# OpenAccess trial task

## Brief

Design and implement a WPF application that is capable of managing detailed product information retrieved from a MS SQL database.

## Requirements

### Technology

Implement the whole project using:

* MS .Net 4.0 or later
* C#
* Visual Studio 2012 or later
* UI using WPF
* MS SQL 2005 or later, either Express Edition or not
* Telerik OpenAccess

### Database design

Design and implement MS SQL relational database that should contain the required data for the application. It should contain two types:

Product – describing a single product instance with the following attributes:

* Unique id of the instance – integer value that should be calculated by the database and each new instance should have value of the last inserted one plus 1
* Name – string with maximum length of 50 characters, cannot be null
* Price – floating point numeric value indicating how much the product costs, can be null
* IsAvailable – Boolean flag indicating whether the product can be sold (on potential online shop), cannot be null, the default value should be True
* Category – indicates which group of products this one belongs to, cannot be null

Category – a group of products that share similar traits (e.g. Beverages, Cosmetics, Power Tools, Snack…). Attributes of a category are:

* Unique id of the instance – integer value that should be calculated by the database and each new instance should have value of the last inserted one plus 1
* Name – string with maximum length of 50 characters, cannot be null
* Description – string with maximum length of 500 characters, cannot be null

### Application

Design and implement WPF application that is able to perform the following operations over the products data:

* Create new product
* Update existing product
* List all products and be able to apply filters over the data
* Delete existing product

Categories data will be treated as read-only and there should be no Create, Update, Read and Delete operations over it. Data should be provided ready in the database initialization.

#### Create new product

New products should be added using a dedicated edit dialog. The dialog should be able to validate the input database based on requirements defined in the Database design section. If any validation errors are present in the new product data the client should not be able to save the new instance and proper messages should be displayed giving hints to client how to resolve any issues.

#### Update existing product

Existing products should be edited in a dedicated edit dialog (you can reuse the one from Create new product). The dialog should be able to validate the input database based on requirements defined in the Database design section. If any validation errors are present in the product data the client should not be able to save the instance and proper messages should be displayed giving hints to client how to resolve any issues.

#### Delete existing product

Delete should be implemented on the main form where the list of products is displayed. Client should be able to delete multiple product instances and there should be confirmation from the user before the delete is performed.

#### List all products and be able to filter them

All existing products should be listed on the main application form displaying all the attributes of each product. Users should see the name of the product category.

There should be combobox that will allow users to filter products based on their category. Such filter should happen on database level so not unnecessary data is transferred between the server and the client.

Users should be able to sort the product data by any of the displayed attributes preferably using database sorting.

Users should be able to refresh the list of the products by clicking a button on the main form.

Any operations that create, edit or delete product data should be executed immediately in their own transaction.

The main form with the products data should be resizable and the content should respond appropriately to any changes of the size.

### Database initialization

The application should initialize the whole database schema and the required data for product categories on its first run. It will be nice to have some pre-initialized product data already in the database on the first run.

### Tests

Test Driven Development is encouraged where applicable.

There should be at least tests for:

* Create new product with valid data
* (Fail to) Create new product with invalid data
* Update existing product with valid data
* (Fail to) Update existing product with invalid data
* Delete existing product
* (Fail to) Delete non-existing product
* Getting all existing products
* Getting all existing products filtered by certain category

Tests should be performed on separate database than the one used in the application.

Tests should initialize the whole database schema and any required data.