INTEGRATED SYSTEMS CHECKPOINTS

Лабораториска вежба 4 (Група Б) / Laboratory exercise 4 (Group B)

Дадена ви е апликација за нарачување на карти за концерти. Симнете го кодот поставен на курсот и дополнете ја апликацијата со следниве функционалности:

- OrderRepository
- IOrderService и OrderService
- Admin контролер
- MVC Admin апликација, каде што ќе ги прикажувате податоците за нарачки и продукти во нарачка

You are given an application for ordering concert tickets. Download the code posted on the course and complete the application with the following functionalities:

- OrderRepository
- IOrderService and OrderService
- Admin controller
- MVC Admin application, where you will display order data and products in order

1. **Interface & Implementation for getting All Orders**

Before making an API Controller, make interface and implementation for getting all orders as a list

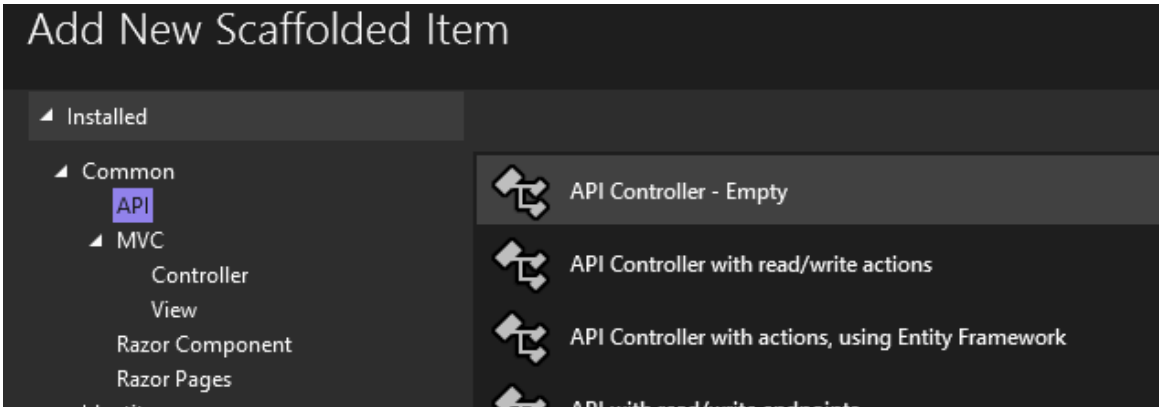
```
namespace EShop.Repository.Interface
{
    public interface IOrder
    {
        List<Order> GetAllOrders();
    }
}
```

```
namespace EShop.Repository.Implementation
{
    public class OrderRepository : IOrder
    {
        private readonly IRepository<Order>
_orderRepository;

        public OrderRepository(IRepository<Order>
orderRepository)
        {
            _orderRepository = orderRepository;
        }

        public List<Order> GetAllOrders()
        {
            return _orderRepository.GetAll().ToList();
        }
    }
}
```

Set Up Dependency Injection for the new files in Program.cs

```
builder.Services.AddScoped<IOrder, OrderRepository>();
```

2. **Add New Scaffold Item (API - Controller Empty)**



3. **Write the API Controller for GET Request**

```
namespace EShop.Web.Controllers.API
{
    [Route("api/[controller]")]
    [ApiController]
    public class AdminController : ControllerBase
    {
        private readonly IOrder _orderRepository;

        public AdminController(IOrder orderRepository)
        {
            _orderRepository = orderRepository;
        }


        [HttpGet("GetAllOrders")]
        public IActionResult GetAllOrders()
        {
            return Ok(_orderRepository.GetAllOrders());
        }
    }
}
```

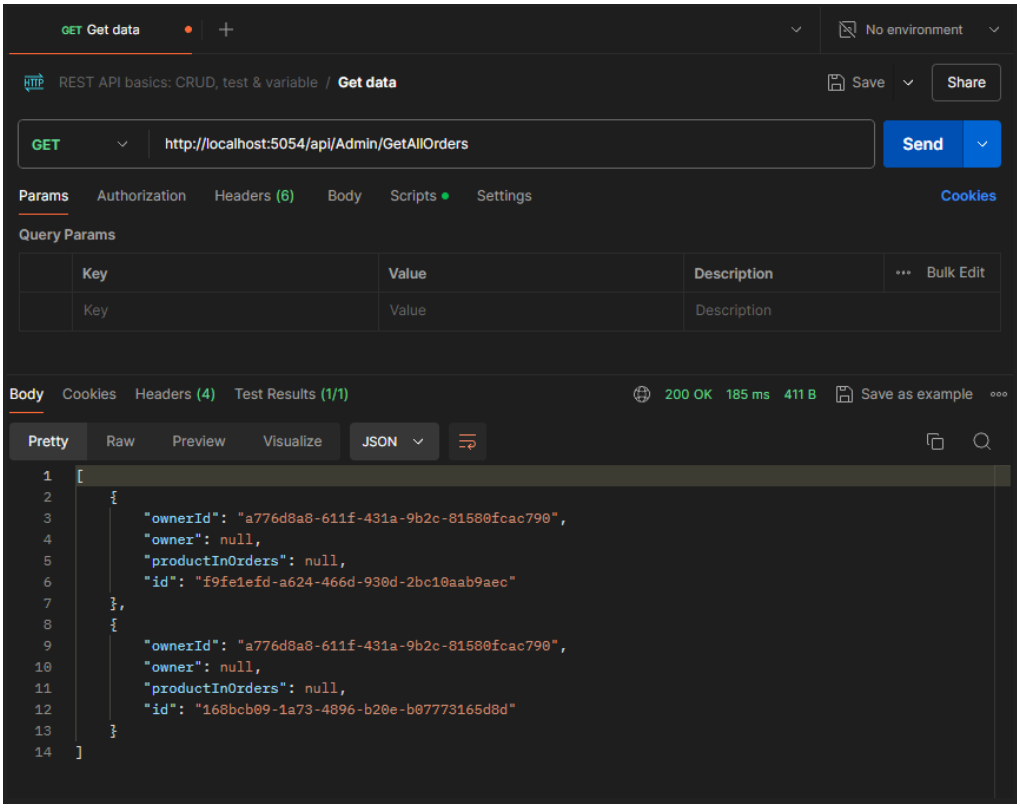
Explanation:

The provided code defines an API controller named AdminController in the EShop.Web.Controllers.API namespace.

- [HttpGet("GetAllOrders")]: Maps a GET request to api/admin/GetAllOrders.
- GetAllOrders() method: Calls _orderRepository.GetAllOrders() to retrieve all orders and returns them with a 200 OK response.

So the route to check for the GET requests is `http://localhost:port/api/Admin/GetAllOrders`

Using third-party software Postman we verify API functionality. In the screenshot, GET request fetches orders from the API.
But ProductInOrders appears '*null*' due to lazy loading. To include product details, code will be modified to eagerly load related products.



Screenshot from Postman

4. **Modify implementation to get all ProductInOrders**

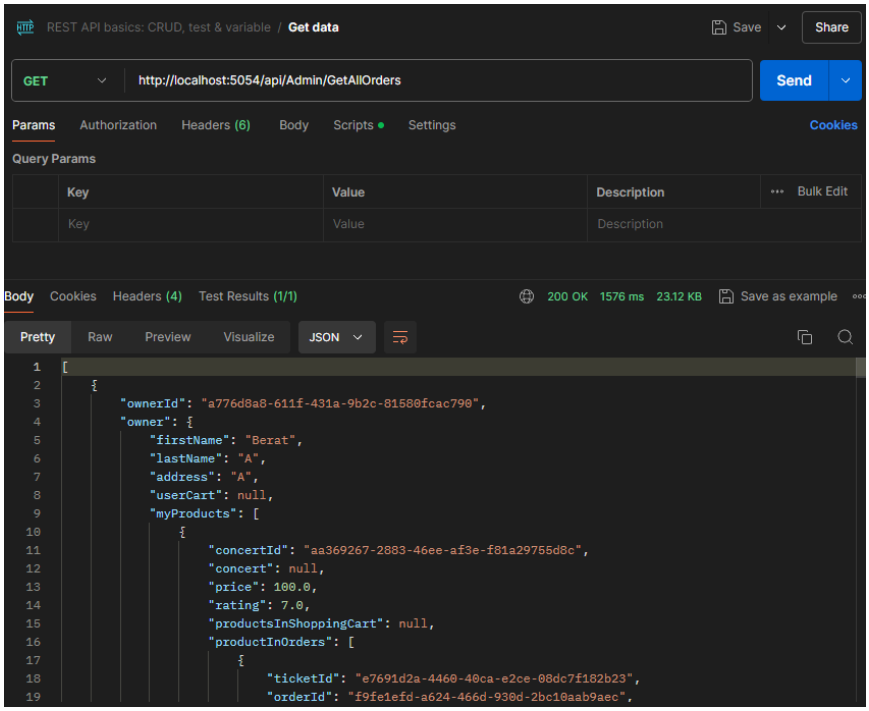
```
namespace EShop.Repository.Implementation
{
    public class OrderRepository : IOrder
    {
        private readonly IRepository<Order> _orderRepository;
        private DbSet<Order> _dbSet;  //Add
        private readonly ApplicationDbContext _context; //Add

        public OrderRepository(IRepository<Order> orderRepository, ApplicationDbContext context)
        {
            _orderRepository = orderRepository;
            _context = context;
            _dbSet = _context.Set<Order>();
        }

        public List<Order> GetAllOrders() //Modify Function
        {
            return _dbSet
                .Include(x => x.Owner)
                .Include(x => x.ProductInOrders)
                .Include("ProductInOrders.OrderedProduct")
                .ToListAsync().Result;
        }
    }
}
```

Important: Code will throw a loop error, install a package in .NET called **NewtonSoftJson**

And also modify this line of code in Program.cs

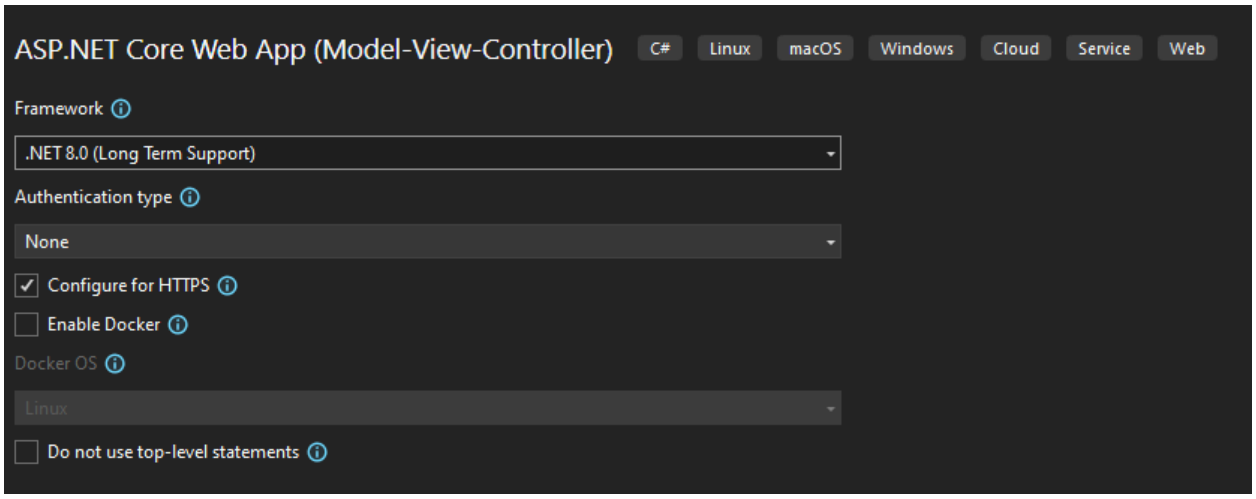
//BEFORE MODIFYING	//AFTER MODIFICATION
builder.Services.AddControllersWithViews();	builder.Services.AddControllersWithViews().AddNewtonsoftJson(options => options.SerializerSettings.ReferenceLoopHandling = Newtonsoft.Json.ReferenceLoopHandling.Ignore);

Postman now verifies that we can see products



Screenshot From Postman

5. **Create new project that will act as an Admin app**

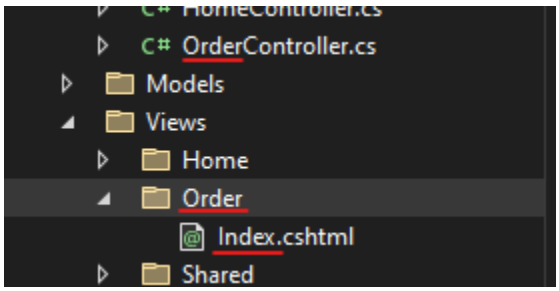


- **Create a empty controller**

```
0 references
public class OrderController : Controller
{
    0 references
    public IActionResult Index()
    {
        return View();
    }
}
```

(the default generated controller)

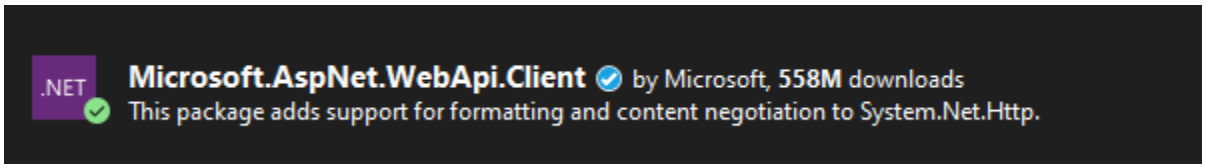
Controller returns an index of the controller name, so make a folder named the same as the controller and create a view named index like below



6. **Write controller that will fetch the data**

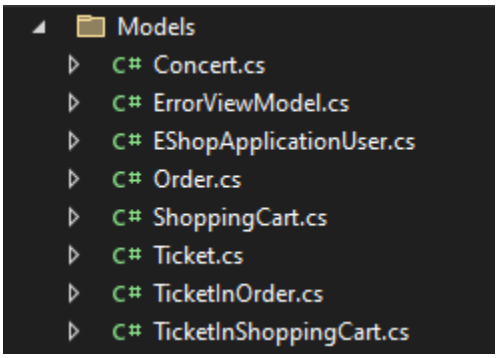
```
namespace AdminApplication.Controllers
{
    public class OrderController : Controller
    {
        public IActionResult Index()
        {
            HttpClient client = new HttpClient();
            string URL = "http://localhost:5054/api/Admin/GetAllOrders";

            HttpResponseMessage response = client.GetAsync(URL).Result;

            var data = response.Content.ReadAsAsync<List<Order>>().Result;

            return View(data);
        }
    }
}
```

Install Web API Client Package to fix the *ReadAsAsync* error:



Now we take from the data and store it to List<Order>, so we need to have models to store to our admin app, easiest way is to copy-paste all of the models from the main project, paste it in admin model and

- change the namespace in all classes
- delete base entity
- add Guid Id to classes which don't have it and relied on base entity



7. Modify Index view

Instead of writing the html from scratch, just copy from the main app and modify it here

```
@*
*@
@{
}

@model List<AdminApplication.Models.Order>  //Add This Line

    <div>
    <h1>Index</h1>

    <p>
        <a asp-action="Create">Create New</a>
    </p>
    <table class="table">
        <thead>
            <tr>
```

```
                <th>
                    @Html.DisplayNameFor(model => model.Capacity) //modified to see capacity
                </th>
                <th>
                    @Html.DisplayNameFor(model => model.Count) //modified to see Count
                </th>
                <th></th>
            </tr>
        </thead>
        <tbody>
            @foreach (var item in Model)
            {
                <tr>
                    <td>
                        @Html.DisplayFor(modelItem => item.Owner) //modified to see owner
                    </td>
                    <td>
                        @Html.DisplayFor(modelItem => item.ProductInOrders) //modified to see products
                    </td>
                    <td>
                        <a asp-action="Edit" asp-route-id="@item.Id">Edit</a> |
                        <a asp-action="Details" asp-route-id="@item.Id">Details</a> |
                        <a asp-action="Delete" asp-route-id="@item.Id">Delete</a> |
                        <a asp-controller="Tickets" asp-action="AddProductToCart" asp-route-id="@item.Id"
class="btn btn-info">Add to Cart</a>
                    </td>
                </tr>
            }
        </tbody>
    </table>
    </div>
```

With that you now start both applications and see the data from one to the other, congrats