



COSMO CONSULT
Business-Software für Menschen

Microsoft AL

GUI & In-Client Designer III

Prerequisite

Use Workshop-VM / Workshop-Computer
follow the instructions of the Boarding Pass



Visual Studio Code

<https://code.visualstudio.com>



Competence Team DevTech

[Microsoft AI](#)

VS Code

Useful Extensions

> AL Formatter

- > Indentation
- > Keyword case style
- > Sort variable definitions
- > Readability Guidelines - Spacing and newlines (experimental)

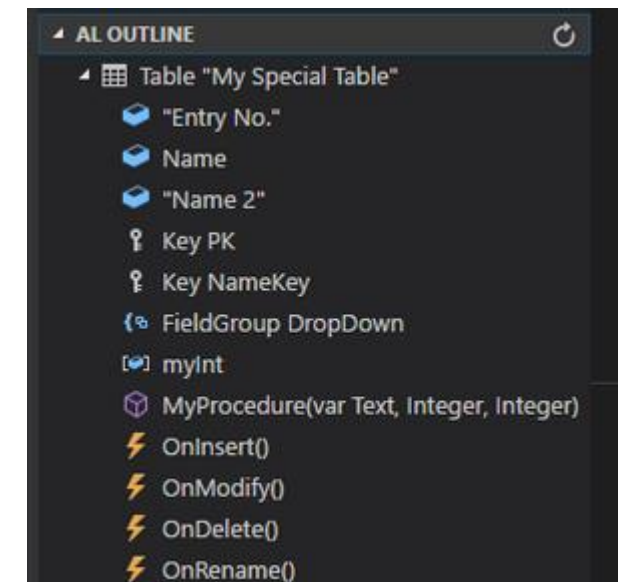
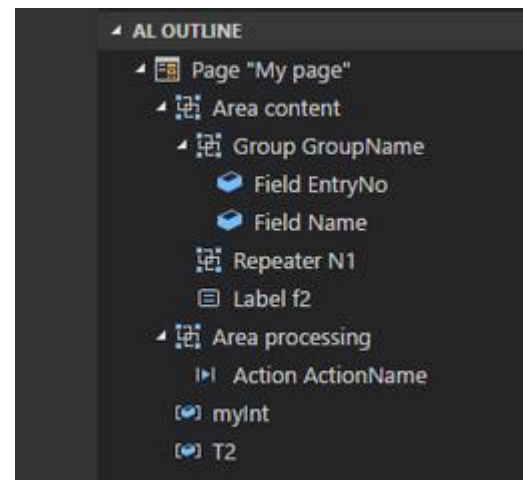
> AL Code Outline

- > Outlining – AL Object Structure
- > “Create List Page” from Table
- > “Create Card Page” from Table

> al-util

- > “Rename & Move” Objects
- > Templates e.g. “Readme.md”

```
Codeunit 70000000 MyCodeunit
{
    var
        Customer : Record Customer;
        Counter : Integer;
        InvalidCustomerErr : TextConst ENU='Invalid Customer.
    trigger OnRun();
    begin
        if Customer.FindSet then
            repeat
                if not Customer.HasAddress then
                    Error(InvalidCustomerErr);
            until Customer.Next = 0;
    end;
}
```



GUI & In-Client Designer

Agenda

- 1 Language & Types (Re-Cap)
- 2 Notification
- 3 Wizard Basics
- 4 Hands On

Microsoft AL

Language & Types

➤ Re-Cap

Microsoft AL

Language & Types

- Recommendation for VS Code
 - 1 File per Object
 - Organize Object Files in Folders (Pages, PageExtension, ...)
- Use Snippets in AL
 - ttable
 - tpageext
 - tcodeunit
 - ...
- Documentation - Development in AL
 - <https://docs.microsoft.com/.../developer/devenv-dev-overview>

C/Side	Microsoft AL	
	<i>Extending</i>	<i>New</i>
Codeunit	-	<u>codeunit</u>
Table	<u>tableextension</u>	<u>table</u>
Page	<u>pageextension</u> <u>pagecustomization</u>	<u>page</u>
XMLport	-	<u>xmlport</u>
Query	-	<u>query</u>
Report	-	<u>report</u>
Menu Suite	-	-
		<u>profile</u>
		<u>controladdin</u>

Improve the UX

Features

- Notification
- Wizard Basics



Pages in Microsoft AL

Improve the UX

> Notifictation

“... programmatic way to send non-intrusive information to the User Interface (UI)...”

- > ID *Guid*
- > Message
- > Scope *Local / Global*
- > Actions
- > GetData(...) / SetData(...)

BEARBEITEN - CUSTOMER CARD

X Bier-Kategorien sind nicht initialisiert Einrichten

10000 · The Cannon Group PLC

General Mehr anzeigen

Name	The Cannon Group PLC	Blocked	
Balance (LCY)	168.364,41	Total Sales	17.100,96
Balance Due (LCY)	168.364,41	Costs (LCY)	11.762,70
Credit Limit (LCY)	0,00		

> Configurable

- > Record "My Notifications"
 - IsEnabled(...) / IsEnabledForRecrod(...)

BEARBEITEN - MY NOTIFICATIONS

NOTIFICATION		ENABL...	CONDITIONS
Confirm marking booking as invoiced.	...	<input checked="" type="checkbox"/>	
Update Sell-to Customer Address	...	<input checked="" type="checkbox"/>	
Show a suggestion to create contacts for newly create...	...	<input checked="" type="checkbox"/>	
Update Pay-to Vendor Address	...	<input checked="" type="checkbox"/>	
Item availability is low.	...	<input checked="" type="checkbox"/>	(View filter details)
Customer exceeds credit limit.	...	<input checked="" type="checkbox"/>	(View filter details)
Data migration notification	...	<input checked="" type="checkbox"/>	

Pages in Microsoft AL

Improve the UX

> Wizards

- > Object Type *Page (Navigation)*
- > Groups *InstructionalText*



> Actions

- > Back, Next, Finish *Visibility depends on Page*
- > Properties *InFooterBar*

> Groups = Wizard Pages *Show / Hide for each Page*

- > Start Page / Welcome *Introduktion*
- > Page XYZ
- > Finish Page *Summary*


BEER CATEGORIES SETUP



Please add your Beer Categories to the list

Beer Category List

SE...	CODE	NAME	DESCRIPTION
<input checked="" type="checkbox"/>	ALTBIER	Altbier	German-Style Altbier
<input checked="" type="checkbox"/>	AMBER ALE	Amber ale	American-Style Amber/Red
<input checked="" type="checkbox"/>	BARLEY WI...	Barley wine	British-Style Barley Wine Ale
<input checked="" type="checkbox"/>	BERLINER...	Berliner Weisse	Berliner-Style Weisse
<input checked="" type="checkbox"/>	BITTER	Bitter	Ordinary Bitter
<input checked="" type="checkbox"/>	BLONDE ALE	Blonde Ale	Golden or Blonde Ale
<input checked="" type="checkbox"/>	BROWN ALE	Brown Ale	English-Style Brown Ale
<input checked="" type="checkbox"/>	DOPPELBO...	Doppelbock	German-Style Doppelbock



Back

Next

It's Lab Time

Hands On

- Notification
- Wizard (Skeleton)



Pages in Microsoft AL

Hands On

➤ Material

- Project Skeleton *„02-GUI-&-In-Client-Designer\Starter\03 My Favorite Beer\”*
- Tables: *“Beer Category”*
- Tables.Extensions: *“Customer”, “Item”*
- Pages: *“Beer Category Card [CC]”, “Beer Category List [CC]”*
- Pages.Extensions: *“Item Card”, “Customer Card”*

➤ Prerequisites

- Connect to your Workshop VM → use Instructions on your Workshop Boarding Pass

➤ Hand On - Tasks

- Invoke a **Notification**, when the selected Beer does not match the Customers Favorite Beer Category
- Create a **Setup Wizard skeleton** to initialize Beer Categories and use a **List Part** for Table *“Beer Category”*
- Invoke a **Notification**, when Beer Categories are empty and start the Wizard by a Notification Action

Pages in Microsoft AL

Hands On – Notification

- Create a Code Unit „*Beer Mgt. [CC]*“ ID: 50201
- Add 2 Methods
 - IsBeerMatch ... check the correctness of the beer
 - CheckBeer ... use the check and show a notification
- Use the codeunit from table extension “Customer [CC]” to check and invoke a notification

```
2 references
field(50200; "Beer Category Code [CC]"; Code[20])
{
    CaptionML      = ENU = 'Beer Category Code', DEU = 'Bier Kategorie Code';
    Description     = '[Dev] GUI & In-Client Designer';
    TableRelation  = "Beer Category [CC]".Code;
    DataClassification = CustomerContent;

    trigger OnValidate();
    var beerMgt: Codeunit "Beer Mgt. [CC]";
    begin
        CalcFields("Beer Category Name [CC]");

        beerMgt.CheckBeer(Rec);
    end;
}
```

```
procedure IsBeerMatch(customer: Record Customer) : Boolean;
var beerItems: Record Item;
begin
    beerItems.SetRange("Beer Item [CC]", true);
    beerItems.SetRange("Beer Category Code [CC]", customer."Beer Category Code [CC]");

    exit(not beerItems.IsEmpty());
end;

// Create a GUID with PowerShell > [System.Guid]::NewGuid()
1 reference
var cBeerMatchID : TextConst ENU = '30546dde-20ae-458e-9c12-c25e4491c3dd';
1 reference
procedure CheckBeer(customer: Record Customer): Boolean;
var notification: Notification;
    beerMatch: Boolean;
    id: GUID;
    msg: TextConst ENU = 'The selected beer does not belong to the preferred category',
        DEU = 'Das Bier gehört nicht zur bevorzugten Kategorie';
    myNotifications: Record "My Notifications";
begin
    id := FORMAT(cBeerMatchID);
    beerMatch := IsBeerMatch(customer);

    if not myNotifications.IsEnabledForRecord(id, customer) then exit(beerMatch);

    notification.Scope := Notification.Scope::LocalScope;
    notification.Id := id;

    if beerMatch then
    begin
        notification.Recall();
    end else begin
        notification.Message := msg;
        notification.Send();
    end;

    exit(beerMatch);
end;
```


Pages in Microsoft AL

Hands On – Wizard

- Create a Page „*Beer Wizard [CC]*“ *ID: 50200*
- Add 1 Variable (Option) *CurrentPage "Welcome", "Beer Categories", "Finish"*
- Add 3 Variables (Boolean) *WelcomeVisible, BeerCategoriesVisible, FinishVisible*
- Add 3 Pages (Groups) *"Welcome", "Beer Categories", "Finish"* *Caption, InstructionalText, Visible ...*
- Add 3 Actions *Back, Next, Finish*
- Manage the visible Page by this method and check the result

```
3 references
local procedure UpdateView(newPage: Integer)
begin
    if newPage > CurrentPage::Finish then newPage := CurrentPage::Finish;
    if newPage < CurrentPage::Welcome then newPage := CurrentPage::Welcome;

    // Change the Page & Update the visibility
    CurrentPage          := newPage;
    WelcomeVisible       := (CurrentPage = CurrentPage::Welcome);
    BeerCategoriesVisible := (CurrentPage = CurrentPage::"Beer Categories");
    FinishVisible        := (CurrentPage = CurrentPage::Finish) and (ImportRecordCount > 0);
end;
```

Pages in Microsoft AL

Hands On – Wizard

- Call the Wizard by changing the “*launch.json*” StartupObject information
- The Wizard skeleton should look like this:

```
"startupObjectId": 50200,  
"startupObjectType": "Page"
```

BEER CATEGORIES SETUP

WELCOME
Setup of Beer Categories\you may import the file "...\\Assets\\BeerCategories.json")

Next

BEER CATEGORIES SETUP

BEER CATEGORIES
Please add your Beer Categories to the list

Back Next

BEER CATEGORIES SETUP

FINISH SETUP
Import of selected Beer Categories

Back Assign

Pages in Microsoft AL

Hands On – Notification & Assisted Setup

- Use Code Unit „*Beer Mgt. [CC]*“ *ID: 50201*
- Add some Methods to achieve this task:
“Show a notification, when the record “Beer Categories” is empty and call the “Beer Wizard” from the notification by using an action”
- Methods can be
 - IsBeerSetupComplete ... check if record “Beer Categories” is empty
 - CheckBeerSetup ... use the check and show a notification
 - StartBeerSetup ... callback method for the notification action
- Use the codeunit from “Customer Card [CC]” and invoke a notification

```
5 references
var mBeerSetup: Boolean;
    2 references
    mBeerMgt: Codeunit "Beer Mgt. [CC]";

trigger OnOpenPage()
begin
    mBeerSetup := mBeerMgt.CheckSetup();
end;

trigger OnAfterGetRecord()
begin
    mBeerSetup := mBeerMgt.CheckSetup();
end;
```

Q & A



Visual Studio Code

<https://code.visualstudio.com>



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