**N-TIER WEB API APP**

A C# project created for educational purposes in order to get acquainted with main approaches of designing and creating app with n-tier architecture including web API layer.

**DESCRIPTION**

**Solution Hierarchy:**

This is a C# .Net solution-project, and it contains six sub-projects:

1. [BllEntities](https://github.com/Majardom/WebApiNtierApp/tree/master/BllEntities): A class library project. Contains realization of entities related to ProductsBLL layer.
2. [DataEntities](https://github.com/Majardom/WebApiNtierApp/tree/master/DataEntities): A class library project. Contains realization of entities related to [DAL\_EntityFrameWork](https://github.com/Majardom/WebApiNtierApp/tree/master/DAL_EntityFrameWork) layer.
3. [DAL\_EntityFrameWork](https://github.com/Majardom/WebApiNtierApp/tree/master/DAL_EntityFrameWork): A class library project. Contains realization of mechanisms of accessing database using Entity Framework.
4. [ProductsBLL](https://github.com/Majardom/WebApiNtierApp/tree/master/ProductsBLL): A class library project. Contains realization of provided services in the current app.
5. [Structure](https://github.com/Majardom/WebApiNtierApp/tree/master/Structure): A class library project. Contains interfaces related to the current app.
6. [WebApi](https://github.com/Majardom/WebApiNtierApp/tree/master/WebApi): A web API project. Contains realization and configuration of web API controllers which provide main functions of the app.

**Web API:**

[Web API](https://github.com/Majardom/WebApiNtierApp/tree/master/WebApi) layer contains three [API controllers](https://github.com/Majardom/WebApiNtierApp/tree/master/WebApi/Controllers):

1. [Product categories controller](https://github.com/Majardom/WebApiNtierApp/tree/master/WebApi/Controllers): Web API controller which contains realization of CRUD functions for product categories and some filtering functions.

Route descriptions:

Get all categories: “api/categories” GET;

Get category by id: “api/categories/{id}” GET;

Get products with specified category id: “api/categories/{id}/products” GET;

Get suppliers who supply products with specified category id: “api/categories/{id}/products” GET;

Add category: “api/categories” POST;

Update category: “api/categories/{id}” PUT;

Delete category: “api/categories/{id}” DELETE.

1. [Products controller](https://github.com/Majardom/WebApiNtierApp/tree/master/WebApi/Controllers): Web API controller which contains realization of CRUD functions for products.

Route descriptions:

Get all products: “api/products” GET;

Get product by id: “api/products/{id}” GET;

Add product: “api/products” POST;

Update product: “api/products/{id}” PUT;

Delete product: “api/products/{id}” DELETE.

1. [Suppliers controller](https://github.com/Majardom/WebApiNtierApp/tree/master/WebApi/Controllers): Web API controller which contains realization of CRUD functions for suppliers.

Route descriptions:

Get all suppliers: “api/suppliers” GET;

Get supplier by id: “api/ suppliers /{id}” GET;

Add supplier: “api/ suppliers” POST;

Update supplier: “api/ suppliers /{id}” PUT;

Delete supplier: “api/ suppliers /{id}” DELETE.

**Exception handling:**

Web API exception handling in the current project is managed using Exception Filter Attribute class.

[Exception filters](https://github.com/Majardom/WebApiNtierApp/tree/master/WebApi/Exceptions):

ValidateModelAttribute: Filter which handles errors related to model state validation.

NotFoundExceptionAttribute: Filter which handles errors related to ElementNotFoundException which occurs on BLL layer.

Exception filters are set globally in [WebApiConfig.cs](https://github.com/Majardom/WebApiNtierApp/blob/master/WebApi/App_Start/WebApiConfig.cs), as a result each web API controller related to the current project can handle those exceptions.

**Dependency injection:**

In the current project dependency injection is managed using Ninject. There are two ninject modules in the app [BllModule.cs](https://github.com/Majardom/WebApiNtierApp/blob/master/ProductsBLL/Infrastructure/BllModule.cs) and [ServicesModule.cs](https://github.com/Majardom/WebApiNtierApp/blob/master/WebApi/Ninject/ServiceModule.cs).