Ventas { get; set; }

[Parameter]

[SupplyParameterFromQuery]

public string Page { get; set; } = "";

protected async override Task OnInitializedAsync()

{

await LoadAsync();

}

private async Task SelectedPageAsync(int page)

{

currentPage = page;

await LoadAsync(page);

}

private async Task LoadAsync(int page = 1)

{

if (!string.IsNullOrWhiteSpace(Page))

{

page = Convert.ToInt32(Page);

}

string url1 = $"api/Ventas?page={page}";

string url2 = $"api/Ventas/totalPages";

try

{

var responseHppt = await repository.Get<List<Venta>>(url1);

var responseHppt2 = await repository.Get<int>(url2);

Ventas = responseHppt.Response!;

totalPages = responseHppt2.Response!;

}

catch (Exception ex)

{

await sweetAlertService.FireAsync("Error", ex.Message, SweetAlertIcon.Error);

}

}

}

1. Modificamos el **NavMenu.razor**:

<div class="nav-item px-3">

<NavLink class="nav-link" href="countries">

<span class="oi oi-globe" aria-hidden="true"></span> Países

</NavLink>

</div>

<div class="nav-item px-3">

<NavLink class="nav-link" href="products">

<span class="oi oi-star" aria-hidden="true"></span> Productos

</NavLink>

</div>

<div class="nav-item px-3">

<NavLink class="nav-link" href="Ventas">

<span class="oi oi-dollar" aria-hidden="true"></span> Pedidos

</NavLink>

</div>

1. Probamos lo que llevamos hasta el momento.
2. Adicionamos este método al **VentasController**:

[HttpGet("{id:int}")]

public async Task<ActionResult> Get(int id)

{

var venta = await \_context.Ventas

.Include(s => s.User!)

.ThenInclude(u => u.City!)

.ThenInclude(c => c.State!)

.ThenInclude(s => s.Country)

.Include(s => s.VentaDetails!)

.ThenInclude(sd => sd.Product)

.ThenInclude(p => p.ProductImages)

.FirstOrDefaultAsync(s => s.Id == id);

if (venta== null)

{

return NotFound();

}

return Ok(venta);

}

1. Creamos el **VentaDetails**:

@page "/orders/VentaDetails/{VentaId:int}"

@using Microsoft.AspNetCore.Authorization;

@using Market.Shared.Enums;

@using System.Net;

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

@attribute [Authorize(Roles = "Admin, User")]

@if (venta is null)

{

<div class="spinner" />

}

else

{

<GenericList MyList="venta.VentaDetails!.ToList()">

<Body>

<div class="card">

<div class="card-header">

<span>

<i class="oi oi-person"></i> @venta.User!.FullName

@if (venta.OrderStatus == OrderStatus.Nuevo)

{

<button class="btn btn-sm btn-danger float-end mx-2" @onclick=@(() => CancelVentaAsync())><i class="oi oi-trash" /> Cancelar</button>

<AuthorizeView Roles="Admin">

<Authorized>

<button class="btn btn-sm btn-primary float-end mx-2" @onclick=@(() => DispatchVentaAsync())><i class="oi oi-external-link" /> Despachar</button>

</Authorized>

</AuthorizeView>

}

<AuthorizeView Roles="Admin">

<Authorized>

@if (venta.OrderStatus == OrderStatus.Despachado)

{

<button class="btn btn-sm btn-warning float-end mx-2" @onclick=@(() => SendVentaAsync())><i class="oi oi-location" /> Enviar</button>

}

@if (venta.OrderStatus == OrderStatus.Enviado)

{

<button class="btn btn-sm btn-dark float-end mx-2" @onclick=@(() => ConfirmVentaAsync())><i class="oi oi-thumb-up" /> Confirmar</button>

}

</Authorized>

</AuthorizeView>

<a class="btn btn-sm btn-success float-end" href="/Ventas"><i class="oi oi-arrow-thick-left" /> Regresar</a>

</span>

</div>

<div class="row mx-2 my-2">

<div class="col-2">

<p>Cliente</p>

<p>Documento</p>

<p>Teléfono</p>

<p>Email</p>

<p>Dirección</p>

</div>

<div class="col-4">

<p><strong>@venta.User.FullName</strong></p>

<p><strong>@venta.User.Document</strong></p>

<p><strong>@venta.User.PhoneNumber</strong></p>

<p><strong>@venta.User.UserName</strong></p>

<p><strong>@venta.User.Address, @venta.User.City!.Name, @venta.User.City.State!.Name, @venta.User.City.State.Country!.Name</strong></p>

</div>

<div class="col-2">

<p>Estado</p>

<p>Fecha</p>

<p>Comentarios</p>

<p>Líneas</p>

<p>Cantidad</p>

<p>Valor</p>

</div>

<div class="col-4">

<p><strong>@venta.OrderStatus</strong></p>

<p><strong>@($"{venta.Date.ToLocalTime():yyyy/MM/dd hh:mm tt}")</strong></p>

<p><strong>@(string.IsNullOrEmpty(venta.Remarks) ? "NA" : venta.Remarks)</strong></p>

<p><strong>@venta.Lines</strong></p>

<p><strong>@($"{venta.Quantity:N2}")</strong></p>

<p><strong>@($"{venta.Value:C2}")</strong></p>

</div>

</div>

<div class="card-body">

<table class="table table-striped">

<thead>

<tr>

<th>Producto</th>

<th>Imagen</th>

<th>Comentarios</th>

<th>Cantidad</th>

<th>Precio</th>

<th>Valor</th>

</tr>

</thead>

<tbody>

@foreach (var ventaDetail in venta.VentaDetails!)

{

<tr>

<td>@ventaDetail.Product!.Name</td>

<td><img src="@ventaDetail.Product!.MainImage" style="width:100px;" /></td>

<td>@ventaDetail.Remarks</td>

<td>@($"{ventaDetail.Quantity:N2}")</td>

<td>@($"{ventaDetail.Product!.Price:C2}")</td>

<td>@($"{ventaDetail.Value:C2}")</td>

</tr>

}

</tbody>

</table>

</div>

</div>

</Body>

</GenericList>

}

@code {

private Venta? venta;

[Parameter]

public int VentaId { get; set; }

protected async override Task OnInitializedAsync()

{

await LoadAsync();

}

private async Task LoadAsync()

{

var responseHppt = await repository.Get<Venta>($"api/Ventas/{VentaId}");

if (responseHppt.Error)

{

if (responseHppt.HttpResponseMessage.StatusCode == HttpStatusCode.NotFound)

{

navigationManager.NavigateTo("/Ventas");

return;

}

var messageError = await responseHppt.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", messageError, SweetAlertIcon.Error);

return;

}

venta = responseHppt.Response;

}

private async Task CancelVentaAsync()

{

await ModifyTemporalVenta("cancelar", OrderStatus.Cancelado);

}

private async Task DispatchVentaAsync()

{

await ModifyTemporalVenta("despachar", OrderStatus.Despachado);

}

private async Task SendVentaAsync()

{

await ModifyTemporalVenta("enviar", OrderStatus.Enviado);

}

private async Task ConfirmVentaAsync()

{

await ModifyTemporalVenta("confirmar", OrderStatus.Confirmado);

}

private async Task ModifyTemporalVenta(string message, OrderStatus status)

{

var result = await sweetAlertService.FireAsync(new SweetAlertOptions

{

Title = "Confirmación",

Text = $"¿Esta seguro que quieres {message} el pedido?",

Icon = SweetAlertIcon.Question,

ShowCancelButton = true

});

var confirm = string.IsNullOrEmpty(result.Value);

if (confirm)

{

return;

}

var ventaDTO = new VentaDTO

{

Id = VentaId,

OrderStatus = status

};

var responseHTTP = await repository.Put("api/Ventas", ventaDTO);

if (responseHTTP.Error)

{

var mensajeError = await responseHTTP.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", mensajeError, SweetAlertIcon.Error);

return;

}

navigationManager.NavigateTo("/Ventas");

}

}

1. Modificamos estos métodos al **VentasDetails.razor**:

private async Task CancelVentaAsync()

{

await ModifyTemporalVenta("cancelar", OrderStatus.Cancelado);

}

private async Task DispatchVentaAsync()

{

await ModifyTemporalVenta("despachar", OrderStatus.Despachado);

}

private async Task SendVentaAsync()

{

await ModifyTemporalVenta("enviar", OrderStatus.Enviado);

}

private async Task ConfirmVentaAsync()

{

await ModifyTemporalVenta("confirmar", OrderStatus.Confirmado);

}

private async Task ModifyTemporalVenta(string message, OrderStatus status)

{

var result = await sweetAlertService.FireAsync(new SweetAlertOptions

{

Title = "Confirmación",

Text = $"¿Esta seguro que quieres {message} el pedido?",

Icon = SweetAlertIcon.Question,

ShowCancelButton = true

});

var confirm = string.IsNullOrEmpty(result.Value);

if (confirm)

{

return;

}

var ventaDTO = new VentaDTO

{

Id = VentaId,

OrderStatus = status

};

var responseHTTP = await repository.Put("api/Ventas", ventaDTO);

if (responseHTTP.Error)

{

var mensajeError = await responseHTTP.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", mensajeError, SweetAlertIcon.Error);

return;

}

navigationManager.NavigateTo("/Ventas");

}

1. Probamos y hacemos el **commit**.

## Ver estado de mis pedidos

1. Modificamos el método **Put** en el **VentasController**:

var isAdmin = await \_userHelper.IsUserInRoleAsync(user, UserType.Admin.ToString());

if (!isAdmin && ventaDTO.OrderStatus != OrderStatus.Cancelado)

{

return BadRequest("Solo permitido para administradores.");

}

1. Agregamos estas líneas al **NavMenu.razor**:

</AuthorizeView>

<AuthorizeView Roles="User">

<Authorized>

<div class="nav-item px-3">

<NavLink class="nav-link" href="Ventas">

<span class="oi oi-dollar" aria-hidden="true"></span> Ver Mis Pedidos

</NavLink>

</div>

</Authorized>

</AuthorizeView>

</nav>

</div>

1. Modificamos el **VentaIndex**:

@attribute [Authorize(Roles = "Admin, User")]

1. Modificamos el **VentaDetails**:

…

@attribute [Authorize(Roles = "Admin, User")]

…

<div class="card-header">

<span>

<i class="oi oi-dollar"></i> @Venta.User!.FullName

@if (venta.OrderStatus == OrderStatus.Nuevo)

{

<button class="btn btn-sm btn-danger float-end mx-2" @onclick=@(() => CancelVentaAsync())><i class="oi oi-trash" /> Cancelar</button>

<AuthorizeView Roles="Admin">

<Authorized>

<button class="btn btn-sm btn-primary float-end mx-2" @onclick=@(() => DispatchVentaAsync())><i class="oi oi-external-link" /> Despachar</button>

</Authorized>

</AuthorizeView>

}

<AuthorizeView Roles="Admin">

<Authorized>

@if (venta.OrderStatus == OrderStatus.Despachado)

{

<button class="btn btn-sm btn-warning float-end mx-2" @onclick=@(() => SendVentaAsync())><i class="oi oi-location" /> Enviar</button>

}

@if (venta.OrderStatus == OrderStatus.Enviado)

{

<button class="btn btn-sm btn-dark float-end mx-2" @onclick=@(() => ConfirmVentaAsync())><i class="oi oi-thumb-up" /> Confirmar</button>

}

</Authorized>

</AuthorizeView>

<a class="btn btn-sm btn-success float-end" href="/Ventas"><i class="oi oi-arrow-thick-left" /> Regresar</a>

</span>

</div>

1. Probamos y hacemos el **commit**.

## Administrar usuarios y crear nuevos administradores

1. Adicionamos estos métodos al **AccountController** (primero inyectamos el **DataContext**):

private readonly DataContext \_context;

public AccountsController(IUserHelper userHelper, IConfiguration configuration, IFileStorage fileStorage,IMailHelper mailHelper, DataContext context)

{

\_userHelper = userHelper;

\_configuration = configuration;

\_fileStorage = fileStorage;

\_container = "users";

\_context = context;

this.\_mailHelper = mailHelper;

}

[HttpGet(“all”)]

[Authorize(AuthenticationSchemes = JwtBearerDefaults.AuthenticationScheme)]

public async Task<ActionResult> GetAll([FromQuery] PaginationDTO pagination)

{

var queryable = \_context.Users

.Include(u => u.City)

.AsQueryable();

if (!string.IsNullOrWhiteSpace(pagination.Filter))

{

queryable = queryable.Where(x => x.FirstName.ToLower().Contains(pagination.Filter.ToLower()) ||

x.LastName.ToLower().Contains(pagination.Filter.ToLower()));

}

return Ok(await queryable

.OrderBy(x => x.FirstName)

.ThenBy(x => x.LastName)

.Paginate(pagination)

.ToListAsync());

}

[HttpGet("totalPages")]

public async Task<ActionResult> GetPages([FromQuery] PaginationDTO pagination)

{

var queryable = \_context.Users.AsQueryable();

if (!string.IsNullOrWhiteSpace(pagination.Filter))

{

queryable = queryable.Where(x => x.FirstName.ToLower().Contains(pagination.Filter.ToLower()) ||

x.LastName.ToLower().Contains(pagination.Filter.ToLower()));

}

double count = await queryable.CountAsync();

double totalPages = Math.Ceiling(count / pagination.RecordsNumber);

return Ok(totalPages);

}

1. Adicionamos estas líneas al **NavMenu**:

<div class="nav-item px-3">

<NavLink class="nav-link" href="products">

<span class="oi oi-star" aria-hidden="true"></span> Productos

</NavLink>

</div>

<div class="nav-item px-3">

<NavLink class="nav-link" href="users">

<span class="oi oi-people" aria-hidden="true"></span> Usuarios

</NavLink>

</div>

1. Creamos el **UserIndex** dentro de **Pages/Auth**:

@page "/users"

@using Microsoft.AspNetCore.Authorization;

@inject IRepository repository

@inject NavigationManager navigationManager

@inject SweetAlertService sweetAlertService

@attribute [Authorize(Roles = "Admin")]

@if (Users is null)

{

<div class="spinner" />

}

else

{

<GenericList MyList="Users">

<Body>

<div class="card">

<div class="card-header">

<span>

<i class="oi oi-people"></i> Usuarios

<a class="btn btn-sm btn-primary float-end" href="/register/?IsAdmin=true"><i class="oi oi-plus"></i> Adicionar Administrador</a>

</span>

</div>

<div class="card-body">

<div class="mb-2" style="display: flex; flex-wrap:wrap; align-items: center;">

<div>

<input style="width: 400px;" type="text" class="form-control" id="titulo" placeholder="Buscar usuario..." @bind-value="Filter" />

</div>

<div class="mx-1">

<button type="button" class="btn btn-outline-primary" @onclick="ApplyFilterAsync"><i class="oi oi-layers" /> Filtrar</button>

<button type="button" class="btn btn-outline-danger" @onclick="CleanFilterAsync"><i class="oi oi-ban" /> Limpiar</button>

</div>

</div>

<Pagination CurrentPage="currentPage"

TotalPages="totalPages"

SelectedPage="SelectedPage" />

<table class="table table-striped">

<thead>

<tr>

<th>Imagén</th>

<th>Usuario</th>

<th>Documento</th>

<th>Teléfono</th>

<th>Email</th>

<th>Dirección</th>

<th>Confirmado</th>

<th>Tipo Usuario</th>

</tr>

</thead>

<tbody>

@foreach (var user in Users)

{

<tr>

<td><img src="@user.Photo" width="80" height="80" style="border-radius:50%" /></td>

<td>@user.FullName</td>

<td>@user.Document</td>

<td>@user.PhoneNumber</td>

<td>@user.Email</td>

<td>@user.Address, @user.City!.Name</td>

<td>@user.EmailConfirmed</td>

<td>@user.UserType</td>

</tr>

}

</tbody>

</table>

</div>

</div>

</Body>

</GenericList>

}

@code {

public List<User>? Users { get; set; }

private int currentPage = 1;

private int totalPages;

[Parameter]

[SupplyParameterFromQuery]

public string Page { get; set; } = "";

[Parameter]

[SupplyParameterFromQuery]

public string Filter { get; set; } = "";

protected async override Task OnInitializedAsync()

{

await LoadAsync();

}

private async Task SelectedPage(int page)

{

currentPage = page;

await LoadAsync(page);

}

private async Task LoadAsync(int page = 1)

{

if (!string.IsNullOrWhiteSpace(Page))

{

page = Convert.ToInt32(Page);

}

string url1 = string.Empty;

string url2 = string.Empty;

if (string.IsNullOrEmpty(Filter))

{

url1 = $"api/accounts/all?page={page}";

url2 = $"api/accounts/totalPages";

}

else

{

url1 = $"api/accounts/all?page={page}&filter={Filter}";

url2 = $"api/accounts/totalPages?filter={Filter}";

}

try

{

var responseHppt = await repository.Get<List<User>>(url1);

var responseHppt2 = await repository.Get<int>(url2);

Users = responseHppt.Response!;

totalPages = responseHppt2.Response!;

}

catch (Exception ex)

{

await sweetAlertService.FireAsync("Error", ex.Message, SweetAlertIcon.Error);

}

}

private async Task ApplyFilterAsync()

{

await LoadAsync();

}

private async Task CleanFilterAsync()

{

Filter = string.Empty;

await LoadAsync();

}

}

1. Modificamos el **Register.razor**:

…

[Parameter]

[SupplyParameterFromQuery]

public bool IsAdmin { get; set; }

…

private async Task CreteUserAsync()

{

userDTO.UserName = userDTO.Email;

if (IsAdmin)

{

userDTO.UserType = UserType.Admin;

}

else

{

userDTO.UserType = UserType.User;

}

var responseHttp = await repository.Post<UserDTO>("/api/accounts/CreateUser", userDTO);

if (responseHttp.Error)

{

var message = await responseHttp.GetErrorMessageAsync();

await sweetAlertService.FireAsync("Error", message, SweetAlertIcon.Error);

return;

}

await sweetAlertService.FireAsync("Confirmación", "Su cuenta ha sido creada con éxito. Se te ha enviado un correo electrónico con las instrucciones para activar tu usuario.", SweetAlertIcon.Info);

navigationManager.NavigateTo("/");

}

1. Probamos y hacemos el **commit**.

## Corrección para que corrar el App en Mac

1. Modificamos el SeedBd:

…

foreach (string? image in images)

{

string filePath;

if (RuntimeInformation.IsOSPlatform(OSPlatform.Windows))

{

filePath = $"{Environment.CurrentDirectory}\\Images\\products\\{image}";

}

else

{

filePath = $"{Environment.CurrentDirectory}/Images/products/{image}";

}

var fileBytes = File.ReadAllBytes(filePath);

var imagePath = await \_fileStorage.SaveFileAsync(fileBytes, "jpg", "products");

prodcut.ProductImages.Add(new ProductImage { Image = imagePath });

}

…

var city = await \_context.Cities.FirstOrDefaultAsync(x => x.Name == "Medellín");

if (city == null)

{

city = await \_context.Cities.FirstOrDefaultAsync();

}

string filePath;

if (RuntimeInformation.IsOSPlatform(OSPlatform.Windows))

{

filePath = $"{Environment.CurrentDirectory}\\Images\\users\\{image}";

}

else

{

filePath = $"{Environment.CurrentDirectory}/Images/users/{image}";

}

var fileBytes = File.ReadAllBytes(filePath);

var imagePath = await \_fileStorage.SaveFileAsync(fileBytes, "jpg", "users");

…

1. Probamos y hacemos el **commit**.