EXPERIENCING BENCHMARKS

DOCUMENTATION
TM CATALOG

Version: 1 from 26.02.2018

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Filename	TM Catalog.docx		
Number of pages	7		

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1 Introduction

TM Catalogue application should be a vehicle parts catalogue application what can be used by vehicle repair garages or vehicle part wholesalers. After starting the application the user can select a vehicle and then its articles. Vehicles can be searched after manufacturer, model, type or after VIN (Vehicle identification number), plate number, TecDocID. The user can access an article's details and some ERP information like price and availability. The articles can be added to the shopping basket for future order.

Extra features:

- The user can assign a plate number to a vehicle for easier identification at next time.
- Decrease/Increase stock depending on shopping basket content
- Print/Export Shopping basket items from the datagrid control
- View the order history

2 Software requirements

2.1 Main development environment

- Visual studio 2017

2.2 Technologies

- Microsoft .NET Framework 4.6.1
- WPF (MVVM architecture)
- Entity framework

2.3 Visual studio extensions

- GhostDoc
- StyleCop

3 TM Catalogue client

3.1 Main Functionalities

Main functionalities of the client application will be to search / identify a vehicle (car type). After vehicle selection finding articles/parts. When the wanted article is found than it can be added to the shopping basket.

3.2 User interface

3.2.1 Vehicle search / identification screen

Has to be a tab item control (not closable), which contains the following parts:

- Combo boxes:
    - Vehicle manufacturer (VW, BMW)
    - Vehicle model (Golf VII, X3)
- A text box for universal search, where the user can search after a plate number, VIN or TecDocID. In the background these three search should start at once on different threads for better performance.
- A data grid/list view where the found vehicle types are shown (Golf VII 1.6 TDI 2016-…). From this data grid the user can navigate to article selection by double clicking on the chosen vehicle type

3.2.2 Article selection

Is another tab item control (closable), which contains the following parts:

- Text block with an information about selected vehicle type
- Tree view with products (root nodes are Product groups and child nodes are Products). After selecting a product (child node) the user should receive a list of articles connected to the selected product and selected vehicle type (ex.: Product: Oil filter – Articles: Bosch oil filter, Mahle oil filter)
- Data grid/list view with articles. Each article can be added to the shopping basket via button. With double click on an article the article detail tab should activate.

3.2.3 Article detail

It is the third tab item control (closable) which contains all information about an article and ERP information too (price availability). It has to contain an ‘add to shopping basket button’ too.

3.2.4 Shopping basket

Is another tab item control, which contains the following parts:

- Data grid with added articles, in plus quantity, unit price and total price = quantity * unit price)
- Bellow data grid should be a summarizing part where the total amount of articles and the total value of shopping basket is shown.
- Button to remove an article from basket
- Button to clear the basket
- Button to send order/basket content which will generate an xml file saved locally

3.2.5 Assign plate number to vehicle type

Will be a button/context menu entry on vehicle selection screen. Will open a pop up window where we can enter a plate number and that plate number will be connected / assigned to the selected vehicle type

3.2.6 Order history

It will be a new window what can be open in the main window, where the user can view in a datagrid control his article orders.

4 Data structure

Database management will be handled by EF (Entity Framework) using code first database generating. Below are listed all needed tables/models. First the models should be created inside solution, after that the database will be generated by EF

4.1 Manufacturer

Name	Type	Description
Id	int	Identification number, unique **KEY**
Description	string	Vehicle manufacturer description

4.2 Model

Name	Type	Description
Id	int	Identification number, unique **KEY**
Description	string	Vehicle model description
ManufacturerId	int	Manufacturer unique id
Manufacturer	Manufacturer	Parent manufacturer object

4.3 Fuel Type

Name	Type	Description
Id	int	Identification number, unique **KEY**
Description	string	Fuel type description

4.4 Vehicle Type

Name	Type	Description
Id	int	Identification number, unique **KEY**
Description	string	Vehicle type description
ModelId	int	Model unique id
Model	Model	Parent model object
TecDocId	int	TecDoc unique identification
ProductionYearFrom	int	Year when production was started
ProductionYearTo	int	Year when production was stopped
FuelTypeId	int	Fuel type id
FuelType	FuelType	Fuel type object

4.5 Product Group

Name	Type	Description
Id	int	Identification number, unique **KEY**
Description	string	Product group description

4.6 Product

Name	Type	Description
Id	int	Identification number, unique **KEY**
Description	string	Product description
ProductGroupID	int	Product group id
ProductGroup	ProductGroup	Parent product group object

4.7 Vehicle Type Products

Name	Type	Description
ProductId	int	Product id, unique **KEY**
VehicleTypeId	int	Vehicle type id, unique **KEY**
Product	Product	Product object
VehicleType	VehicleType	Vehicle type object

4.8 Article

Name	Type	Description
Id	int	Identification number, unique **KEY**
ArticleNumber	string	Article identification number
Description	string	Article description
ProductId	Int	Product id
Product	Product	Parent product object

4.9 Stock

Name	Type	Description
ArticleId	int	Identification number, unique **KEY**
Article	Article	Article object
Quantity	Decimal	Quantity of an article on stock
Price	Decimal	Price of an article

4.10 Vehicle Type Articles

Name	Type	Description
ArticeId	int	Article id, unique **KEY**
VehicleTypeId	int	Vehicle type id, unique **KEY**
Article	Article	Article object
VehicleType	VehicleType	Vehicle type object

4.11 Vehicle Type VIN

Name	Type	Description
VIN	string	Vehicle identification number, unique **KEY**
VehicleTypeId	int	Vehicle type id

VehicleType	VehicleType	Vehicle type object

4.12 Vehicle Type Plate Nr

Name	Type	Description
PlateNr	string	Plate number, unique **KEY**
VehicleTypeId	int	Vehicle type id
VehicleType	VehicleType	Vehicle type object

5 Additional explications

VIN – Vehicle identification number
TecDocID – unique identifier provided by TecDoc Company, can be used to external identification of vehicle types
ERP – Enterprise resource planning