On Sale - WEB Parte I

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# 

# Что мы сделаем?

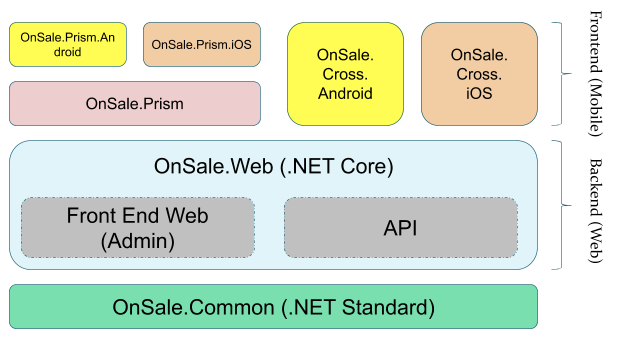
Во время пандемии мы собираемся разработать решение, при котором продавец сможет зарегистрировать свои продукты, а затем продавать их через мобильное приложение..

# Матрица функциональности

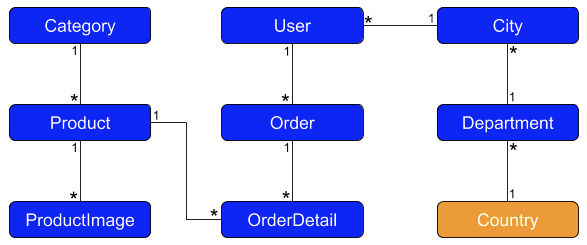
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Функциональность** | **Web** | | | **App** |
| **Admin** | **User** | **User** | |
| Login | X | X | X | |
| Зарегистрируйтесь как пользователь |  | X | X | |
| Изменить профиль | X | X | X | |
| Помнить пароль | X | X | X | |
| Управляйте администраторами | X |  |  | |
| Управляйте странами, отделами, городами | X |  |  | |
| Управлять продуктами | X |  |  | |
| Просмотр и поиск продуктов |  | X | X | |
| Добавить товары в корзину |  | X | X | |
| Подтвердить заказ |  | X | X | |
| Управлять заказами | X |  |  | |
| Посмотреть статус моих заказов |  | X | X | |

# 

# Архитектура

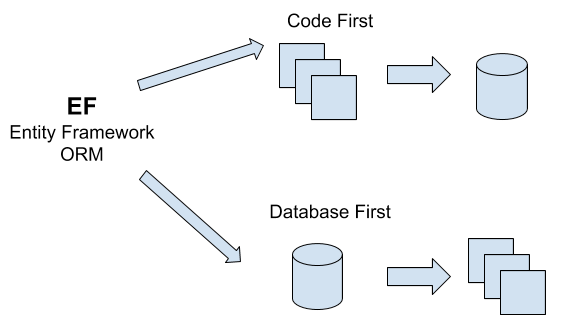


# Диаграмма отношений сущностей (кандидат)



# 

# Создание базы данных с Entity Framework



Я рекомендую искать и читать документацию по Code First и Database First. В этом курсе мы будем работать с EF Code First, если вы хотите узнать больше о EF Database First, вот ссылка:<https://docs.microsoft.com/en-us/ef/core/get-started/aspnetcore/existing-db>

1. Создайте **Common** и **Web** проекты.
2. В проекте **Common** создайте папку **Entities** и внутри нее класс Country:

public class Country

{

public int Id { get; set; }

[MaxLength(50)]

[Required]

public string Name { get; set; }

}

1. В веб-проекте создайте папку **Data** и внутри нее класс **DataContext**:

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(t => t.Name)

.IsUnique();

}

}

1. Добавьте строку подключения в файл **appsettings.json:**

{

"Logging": {

"LogLevel": {

"Default": "Warning"

}

},

"AllowedHosts": "\*",

"ConnectionStrings": {

"DefaultConnection": "Server=(localdb)\\MSSQLLocalDB;Database=OnSale;Trusted\_Connection=True;MultipleActiveResultSets=true"

}

}

1. Внедряем подключение к базе данных в файле **Startup.cs** в методе **ConfigureServices**:

public void ConfigureServices(IServiceCollection services)

{

services.Configure<CookiePolicyOptions>(options =>

{

options.CheckConsentNeeded = context => true;

options.MinimumSameSitePolicy = SameSiteMode.None;

});

services.AddDbContext<DataContext>(cfg =>

{

cfg.UseSqlServer(Configuration.GetConnectionString("DefaultConnection"));

});

services.AddMvc().SetCompatibilityVersion(CompatibilityVersion.Version\_2\_1);

}

1. Сохраняем изменения и запускаем команды для создания базы данных локально:

PM> add-migration InitialDb

PM> update-database

1. Мы создаем контроллер с мастером для стран и модифицируем меню, чтобы иметь возможность тестировать то, что мы несем.

<ul class="nav navbar-nav">

<li><a asp-area="" asp-controller="Home" asp-action="Index">Home</a></li>

<li><a asp-area="" asp-controller="Home" asp-action="About">About</a></li>

<li><a asp-area="" asp-controller="Home" asp-action="Contact">Contact</a></li>

<li><a asp-area="" asp-controller="Countries" asp-action="Index">Countries</a></li>

</ul>

1. Mejoremos el CRUD colocando un aspecto más profesional. Para esto adicionamos la vista parcial **\_DeleteDialog**:

<div class="modal fade" id="deleteDialog" tabindex="-1" role="dialog" aria-labelledby="exampleModalLabel" aria-hidden="true">

<div class="modal-dialog" role="document">

<div class="modal-content">

<div class="modal-header">

<h5 class="modal-title" id="exampleModalLabel">Delete Record</h5>

</div>

<div class="modal-body">

<p>Are you sure to wanto to delete the record?</p>

</div>

<div class="modal-footer">

<button type="button" class="btn btn-primary" data-dismiss="modal">No</button>

<button type="button" class="btn btn-danger" id="btnYesDelete">Yes</button>

</div>

</div>

</div>

</div>

1. Adicional a esto, agregamos el archivo **deleteDialog.js** en **wwwroot/js**:

(function (soccerDeleteDialog) {

var methods = {

"openModal": openModal,

"deleteItem": deleteItem

};

var item\_to\_delete;

/\*\*

\* Open a modal by class name or Id.

\*

\* @return string id item.

\*/

function openModal(modalName, classOrId, sourceEvent, deletePath, eventClassOrId) {

var textEvent;

if (classOrId) {

textEvent = "." + modalName;

} else {

textEvent = "#" + modalName;

}

$(textEvent).click((e) => {

item\_to\_delete = e.currentTarget.dataset.id;

deleteItem(sourceEvent, deletePath, eventClassOrId);

});

}

/\*\*

\* Path to delete an item.

\*

\* @return void.

\*/

function deleteItem(sourceEvent, deletePath, eventClassOrId) {

var textEvent;

if (eventClassOrId) {

textEvent = "." + sourceEvent;

} else {

textEvent = "#" + sourceEvent;

}

$(textEvent).click(function () {

window.location.href = deletePath + item\_to\_delete;

});

}

soccerDeleteDialog.sc\_deleteDialog = methods;

})(window);

1. Modificamos la acción **Delete**:

public async Task<IActionResult> Delete(int? id)

{

if (id == null)

{

return NotFound();

}

Country country = await \_context.Countries

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

if (country == null)

{

return NotFound();

}

\_context.Countries.Remove(country);

await \_context.SaveChangesAsync();

return RedirectToAction(nameof(Index));

}

1. Modificamos el resto de vistas colocando los botones con estilos.
2. Modificar la vista **Index**:

@model IEnumerable<OnSale.Common.Entities.Country>

@{

ViewData["Title"] = "Index";

}

<link rel="stylesheet" href="https://cdn.datatables.net/1.10.19/css/jquery.dataTables.min.css" />

<br />

<p>

<a asp-action="Create" class="btn btn-primary"><i class="fas fa-plus"></i> Add New</a>

</p>

<div class="row">

<div class="col-md-12">

<div class="panel panel-default">

<div class="panel-heading">

<h3 class="panel-title">Countries</h3>

</div>

<div class="panel-body">

<table class="table table-hover table-responsive-md table-striped" id="MyTable">

<thead>

<tr>

<th>

@Html.DisplayNameFor(model => model.Name)

</th>

<th></th>

</tr>

</thead>

<tbody>

@foreach (var item in Model)

{

<tr>

<td>

@Html.DisplayFor(modelItem => item.Name)

</td>

<td>

<a asp-action="Edit" asp-route-id="@item.Id" class="btn btn-warning"><i class="far fa-pencil"></i></a>

<a asp-action="Details" asp-route-id="@item.Id" class="btn btn-info"><i class="fas fa-align-justify"></i></a>

<button data-id="@item.Id" class="btn btn-danger deleteItem" data-toggle="modal" data-target="#deleteDialog"><i class="fas fa-trash"></i></button>

</td>

</tr>

}

</tbody>

</table>

</div>

</div>

</div>

</div>

<partial name="\_DeleteDialog" />

@section Scripts {

@{await Html.RenderPartialAsync("\_ValidationScriptsPartial");}

<script src="//cdn.datatables.net/1.10.19/js/jquery.dataTables.min.js"></script>

<script src="/js/deleteDialog.js"></script>

<script type="text/javascript">

$(document).ready(function () {

$('#MyTable').DataTable();

// Delete item

sc\_deleteDialog.openModal('deleteItem', true, 'btnYesDelete', '/Countries/Delete/', false);

});

</script>

}

1. Adicionamos una validación al controlador para evitar errores de duplicados en el **Create**:

[HttpPost]

[ValidateAntiForgeryToken]

public async Task<IActionResult> Create(Country country)

{

if (ModelState.IsValid)

{

try

{

\_context.Add(country);

await \_context.SaveChangesAsync();

return RedirectToAction(nameof(Index));

}

catch (DbUpdateException dbUpdateException)

{

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

{

ModelState.AddModelError(string.Empty, "There are a record with the same name.");

}

else

{

ModelState.AddModelError(string.Empty, dbUpdateException.InnerException.Message);

}

}

catch (Exception exception)

{

ModelState.AddModelError(string.Empty, exception.Message);

}

}

return View(country);

}

1. Adicionamos una validación al controlador para evitar errores de duplicados en el **Edit**:

[HttpPost]

[ValidateAntiForgeryToken]

public async Task<IActionResult> Edit(int id, Country country)

{

if (id != country.Id)

{

return NotFound();

}

if (ModelState.IsValid)

{

try

{

\_context.Update(country);

await \_context.SaveChangesAsync();

return RedirectToAction(nameof(Index));

}

catch (DbUpdateException dbUpdateException)

{

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

{

ModelState.AddModelError(string.Empty, "There are a record with the same name.");

}

else

{

ModelState.AddModelError(string.Empty, dbUpdateException.InnerException.Message);

}

}

catch (Exception exception)

{

ModelState.AddModelError(string.Empty, exception.Message);

}

}

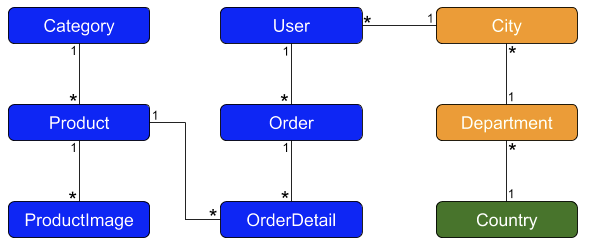
return View(country);

}

1. Probamos.

# Modificación de la Base de Datos

1. Completamos estas entidades:



1. Adicionar **City**:

public class City

{

public int Id { get; set; }

[MaxLength(50)]

[Required]

public string Name { get; set; }

}

1. Adicionamos **Department**:

public class Department

{

public int Id { get; set; }

[MaxLength(50)]

[Required]

public string Name { get; set; }

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

[DisplayName("Cities Number")]

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

}

1. Modificamos **Country**:

public class Country

{

public int Id { get; set; }

[MaxLength(50)]

[Required]

public string Name { get; set; }

public ICollection<Department> Departments { get; set; }

[DisplayName("Departments Number")]

public int DepartmentsNumber => Departments == null ? 0 : Departments.Count;

}

1. Modificamos **DataContext**:

public class DataContext : DbContext

{

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

{

}

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

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

public DbSet<Department> Departments { get; set; }

protected override void OnModelCreating(ModelBuilder modelBuilder)

{

base.OnModelCreating(modelBuilder);

modelBuilder.Entity<City>()

.HasIndex(t => t.Name)

.IsUnique();

modelBuilder.Entity<Country>()

.HasIndex(t => t.Name)

.IsUnique();

modelBuilder.Entity<Department>()

.HasIndex(t => t.Name)

.IsUnique();

}

}

1. Guardamos los cambios y corremos los comandos para actualizar la base de datos de forma local:

PM> add-migration AddCityAndDepartment

PM> update-database

# Creación de un maestro detalle MVC

1. Modificamos la vista **Index** de **Countries**:

<thead>

<tr>

<th>

@Html.DisplayNameFor(model => model.Name)

</th>

<th>

@Html.DisplayNameFor(model => model.DepartmentsNumber)

</th>

<th></th>

</tr>

</thead>

<tbody>

@foreach (var item in Model)

{

<tr>

<td>

@Html.DisplayFor(modelItem => item.Name)

</td>

<td>

@Html.DisplayFor(modelItem => item.DepartmentsNumber)

</td>

<td>

<a asp-action="Edit" asp-route-id="@item.Id" class="btn btn-warning"><i class="far fa-pencil"></i></a>

<a asp-action="Details" asp-route-id="@item.Id" class="btn btn-info"><i class="fas fa-align-justify"></i></a>

<button data-id="@item.Id" class="btn btn-danger deleteItem" data-toggle="modal" data-target="#deleteDialog"><i class="fas fa-trash"></i></button>

</td>

</tr>

}

</tbody>

1. Modificamos los métodos **Index** y **Details** del controlador **Countries**:

public async Task<IActionResult> Index()

{

return View(await \_context.Countries

.Include(c => c.Departments)

.ToListAsync());

}

public async Task<IActionResult> Details(int? id)

{

if (id == null)

{

return NotFound();

}

Country country = await \_context.Countries

.Include(c => c.Departments)

.ThenInclude(d => d.Cities)

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

if (country == null)

{

return NotFound();

}

return View(country);

}

1. Modificamos la vista **Details** del controlador **Countries**:

@model OnSale.Common.Entities.Country

@{

ViewData["Title"] = "Details";

}

<link rel="stylesheet" href="https://cdn.datatables.net/1.10.19/css/jquery.dataTables.min.css" />

<h2>Details</h2>

<div>

<h4>Country</h4>

<hr />

<dl class="dl-horizontal">

<dt>

@Html.DisplayNameFor(model => model.Name)

</dt>

<dd>

@Html.DisplayFor(model => model.Name)

</dd>

<dt>

@Html.DisplayNameFor(model => model.DepartmentsNumber)

</dt>

<dd>

@Html.DisplayFor(model => model.DepartmentsNumber)

</dd>

</dl>

</div>

<div>

<a asp-action="AddDepartment" asp-route-id="@Model.Id" class="btn btn-primary"><i class="fas fa-plus"></i> Department</a>

<a asp-action="Edit" asp-route-id="@Model.Id" class="btn btn-warning">Edit</a>

<a asp-action="Index" class="btn btn-success">Back to List</a>

</div>

<br />

<div class="row">

<div class="col-md-12">

<div class="panel panel-default">

<div class="panel-heading">

<h3 class="panel-title">Departments</h3>

</div>

<div class="panel-body">

<table class="table table-hover table-responsive-md table-striped" id="MyTable">

<thead>

<tr>

<th>

@Html.DisplayNameFor(model => model.Departments.FirstOrDefault().Name)

</th>

<th>

@Html.DisplayNameFor(model => model.Departments.FirstOrDefault().CitiesNumber)

</th>

<th></th>

</tr>

</thead>

<tbody>

@foreach (var item in Model.Departments)

{

<tr>

<td>

@Html.DisplayFor(modelItem => item.Name)

</td>

<td>

@Html.DisplayFor(modelItem => item.CitiesNumber)

</td>

<td>

<a asp-action="EditDepartment" asp-route-id="@item.Id" class="btn btn-warning"><i class="far fa-pencil"></i></a>

<a asp-action="DetailsDepartment" asp-route-id="@item.Id" class="btn btn-info"><i class="fas fa-align-justify"></i></a>

<button data-id="@item.Id" class="btn btn-danger deleteItem" data-toggle="modal" data-target="#deleteDialog"><i class="fas fa-trash"></i></button>

</td>

</tr>

}

</tbody>

</table>

</div>

</div>

</div>

</div>

<partial name="\_DeleteDialog" />

@section Scripts {

@{await Html.RenderPartialAsync("\_ValidationScriptsPartial");}

<script src="//cdn.datatables.net/1.10.19/js/jquery.dataTables.min.js"></script>

<script src="/js/deleteDialog.js"></script>

<script type="text/javascript">

$(document).ready(function () {

$('#MyTable').DataTable();

// Delete item

sc\_deleteDialog.openModal('deleteItem', true, 'btnYesDelete', '/Countries/DeleteDepartment/', false);

});

</script>

}

1. Modificamos la entidad **Department**:

public class Department

{

public int Id { get; set; }

[MaxLength(50)]

[Required]

public string Name { get; set; }

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

[DisplayName("Cities Number")]

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

[NotMapped]

public int IdCountry { get; set; }

}

1. Iniciamos creando nuevos departamentos, para esto, adicionamos estos métodos al controlador **Countries**:

public async Task<IActionResult> AddDepartment(int? id)

{

if (id == null)

{

return NotFound();

}

Country country = await \_context.Countries.FindAsync(id);

if (country == null)

{

return NotFound();

}

Department model = new Department { IdCountry = country.Id };

return View(model);

}

[HttpPost]

[ValidateAntiForgeryToken]

public async Task<IActionResult> AddDepartment(Department department)

{

if (ModelState.IsValid)

{

Country country = await \_context.Countries

.Include(c => c.Departments)

.FirstOrDefaultAsync(c => c.Id == department.IdCountry);

if (country == null)

{

return NotFound();

}

try

{

department.Id = 0;

country.Departments.Add(department);

\_context.Update(country);

await \_context.SaveChangesAsync();

return RedirectToAction($"{nameof(Details)}/{country.Id}");

}

catch (DbUpdateException dbUpdateException)

{

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

{

ModelState.AddModelError(string.Empty, "There are a record with the same name.");

}

else

{

ModelState.AddModelError(string.Empty, dbUpdateException.InnerException.Message);

}

}

catch (Exception exception)

{

ModelState.AddModelError(string.Empty, exception.Message);

}

}

return View(department);

}

1. Adicionamos la vista parcial **\_Department**:

@model OnSale.Common.Entities.Department

<div class="form-group">

<label asp-for="Name" class="control-label"></label>

<input asp-for="Name" class="form-control" />

<span asp-validation-for="Name" class="text-danger"></span>

</div>

1. Adicionamos la vista **AddDepartment**:

@model OnSale.Common.Entities.Department

@{

ViewData["Title"] = "Add Department";

}

<h2>Add</h2>

<h4>Department</h4>

<hr />

<div class="row">

<div class="col-md-4">

<form asp-action="AddDepartment">

<div asp-validation-summary="ModelOnly" class="text-danger"></div>

<input type="hidden" asp-for="IdCountry" />

<partial name="\_Department" />

<div class="form-group">

<input type="submit" value="Save" class="btn btn-primary" />

<a asp-action="Details" asp-route-id="@Model.IdCountry" class="btn btn-success">Back to List</a>

</div>

</form>

</div>

</div>

@section Scripts {

@{await Html.RenderPartialAsync("\_ValidationScriptsPartial");}

}

1. Probamos.
2. Ahora vamos con la edición de departamentos, agregamos estos métodos a al controlador de **Countries**:

public async Task<IActionResult> EditDepartment(int? id)

{

if (id == null)

{

return NotFound();

}

Department department = await \_context.Departments.FindAsync(id);

if (department == null)

{

return NotFound();

}

Country country = await \_context.Countries.FirstOrDefaultAsync(c => c.Departments.FirstOrDefault(d => d.Id == department.Id) != null);

department.IdCountry = country.Id;

return View(department);

}

[HttpPost]

[ValidateAntiForgeryToken]

public async Task<IActionResult> EditDepartment(Department department)

{

if (ModelState.IsValid)

{

try

{

\_context.Update(department);

await \_context.SaveChangesAsync();

return RedirectToAction($"{nameof(Details)}/{department.IdCountry}");

}

catch (DbUpdateException dbUpdateException)

{

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

{

ModelState.AddModelError(string.Empty, "There are a record with the same name.");

}

else

{

ModelState.AddModelError(string.Empty, dbUpdateException.InnerException.Message);

}

}

catch (Exception exception)

{

ModelState.AddModelError(string.Empty, exception.Message);

}

}

return View(department);

}

1. Adicionamos la vista **EditDepartment**:

@model OnSale.Common.Entities.Department

@{

ViewData["Title"] = "Edit";

}

<h2>Edit</h2>

<h4>Department</h4>

<hr />

<div class="row">

<div class="col-md-4">

<form asp-action="EditDepartment">

<div asp-validation-summary="ModelOnly" class="text-danger"></div>

<input type="hidden" asp-for="Id" />

<input type="hidden" asp-for="IdCountry" />

<partial name="\_Department" />

<div class="form-group">

<input type="submit" value="Save" class="btn btn-primary" />

<a asp-action="Details" asp-route-id="@Model.IdCountry" class="btn btn-success">Back to List</a>

</div>

</form>

</div>

</div>

@section Scripts {

@{await Html.RenderPartialAsync("\_ValidationScriptsPartial");}

}

1. Vamos ahora con el borrado, adicionamos este método al controlador de **Countries**:

public async Task<IActionResult> DeleteDepartment(int? id)

{

if (id == null)

{

return NotFound();

}

Department department = await \_context.Departments

.Include(d => d.Cities)

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

if (department == null)

{

return NotFound();

}

Country country = await \_context.Countries.FirstOrDefaultAsync(c => c.Departments.FirstOrDefault(d => d.Id == department.Id) != null);

\_context.Departments.Remove(department);

await \_context.SaveChangesAsync();

return RedirectToAction($"{nameof(Details)}/{country.Id}");

}

1. Para evitar que saque error al borrar un país que tenga matriculados departamentos, modificamos el método **Delete**:

public async Task<IActionResult> Delete(int? id)

{

if (id == null)

{

return NotFound();

}

Country country = await \_context.Countries

.Include(c => c.Departments)

.ThenInclude(d => d.Cities)

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

if (country == null)

{

return NotFound();

}

\_context.Countries.Remove(country);

await \_context.SaveChangesAsync();

return RedirectToAction(nameof(Index));

}

1. Ahora vamos con la administración de ciudades de un departamento. Adicionamos este método al controlador **Countries**:

public async Task<IActionResult> DetailsDepartment(int? id)

{

if (id == null)

{

return NotFound();

}

Department department = await \_context.Departments

.Include(d => d.Cities)

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

if (department == null)

{

return NotFound();

}

Country country = await \_context.Countries.FirstOrDefaultAsync(c => c.Departments.FirstOrDefault(d => d.Id == department.Id) != null);

department.IdCountry = country.Id;

return View(department);

}

1. Adicionamos la vista **DetailsDepartment**:

@model OnSale.Common.Entities.Department

@{

ViewData["Title"] = "Details";

}

<link rel="stylesheet" href="https://cdn.datatables.net/1.10.19/css/jquery.dataTables.min.css" />

<h2>Details</h2>

<div>

<h4>Department</h4>

<hr />

<dl class="dl-horizontal">

<dt>

@Html.DisplayNameFor(model => model.Name)

</dt>

<dd>

@Html.DisplayFor(model => model.Name)

</dd>

<dt>

@Html.DisplayNameFor(model => model.CitiesNumber)

</dt>

<dd>

@Html.DisplayFor(model => model.CitiesNumber)

</dd>

</dl>

</div>

<div>

<a asp-action="AddCity" asp-route-id="@Model.Id" class="btn btn-primary"><i class="fas fa-plus"></i> City</a>

<a asp-action="Edit" asp-route-id="@Model.Id" class="btn btn-warning">Edit</a>

<a asp-action="Details" asp-route-id="@Model.IdCountry" class="btn btn-success">Back to List</a>

</div>

<br />

<div class="row">

<div class="col-md-12">

<div class="panel panel-default">

<div class="panel-heading">

<h3 class="panel-title">Cities</h3>

</div>

<div class="panel-body">

<table class="table table-hover table-responsive-md table-striped" id="MyTable">

<thead>

<tr>

<th>

@Html.DisplayNameFor(model => model.Cities.FirstOrDefault().Name)

</th>

<th></th>

</tr>

</thead>

<tbody>

@foreach (var item in Model.Cities)

{

<tr>

<td>

@Html.DisplayFor(modelItem => item.Name)

</td>

<td>

<a asp-action="EditCity" asp-route-id="@item.Id" class="btn btn-warning"><i class="far fa-pencil"></i></a>

<button data-id="@item.Id" class="btn btn-danger deleteItem" data-toggle="modal" data-target="#deleteDialog"><i class="fas fa-trash"></i></button>

</td>

</tr>

}

</tbody>

</table>

</div>

</div>

</div>

</div>

<partial name="\_DeleteDialog" />

@section Scripts {

@{await Html.RenderPartialAsync("\_ValidationScriptsPartial");}

<script src="//cdn.datatables.net/1.10.19/js/jquery.dataTables.min.js"></script>

<script src="/js/deleteDialog.js"></script>

<script type="text/javascript">

$(document).ready(function () {

$('#MyTable').DataTable();

// Delete item

sc\_deleteDialog.openModal('deleteItem', true, 'btnYesDelete', '/Countries/DeleteCity/', false);

});

</script>

}

1. Probamos.
2. Ahora vamos a adicionar una ciudad, primero modificamos la entidad **City**:

public class City

{

public int Id { get; set; }

[MaxLength(50)]

[Required]

public string Name { get; set; }

[NotMapped]

public int IdDepartment { get; set; }

}

1. Adicionamos estos métodos en el controlador de **Country**:

public async Task<IActionResult> AddCity(int? id)

{

if (id == null)

{

return NotFound();

}

Department department = await \_context.Departments.FindAsync(id);

if (department == null)

{

return NotFound();

}

City model = new City { IdDepartment = department.Id };

return View(model);

}

[HttpPost]

[ValidateAntiForgeryToken]

public async Task<IActionResult> AddCity(City city)

{

if (ModelState.IsValid)

{

Department department = await \_context.Departments

.Include(d => d.Cities)

.FirstOrDefaultAsync(c => c.Id == city.IdDepartment);

if (department == null)

{

return NotFound();

}

try

{

city.Id = 0;

department.Cities.Add(city);

\_context.Update(department);

await \_context.SaveChangesAsync();

return RedirectToAction($"{nameof(DetailsDepartment)}/{department.Id}");

}

catch (DbUpdateException dbUpdateException)

{

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

{

ModelState.AddModelError(string.Empty, "There are a record with the same name.");

}

else

{

ModelState.AddModelError(string.Empty, dbUpdateException.InnerException.Message);

}

}

catch (Exception exception)

{

ModelState.AddModelError(string.Empty, exception.Message);

}

}

return View(city);

}

1. Adicionamos la vista parcial **\_City**:

@model OnSale.Common.Entities.City

<div class="form-group">

<label asp-for="Name" class="control-label"></label>

<input asp-for="Name" class="form-control" />

<span asp-validation-for="Name" class="text-danger"></span>

</div>

1. Adicionamos la vista **AddCity**:

@model OnSale.Common.Entities.City

@{

ViewData["Title"] = "Add City";

}

<h2>Add</h2>

<h4>City</h4>

<hr />

<div class="row">

<div class="col-md-4">

<form asp-action="AddCity">

<div asp-validation-summary="ModelOnly" class="text-danger"></div>

<input type="hidden" asp-for="IdDepartment" />

<partial name="\_City" />

<div class="form-group">

<input type="submit" value="Save" class="btn btn-primary" />

<a asp-action="DetailsDepartment" asp-route-id="@Model.IdDepartment" class="btn btn-success">Back to List</a>

</div>

</form>

</div>

</div>

@section Scripts {

@{await Html.RenderPartialAsync("\_ValidationScriptsPartial");}

}

1. Probamos.
2. Para editar la ciudad, adicionamos estos métodos al controlador **Country**:

public async Task<IActionResult> EditCity(int? id)

{

if (id == null)

{

return NotFound();

}

City city = await \_context.Cities.FindAsync(id);

if (city == null)

{

return NotFound();

}

Department department = await \_context.Departments.FirstOrDefaultAsync(d => d.Cities.FirstOrDefault(c => c.Id == city.Id) != null);

city.IdDepartment = department.Id;

return View(city);

}

[HttpPost]

[ValidateAntiForgeryToken]

public async Task<IActionResult> EditCity(City city)

{

if (ModelState.IsValid)

{

try

{

\_context.Update(city);

await \_context.SaveChangesAsync();

return RedirectToAction($"{nameof(DetailsDepartment)}/{city.IdDepartment}");

}

catch (DbUpdateException dbUpdateException)

{

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

{

ModelState.AddModelError(string.Empty, "There are a record with the same name.");

}

else

{

ModelState.AddModelError(string.Empty, dbUpdateException.InnerException.Message);

}

}

catch (Exception exception)

{

ModelState.AddModelError(string.Empty, exception.Message);

}

}

return View(city);

}

1. Y adicionamos la vista **EditCity**:

@model OnSale.Common.Entities.City

@{

ViewData["Title"] = "Edit";

}

<h2>Edit</h2>

<h4>City</h4>

<hr />

<div class="row">

<div class="col-md-4">

<form asp-action="EditCity">

<div asp-validation-summary="ModelOnly" class="text-danger"></div>

<input type="hidden" asp-for="Id" />

<input type="hidden" asp-for="IdDepartment" />

<partial name="\_City" />

<div class="form-group">

<input type="submit" value="Save" class="btn btn-primary" />

<a asp-action="DetailsDepartment" asp-route-id="@Model.IdDepartment" class="btn btn-success">Back to List</a>

</div>

</form>

</div>

</div>

@section Scripts {

@{await Html.RenderPartialAsync("\_ValidationScriptsPartial");}

}

1. Probamos.
2. Por último, adicionamos el método **DeleteCity** al controlador **Country**:

public async Task<IActionResult> DeleteCity(int? id)

{

if (id == null)

{

return NotFound();

}

City city = await \_context.Cities

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

if (city == null)

{

return NotFound();

}

Department department = await \_context.Departments.FirstOrDefaultAsync(d => d.Cities.FirstOrDefault(c => c.Id == city.Id) != null);

\_context.Cities.Remove(city);

await \_context.SaveChangesAsync();

return RedirectToAction($"{nameof(DetailsDepartment)}/{department.Id}");

}

1. Probamos y hemos terminado un maestro detalle de tres niveles.

# Adición de un “Seeder”

1. Vamos a necesitar un método que nos llene información fija en la base de datos y que se verifique esta información exista cada que ejecutemos nuestro sitio WEB. Para tal motivo adicionamos la clase **SeedDb** e la carpeta **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",

Departments = new List<Department>

{

new Department

{

Name = "Antioquia",

Cities = new List<City>

{

new City { Name = "Medellín" },

new City { Name = "Envigado" },

new City { Name = "Itagüí" }

}

},

new Department

{

Name = "Bogotá",

Cities = new List<City>

{

new City { Name = "Bogotá" }

}

},

new Department

{

Name = "Valle del Cauca",

Cities = new List<City>

{

new City { Name = "Calí" },

new City { Name = "Buenaventura" },

new City { Name = "Palmira" }

}

}

}

});

\_context.Countries.Add(new Country

{

Name = "USA",

Departments = new List<Department>

{

new Department

{

Name = "California",

Cities = new List<City>

{

new City { Name = "Los Angeles" },

new City { Name = "San Diego" },

new City { Name = "San Francisco" }

}

},

new Department

{

Name = "Illinois",

Cities = new List<City>

{

new City { Name = "Chicago" },

new City { Name = "Springfield" }

}

}

}

});

await \_context.SaveChangesAsync();

}

}

}

1. Modificamos el **Startup** para inyectar esta clase:

public void ConfigureServices(IServiceCollection services)

{

services.Configure<CookiePolicyOptions>(options =>

{

options.CheckConsentNeeded = context => true;

options.MinimumSameSitePolicy = SameSiteMode.None;

});

services.AddDbContext<DataContext>(cfg =>

{

cfg.UseSqlServer(Configuration.GetConnectionString("DefaultConnection"));

});

services.AddTransient<SeedDb>();

services.AddMvc().SetCompatibilityVersion(CompatibilityVersion.Version\_2\_1);

}

1. Modificamos el **Program** para llamar el seeder cada que inicie nuestro sitio WEB:

public class Program

{

public static void Main(string[] args)

{

IWebHost host = CreateWebHostBuilder(args).Build();

RunSeeding(host);

host.Run();

}

private static void RunSeeding(IWebHost host)

{

IServiceScopeFactory scopeFactory = host.Services.GetService<IServiceScopeFactory>();

using (IServiceScope scope = scopeFactory.CreateScope())

{

SeedDb seeder = scope.ServiceProvider.GetService<SeedDb>();

seeder.SeedAsync().Wait();

}

}

public static IWebHostBuilder CreateWebHostBuilder(string[] args)

{

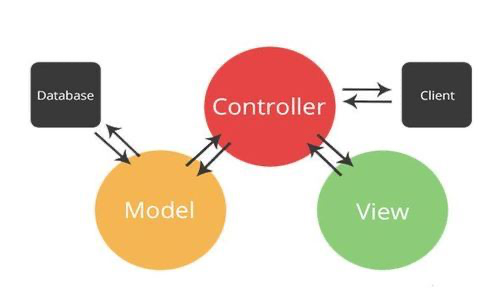
return WebHost.CreateDefaultBuilder(args).UseStartup<Startup>();

}

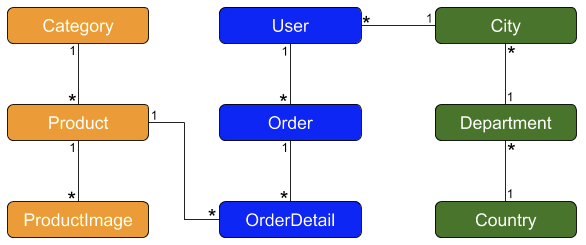
}

1. Borramos la base de datos con el comando: **drop-database**
2. Запускаем проект и тестируем.

# Создание CRUD, где Модель не является той же сущностью (категориями)



1. Мы продолжаем дополнять базу данных, и на этот раз мы собираемся добавить несколько таблиц, включающих изображения. В частности, мы собираемся добавить таблицы категорий, продукты и изображения.



1. Начнем с сущности **Category**:

public class Category

{

public int Id { get; set; }

[MaxLength(50)]

[Required]

public string Name { get; set; }

[Display(Name = "Image")]

public Guid ImageId { get; set; }

//TODO: Pending to put the correct paths

[Display(Name = "Image")]

public string ImageFullPath => ImageId == Guid.Empty

? $"https://localhost:44390/images/noimage.png"

: $"https://onsale.blob.core.windows.net/categories/{ImageId}";

}

1. Теперь с сущностью **ProductImage**:

public class ProductImage

{

public int Id { get; set; }

[Display(Name = "Image")]

public Guid ImageId { get; set; }

//TODO: Pending to put the correct paths

[Display(Name = "Image")]

public string ImageFullPath => ImageId == Guid.Empty

? $"https://localhost:44390/images/noimage.png"

: $"https://onsale.blob.core.windows.net/products/{ImageId}";

}

1. Заканчиваем сущностью **Product**:

public class Product

{

public int Id { get; set; }

[MaxLength(50)]

[Required]

public string Name { get; set; }

[DataType(DataType.MultilineText)]

public string Description { get; set; }

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

public decimal Price { get; set; }

[DisplayName("Is Active")]

public bool IsActive { get; set; }

[DisplayName("Is Starred")]

public bool IsStarred { get; set; }

public Category Category { get; set; }

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

[DisplayName("Product Images Number")]

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

//TODO: Pending to put the correct paths

[Display(Name = "Image")]

public string ImageFullPath => ProductImages == null || ProductImages.Count == 0

? $"https://localhost:44390/images/noimage.png"

: ProductImages.FirstOrDefault().ImageFullPath;

}

1. Мы обновляем **DataContext**:

public class DataContext : DbContext

{

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<Department> Departments { get; set; }

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

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

protected override void OnModelCreating(ModelBuilder modelBuilder)

{

base.OnModelCreating(modelBuilder);

modelBuilder.Entity<Category>()

.HasIndex(t => t.Name)

.IsUnique();

modelBuilder.Entity<City>()

.HasIndex(t => t.Name)

.IsUnique();

modelBuilder.Entity<Country>()

.HasIndex(t => t.Name)

.IsUnique();

modelBuilder.Entity<Department>()

.HasIndex(t => t.Name)

.IsUnique();

modelBuilder.Entity<Product>()

.HasIndex(t => t.Name)

.IsUnique();

}

}

1. Сохраняем изменения и запускаем команды для обновления базы локально:

PM> add-migration AddProductTables

PM> update-database

**Примечание**: если возникает ошибка, удалите базу данных с помощью команды drop-database и повторите попытку..

1. Теперь мы собираемся сделать CRUD для категории, но поскольку у нас есть захват изображения. Сначала мы должны создать **CategoryViewModel** в папке **Models**.:

public class CategoryViewModel : Category

{

[Display(Name = "Image")]

public IFormFile ImageFile { get; set; }

}

1. Мы создаем **CategoriesController**:

public class CategoriesController : Controller

{

private readonly DataContext \_context;

public CategoriesController(DataContext context)

{

\_context = context;

}

public async Task<IActionResult> Index()

{

return View(await \_context.Categories.ToListAsync());

}

}

1. Мы создаем **Index** представление **CategoriesController**:

@model IEnumerable<OnSale.Common.Entities.Category>

@{

ViewData["Title"] = "Index";

}

<link rel="stylesheet" href="https://cdn.datatables.net/1.10.19/css/jquery.dataTables.min.css" />

<br />

<p>

<a asp-action="Create" class="btn btn-primary"><i class="fas fa-plus"></i> Add New</a>

</p>

<div class="row">

<div class="col-md-12">

<div class="panel panel-default">

<div class="panel-heading">

<h3 class="panel-title">Categories</h3>

</div>

<div class="panel-body">

<table class="table table-hover table-responsive-md table-striped" id="MyTable">

<thead>

<tr>

<th>

@Html.DisplayNameFor(model => model.Name)

</th>

<th>

@Html.DisplayNameFor(model => model.ImageFullPath)

</th>

<th></th>

</tr>

</thead>

<tbody>

@foreach (var item in Model)

{

<tr>

<td>

@Html.DisplayFor(modelItem => item.Name)

</td>

<td>

<img src="@item.ImageFullPath" style="width:100px;height:100px;max-width: 100%; height: auto;" />

</td>

<td>

<a asp-action="Edit" asp-route-id="@item.Id" class="btn btn-warning"><i class="far fa-pencil"></i></a>

<button data-id="@item.Id" class="btn btn-danger deleteItem" data-toggle="modal" data-target="#deleteDialog"><i class="fas fa-trash"></i></button>

</td>

</tr>

}

</tbody>

</table>

</div>

</div>

</div>

</div>

<partial name="\_DeleteDialog" />

@section Scripts {

@{await Html.RenderPartialAsync("\_ValidationScriptsPartial");}

<script src="//cdn.datatables.net/1.10.19/js/jquery.dataTables.min.js"></script>

<script src="/js/deleteDialog.js"></script>

<script type="text/javascript">

$(document).ready(function () {

$('#MyTable').DataTable();

// Delete item

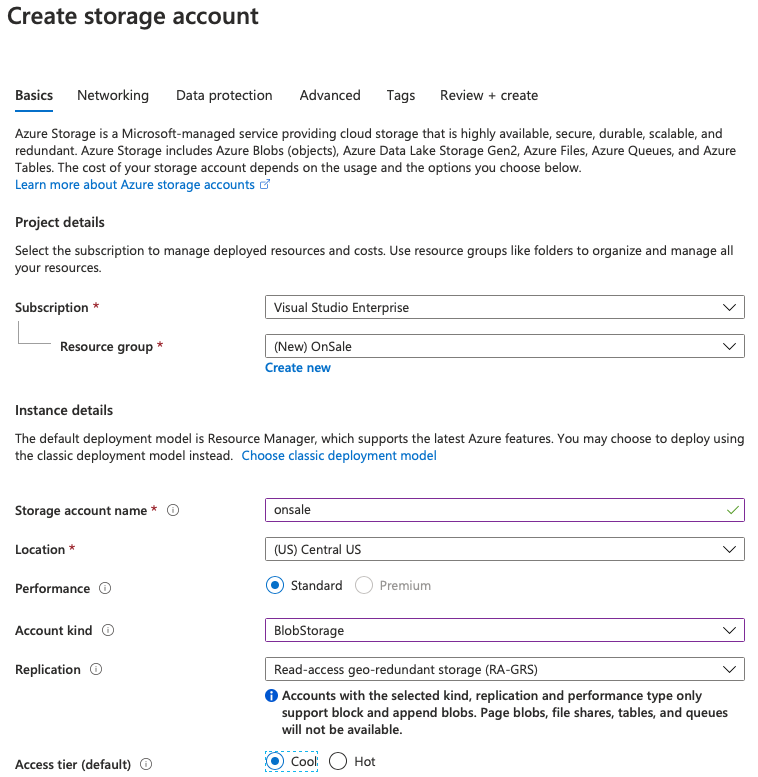
sc\_deleteDialog.openModal('deleteItem', true, 'btnYesDelete', '/Categories/Delete/', false);

});

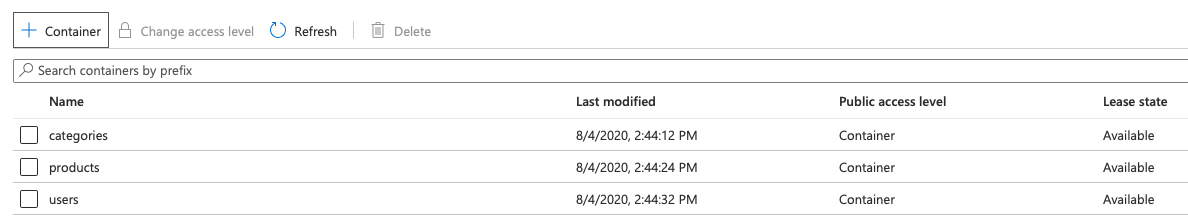
</script>

}

1. Мы протестировали.
2. Мы собираемся создать хранилище BLOB-объектов в Azure, чтобы иметь возможность хранить наши изображения.:



Затем мы создаем контейнеры, в которых будем хранить наши изображения: категории, товары, пользователи.:



1. Мы добавляем строку подключения blob к **appsettings.json**:

{

"Logging": {

"LogLevel": {

"Default": "Warning"

}

},

"AllowedHosts": "\*",

"ConnectionStrings": {

"DefaultConnection": "Server=(localdb)\\MSSQLLocalDB;Database=OnSale;Trusted\_Connection=True;MultipleActiveResultSets=true"

},

"Blob": {

"ConnectionString": "DefaultEndpointsProtocol=https;AccountName=onsale;AccountKey=u4Ds+6uYoz5qfaejvPRRQCg3PI5HVaDaLj1rfx/UVSB68trksZ37YRTxawCr8tSZmNxXIxzW2VqNgE5vvactYg==;EndpointSuffix=core.windows.net"

}

}

1. Мы собираемся создать папку **Helpers**, и в ней мы собираемся создать IBlobHelper для загрузки файлов в наш blob.:

public interface IBlobHelper

{

Task<Guid> UploadBlobAsync(IFormFile file, string containerName);

Task<Guid> UploadBlobAsync(byte[] file, string containerName);

Task<Guid> UploadBlobAsync(string image, string containerName);

}

1. Создаем реализацию интерфейса **BlobHelper**:

public class BlobHelper : IBlobHelper

{

private readonly CloudBlobClient \_blobClient;

public BlobHelper(IConfiguration configuration)

{

string keys = configuration["Blob:ConnectionString"];

CloudStorageAccount storageAccount = CloudStorageAccount.Parse(keys);

\_blobClient = storageAccount.CreateCloudBlobClient();

}

public async Task<Guid> UploadBlobAsync(byte[] file, string containerName)

{

MemoryStream stream = new MemoryStream(file);

Guid name = Guid.NewGuid();

CloudBlobContainer container = \_blobClient.GetContainerReference(containerName);

CloudBlockBlob blockBlob = container.GetBlockBlobReference($"{name}");

await blockBlob.UploadFromStreamAsync(stream);

return name;

}

public async Task<Guid> UploadBlobAsync(IFormFile file, string containerName)

{

Stream stream = file.OpenReadStream();

Guid name = Guid.NewGuid();

CloudBlobContainer container = \_blobClient.GetContainerReference(containerName);

CloudBlockBlob blockBlob = container.GetBlockBlobReference($"{name}");

await blockBlob.UploadFromStreamAsync(stream);

return name;

}

public async Task<Guid> UploadBlobAsync(string image, string containerName)

{

Stream stream = File.OpenRead(image);

Guid name = Guid.NewGuid();

CloudBlobContainer container = \_blobClient.GetContainerReference(containerName);

CloudBlockBlob blockBlob = container.GetBlockBlobReference($"{name}");

await blockBlob.UploadFromStreamAsync(stream);

return name;

}

}

1. Внутри той же папки Helpers мы добавляем интерфейс IConverterHelper для преобразования объектов:

public interface IConverterHelper

{

Category ToCategory(CategoryViewModel model, Guid imageId, bool isNew);

CategoryViewModel ToCategoryViewModel(Category category);

}

1. Реализуем интерфейс:

public class ConverterHelper : IConverterHelper

{

public Category ToCategory(CategoryViewModel model, Guid imageId, bool isNew)

{

return new Category

{

Id = isNew ? 0 : model.Id,

ImageId = imageId,

Name = model.Name

};

}

public CategoryViewModel ToCategoryViewModel(Category category)

{

return new CategoryViewModel

{

Id = category.Id,

ImageId = category.ImageId,

Name = category.Name

};

}

}

1. Добавляем инъекцию в Startup только что созданных помощников:

public void ConfigureServices(IServiceCollection services)

{

services.Configure<CookiePolicyOptions>(options =>

{

options.CheckConsentNeeded = context => true;

options.MinimumSameSitePolicy = SameSiteMode.None;

});

services.AddDbContext<DataContext>(cfg =>

{

cfg.UseSqlServer(Configuration.GetConnectionString("DefaultConnection"));

});

services.AddTransient<SeedDb>();

services.AddScoped<IBlobHelper, BlobHelper>();

services.AddScoped<IConverterHelper, ConverterHelper>();

services.AddMvc().SetCompatibilityVersion(CompatibilityVersion.Version\_2\_1);

}

1. Модифицируем CategoriesController:

public class CategoriesController : Controller

{

private readonly DataContext \_context;

private readonly IBlobHelper \_blobHelper;

private readonly IConverterHelper \_converterHelper;

public CategoriesController(DataContext context, IBlobHelper blobHelper, IConverterHelper converterHelper)

{

\_context = context;

\_blobHelper = blobHelper;

\_converterHelper = converterHelper;

}

public async Task<IActionResult> Index()

{

return View(await \_context.Categories.ToListAsync());

}

public IActionResult Create()

{

CategoryViewModel model = new CategoryViewModel();

return View(model);

}

[HttpPost]

[ValidateAntiForgeryToken]

public async Task<IActionResult> Create(CategoryViewModel model)

{

if (ModelState.IsValid)

{

Guid imageId = Guid.Empty;

if (model.ImageFile != null)

{

imageId = await \_blobHelper.UploadBlobAsync(model.ImageFile, "categories");

}

try

{

Category category = \_converterHelper.ToCategory(model, imageId, true);

\_context.Add(category);

await \_context.SaveChangesAsync();

return RedirectToAction(nameof(Index));

}

catch (DbUpdateException dbUpdateException)

{

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

{

ModelState.AddModelError(string.Empty, "There are a record with the same name.");

}

else

{

ModelState.AddModelError(string.Empty, dbUpdateException.InnerException.Message);

}

}

catch (Exception exception)

{

ModelState.AddModelError(string.Empty, exception.Message);

}

}

return View(model);

}

}

1. Создаем частичный вид **\_Category**:

@model OnSale.Web.Models.CategoryViewModel

<div class="form-group">

<label asp-for="Name" class="control-label"></label>

<input asp-for="Name" class="form-control" />

<span asp-validation-for="Name" class="text-danger"></span>

</div>

<div class="form-group">

<label asp-for="ImageFile" class="control-label"></label>

<input asp-for="ImageFile" type="file" class="form-control" />

<span asp-validation-for="ImageFile" class="text-danger"></span>

</div>

1. Создаем представление **Create** контроллера **Categories**:

@model OnSale.Web.Models.CategoryViewModel

@{

ViewData["Title"] = "Create";

}

<h2>Create</h2>

<h4>Category</h4>

<hr />

<div class="row">

<div class="col-md-4">

<form asp-action="Create" enctype="multipart/form-data">

<div asp-validation-summary="ModelOnly" class="text-danger"></div>

<partial name="\_Category" />

<div class="form-group">

<input type="submit" value="Create" class="btn btn-primary" />

<a asp-action="Index" class="btn btn-success">Back to List</a>

</div>

</form>

</div>

</div>

@section Scripts {

@{await Html.RenderPartialAsync("\_ValidationScriptsPartial");}

}

1. Мы протестировали.
2. Теперь давайте реализуем Category Edit, для этого мы добавим эти методы в контроллер Categories:

public async Task<IActionResult> Edit(int? id)

{

if (id == null)

{

return NotFound();

}

Category category = await \_context.Categories.FindAsync(id);

if (category == null)

{

return NotFound();

}

CategoryViewModel model = \_converterHelper.ToCategoryViewModel(category);

return View(model);

}

[HttpPost]

[ValidateAntiForgeryToken]

public async Task<IActionResult> Edit(CategoryViewModel model)

{

if (ModelState.IsValid)

{

Guid imageId = model.ImageId;

if (model.ImageFile != null)

{

imageId = await \_blobHelper.UploadBlobAsync(model.ImageFile, "categories");

}

try

{

Category category = \_converterHelper.ToCategory(model, imageId, false);

\_context.Update(category);

await \_context.SaveChangesAsync();

return RedirectToAction(nameof(Index));

}

catch (DbUpdateException dbUpdateException)

{

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

{

ModelState.AddModelError(string.Empty, "There are a record with the same name.");

}

else

{

ModelState.AddModelError(string.Empty, dbUpdateException.InnerException.Message);

}

}

catch (Exception exception)

{

ModelState.AddModelError(string.Empty, exception.Message);

}

}

return View(model);

}

1. Добавляем представление **Edit**:

@model OnSale.Web.Models.CategoryViewModel

@{

ViewData["Title"] = "Edit";

}

<h2>Edit</h2>

<h4>Category</h4>

<hr />

<div class="row">

<div class="col-md-4">

<form asp-action="Edit" enctype="multipart/form-data">

<div asp-validation-summary="ModelOnly" class="text-danger"></div>

<input type="hidden" asp-for="Id" />

<input type="hidden" asp-for="ImageId" />

<partial name="\_Category" />

<div class="form-group">

<input type="submit" value="Save" class="btn btn-primary" />

<a asp-action="Index" class="btn btn-success">Back to List</a>

</div>

</form>

</div>

<div class="col-md-4">

<img src="@Model.ImageFullPath" style="width:200px;height:200px;max-width: 100%; height: auto;" />

</div>

</div>

@section Scripts {

@{await Html.RenderPartialAsync("\_ValidationScriptsPartial");}

}

1. Мы протестировали.
2. Наконец, чтобы закончить этот CRUD, мы добавляем метод **Delete**:

public async Task<IActionResult> Delete(int? id)

{

if (id == null)

{

return NotFound();

}

Category category = await \_context.Categories

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

if (category == null)

{

return NotFound();

}

try

{

\_context.Categories.Remove(category);

await \_context.SaveChangesAsync();

}

catch (Exception ex)

{

ModelState.AddModelError(string.Empty, ex.Message);

}

return RedirectToAction(nameof(Index));

}

1. Мы протестировали.

# Создать CRUD с раскрывающимся списком (Products)

1. Теперь мы собираемся создать CRUD продуктов, в котором есть раскрывающийся список для выбора категории продуктов. Начнем с создания **ProductViewModel**:

public class ProductViewModel : Product

{

[Display(Name = "Category")]

[Range(1, int.MaxValue, ErrorMessage = "You must select a category.")]

[Required]

public int CategoryId { get; set; }

public IEnumerable<SelectListItem> Categories { get; set; }

}

1. Создаем **ICombosHelper** внутри папки **Helpers**:

public interface ICombosHelper

{

IEnumerable<SelectListItem> GetComboCategories();

}

1. Реализуем интерфейс:

public class CombosHelper : ICombosHelper

{

private readonly DataContext \_context;

public CombosHelper(DataContext context)

{

\_context = context;

}

public IEnumerable<SelectListItem> GetComboCategories()

{

List<SelectListItem> list = \_context.Categories.Select(t => new SelectListItem

{

Text = t.Name,

Value = $"{t.Id}"

})

.OrderBy(t => t.Text)

.ToList();

list.Insert(0, new SelectListItem

{

Text = "[Select a category...]",

Value = "0"

});

return list;

}

}

1. Настраиваем инъекцию нового интерфейса в **Startup**:

public void ConfigureServices(IServiceCollection services)

{

services.Configure<CookiePolicyOptions>(options =>

{

options.CheckConsentNeeded = context => true;

options.MinimumSameSitePolicy = SameSiteMode.None;

});

services.AddDbContext<DataContext>(cfg =>

{

cfg.UseSqlServer(Configuration.GetConnectionString("DefaultConnection"));

});

services.AddTransient<SeedDb>();

services.AddScoped<IBlobHelper, BlobHelper>();

services.AddScoped<IConverterHelper, ConverterHelper>();

services.AddScoped<ICombosHelper, CombosHelper>();

services.AddMvc().SetCompatibilityVersion(CompatibilityVersion.Version\_2\_1);

}

1. Добавляем эти методы в интерфейс **IConverterHelper**:

Task<Product> ToProductAsync(ProductViewModel model, bool isNew);

ProductViewModel ToProductViewModel(Product product);

1. Реализуем новые методы:

public async Task<Product> ToProductAsync(ProductViewModel model, bool isNew)

{

return new Product

{

Category = await \_context.Categories.FindAsync(model.CategoryId),

Description = model.Description,

Id = isNew ? 0 : model.Id,

IsActive = model.IsActive,

IsStarred = model.IsStarred,

Name = model.Name,

Price = model.Price,

ProductImages = model.ProductImages

};

}

public ProductViewModel ToProductViewModel(Product product)

{

return new ProductViewModel

{

Categories = \_combosHelper.GetComboCategories(),

Category = product.Category,

CategoryId = product.Category.Id,

Description = product.Description,

Id = product.Id,

IsActive = product.IsActive,

IsStarred = product.IsStarred,

Name = product.Name,

Price = product.Price,

ProductImages = product.ProductImages

};

}

1. Мы создаем **ProductsController**:

public class ProductsController : Controller

{

private readonly DataContext \_context;

private readonly IBlobHelper \_blobHelper;

private readonly ICombosHelper \_combosHelper;

private readonly IConverterHelper \_converterHelper;

public ProductsController(DataContext context, IBlobHelper blobHelper, ICombosHelper combosHelper, IConverterHelper converterHelper)

{

\_context = context;

\_blobHelper = blobHelper;

\_combosHelper = combosHelper;

\_converterHelper = converterHelper;

}

public async Task<IActionResult> Index()

{

return View(await \_context.Products

.Include(p => p.Category)

.Include(p => p.ProductImages)

.ToListAsync());

}

}

1. Мы создаем представление **Index** в **ProductsController**:

@model IEnumerable<OnSale.Common.Entities.Product>

@{

ViewData["Title"] = "Index";

}

<link rel="stylesheet" href="https://cdn.datatables.net/1.10.19/css/jquery.dataTables.min.css" />

<br />

<p>

<a asp-action="Create" class="btn btn-primary"><i class="fas fa-plus"></i> Add New</a>

</p>

<div class="row">

<div class="col-md-12">

<div class="panel panel-default">

<div class="panel-heading">

<h3 class="panel-title">Products</h3>

</div>

<div class="panel-body">

<table class="table table-hover table-responsive-md table-striped" id="MyTable">

<thead>

<tr>

<th>

@Html.DisplayNameFor(model => model.Name)

</th>

<th>

@Html.DisplayNameFor(model => model.ImageFullPath)

</th>

<th>

@Html.DisplayNameFor(model => model.Price)

</th>

<th>

@Html.DisplayNameFor(model => model.IsActive)

</th>

<th>

@Html.DisplayNameFor(model => model.IsStarred)

</th>

<th>

Category

</th>

<th>

@Html.DisplayNameFor(model => model.ProductImagesNumber)

</th>

<th></th>

</tr>

</thead>

<tbody>

@foreach (var item in Model)

{

<tr>

<td>

@Html.DisplayFor(modelItem => item.Name)

</td>

<td>

<img src="@item.ImageFullPath" style="width:100px;height:100px;max-width: 100%; height: auto;" />

</td>

<td>

@Html.DisplayFor(modelItem => item.Price)

</td>

<td>

@Html.DisplayFor(modelItem => item.IsActive)

</td>

<td>

@Html.DisplayFor(modelItem => item.IsStarred)

</td>

<td>

@Html.DisplayFor(modelItem => item.Category.Name)

</td>

<td>

@Html.DisplayFor(modelItem => item.ProductImagesNumber)

</td>

<td>

<a asp-action="Edit" asp-route-id="@item.Id" class="btn btn-warning"><i class="far fa-pencil"></i></a>

<a asp-action="Details" asp-route-id="@item.Id" class="btn btn-info"><i class="fas fa-align-justify"></i></a>

<button data-id="@item.Id" class="btn btn-danger deleteItem" data-toggle="modal" data-target="#deleteDialog"><i class="fas fa-trash"></i></button>

</td>

</tr>

}

</tbody>

</table>

</div>

</div>

</div>

</div>

<partial name="\_DeleteDialog" />

@section Scripts {

@{await Html.RenderPartialAsync("\_ValidationScriptsPartial");}

<script src="//cdn.datatables.net/1.10.19/js/jquery.dataTables.min.js"></script>

<script src="/js/deleteDialog.js"></script>

<script type="text/javascript">

$(document).ready(function () {

$('#MyTable').DataTable();

// Delete item

sc\_deleteDialog.openModal('deleteItem', true, 'btnYesDelete', '/Products/Delete/', false);

});

</script>

}

1. Добавляем в меню новую опцию:

<li><a asp-area="" asp-controller="Home" asp-action="Index">Home</a></li>

<li><a asp-area="" asp-controller="Home" asp-action="About">About</a></li>

<li><a asp-area="" asp-controller="Home" asp-action="Contact">Contact</a></li>

<li><a asp-area="" asp-controller="Countries" asp-action="Index">Countries</a></li>

<li><a asp-area="" asp-controller="Categories" asp-action="Index">Categories</a></li>

<li><a asp-area="" asp-controller="Products" asp-action="Index">Products</a></li>

1. Мы протестировали то, что у нас есть.
2. Для создания новых продуктов мы добавляем эти методы в **ProductsController**:

public IActionResult Create()

{

ProductViewModel model = new ProductViewModel

{

Categories = \_combosHelper.GetComboCategories(),

IsActive = true

};

return View(model);

}

[HttpPost]

[ValidateAntiForgeryToken]

public async Task<IActionResult> Create(ProductViewModel model)

{

if (ModelState.IsValid)

{

try

{

Product product = await \_converterHelper.ToProductAsync(model, true);

if (model.ImageFile != null)

{

Guid imageId = await \_blobHelper.UploadBlobAsync(model.ImageFile, "products");

product.ProductImages = new List<ProductImage>

{

new ProductImage { ImageId = imageId }

};

}

\_context.Add(product);

await \_context.SaveChangesAsync();

return RedirectToAction(nameof(Index));

}

catch (DbUpdateException dbUpdateException)

{

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

{

ModelState.AddModelError(string.Empty, "There are a record with the same name.");

}

else

{

ModelState.AddModelError(string.Empty, dbUpdateException.InnerException.Message);

}

}

catch (Exception exception)

{

ModelState.AddModelError(string.Empty, exception.Message);

}

}

model.Categories = \_combosHelper.GetComboCategories();

return View(model);

}

1. Добавляем частичное представление **\_Product** в **ProductsController**:

@model OnSale.Web.Models.ProductViewModel

<div class="form-group">

<label asp-for="Name" class="control-label"></label>

<input asp-for="Name" class="form-control" />

<span asp-validation-for="Name" class="text-danger"></span>

</div>

<div class="form-group">

<label asp-for="Description" class="control-label"></label>

<textarea asp-for="Description" class="form-control"></textarea>

<span asp-validation-for="Description" class="text-danger"></span>

</div>

<div class="form-group">

<label asp-for="CategoryId" class="control-label"></label>

<select asp-for="CategoryId" asp-items="Model.Categories" class="form-control"></select>

<span asp-validation-for="CategoryId" class="text-danger"></span>

</div>

<div class="form-group">

<label asp-for="Price" class="control-label"></label>

<input asp-for="Price" class="form-control" />

<span asp-validation-for="Price" class="text-danger"></span>

</div>

<div class="form-group">

<label asp-for="ImageFile" class="control-label"></label>

<input asp-for="ImageFile" type="file" class="form-control" />

<span asp-validation-for="ImageFile" class="text-danger"></span>

</div>

<div class="form-group">

<div class="checkbox">

<label>

<input asp-for="IsActive" /> @Html.DisplayNameFor(model => model.IsActive)

</label>

</div>

</div>

<div class="form-group">

<div class="checkbox">

<label>

<input asp-for="IsStarred" /> @Html.DisplayNameFor(model => model.IsStarred)

</label>

</div>

</div>

1. Мы добавляем представление **Create** в **ProductsController**:

@model OnSale.Web.Models.ProductViewModel

@{

ViewData["Title"] = "Create";

}

<h2>Create</h2>

<h4>Product</h4>

<hr />

<div class="row">

<div class="col-md-4">

<form asp-action="Create" enctype="multipart/form-data">

<div asp-validation-summary="ModelOnly" class="text-danger"></div>

<partial name="\_Product" />

<div class="form-group">

<input type="submit" value="Create" class="btn btn-primary" />

<a asp-action="Index" class="btn btn-success">Back to List</a>

</div>

</form>

</div>

</div>

@section Scripts {

@{await Html.RenderPartialAsync("\_ValidationScriptsPartial");}

}

1. Мы протестировали.
2. Продолжаем редактировать товары. Добавляем эти методы в контроллер **Products**:

public async Task<IActionResult> Edit(int? id)

{

if (id == null)

{

return NotFound();

}

Product product = await \_context.Products

.Include(p => p.Category)

.Include(p => p.ProductImages)

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

if (product == null)

{

return NotFound();

}

ProductViewModel model = \_converterHelper.ToProductViewModel(product);

return View(model);

}

[HttpPost]

[ValidateAntiForgeryToken]

public async Task<IActionResult> Edit(ProductViewModel model)

{

if (ModelState.IsValid)

{

try

{

Product product = await \_converterHelper.ToProductAsync(model, false);

if (model.ImageFile != null)

{

Guid imageId = await \_blobHelper.UploadBlobAsync(model.ImageFile, "products");

if (product.ProductImages == null)

{

product.ProductImages = new List<ProductImage>();

}

product.ProductImages.Add(new ProductImage { ImageId = imageId });

}

\_context.Update(product);

await \_context.SaveChangesAsync();

return RedirectToAction(nameof(Index));

}

catch (DbUpdateException dbUpdateException)

{

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

{

ModelState.AddModelError(string.Empty, "There are a record with the same name.");

}

else

{

ModelState.AddModelError(string.Empty, dbUpdateException.InnerException.Message);

}

}

catch (Exception exception)

{

ModelState.AddModelError(string.Empty, exception.Message);

}

}

model.Categories = \_combosHelper.GetComboCategories();

return View(model);

}

1. Мы добавляем представление **Edit** в **ProductsController**:

@model OnSale.Web.Models.ProductViewModel

@{

ViewData["Title"] = "Edit";

}

<h2>Edit</h2>

<h4>Product</h4>

<hr />

<div class="row">

<div class="col-md-4">

<form asp-action="Edit" enctype="multipart/form-data">

<div asp-validation-summary="ModelOnly" class="text-danger"></div>

<input type="hidden" asp-for="Id" />

<partial name="\_Product" />

<div class="form-group">

<input type="submit" value="Save" class="btn btn-primary" />

<a asp-action="Index" class="btn btn-success">Back to List</a>

</div>

</form>

</div>

<div class="col-md-4">

<img src="@Model.ImageFullPath" style="width:200px;height:200px;max-width: 100%; height: auto;" />

</div>

</div>

@section Scripts {

@{await Html.RenderPartialAsync("\_ValidationScriptsPartial");}

}

1. Тестируем.
2. Продолжаем удаление товаров. Мы добавляем этот метод в **ProductsController**:

public async Task<IActionResult> Delete(int? id)

{

if (id == null)

{

return NotFound();

}

Product product = await \_context.Products

.Include(p => p.ProductImages)

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

if (product == null)

{

return NotFound();

}

try

{

\_context.Products.Remove(product);

await \_context.SaveChangesAsync();

}

catch (Exception ex)

{

ModelState.AddModelError(string.Empty, ex.Message);

}

return RedirectToAction(nameof(Index));

}

1. Тестируем.
2. Чтобы закончить этот CRUD, мы собираемся реализовать кнопку **Details** для управления различными изображениями продукта. Добавим этот метод в **ProductsController**:

public async Task<IActionResult> Details(int? id)

{

if (id == null)

{

return NotFound();

}

Product product = await \_context.Products

.Include(c => c.Category)

.Include(c => c.ProductImages)

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

if (product == null)

{

return NotFound();

}

return View(product);

}

1. Мы добавляем представление **Details** в **ProductsController**:

@model OnSale.Common.Entities.Product

@{

ViewData["Title"] = "Details";

}

<link rel="stylesheet" href="https://cdn.datatables.net/1.10.19/css/jquery.dataTables.min.css" />

<h2>Details</h2>

<div>

<h4>Product</h4>

<hr />

<dl class="dl-horizontal">

<dt>

@Html.DisplayNameFor(model => model.Name)

</dt>

<dd>

@Html.DisplayFor(model => model.Name)

</dd>

<dt>

@Html.DisplayNameFor(model => model.Description)

</dt>

<dd>

@Html.DisplayFor(model => model.Description)

</dd>

<dt>

Category

</dt>

<dd>

@Html.DisplayFor(model => model.Category.Name)

</dd>

<dt>

@Html.DisplayNameFor(model => model.Price)

</dt>

<dd>

@Html.DisplayFor(model => model.Price)

</dd>

<dt>

@Html.DisplayNameFor(model => model.IsActive)

</dt>

<dd>

@Html.DisplayFor(model => model.IsActive)

</dd>

<dt>

@Html.DisplayNameFor(model => model.IsStarred)

</dt>

<dd>

@Html.DisplayFor(model => model.IsStarred)

</dd>

<dt>

@Html.DisplayNameFor(model => model.ProductImagesNumber)

</dt>

<dd>

@Html.DisplayFor(model => model.ProductImagesNumber)

</dd>

</dl>

</div>

<div>

<a asp-action="AddImage" asp-route-id="@Model.Id" class="btn btn-primary"><i class="fas fa-plus"></i> Image</a>

<a asp-action="Edit" asp-route-id="@Model.Id" class="btn btn-warning">Edit</a>

<a asp-action="Index" class="btn btn-success">Back to List</a>

</div>

<br />

<div class="row">

<div class="col-md-12">

<div class="panel panel-default">

<div class="panel-heading">

<h3 class="panel-title">Product Images</h3>

</div>

<div class="panel-body">

<table class="table table-hover table-responsive-md table-striped" id="MyTable">

<thead>

<tr>

<th>

@Html.DisplayNameFor(model => model.ProductImages.FirstOrDefault().ImageFullPath)

</th>

<th></th>

</tr>

</thead>

<tbody>

@foreach (var item in Model.ProductImages)

{

<tr>

<td>

<img src="@item.ImageFullPath" style="width:200px;height:200px;max-width: 100%; height: auto;" />

</td>

<td>

<button data-id="@item.Id" class="btn btn-danger deleteItem" data-toggle="modal" data-target="#deleteDialog"><i class="fas fa-trash"></i></button>

</td>

</tr>

}

</tbody>

</table>

</div>

</div>

</div>

</div>

<partial name="\_DeleteDialog" />

@section Scripts {

@{await Html.RenderPartialAsync("\_ValidationScriptsPartial");}

<script src="//cdn.datatables.net/1.10.19/js/jquery.dataTables.min.js"></script>

<script src="/js/deleteDialog.js"></script>

<script type="text/javascript">

$(document).ready(function () {

$('#MyTable').DataTable();

// Delete item

sc\_deleteDialog.openModal('deleteItem', true, 'btnYesDelete', '/Products/DeleteImage/', false);

});

</script>

}

1. Тестируем.
2. Теперь, чтобы иметь возможность добавлять несколько Views к продукту, мы добавляем класс **AddProductImageViewModel.**:

public class AddProductImageViewModel

{

public int ProductId { get; set; }

[Display(Name = "Image")]

[Required]

public IFormFile ImageFile { get; set; }

}

1. Мы добавляем эти методы в **ProductsController**:

public async Task<IActionResult> AddImage(int? id)

{

if (id == null)

{

return NotFound();

}

Product product = await \_context.Products.FindAsync(id);

if (product == null)

{

return NotFound();

}

AddProductImageViewModel model = new AddProductImageViewModel { ProductId = product.Id };

return View(model);

}

[HttpPost]

[ValidateAntiForgeryToken]

public async Task<IActionResult> AddImage(AddProductImageViewModel model)

{

if (ModelState.IsValid)

{

Product product = await \_context.Products

.Include(p => p.ProductImages)

.FirstOrDefaultAsync(p => p.Id == model.ProductId);

if (product == null)

{

return NotFound();

}

try

{

Guid imageId = await \_blobHelper.UploadBlobAsync(model.ImageFile, "products");

if (product.ProductImages == null)

{

product.ProductImages = new List<ProductImage>();

}

product.ProductImages.Add(new ProductImage { ImageId = imageId });

\_context.Update(product);

await \_context.SaveChangesAsync();

return RedirectToAction($"{nameof(Details)}/{product.Id}");

}

catch (Exception exception)

{

ModelState.AddModelError(string.Empty, exception.Message);

}

}

return View(model);

}

1. Мы добавили вид **AddImage** el **ProductsController**:

@model OnSale.Web.Models.AddProductImageViewModel

@{

ViewData["Title"] = "Add Image";

}

<h2>Add</h2>

<h4>Image</h4>

<hr />

<div class="row">

<div class="col-md-4">

<form asp-action="AddImage" enctype="multipart/form-data">

<div asp-validation-summary="ModelOnly" class="text-danger"></div>

<input type="hidden" asp-for="ProductId" />

<div class="form-group">

<label asp-for="ImageFile" class="control-label"></label>

<input asp-for="ImageFile" type="file" class="form-control" />

<span asp-validation-for="ImageFile" class="text-danger"></span>

</div>

<div class="form-group">

<input type="submit" value="Save" class="btn btn-primary" />

<a asp-action="Details" asp-route-id="@Model.ProductId" class="btn btn-success">Back to List</a>

</div>

</form>

</div>

</div>

@section Scripts {

@{await Html.RenderPartialAsync("\_ValidationScriptsPartial");}

}

1. Тестируем.
2. Наконец, чтобы закончить этот CRUD, мы создаем метод **DeleteImage**:

public async Task<IActionResult> DeleteImage(int? id)

{

if (id == null)

{

return NotFound();

}

ProductImage productImage = await \_context.ProductImages

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

if (productImage == null)

{

return NotFound();

}

Product product = await \_context.Products.FirstOrDefaultAsync(p => p.ProductImages.FirstOrDefault(pi => pi.Id == productImage.Id) != null);

\_context.ProductImages.Remove(productImage);

await \_context.SaveChangesAsync();

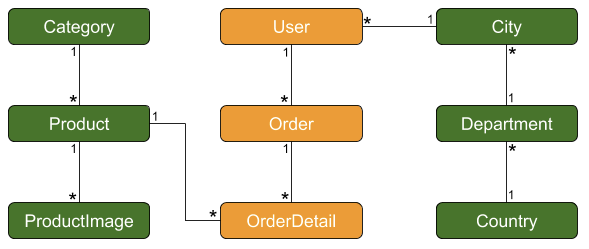
return RedirectToAction($"{nameof(Details)}/{product.Id}");

}

1. Тестируем.

# Добавление пользователей и ролей

Очень важной особенностью нашего приложения и большинства приложений является использование пользователей. Приступаем к обновлению нашего сайта таблицами, которые нам не хватает:



1. Поскольку у нас будет два типа пользователей; администраторы и пользователи. Мы собираемся создать перечисление, чтобы различать их. Создаем папку **Enums** в проекте **Common** и внутри этой папки перечисление **UserType**:

public enum UserType

{

Admin,

User

}

1. В веб-проекте в папке **Data** создайте папку **Entities** и внутри нее создайте сущность **User**:

public class User : IdentityUser

{

[MaxLength(20)]

[Required]

public string Document { get; set; }

[Display(Name = "First Name")]

[MaxLength(50)]

[Required]

public string FirstName { get; set; }

[Display(Name = "Last Name")]

[MaxLength(50)]

[Required]

public string LastName { get; set; }

[MaxLength(100)]

public string Address { get; set; }

[Display(Name = "Image")]

public Guid ImageId { get; set; }

//TODO: В ожидании ввода правильных путей

[Display(Name = "Image")]

public string ImageFullPath => ImageId == Guid.Empty

? $"https://localhost:44390/images/noimage.png"

: $"https://onsale.blob.core.windows.net/users/{ImageId}";

[Display(Name = "User Type")]

public UserType UserType { get; set; }

public City City { get; set; }

[Display(Name = "User")]

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

[Display(Name = "User")]

public string FullNameWithDocument => $"{FirstName} {LastName} - {Document}";

}

1. Измените **DataContext**:

public class DataContext : IdentityDbContext<User>

{

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

{

}

…

1. Создайте интерфейс **IUserHelper**:

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. Создаем реализацию интерфейса **UserHelper**:

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)

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

}

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

{

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

}

}

1. Измените метод **ConfigureServices** для **Startup**:

public void ConfigureServices(IServiceCollection services)

{

services.Configure<CookiePolicyOptions>(options =>

{

options.CheckConsentNeeded = context => true;

options.MinimumSameSitePolicy = SameSiteMode.None;

});

services.AddIdentity<User, IdentityRole>(cfg =>

{

cfg.User.RequireUniqueEmail = true;

cfg.Password.RequireDigit = false;

cfg.Password.RequiredUniqueChars = 0;

cfg.Password.RequireLowercase = false;

cfg.Password.RequireNonAlphanumeric = false;

cfg.Password.RequireUppercase = false;

}).AddEntityFrameworkStores<DataContext>();

services.AddDbContext<DataContext>(cfg =>

{

cfg.UseSqlServer(Configuration.GetConnectionString("DefaultConnection"));

});

services.AddTransient<SeedDb>();

services.AddScoped<IBlobHelper, BlobHelper>();

services.AddScoped<IConverterHelper, ConverterHelper>();

services.AddScoped<ICombosHelper, CombosHelper>();

services.AddScoped<IUserHelper, UserHelper>();

services.AddMvc().SetCompatibilityVersion(CompatibilityVersion.Version\_2\_1);

}

1. Модифицируем метод **Configure** **Startup**:

public void Configure(IApplicationBuilder app, IHostingEnvironment env)

{

if (env.IsDevelopment())

{

app.UseDeveloperExceptionPage();

}

else

{

app.UseExceptionHandler("/Home/Error");

app.UseHsts();

}

app.UseHttpsRedirection();

app.UseStaticFiles();

app.UseAuthentication();

app.UseCookiePolicy();

app.UseMvc(routes =>

{

routes.MapRoute(

name: "default",

template: "{controller=Home}/{action=Index}/{id?}");

});

}

1. Мы модифицируем **SeedDb**:

public class SeedDb

{

private readonly DataContext \_context;

private readonly IUserHelper \_userHelper;

public SeedDb(DataContext context, IUserHelper userHelper)

{

\_context = context;

\_userHelper = userHelper;

}

public async Task SeedAsync()

{

await \_context.Database.EnsureCreatedAsync();

await CheckCountriesAsync();

await CheckRolesAsync();

await CheckUserAsync("1010", "Juan", "Zuluaga", "jzuluaga55@hotmail.com", "322 311 4620", "Calle Luna Calle Sol", UserType.Admin);

}

private async Task CheckRolesAsync()

{

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

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

}

private async Task<User> CheckUserAsync(

string document,

string firstName,

string lastName,

string email,

string phone,

string address,

UserType userType)

{

User 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 CheckCountriesAsync()

…

1. Сохраняем изменения и выполняем следующие команды для обновления БД:

PM> add-migration Users

PM> update-database

1. Тестируем.
2. Чтобы закончить эту главу, мы собираемся дополнить сущности. Начнем с создания перечисления **OrderStatus**:

public enum OrderStatus

{

Pending,

Spreading,

Sent,

Confirmed

}

1. В проекте **Common** создаем сущность **OrderDetail**:

public class OrderDetail

{

public int Id { get; set; }

public Product Product { get; set; }

public float Quantity { get; set; }

public decimal Price { get; set; }

[DataType(DataType.MultilineText)]

public string Remarks { get; set; }

public decimal Value => (decimal)Quantity \* Price;

}

1. В **Web**-проекте мы создаем сущность **Order**:

public class Order

{

public int Id { get; set; }

public DateTime Date { get; set; }

public User User { get; set; }

public OrderStatus OrderStatus { get; set; }

[Display(Name = "Date Sent")]

public DateTime? DateSent { get; set; }

[Display(Name = "Date Confirmed")]

public DateTime? DateConfirmed { get; set; }

[DataType(DataType.MultilineText)]

public string Remarks { get; set; }

public ICollection<OrderDetail> OrderDetails { get; set; }

public int Lines => OrderDetails == null ? 0 : OrderDetails.Count;

public float Quantity => OrderDetails == null ? 0 : OrderDetails.Sum(od => od.Quantity);

public decimal Value => OrderDetails == null ? 0 : OrderDetails.Sum(od => od.Value);

}

1. Обновляем **DataContext**:

…

public DbSet<Department> Departments { get; set; }

public DbSet<Order> Orders { get; set; }

public DbSet<OrderDetail> OrderDetails { get; set; }

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

…

1. Сохраняем изменения и запускаем следующие команды:

PM> add-migration AddOrderEntities

PM> update-database

# Реализация Login/Logout

1. Мы создаем **LoginViewModel**:

public class LoginViewModel

{

[Required]

[EmailAddress]

public string Username { get; set; }

[Required]

[MinLength(6)]

public string Password { get; set; }

public bool RememberMe { get; set; }

}

1. Мы добавляем эти методы в **IUserHelper**:

Task<SignInResult> LoginAsync(LoginViewModel model);

Task LogoutAsync();

1. И добавляем его реализацию в **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(LoginViewModel model)

{

return await \_signInManager.PasswordSignInAsync(

model.Username,

model.Password,

model.RememberMe,

false);

}

public async Task LogoutAsync()

{

await \_signInManager.SignOutAsync();

}

...

1. Создаем **AccountController**:

public class AccountController : Controller

{

private readonly IUserHelper \_userHelper;

public AccountController(IUserHelper userHelper)

{

\_userHelper = userHelper;

}

public IActionResult Login()

{

if (User.Identity.IsAuthenticated)

{

return RedirectToAction("Index", "Home");

}

return View(new LoginViewModel());

}

[HttpPost]

public async Task<IActionResult> Login(LoginViewModel model)

{

if (ModelState.IsValid)

{

Microsoft.AspNetCore.Identity.SignInResult result = await \_userHelper.LoginAsync(model);

if (result.Succeeded)

{

if (Request.Query.Keys.Contains("ReturnUrl"))

{

return Redirect(Request.Query["ReturnUrl"].First());

}

return RedirectToAction("Index", "Home");

}

ModelState.AddModelError(string.Empty, "Email or password incorrect.");

}

return View(model);

}

public async Task<IActionResult> Logout()

{

await \_userHelper.LogoutAsync();

return RedirectToAction("Index", "Home");

}

}

1. Добавляем представ**л**ение **Login**:

@model OnSale.Web.Models.LoginViewModel

@{

ViewData["Title"] = "Login";

}

<h2>Login</h2>

<div class="row">

<div class="col-md-4 offset-md-4">

<form method="post">

<div asp-validation-summary="ModelOnly"></div>

<div class="form-group">

<label asp-for="Username">Username</label>

<input asp-for="Username" class="form-control" />

<span asp-validation-for="Username" class="text-warning"></span>

</div>

<script src="~/lib/jquery-validation/dist/jquery.validate.js"></script>

<div class="form-group">

<label asp-for="Password">Password</label>

<input asp-for="Password" type="password" class="form-control" />

<span asp-validation-for="Password" class="text-warning"></span>

</div>

<div class="form-group">

<div class="form-check">

<input asp-for="RememberMe" type="checkbox" class="form-check-input" />

<label asp-for="RememberMe" class="form-check-label">Remember Me?</label>

</div>

<span asp-validation-for="RememberMe" class="text-warning"></span>

</div>

<div class="form-group">

<input type="submit" value="Login" class="btn btn-success" />

<a asp-action="Register" class="btn btn-primary">Register New User</a>

</div>

</form>

</div>

</div>

@section Scripts {

@{await Html.RenderPartialAsync("\_ValidationScriptsPartial");}

}

1. Мы добавляем аннотацию авторизации к предыдущим контроллерам:

[Authorize(Roles = "Admin")]

1. Модифицируем наше меню **\_Layout**:

…

<div class="navbar-collapse collapse">

<ul class="nav navbar-nav">

<li><a asp-area="" asp-controller="Home" asp-action="Index">Home</a></li>

<li><a asp-area="" asp-controller="Home" asp-action="About">About</a></li>

<li><a asp-area="" asp-controller="Home" asp-action="Contact">Contact</a></li>

@if (User.Identity.IsAuthenticated && User.IsInRole("Admin"))

{

<li><a asp-area="" asp-controller="Countries" asp-action="Index">Countries</a></li>

<li><a asp-area="" asp-controller="Categories" asp-action="Index">Categories</a></li>

<li><a asp-area="" asp-controller="Products" asp-action="Index">Products</a></li>

}

</ul>

<ul class="nav navbar-nav navbar-right">

@if (User.Identity.IsAuthenticated)

{

<li><a asp-area="" asp-controller="Account" asp-action="ChangeUser">@User.Identity.Name</a></li>

<li><a asp-area="" asp-controller="Account" asp-action="Logout">Logout</a></li>

}

else

{

<li><a asp-area="" asp-controller="Account" asp-action="Login">Login</a></li>

}

</ul>

</div>

1. Тестируем.

# Создание API без защиты

1. Мы создаем папку **API** внутри папки **Controllers**, а внутри **API** мы создаем **CountryController** со следующим кодом:

[ApiController]

[Route("api/[controller]")]

public class CountriesController : ControllerBase

{

private readonly DataContext \_context;

public CountriesController(DataContext context)

{

\_context = context;

}

[HttpGet]

public IActionResult GetCountries()

{

return Ok(\_context.Countries

.Include(c => c.Departments)

.ThenInclude(d => d.Cities));

}

}

1. Тестируем.
2. Чтобы избежать ненужных полей, мы можем добавить аннотацию **JsonIgnore**, мы изменим сущности **Department и City**:

[JsonIgnore]

[NotMapped]

public int IdCountry { get; set; }

[JsonIgnore]

[NotMapped]

public int IdDepartment { get; set; }

1. Тестируем.
2. Мы делаем то же самое, но для **ProductsController**:

[ApiController]

[Route("api/[controller]")]

public class ProductsController : ControllerBase

{

private readonly DataContext \_context;

public ProductsController(DataContext context)

{

\_context = context;

}

[HttpGet]

public IActionResult GetProducts()

{

return Ok(\_context.Products

.Include(p => p.Category)

.Include(p => p.ProductImages)

.Where(p => p.IsActive));

}

}

1. Тестируем.

# Создание токена безопасности

1. Мы добавляем эти значения к нашим **appsettings**:

{

"Logging": {

"LogLevel": {

"Default": "Warning"

}

},

"AllowedHosts": "\*",

"ConnectionStrings": {

"DefaultConnection": "Server=(localdb)\\MSSQLLocalDB;Database=OnSale;Trusted\_Connection=True;MultipleActiveResultSets=true"

},

"Blob": {

"ConnectionString": "DefaultEndpointsProtocol=https;AccountName=onsale;AccountKey=u4Ds+6uYoz5qfaejvPRRQCg3PI5HVaDaLj1rfx/UVSB68trksZ37YRTxawCr8tSZmNxXIxzW2VqNgE5vvactYg==;EndpointSuffix=core.windows.net"

},

"Tokens": {

"Key": "asdfghjikbnRRUREDFJDLKJF69877vcgfdsrtfyLKJHGFRTGVC543FDhgcvgfx\_dg708ctrreSSssSwwsswrrrRRRRWYUIY",

"Issuer": "localhost",

"Audience": "users"

}

}

1. Мы добавляем этот метод в **IUserHelper**:

Task<SignInResult> ValidatePasswordAsync(User user, string password);

1. И его реализация в **UserHelper**:

public async Task<SignInResult> ValidatePasswordAsync(User user, string password)

{

return await \_signInManager.CheckPasswordSignInAsync(user, password, false);

}

1. Внутри папки **API / Controllers** создаем **AccountController**:

[ApiController]

[Route("api/[controller]")]

public class AccountController : ControllerBase

{

private readonly IUserHelper \_userHelper;

private readonly IConfiguration \_configuration;

public AccountController(IUserHelper userHelper, IConfiguration configuration)

{

\_userHelper = userHelper;

\_configuration = configuration;

}

[HttpPost]

[Route("CreateToken")]

public async Task<IActionResult> CreateToken([FromBody] LoginViewModel model)

{

if (ModelState.IsValid)

{

User user = await \_userHelper.GetUserAsync(model.Username);

if (user != null)

{

Microsoft.AspNetCore.Identity.SignInResult result = await \_userHelper.ValidatePasswordAsync(user, model.Password);

if (result.Succeeded)

{

Claim[] claims = new[]

{

new Claim(JwtRegisteredClaimNames.Sub, user.Email),

new Claim(JwtRegisteredClaimNames.Jti, Guid.NewGuid().ToString())

};

SymmetricSecurityKey key = new SymmetricSecurityKey(Encoding.UTF8.GetBytes(\_configuration["Tokens:Key"]));

SigningCredentials credentials = new SigningCredentials(key, SecurityAlgorithms.HmacSha256);

JwtSecurityToken token = new JwtSecurityToken(

\_configuration["Tokens:Issuer"],

\_configuration["Tokens:Audience"],

claims,

expires: DateTime.UtcNow.AddDays(99),

signingCredentials: credentials);

var results = new

{

token = new JwtSecurityTokenHandler().WriteToken(token),

expiration = token.ValidTo,

user

};

return Created(string.Empty, results);

}

}

}

return BadRequest();

}

}

1. Добавляем конфигурацию в **Startup**:

…

}).AddEntityFrameworkStores<DataContext>();

services.AddAuthentication()

.AddCookie()

.AddJwtBearer(cfg =>

{

cfg.TokenValidationParameters = new TokenValidationParameters

{

ValidIssuer = Configuration["Tokens:Issuer"],

ValidAudience = Configuration["Tokens:Audience"],

IssuerSigningKey = new SymmetricSecurityKey(Encoding.UTF8.GetBytes(Configuration["Tokens:Key"]))

};

});

services.AddDbContext<DataContext>(cfg =>

…

1. Тестируем.

# Безопасное создание API

В нашем приложении будут методы, требующие безопасности, и другие методы, которым безопасность не нужна. Это пример того, как обеспечить безопасность метода нашего API.

1. Внутри папки API / Controllers мы добавляем этот метод в AccountController:

**[Authorize(AuthenticationSchemes = JwtBearerDefaults.AuthenticationScheme)]**

[HttpPost]

[Route("GetUserByEmail")]

public async Task<IActionResult> GetUserByEmail([FromBody] EmailRequest request)

{

if (!ModelState.IsValid)

{

return BadRequest();

}

User user = await \_userHelper.GetUserAsync(request.Email);

if (user == null)

{

return NotFound("Error001");

}

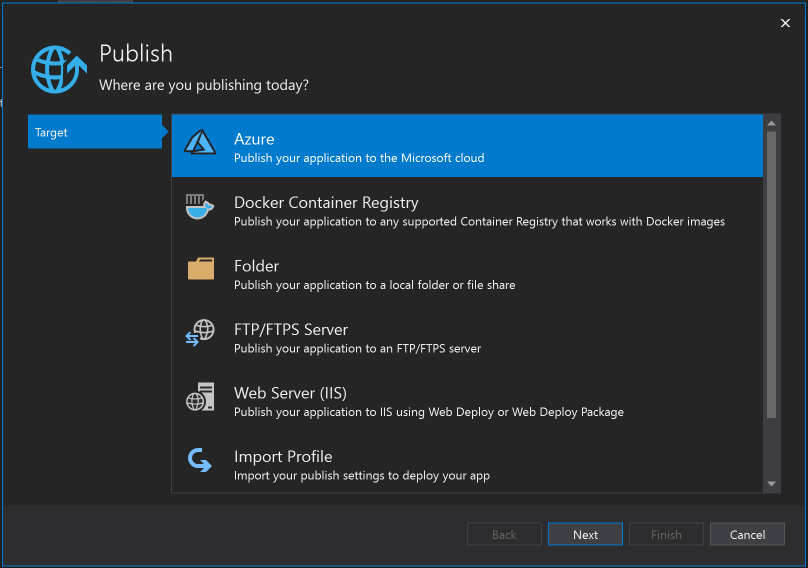
return Ok(user);

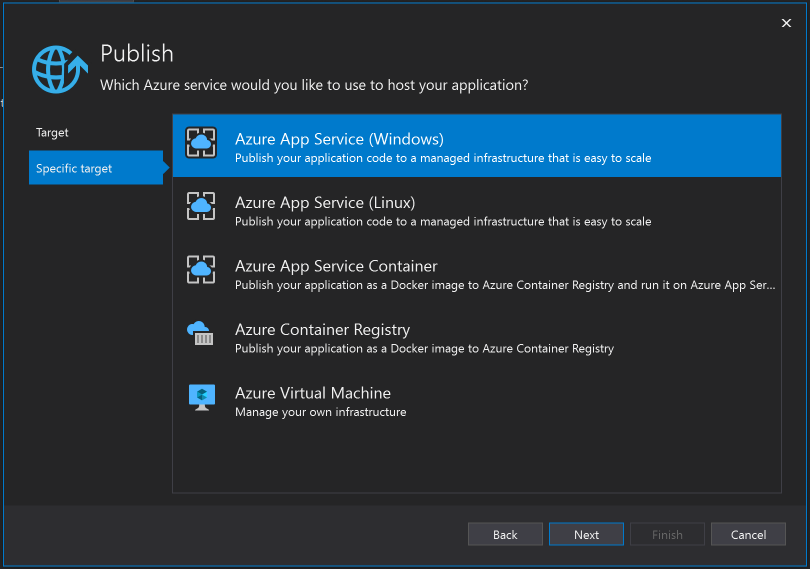
}

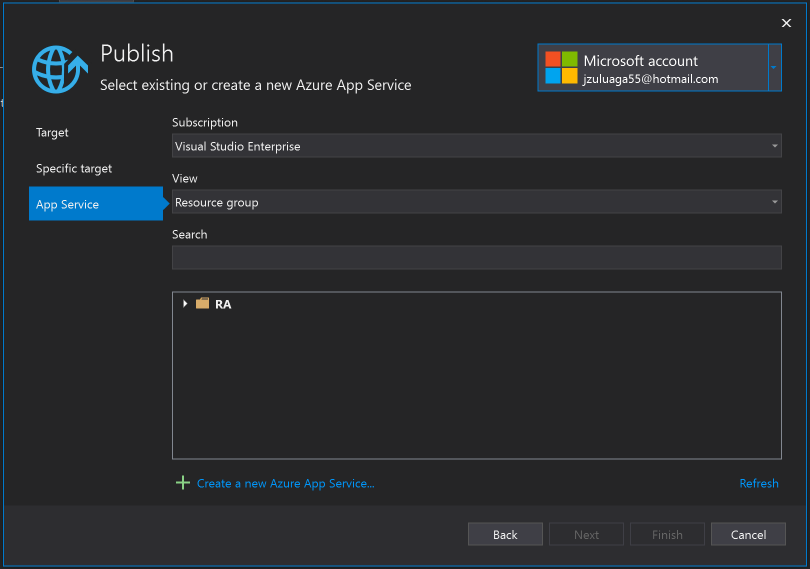
1. Тестируем.

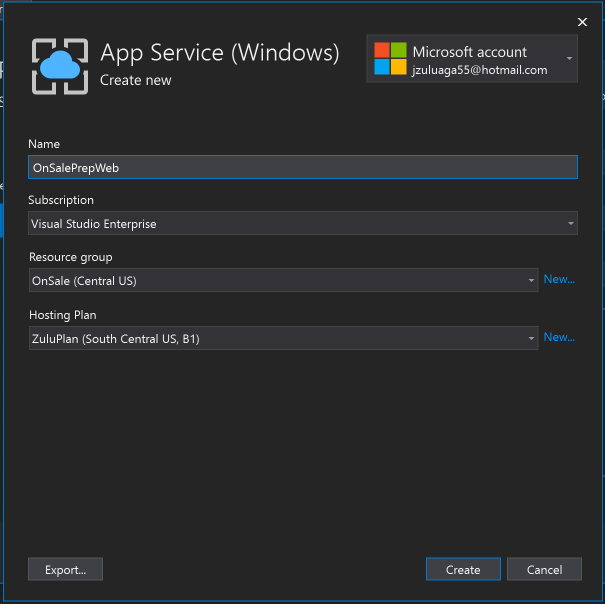
# Размещение в Azure

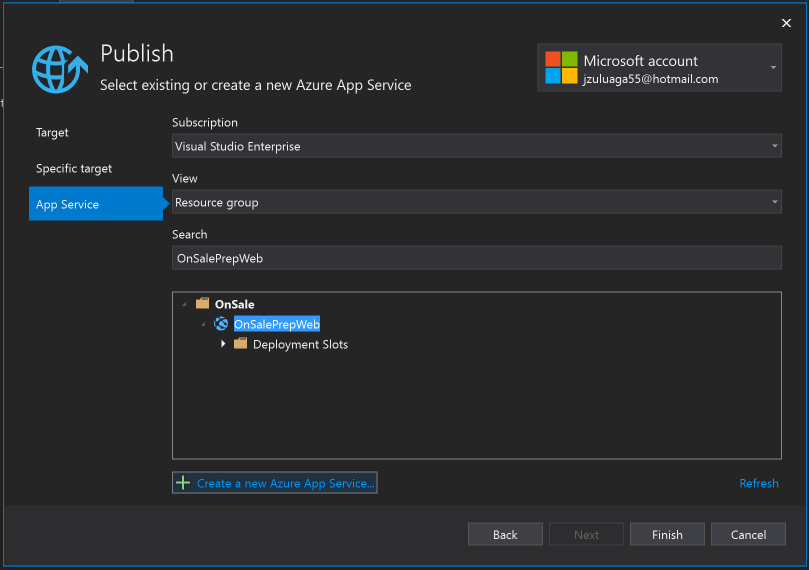
Чтобы получить доступ к нашему API с мобильных устройств, нам необходимо опубликовать наш сайт. Это пример публикации в Azure.

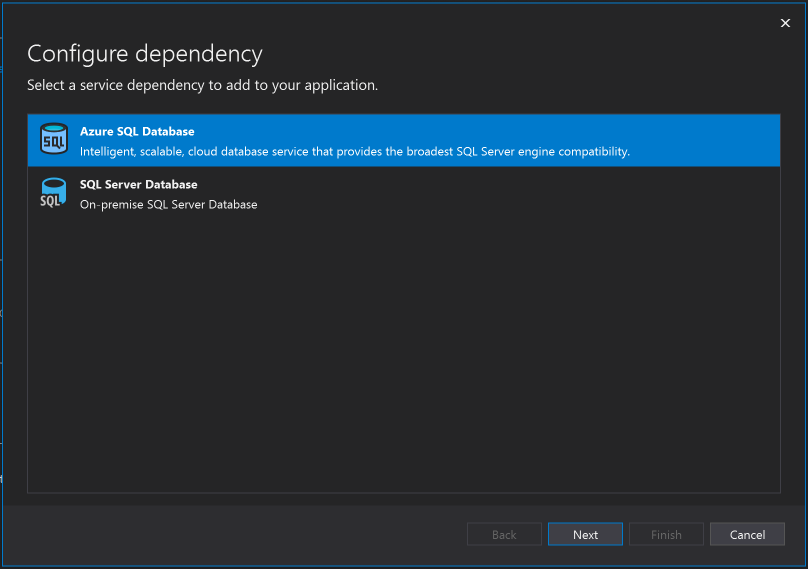


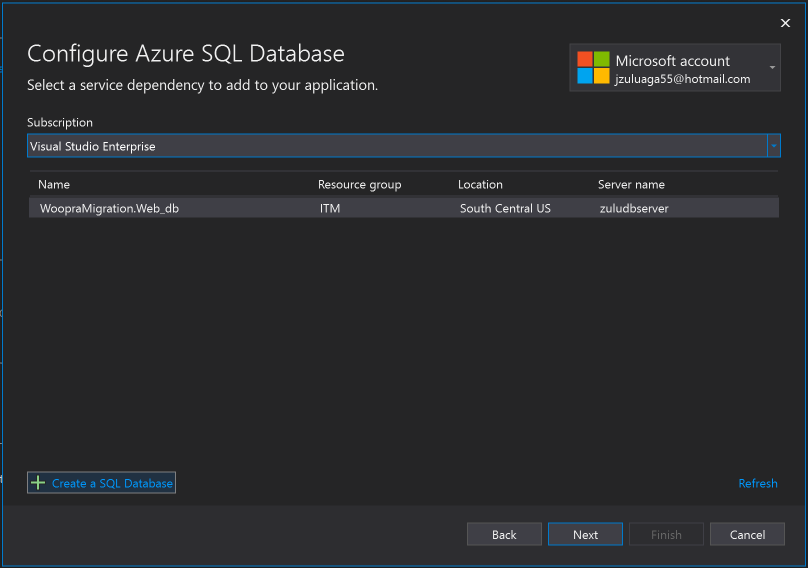


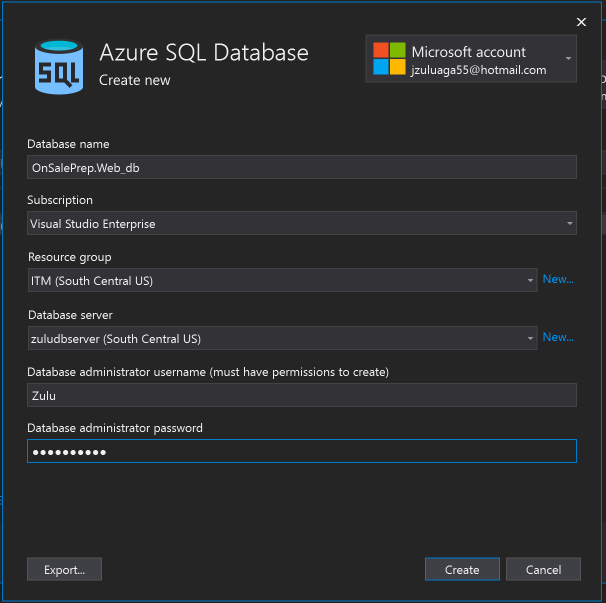


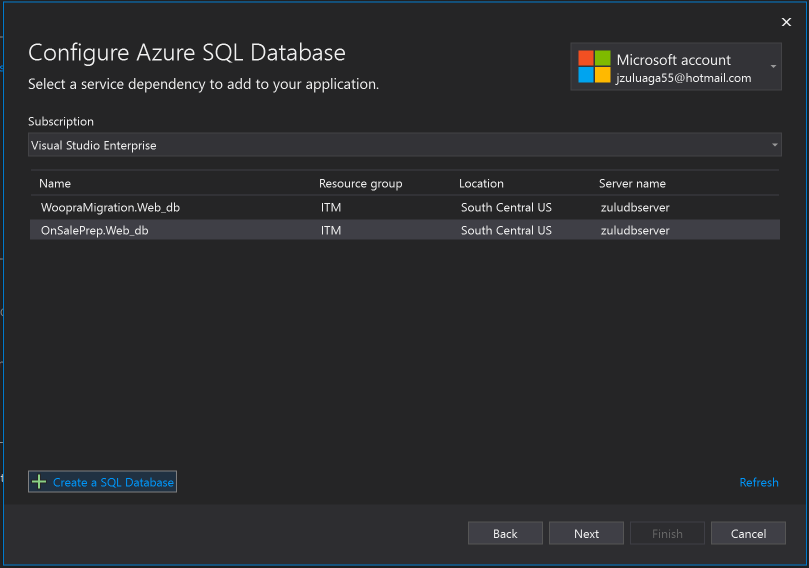


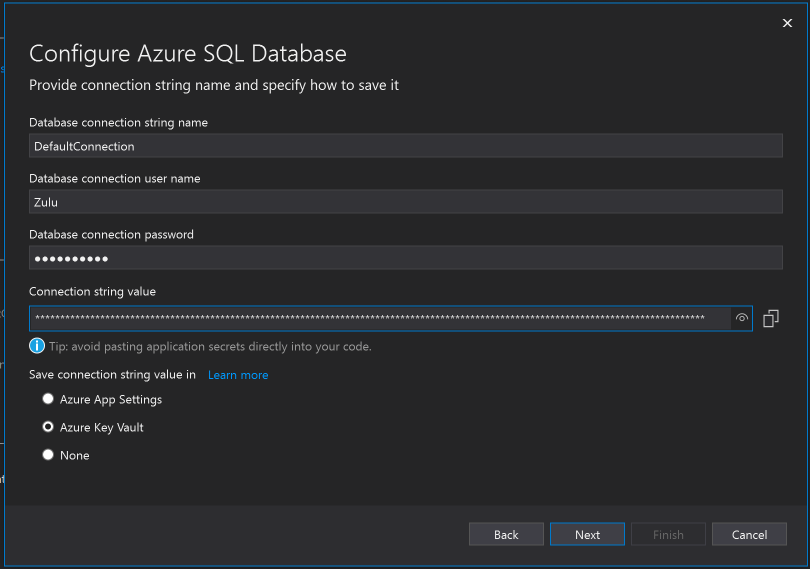


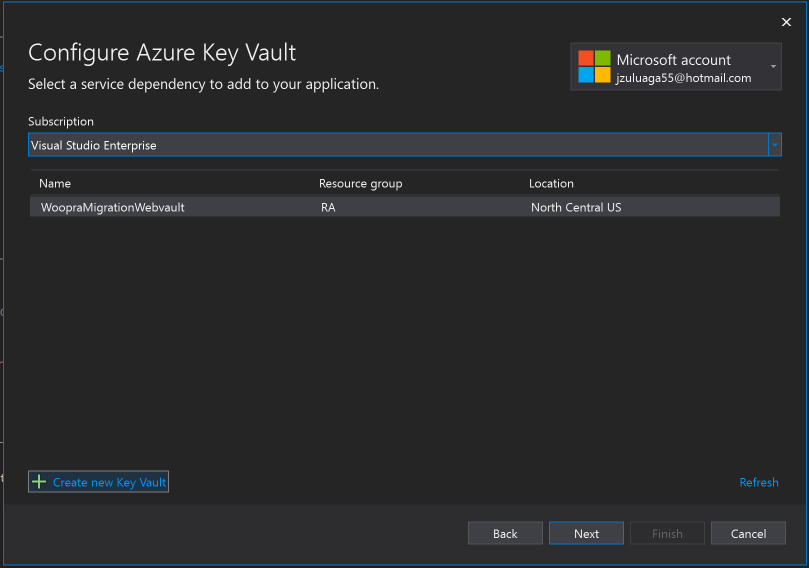


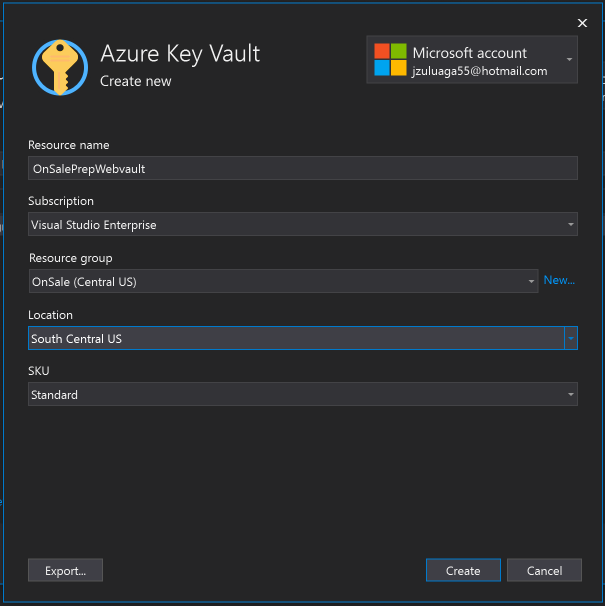


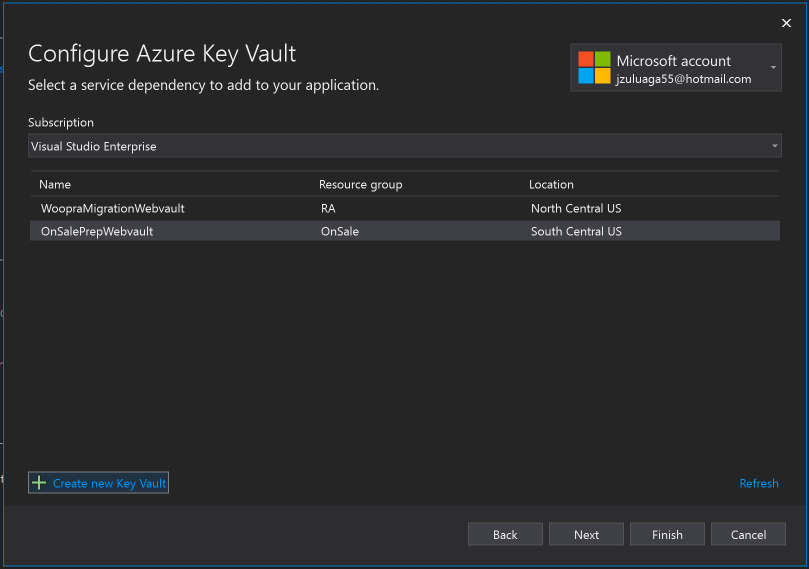


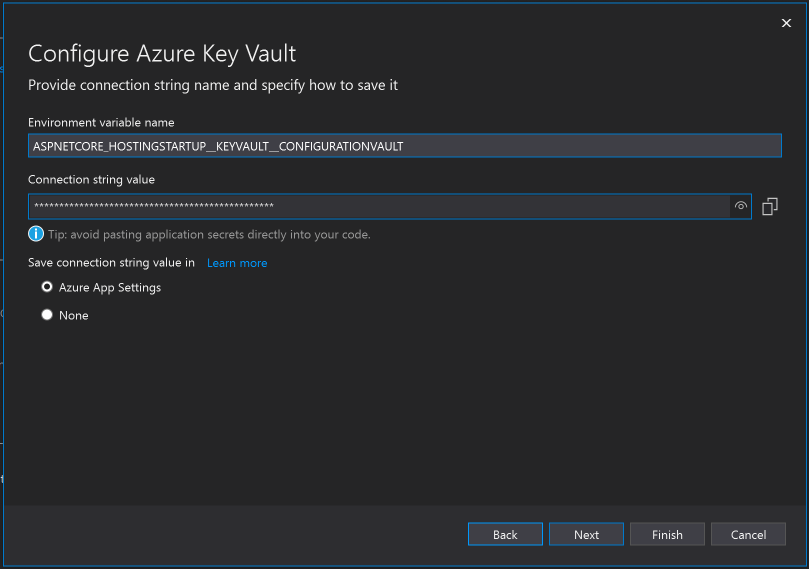


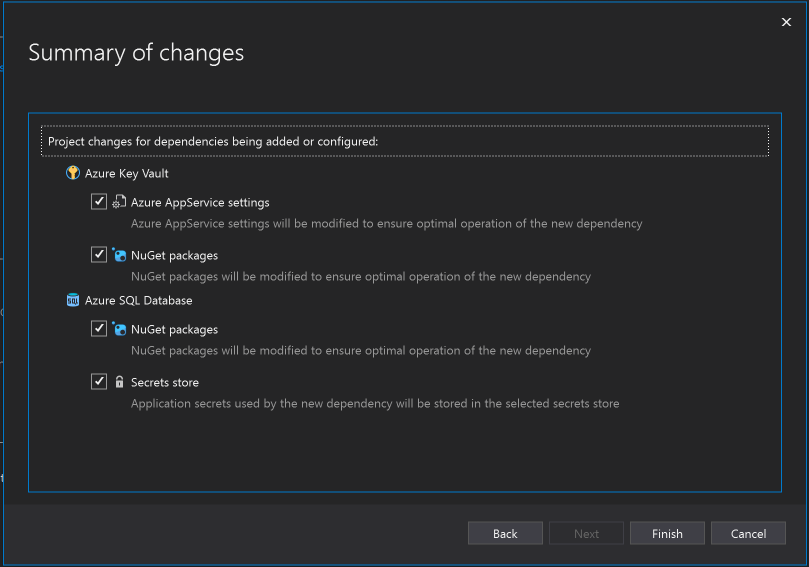


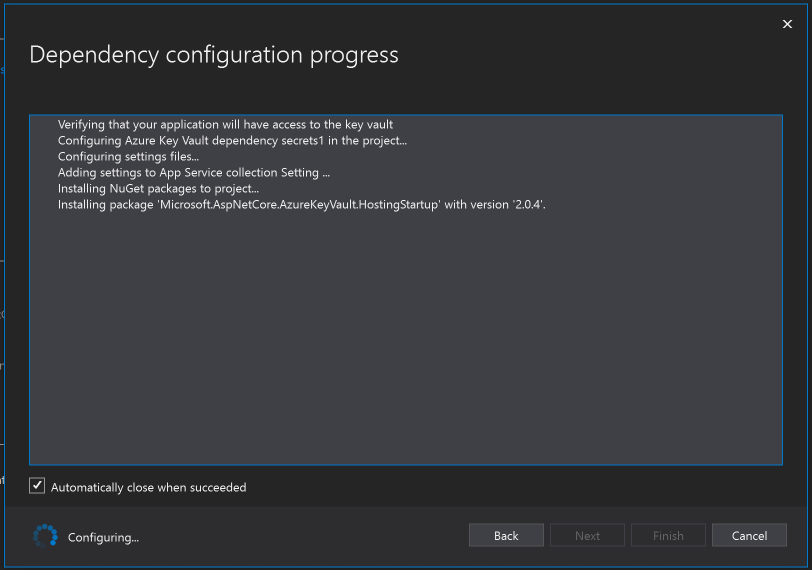


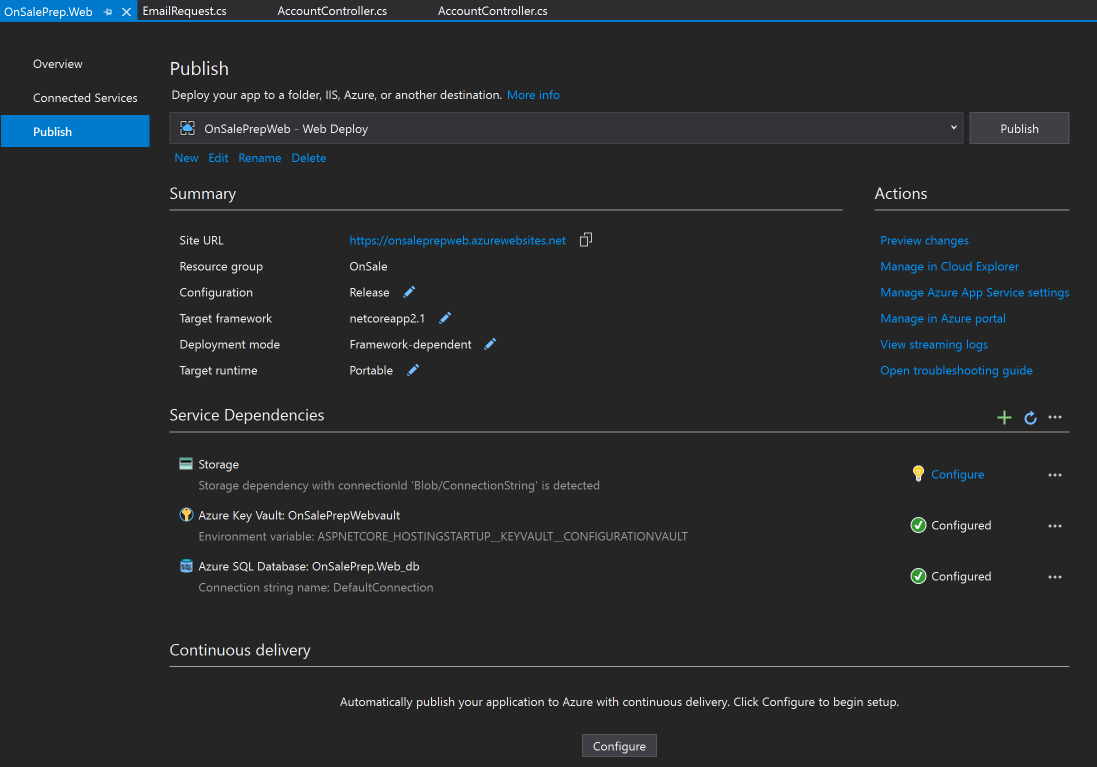


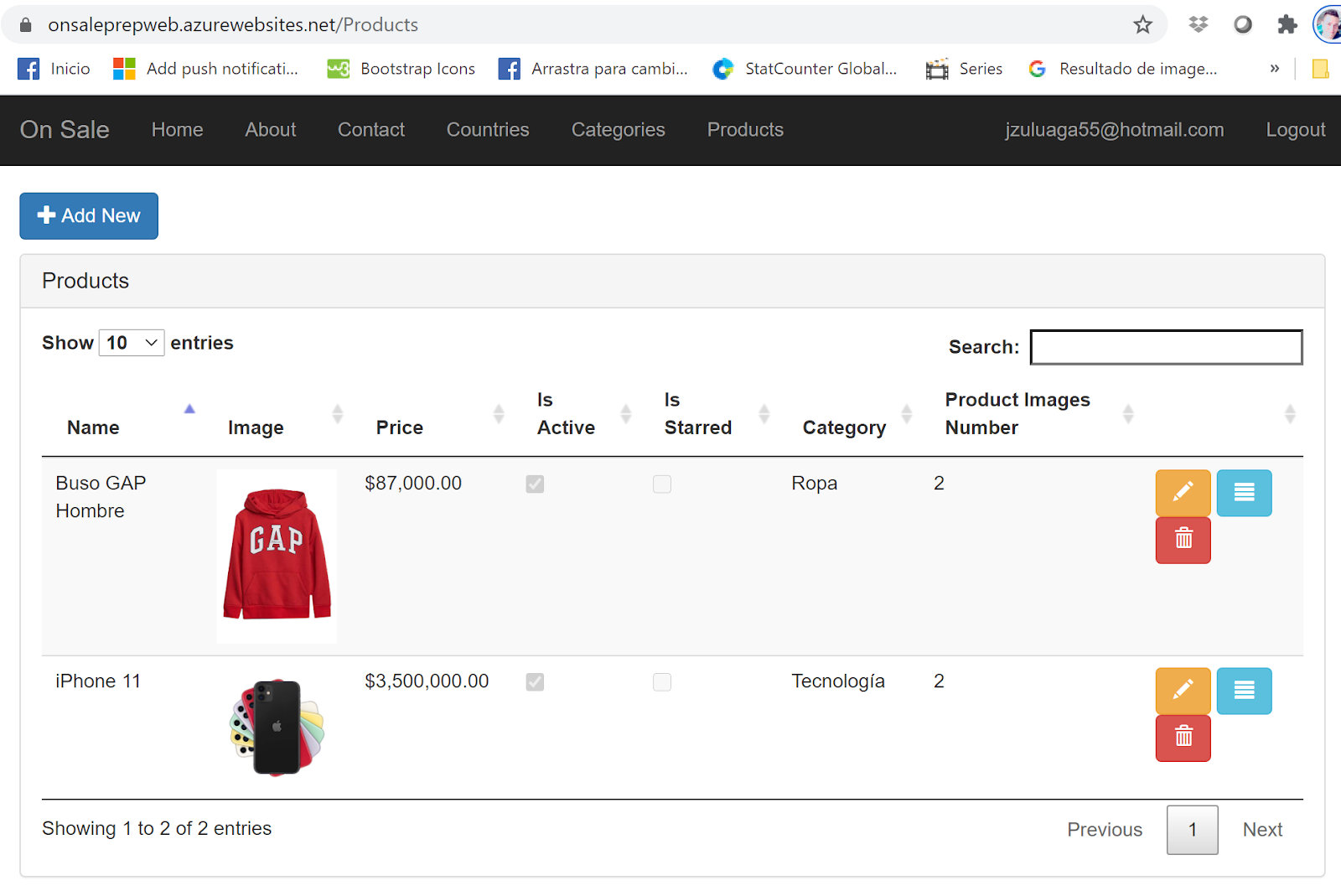












# Решение проблем

У нас возникли проблемы с локалью, мы можем быстро решить эту проблему с помощью:

app.UseRequestLocalization(new RequestLocalizationOptions

{

DefaultRequestCulture = new RequestCulture("en-US"),

SupportedCultures = new[] { new CultureInfo("en-US") },

SupportedUICultures = new[] { new CultureInfo("en-US") }

});

Или мы можем предложить более эффективное решение:

public class ProductViewModel : Product

{

[Display(Name = "Category")]

[Range(1, int.MaxValue, ErrorMessage = "You must select a category.")]

[Required]

public int CategoryId { get; set; }

[Display(Name = "Price")]

[MaxLength(12)]

[RegularExpression(@"^\d+([\.\,]?\d+)?$", ErrorMessage = "Use only numbers and . or , to put decimals")]

[Required]

public string PriceString { get; set; }

public IEnumerable<SelectListItem> Categories { get; set; }

[Display(Name = "Image")]

public IFormFile ImageFile { get; set; }

}

Luego:

<div class="form-group">

<label asp-for="PriceString" class="control-label"></label>

<input asp-for="PriceString" class="form-control" />

<span asp-validation-for="PriceString" class="text-danger"></span>

</div>

Затем:

public async Task<Product> ToProductAsync(ProductViewModel model, bool isNew)

{

return new Product

{

Category = await \_context.Categories.FindAsync(model.CategoryId),

Description = model.Description,

Id = isNew ? 0 : model.Id,

IsActive = model.IsActive,

IsStarred = model.IsStarred,

Name = model.Name,

Price = ToPrice(model.PriceString),

ProductImages = model.ProductImages

};

}

private decimal ToPrice(string priceString)

{

string nds = CultureInfo.CurrentCulture.NumberFormat.NumberDecimalSeparator;

if (nds == ".")

{

priceString = priceString.Replace(',', '.');

}

else

{

priceString = priceString.Replace('.', ',');

}

return decimal.Parse(priceString);

}

public ProductViewModel ToProductViewModel(Product product)

{

return new ProductViewModel

{

Categories = \_combosHelper.GetComboCategories(),

Category = product.Category,

CategoryId = product.Category.Id,

Description = product.Description,

Id = product.Id,

IsActive = product.IsActive,

IsStarred = product.IsStarred,

Name = product.Name,

Price = product.Price,

PriceString = $"{product.Price}",

ProductImages = product.ProductImages

};

}

Тестируем.

Другая ошибка заключается в том, что у нас проблема с каскадным удалением. Сначала мы собираемся организовать наши отношения в сущностях:

public class City

{

public int Id { get; set; }

[MaxLength(50)]

[Required]

public string Name { get; set; }

[JsonIgnore]

[NotMapped]

public int IdDepartment { get; set; }

[JsonIgnore]

public Department Department { get; set; }

}

public class Department

{

public int Id { get; set; }

[MaxLength(50)]

[Required]

public string Name { get; set; }

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

[DisplayName("Cities Number")]

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

[JsonIgnore]

[NotMapped]

public int IdCountry { get; set; }

[JsonIgnore]

public Country Country { get; set; }

}

Это делается для того, чтобы явно установить отношения в тексте данных и, таким образом, иметь возможность определять каскадное удаление:

protected override void OnModelCreating(ModelBuilder modelBuilder)

{

base.OnModelCreating(modelBuilder);

modelBuilder.Entity<Category>()

.HasIndex(t => t.Name)

.IsUnique();

modelBuilder.Entity<Country>(cou =>

{

cou.HasIndex("Name").IsUnique();

cou.HasMany(c => c.Departments).WithOne(d => d.Country).OnDelete(DeleteBehavior.Cascade);

});

modelBuilder.Entity<Department>(dep =>

{

dep.HasIndex("Name", "CountryId").IsUnique();

dep.HasOne(d => d.Country).WithMany(c => c.Departments).OnDelete(DeleteBehavior.Cascade);

});

modelBuilder.Entity<City>(cit =>

{

cit.HasIndex("Name", "DepartmentId").IsUnique();

cit.HasOne(c => c.Department).WithMany(d => d.Cities).OnDelete(DeleteBehavior.Cascade);

});

modelBuilder.Entity<Product>()

.HasIndex(t => t.Name)

.IsUnique();

}

Третья проблема связана с Internet Explorer, но….



# Страницы перенаправления

1. Создайте метод **NotAuthorized** в **AccountController**:

public IActionResult NotAuthorized()

{

return View();

}

1. Создайте соответствующее представление с этими строками:

@{

ViewData["Title"] = "NotAuthorized";

}

<br />

<br />

<img src="~/images/gopher\_head-min.png" />

<h2>You are not authorized to perform this action!</h2>

1. Измените **Startup.cs**, чтобы настроить параметры **cookie** приложения (после строк **cookie**):

services.ConfigureApplicationCookie(options =>

{

options.LoginPath = "/Account/NotAuthorized";

options.AccessDeniedPath = "/Account/NotAuthorized";

});

1. Мы добавляем его в конвейер внутри **Startup.cs** с подстановочным знаком в качестве параметра.

public void Configure(IApplicationBuilder app, IHostingEnvironment env)

{

if (env.IsDevelopment())

{

app.UseDeveloperExceptionPage();

}

else

{

app.UseExceptionHandler("/Home/Error");

app.UseHsts();

}

app.UseStatusCodePagesWithReExecute("/error/{0}");

app.UseHttpsRedirection();

app.UseStaticFiles();

app.UseAuthentication();

app.UseCookiePolicy();

app.UseMvc(routes =>

{

routes.MapRoute(

name: "default",

template: "{controller=Home}/{action=Index}/{id?}");

});

}

1. Внутри **HomeController** создайте следующее действие.

[Route("error/404")]

public IActionResult Error404()

{

return View();

}

1. Создайте соответствующий вид.

@{

ViewData["Title"] = "Error404";

}

<br />

<br />

<img src="~/images/gopher\_head-min.png" />

<h2>Sorry, page not found</h2>

1. Тестируем!.

# Самостоятельная регистрация пользователей

1. Добавьте **EditUserViewModel**:

public class EditUserViewModel

{

public string Id { get; set; }

[MaxLength(20)]

[Required]

public string Document { get; set; }

[Display(Name = "First Name")]

[MaxLength(50)]

[Required]

public string FirstName { get; set; }

[Display(Name = "Last Name")]

[MaxLength(50)]

[Required]

public string LastName { get; set; }

[MaxLength(100)]

public string Address { get; set; }

[Display(Name = "Phone Number")]

[MaxLength(20)]

public string PhoneNumber { get; set; }

[Display(Name = "Image")]

public Guid ImageId { get; set; }

[Display(Name = "Image")]

public string ImageFullPath => ImageId == Guid.Empty

? $"https://OnSaleweb.azurewebsites.net/images/noimage.png"

: $"https://onsale.blob.core.windows.net/users/{ImageId}";

[Display(Name = "Image")]

public IFormFile ImageFile { get; set; }

[Required]

[Display(Name = "Country")]

[Range(1, int.MaxValue, ErrorMessage = "You must select a country.")]

public int CountryId { get; set; }

public IEnumerable<SelectListItem> Countries { get; set; }

[Required]

[Display(Name = "Department")]

[Range(1, int.MaxValue, ErrorMessage = "You must select a department.")]

public int DepartmentId { get; set; }

public IEnumerable<SelectListItem> Departments { get; set; }

[Required]

[Display(Name = "City")]

[Range(1, int.MaxValue, ErrorMessage = "You must select a city.")]

public int CityId { get; set; }

public IEnumerable<SelectListItem> Cities { get; set; }

}

1. Добавьте этот метод в **AddUserViewModel**:

public class AddUserViewModel : EditUserViewModel

{

[Display(Name = "Email")]

[Required(ErrorMessage = "The field {0} is mandatory.")]

[MaxLength(100, ErrorMessage = "The {0} field can not have more than {1} characters.")]

[EmailAddress]

public string Username { get; set; }

[Display(Name = "Password")]

[Required(ErrorMessage = "The field {0} is mandatory.")]

[DataType(DataType.Password)]

[StringLength(20, MinimumLength = 6, ErrorMessage = "The {0} field must contain between {2} and {1} characters.")]

public string Password { get; set; }

[Display(Name = "Password Confirm")]

[Required(ErrorMessage = "The field {0} is mandatory.")]

[DataType(DataType.Password)]

[StringLength(20, MinimumLength = 6, ErrorMessage = "The {0} field must contain between {2} and {1} characters.")]

[Compare("Password")]

public string PasswordConfirm { get; set; }

}

1. Добавьте этот метод в **IUserHelper**:

Task<User> AddUserAsync(AddUserViewModel model, Guid imageId, UserType userType);

1. Добавьте этот метод в **UserHelper**:

public async Task<User> AddUserAsync(AddUserViewModel model, Guid imageId, UserType userType)

{

User user = new User

{

Address = model.Address,

Document = model.Document,

Email = model.Username,

FirstName = model.FirstName,

LastName = model.LastName,

ImageId = imageId,

PhoneNumber = model.PhoneNumber,

City = await \_context.Cities.FindAsync(model.CityId),

UserName = model.Username,

UserType = userType

};

IdentityResult result = await \_userManager.CreateAsync(user, model.Password);

if (result != IdentityResult.Success)

{

return null;

}

User newUser = await GetUserAsync(model.Username);

await AddUserToRoleAsync(newUser, user.UserType.ToString());

return newUser;

}

1. Добавьте эти методы в **ICombosHelper**:

IEnumerable<SelectListItem> GetComboCountries();

IEnumerable<SelectListItem> GetComboDepartments(int countryId);

IEnumerable<SelectListItem> GetComboCities(int departmentId);

1. Добавьте эти методы в **CombosHelper**:

public IEnumerable<SelectListItem> GetComboCities(int departmentId)

{

List<SelectListItem> list = new List<SelectListItem>();

Department department = \_context.Departments

.Include(d => d.Cities)

.FirstOrDefault(d => d.Id == departmentId);

if (department != null)

{

list = department.Cities.Select(t => new SelectListItem

{

Text = t.Name,

Value = $"{t.Id}"

})

.OrderBy(t => t.Text)

.ToList();

}

list.Insert(0, new SelectListItem

{

Text = "[Select a city...]",

Value = "0"

});

return list;

}

public IEnumerable<SelectListItem> GetComboCountries()

{

List<SelectListItem> list = \_context.Countries.Select(t => new SelectListItem

{

Text = t.Name,

Value = $"{t.Id}"

})

.OrderBy(t => t.Text)

.ToList();

list.Insert(0, new SelectListItem

{

Text = "[Select a country...]",

Value = "0"

});

return list;

}

public IEnumerable<SelectListItem> GetComboDepartments(int countryId)

{

List<SelectListItem> list = new List<SelectListItem>();

Country country = \_context.Countries

.Include(c => c.Departments)

.FirstOrDefault(c => c.Id == countryId);

if (country != null)

{

list = country.Departments.Select(t => new SelectListItem

{

Text = t.Name,

Value = $"{t.Id}"

})

.OrderBy(t => t.Text)

.ToList();

}

list.Insert(0, new SelectListItem

{

Text = "[Select a department...]",

Value = "0"

});

return list;

}

1. Измените AccountController:

public class AccountController : Controller

{

private readonly DataContext \_context;

private readonly IUserHelper \_userHelper;

private readonly ICombosHelper \_combosHelper;

private readonly IBlobHelper \_blobHelper;

public AccountController(

DataContext context,

IUserHelper userHelper,

ICombosHelper combosHelper,

IBlobHelper blobHelper)

{

\_context = context;

\_userHelper = userHelper;

\_combosHelper = combosHelper;

\_blobHelper = blobHelper;

}

public IActionResult Login()

{

if (User.Identity.IsAuthenticated)

{

return RedirectToAction("Index", "Home");

}

return View(new LoginViewModel());

}

[HttpPost]

public async Task<IActionResult> Login(LoginViewModel model)

{

if (ModelState.IsValid)

{

Microsoft.AspNetCore.Identity.SignInResult result = await \_userHelper.LoginAsync(model);

if (result.Succeeded)

{

if (Request.Query.Keys.Contains("ReturnUrl"))

{

return Redirect(Request.Query["ReturnUrl"].First());

}

return RedirectToAction("Index", "Home");

}

ModelState.AddModelError(string.Empty, "Email or password incorrect.");

}

return View(model);

}

public async Task<IActionResult> Logout()

{

await \_userHelper.LogoutAsync();

return RedirectToAction("Index", "Home");

}

public IActionResult NotAuthorized()

{

return View();

}

public IActionResult Register()

{

AddUserViewModel model = new AddUserViewModel

{

Countries = \_combosHelper.GetComboCountries(),

Departments = \_combosHelper.GetComboDepartments(0),

Cities = \_combosHelper.GetComboCities(0),

};

return View(model);

}

[HttpPost]

[ValidateAntiForgeryToken]

public async Task<IActionResult> Register(AddUserViewModel model)

{

if (ModelState.IsValid)

{

Guid imageId = Guid.Empty;

if (model.ImageFile != null)

{

imageId = await \_blobHelper.UploadBlobAsync(model.ImageFile, "users");

}

User user = await \_userHelper.AddUserAsync(model, imageId, UserType.User);

if (user == null)

{

ModelState.AddModelError(string.Empty, "This email is already used.");

model.Countries = \_combosHelper.GetComboCountries();

model.Departments = \_combosHelper.GetComboDepartments(model.CountryId);

model.Cities = \_combosHelper.GetComboCities(model.DepartmentId);

return View(model);

}

LoginViewModel loginViewModel = new LoginViewModel

{

Password = model.Password,

RememberMe = false,

Username = model.Username

};

var result2 = await \_userHelper.LoginAsync(loginViewModel);

if (result2.Succeeded)

{

return RedirectToAction("Index", "Home");

}

}

model.Countries = \_combosHelper.GetComboCountries();

model.Departments = \_combosHelper.GetComboDepartments(model.CountryId);

model.Cities = \_combosHelper.GetComboCities(model.DepartmentId);

return View(model);

}

public JsonResult GetDepartments(int countryId)

{

Country country = \_context.Countries

.Include(c => c.Departments)

.FirstOrDefault(c => c.Id == countryId);

if (country == null)

{

return null;

}

return Json(country.Departments.OrderBy(d => d.Name));

}

public JsonResult GetCities(int departmentId)

{

Department department = \_context.Departments

.Include(d => d.Cities)

.FirstOrDefault(d => d.Id == departmentId);

if (department == null)

{

return null;

}

return Json(department.Cities.OrderBy(c => c.Name));

}

}

1. Добавьте частичное представление \_**User** в **AccountController**:

@model OnSale.Web.Models.EditUserViewModel

<div class="form-group">

<label asp-for="Document" class="control-label"></label>

<input asp-for="Document" class="form-control" />

<span asp-validation-for="Document" class="text-danger"></span>

</div>

<div class="form-group">

<label asp-for="FirstName" class="control-label"></label>

<input asp-for="FirstName" class="form-control" />

<span asp-validation-for="FirstName" class="text-danger"></span>

</div>

<div class="form-group">

<label asp-for="LastName" class="control-label"></label>

<input asp-for="LastName" class="form-control" />

<span asp-validation-for="LastName" class="text-danger"></span>

</div>

<div class="form-group">

<label asp-for="Address" class="control-label"></label>

<input asp-for="Address" class="form-control" />

<span asp-validation-for="Address" class="text-danger"></span>

</div>

<div class="form-group">

<label asp-for="PhoneNumber" class="control-label"></label>

<input asp-for="PhoneNumber" class="form-control" />

<span asp-validation-for="PhoneNumber" class="text-danger"></span>

</div>

<div class="form-group">

<label asp-for="ImageFile" class="control-label"></label>

<input asp-for="ImageFile" class="form-control" type="file" />

<span asp-validation-for="ImageFile" class="text-danger"></span>

</div>

<div class="form-group">

<label asp-for="CountryId" class="control-label"></label>

<select asp-for="CountryId" asp-items="Model.Countries" class="form-control"></select>

<span asp-validation-for="CountryId" class="text-danger"></span>

</div>

<div class="form-group">

<label asp-for="DepartmentId" class="control-label"></label>

<select asp-for="DepartmentId" asp-items="Model.Departments" class="form-control"></select>

<span asp-validation-for="DepartmentId" class="text-danger"></span>

</div>

<div class="form-group">

<label asp-for="CityId" class="control-label"></label>

<select asp-for="CityId" asp-items="Model.Cities" class="form-control"></select>

<span asp-validation-for="CityId" class="text-danger"></span>

</div>

1. Добавьте представление **Register** в **AccountController**:

@model OnSale.Web.Models.AddUserViewModel

@{

ViewData["Title"] = "Register";

}

<h2>Register</h2>

<h4>User</h4>

<hr />

<div class="row">

<div class="col-md-4">

<form asp-action="Register" enctype="multipart/form-data">

<div asp-validation-summary="ModelOnly" class="text-danger"></div>

<div class="form-group">

<label asp-for="Username" class="control-label"></label>

<input asp-for="Username" class="form-control" />

<span asp-validation-for="Username" class="text-danger"></span>

</div>

<partial name="\_User" />

<div class="form-group">

<label asp-for="Password" class="control-label"></label>

<input asp-for="Password" class="form-control" />

<span asp-validation-for="Password" class="text-danger"></span>

</div>

<div class="form-group">

<label asp-for="PasswordConfirm" class="control-label"></label>

<input asp-for="PasswordConfirm" class="form-control" />

<span asp-validation-for="PasswordConfirm" class="text-danger"></span>

</div>

<div class="form-group">

<input type="submit" value="Register" class="btn btn-primary" />

</div>

</form>

</div>

</div>

@section Scripts {

@{await Html.RenderPartialAsync("\_ValidationScriptsPartial");}

<script type="text/javascript">

$(document).ready(function () {

$("#CountryId").change(function () {

$("#DepartmentId").empty();

$("#DepartmentId").append('<option value="0">[Select a department...]</option>');

$("#CityId").empty();

$("#CityId").append('<option value="0">[Select a city...]</option>');

$.ajax({

type: 'POST',

url: '@Url.Action("GetDepartments")',

dataType: 'json',

data: { countryId: $("#CountryId").val() },

success: function (subcategories) {

$.each(subcategories, function (i, department) {

debugger;

$("#DepartmentId").append('<option value="'

+ department.id + '">'

+ department.name + '</option>');

});

},

error: function (ex) {

alert('Failed to retrieve departments.' + ex);

}

});

return false;

})

$("#DepartmentId").change(function () {

$("#CityId").empty();

$("#CityId").append('<option value="0">[Select a city...]</option>');

$.ajax({

type: 'POST',

url: '@Url.Action("GetCities")',

dataType: 'json',

data: { departmentId: $("#DepartmentId").val() },

success: function (cities) {

$.each(cities, function (i, city) {

debugger;

$("#CityId").append('<option value="'

+ city.id + '">'

+ city.name + '</option>');

});

},

error: function (ex) {

alert('Failed to retrieve cities.' + ex);

}

});

return false;

})

});

</script>

}

1. Тестируем

# Изменение пользователей

1. Добавьте класс **ChangePasswordViewModel**:

public class ChangePasswordViewModel

{

[Display(Name = "Current password")]

[Required(ErrorMessage = "The field {0} is mandatory.")]

[DataType(DataType.Password)]

[StringLength(20, MinimumLength = 6, ErrorMessage = "The {0} field must contain between {2} and {1} characters.")]

public string OldPassword { get; set; }

[Display(Name = "New password")]

[Required(ErrorMessage = "The field {0} is mandatory.")]

[DataType(DataType.Password)]

[StringLength(20, MinimumLength = 6, ErrorMessage = "The {0} field must contain between {2} and {1} characters.")]

public string NewPassword { get; set; }

[Display(Name = "Password confirm")]

[Required(ErrorMessage = "The field {0} is mandatory.")]

[DataType(DataType.Password)]

[StringLength(20, MinimumLength = 6, ErrorMessage = "The {0} field must contain between {2} and {1} characters.")]

[Compare("NewPassword")]

public string Confirm { get; set; }

}

1. Add those methods in **IUserHelper** interface:

Task<IdentityResult> ChangePasswordAsync(User user, string oldPassword, string newPassword);

Task<IdentityResult> UpdateUserAsync(User user);

Task<User> GetUserAsync(Guid userId);

1. Add the implementation in **UserHelper** class:

public async Task<IdentityResult> ChangePasswordAsync(User user, string oldPassword, string newPassword)

{

return await \_userManager.ChangePasswordAsync(user, oldPassword, newPassword);

}

public async Task<IdentityResult> UpdateUserAsync(User user)

{

return await \_userManager.UpdateAsync(user);

}

public async Task<User> GetUserAsync(Guid userId)

{

return await \_context.Users

.Include(u => u.City)

.FirstOrDefaultAsync(u => u.Id == userId.ToString());

}

1. Add those methods to **AccountController** class:

public async Task<IActionResult> ChangeUser()

{

User user = await \_userHelper.GetUserAsync(User.Identity.Name);

if (user == null)

{

return NotFound();

}

Department department = await \_context.Departments.FirstOrDefaultAsync(d => d.Cities.FirstOrDefault(c => c.Id == user.City.Id) != null);

if (department == null)

{

department = await \_context.Departments.FirstOrDefaultAsync();

}

Country country = await \_context.Countries.FirstOrDefaultAsync(c => c.Departments.FirstOrDefault(d => d.Id == department.Id) != null);

if (country == null)

{

country = await \_context.Countries.FirstOrDefaultAsync();

}

EditUserViewModel model = new EditUserViewModel

{

Address = user.Address,

FirstName = user.FirstName,

LastName = user.LastName,

PhoneNumber = user.PhoneNumber,

ImageId = user.ImageId,

Cities = \_combosHelper.GetComboCities(department.Id),

CityId = user.City.Id,

Countries = \_combosHelper.GetComboCountries(),

CountryId = country.Id,

DepartmentId = department.Id,

Departments = \_combosHelper.GetComboDepartments(country.Id),

Id = user.Id,

Document = user.Document

};

return View(model);

}

[HttpPost]

[ValidateAntiForgeryToken]

public async Task<IActionResult> ChangeUser(EditUserViewModel model)

{

if (ModelState.IsValid)

{

Guid imageId = model.ImageId;

if (model.ImageFile != null)

{

imageId = await \_blobHelper.UploadBlobAsync(model.ImageFile, "users");

}

User user = await \_userHelper.GetUserAsync(User.Identity.Name);

user.FirstName = model.FirstName;

user.LastName = model.LastName;

user.Address = model.Address;

user.PhoneNumber = model.PhoneNumber;

user.ImageId = imageId;

user.City = await \_context.Cities.FindAsync(model.CityId);

user.Document = model.Document;

await \_userHelper.UpdateUserAsync(user);

return RedirectToAction("Index", "Home");

}

model.Cities = \_combosHelper.GetComboCities(model.DepartmentId);

model.Countries = \_combosHelper.GetComboCountries();

model.Departments = \_combosHelper.GetComboDepartments(model.CityId);

return View(model);

}

1. Add the view **ChangeUser** in **AccountController**:

@model OnSale.Web.Models.EditUserViewModel

@{

ViewData["Title"] = "Edit";

}

<h2>Edit</h2>

<h4>User</h4>

<hr />

<div class="row">

<div class="col-md-6">

<form asp-action="ChangeUser" enctype="multipart/form-data">

<div asp-validation-summary="ModelOnly" class="text-danger"></div>

<input type="hidden" asp-for="Id" />

<input type="hidden" asp-for="ImageId" />

<partial name="\_User" />

<div class="form-group">

<input type="submit" value="Save" class="btn btn-primary" />

<a asp-action="ChangePassword" class="btn btn-warning">Change Password</a>

</div>

</form>

</div>

<div class="col-md-4">

<img src="@Model.ImageFullPath" style="width:250px;height:250px;border-radius:50%" />

</div>

</div>

@section Scripts {

@{await Html.RenderPartialAsync("\_ValidationScriptsPartial");}

<script type="text/javascript">

$(document).ready(function () {

$("#CountryId").change(function () {

$("#DepartmentId").empty();

$("#DepartmentId").append('<option value="0">[Select a department...]</option>');

$("#CityId").empty();

$("#CityId").append('<option value="0">[Select a city...]</option>');

$.ajax({

type: 'POST',

url: '@Url.Action("GetDepartments")',

dataType: 'json',

data: { countryId: $("#CountryId").val() },

success: function (subcategories) {

$.each(subcategories, function (i, department) {

debugger;

$("#DepartmentId").append('<option value="'

+ department.id + '">'

+ department.name + '</option>');

});

},

error: function (ex) {

alert('Failed to retrieve departments.' + ex);

}

});

return false;

})

$("#DepartmentId").change(function () {

$("#CityId").empty();

$("#CityId").append('<option value="0">[Select a city...]</option>');

$.ajax({

type: 'POST',

url: '@Url.Action("GetCities")',

dataType: 'json',

data: { departmentId: $("#DepartmentId").val() },

success: function (cities) {

$.each(cities, function (i, city) {

debugger;

$("#CityId").append('<option value="'

+ city.id + '">'

+ city.name + '</option>');

});

},

error: function (ex) {

alert('Failed to retrieve cities.' + ex);

}

});

return false;

})

});

</script>

}

1. Тестируем.
2. Добавьте эти методы в класс **AccountController**:

public IActionResult ChangePassword()

{

return View();

}

[HttpPost]

public async Task<IActionResult> ChangePassword(ChangePasswordViewModel model)

{

if (ModelState.IsValid)

{

var user = await \_userHelper.GetUserAsync(User.Identity.Name);

if (user != null)

{

var result = await \_userHelper.ChangePasswordAsync(user, model.OldPassword, model.NewPassword);

if (result.Succeeded)

{

return RedirectToAction("ChangeUser");

}

else

{

ModelState.AddModelError(string.Empty, result.Errors.FirstOrDefault().Description);

}

}

else

{

ModelState.AddModelError(string.Empty, "User no found.");

}

}

return View(model);

}

1. Добавьте представление **ChangePassword** в класс **AccountController**:

@model OnSale.Web.Models.ChangePasswordViewModel

@{

ViewData["Title"] = "Register";

}

<h2>Change Password</h2>

<div class="row">

<div class="col-md-4 offset-md-4">

<form method="post">

<div asp-validation-summary="ModelOnly"></div>

<div class="form-group">

<label asp-for="OldPassword">Current password</label>

<input asp-for="OldPassword" type="password" class="form-control" />

<span asp-validation-for="OldPassword" class="text-warning"></span>

</div>

<div class="form-group">

<label asp-for="NewPassword">New password</label>

<input asp-for="NewPassword" type="password" class="form-control" />

<span asp-validation-for="NewPassword" class="text-warning"></span>

</div>

<div class="form-group">

<label asp-for="Confirm">Confirm</label>

<input asp-for="Confirm" type="password" class="form-control" />

<span asp-validation-for="Confirm" class="text-warning"></span>

</div>

<div class="form-group">

<input type="submit" value="Change password" class="btn btn-primary" />

<a asp-action="ChangeUser" class="btn btn-success">Back to user</a>

</div>

</form>

</div>

</div>

@section Scripts {

@{await Html.RenderPartialAsync("\_ValidationScriptsPartial");}

}

1. Тестируем.

# Подтвердите регистрацию по электронной почте

1. First, change the setup project:

services.AddIdentity<UserEntity, IdentityRole>(cfg =>

{

cfg.Tokens.AuthenticatorTokenProvider = TokenOptions.DefaultAuthenticatorProvider;

cfg.SignIn.RequireConfirmedEmail = true;

cfg.User.RequireUniqueEmail = true;

cfg.Password.RequireDigit = false;

cfg.Password.RequiredUniqueChars = 0;

cfg.Password.RequireLowercase = false;

cfg.Password.RequireNonAlphanumeric = false;

cfg.Password.RequireUppercase = false;

})

.AddDefaultTokenProviders()

.AddEntityFrameworkStores<DataContext>();

1. Check if your email account is enabled to send email in: <https://myaccount.google.com/lesssecureapps> and <https://accounts.google.com/DisplayUnlockCaptcha>.
2. Add this parameters to the configuration file:

"Mail": {

"From": "onsalezulu@gmail.com",

"Smtp": "smtp.gmail.com",

"Port": 587,

"Password": "Zulu1234."

}

1. Add the nuget “**Mailkit**”.
2. In **Helpers** folder add the interface **IMailHelper**:

public interface IMailHelper

{

Response SendMail(string to, string subject, string body);

}

1. In **Helpers** folder add the implementation **MailHelper**:

public class MailHelper : IMailHelper

{

private readonly IConfiguration \_configuration;

public MailHelper(IConfiguration configuration)

{

\_configuration = configuration;

}

public Response SendMail(string to, string subject, string body)

{

try

{

string from = \_configuration["Mail:From"];

string smtp = \_configuration["Mail:Smtp"];

string port = \_configuration["Mail:Port"];

string password = \_configuration["Mail:Password"];

MimeMessage message = new MimeMessage();

message.From.Add(new MailboxAddress(from));

message.To.Add(new MailboxAddress(to));

message.Subject = subject;

BodyBuilder bodyBuilder = new BodyBuilder

{

HtmlBody = body

};

message.Body = bodyBuilder.ToMessageBody();

using (SmtpClient 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. Configure the injection for the new interface:

services.AddScoped<IMailHelper, MailHelper>();

1. Add those methods to **IUserHelper**:

Task<string> GenerateEmailConfirmationTokenAsync(User user);

Task<IdentityResult> ConfirmEmailAsync(User user, string token);

And the implementation:

public async Task<IdentityResult> ConfirmEmailAsync(User user, string token)

{

return await \_userManager.ConfirmEmailAsync(user, token);

}

public async Task<string> GenerateEmailConfirmationTokenAsync(User user)

{

return await \_userManager.GenerateEmailConfirmationTokenAsync(user);

}

1. Modify the register post method (first inject the **IMailHelper** in **AccountController**):

[HttpPost]

[ValidateAntiForgeryToken]

public async Task<IActionResult> Register(AddUserViewModel model)

{

if (ModelState.IsValid)

{

Guid imageId = Guid.Empty;

if (model.ImageFile != null)

{

imageId = await \_blobHelper.UploadBlobAsync(model.ImageFile, "users");

}

User user = await \_userHelper.AddUserAsync(model, imageId, UserType.User);

if (user == null)

{

ModelState.AddModelError(string.Empty, "This email is already used.");

model.Countries = \_combosHelper.GetComboCountries();

model.Departments = \_combosHelper.GetComboDepartments(model.CountryId);

model.Cities = \_combosHelper.GetComboCities(model.DepartmentId);

return View(model);

}

string myToken = await \_userHelper.GenerateEmailConfirmationTokenAsync(user);

string tokenLink = Url.Action("ConfirmEmail", "Account", new

{

userid = user.Id,

token = myToken

}, protocol: HttpContext.Request.Scheme);

Response response = \_mailHelper.SendMail(model.Username, "Email confirmation", $"<h1>Email Confirmation</h1>" +

$"To allow the user, " +

$"plase click in this link:</br></br><a href = \"{tokenLink}\">Confirm Email</a>");

if (response.IsSuccess)

{

ViewBag.Message = "The instructions to allow your user has been sent to email.";

return View(model);

}

ModelState.AddModelError(string.Empty, response.Message);

}

model.Countries = \_combosHelper.GetComboCountries();

model.Departments = \_combosHelper.GetComboDepartments(model.CountryId);

model.Cities = \_combosHelper.GetComboCities(model.DepartmentId);

return View(model);

}

1. Add this to the register view ends:

<div class="text-success">

<p>

@ViewBag.Message

</p>

</div>

1. Create the method confirm email in account controller:

public async Task<IActionResult> ConfirmEmail(string userId, string token)

{

if (string.IsNullOrEmpty(userId) || string.IsNullOrEmpty(token))

{

return NotFound();

}

User user = await \_userHelper.GetUserAsync(new Guid(userId));

if (user == null)

{

return NotFound();

}

IdentityResult result = await \_userHelper.ConfirmEmailAsync(user, token);

if (!result.Succeeded)

{

return NotFound();

}

return View();

}

1. Create the view:

@{

ViewData["Title"] = "Confirm email";

}

<h2>@ViewData["Title"]</h2>

<div>

<p>

Thank you for confirming your email. Now you can login into system.

</p>

</div>

1. Drop the database (PM> drop-database) to ensure that all the users have a confirmed email.
2. Modify the seed class:

private async Task<User> CheckUserAsync(

string document,

string firstName,

string lastName,

string email,

string phone,

string address,

UserType userType)

{

User 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());

string token = await \_userHelper.GenerateEmailConfirmationTokenAsync(user);

await \_userHelper.ConfirmEmailAsync(user, token);

}

return user;

}

1. Test it.

# Password Recovery

1. Modify the login view:

<div class="form-group">

<input type="submit" value="Login" class="btn btn-success" />

<a asp-action="Register" class="btn btn-primary">Register New User</a>

<a asp-action="RecoverPassword" class="btn btn-link">Forgot your password?</a>

</div>

1. Add the model **RecoverPasswordViewModel**:

public class RecoverPasswordViewModel

{

[Required]

[EmailAddress]

public string Email { get; set; }

}

1. Add the model **ResetPasswordViewModel**:

public class ResetPasswordViewModel

{

[Required]

[EmailAddress]

public string UserName { get; set; }

[Required]

[StringLength(20, MinimumLength = 6, ErrorMessage = "The {0} field must contain between {2} and {1} characters.")]

[DataType(DataType.Password)]

public string Password { get; set; }

[Required]

[StringLength(20, MinimumLength = 6, ErrorMessage = "The {0} field must contain between {2} and {1} characters.")]

[DataType(DataType.Password)]

[Compare("Password")]

public string ConfirmPassword { get; set; }

[Required]

public string Token { get; set; }

}

1. Add those methods to **IUserHelper**:

Task<string> GeneratePasswordResetTokenAsync(User user);

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

And the implementation:

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. Add this methods to account controller:

public IActionResult RecoverPassword()

{

return View();

}

[HttpPost]

public async Task<IActionResult> RecoverPassword(RecoverPasswordViewModel model)

{

if (ModelState.IsValid)

{

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

if (user == null)

{

ModelState.AddModelError(string.Empty, "The email doesn't correspont to a registered user.");

return View(model);

}

string myToken = await \_userHelper.GeneratePasswordResetTokenAsync(user);

string link = Url.Action(

"ResetPassword",

"Account",

new { token = myToken }, protocol: HttpContext.Request.Scheme);

\_mailHelper.SendMail(model.Email, "Password Reset", $"<h1>Password Reset</h1>" +

$"To reset the password click in this link:</br></br>" +

$"<a href = \"{link}\">Reset Password</a>");

ViewBag.Message = "The instructions to recover your password has been sent to email.";

return View();

}

return View(model);

}

public IActionResult ResetPassword(string token)

{

return View();

}

[HttpPost]

public async Task<IActionResult> ResetPassword(ResetPasswordViewModel model)

{

User user = await \_userHelper.GetUserAsync(model.UserName);

if (user != null)

{

IdentityResult result = await \_userHelper.ResetPasswordAsync(user, model.Token, model.Password);

if (result.Succeeded)

{

ViewBag.Message = "Password reset successful.";

return View();

}

ViewBag.Message = "Error while resetting the password.";

return View(model);

}

ViewBag.Message = "User not found.";

return View(model);

}

1. Add the view:

@model OnSale.Web.Models.RecoverPasswordViewModel

@{

ViewData["Title"] = "Recover Password";

}

<h2>Recover Password</h2>

<div class="row">

<div class="col-md-4 offset-md-4">

<form method="post">

<div asp-validation-summary="ModelOnly"></div>

<div class="form-group">

<label asp-for="Email">Email</label>

<input asp-for="Email" class="form-control" />

<span asp-validation-for="Email" class="text-warning"></span>

</div>

<div class="form-group">

<input type="submit" value="Recover password" class="btn btn-primary" />

<a asp-action="Login" class="btn btn-success">Back to login</a>

</div>

</form>

<div class="text-success">

<p>

@ViewBag.Message

</p>

</div>

</div>

</div>

@section Scripts {

@{await Html.RenderPartialAsync("\_ValidationScriptsPartial");}

}

1. Add the view:

@model OnSale.Web.Models.ResetPasswordViewModel

@{

ViewData["Title"] = "Reset Password";

}

<h1>Reset Your Password</h1>

<div class="row">

<div class="col-md-4 offset-md-4">

<form method="post">

<div asp-validation-summary="All"></div>

<input type="hidden" asp-for="Token" />

<div class="form-group">

<label asp-for="UserName">Email</label>

<input asp-for="UserName" class="form-control" />

<span asp-validation-for="UserName" class="text-warning"></span>

</div>

<div class="form-group">

<label asp-for="Password">New password</label>

<input asp-for="Password" type="password" class="form-control" />

<span asp-validation-for="Password" class="text-warning"></span>

</div>

<div class="form-group">

<label asp-for="ConfirmPassword">Confirm</label>

<input asp-for="ConfirmPassword" type="password" class="form-control" />

<span asp-validation-for="ConfirmPassword" class="text-warning"></span>

</div>

<div class="form-group">

<input type="submit" value="Reset password" class="btn btn-primary" />

</div>

</form>

<div class="text-success">

<p>

@ViewBag.Message

</p>

</div>

</div>

</div>

@section Scripts {

@{await Html.RenderPartialAsync("\_ValidationScriptsPartial");}

}

1. Test it.
2. Finally, delete the Azure DB, recreate and re-publish the solution.