



COM-ADD-INS

Für
Microsoft Access &
Office

WARUM ÜBERHAUPT?

Zusätzliche Funktionalität der Access
Entwicklungsumgebung

Mächtigerere Programmierwerkzeuge

Nahtlose Integration in Access UI

Integration in andere Office Anwendungen

WAS IST COM?

Component Object Model

Binärer Interface Standard

-> (Programmier-)Sprachunabhängig

Basis für Objektbibliotheken (Verweise)

INTERFACE IM OBJECT BROWSER

The screenshot shows the Visual Studio Object Browser interface. At the top, there is a search bar with 'stdole' entered. Below it, a 'Search Results' table is visible, with columns for 'Library' and 'Class'. The main area is divided into two panes. The left pane, titled 'Classes', lists various classes including <globals>, IFontDisp, IFontEventsDisp, IPictureDisp (which is selected), StdFont, StdPicture, StdFunctions, and DISPPARAMS. The right pane, titled 'Members of IPictureDisp', lists the following members: Handle, Height, hPal, Type, Width, and Render (which is highlighted in blue). At the bottom of the window, the signature for the 'Render' method is displayed: `Sub Render(hdc As Long, x As Long, y As Long, cx As Long, cy As Long, xSrc As OLE_XPOS_HIMETRIC, ySrc As OLE_YPOS_HIME`, with a note that it is a member of `stdole.StdPicture`.

INTERFACE VS. KLASSE

Interface definiert (öffentliche)
Methodensignaturen

Keine Funktionalität im Interface

Klasse implementiert das Interface

DEMO – INTERFACES IN VBA?

Wer weiß wie es geht?

Wer hat schon mal implementiert?

BEGRIFFSDEFINITION

„Schnittstelle“ \Rightarrow allg. Schnittstellendefinition

„Interface“ \Rightarrow Technisches COM-Interface

WAS SIND ADD-INS / PLUG-INS?

Optionale Erweiterungen

Definierte Schnittstelle in/zu der Host-
Applikation

PLUG-INS - VISUALISIERT

Host Anwendung



Plug-Ins



KLASSISCHE ACCESS ADD-INS

Schnittstelle: Name, Dateiname, Wo/für was, VBA-Funktion

Registry (*USysRegInfo*)

Add-In wird bei Verwendung geladen

COM-ADD-INS

Schnittstelle: Name, Dateiname, **Klasse**
(Implementiert *IDTExtensibility2*), Wann
Laden (Auto/Manuell)

Registry

Add-In wird unabhängig von
Verwendung geladen

COM-ADD-IN - REGISTRY

1. COM-Klasse registrieren

HKCU\Software\Classes*ProgId*

HKCU\Software\Classes\CLSID\

CLSID **32bit** =>

... \Classes\Wow6432Node\CLSID\...

2. Access Add-In

HKCU\Software\Microsoft\Office\Access\Addins

REGISTRY – HKCU vs HKLM

HKCU – HKey Current User

Nur für aktuellen Benutzer

Keine Adminrechte

HKLM – HKey Local Machine

Für Alle Benutzer

Adminrechte

Benutzer hat keine Kontrolle über Laden/Entladen

DEMO - ?

Registry, Batch Script, Screenshots

(.NET) COM ADD-IN REGISTRIERUNG

```
7 SET AssemblyDir=%~dp0
8 SET AssemblyDir=%AssemblyDir:\=%
9 SET AssemblyName=Aek2023Demo1
10 SET AssemblyFile=%AssemblyName%.dll
11
12 SET ClassGuid=E19EA5FC-7CA2-437A-A89C-5C4DFC2C9D3C
13 SET ProgId=Aek2023.ComAddInDemo1
14 SET FullClassName=Aek2023.Connect
15 SET ProgVersion=1.0
16
17 SET TargetRuntimeVersion=v4.0.30319
18
19 %windir%\system32\REG ADD "HKCU\Software\Classes\%ProgId%" /ve /t REG_SZ /d %FullClassName% /f
20 %windir%\system32\REG ADD "HKCU\Software\Classes\%ProgId%\CLSID" /ve /t REG_SZ /d "{%ClassGuid%}" /f
21
22 %windir%\system32\REG ADD "HKCU\Software\Classes\CLSID\{%ClassGuid%}" /ve /t REG_SZ /d %FullClassName% /reg:32 /f
23 %windir%\system32\REG ADD "HKCU\Software\Classes\CLSID\{%ClassGuid%}\ProgId" /ve /t REG_SZ /d %ProgId% /reg:32 /f
24
25 %windir%\system32\REG ADD "HKCU\Software\Classes\CLSID\{%ClassGuid%}\InprocServer32" /ve /t REG_SZ /d "mscoree.dll" /reg:32 /f
26 %windir%\system32\REG ADD "HKCU\Software\Classes\CLSID\{%ClassGuid%}\InprocServer32" /v "ThreadingModel" /t REG_SZ /d "Both" /reg:32 /f
27 %windir%\system32\REG ADD "HKCU\Software\Classes\CLSID\{%ClassGuid%}\InprocServer32" /v "Class" /t REG_SZ /d %FullClassName% /reg:32 /f
28 %windir%\system32\REG ADD "HKCU\Software\Classes\CLSID\{%ClassGuid%}\InprocServer32" /v "Assembly" /t ^
29     REG_SZ /d "%AssemblyName%, Version=%ProgVersion%, Culture=neutral, PublicKeyToken=null" /reg:32 /f
30 %windir%\system32\REG ADD "HKCU\Software\Classes\CLSID\{%ClassGuid%}\InprocServer32" /v "RuntimeVersion" /t ^
31     REG_SZ /d %TargetRuntimeVersion% /reg:32 /f
32 %windir%\system32\REG ADD "HKCU\Software\Classes\CLSID\{%ClassGuid%}\InprocServer32" /v "CodeBase" /t ^
33     REG_SZ /d "file:/// %AssemblyDir%%AssemblyFile%" /reg:32 /f
34
35 %windir%\system32\REG ADD "HKCU\Software\Microsoft\Office\Access\Addins\%ProgId%" /v "LoadBehavior" /t REG_DWORD /d "0x00000003" /f
36 %windir%\system32\REG ADD "HKCU\Software\Microsoft\Office\Access\Addins\%ProgId%" /v "FriendlyName" /t REG_SZ /d "AEK Demo 1" /f
37 %windir%\system32\REG ADD "HKCU\Software\Microsoft\Office\Access\Addins\%ProgId%" /v "Description" /t REG_SZ /d "AEK Demo Add-in f. Access" /f
38
```

REGISTRY SCREENSHOTS

Registry Editor

File Edit View Favorites Help

Computer\HKEY_CURRENT_USER\SOFTWARE\Classes\Wow6432Node\CLSID\{E19EA5FC-7CA2-437A-A89C-5C4DFC2C9D3C}\InprocServer32

Name	Type	Data
(Default)	REG_SZ	mSCOREE.dll
Assembly	REG_SZ	Aek2023Demo1, Version=1.0, Culture=neutral, PublicKeyToken=null
Class	REG_SZ	Aek2023.Connect
CodeBase	REG_SZ	file:///D:/OneDriveBusiness/P.Stiefel Softwareentwicklung/codekabinett - Documents/AEK/AEK_2022_COM Add-Ins/Aek2023Demo1.dll
RuntimeVersion	REG_SZ	v4.0.30319
ThreadingModel	REG_SZ	Both

Registry Editor

File Edit View Favorites Help

Computer\HKEY_CURRENT_USER\SOFTWARE\Microsoft\Office\Access\Addins\Aek2023.ComAddInDemo1

Name	Type	Data
(Default)	REG_SZ	(value not set)
Description	REG_SZ	AEK Demo Add-in f. Access
FriendlyName	REG_SZ	AEK Demo 1
LoadBehavior	REG_DWORD	0x00000003 (3)

LOADBEHAVIOR (VEREINFACHT)

0 = Nicht laden

3 = Automatisch Laden beim Start

8 = Manuell Laden

16 = 1 * automatisch, dann manuell

<https://learn.microsoft.com/de-de/visualstudio/vsto/registry-entries-for-vsto-add-ins>

COM-ADD-IN INTERFACE - IDTEXTENSIBILITY2

- OnAddInsUpdate** – Irgendwas mit Add-Ins
- OnBeginShutdown** – Access beendet sich
- OnConnection** – Add-In geladen
- OnDisconnection** – Add-In entladen
- OnStartupComplete** – Access fertig geladen

DEMO!

- Interface Implementation
- Add-In with *MsgBox*
- Info Form
- Interaction with DB
- Add-In Dialog in Access

ERWEITERTE SCHNITTSTELLE



RIBBON?

Interface `IRibbonExtensibility` implementieren

Methode `GetCustomUI` → Ribbon XML

Ribbon call backs → „Call by Name“

DEMO - RIBBON

LATE BINDING vs VERWEISE

Verweis zwingend:

Extensibility, Office (Ribbon)

Alles übrige:

Optional, Late Binding

Welche Verweise?

Access vs DAO vs ADO

PRIMARY INTEROP ASSEMBLIES (.NET)

.Net Wrapper um COM-Bibliotheken

Visual Studio (Extensibility, Office DLL)

VS2013/VSTO → Office (**2013**) Anwendungen,
VBE, DAO, etc.

Download → Office (**2010**) Anwendungen, VBE,
DAO, **ADO**, etc.

<https://www.microsoft.com/en-us/download/details.aspx?id=3508>

ANDERE INTEROP ASSEMBLIES (.NET)

Neue Office Versionen

Eigene COM-Komponenten

=> Selber machen mit Tlbimp.exe

<https://learn.microsoft.com/en-us/dotnet/framework/interop/how-to-generate-primary-interop-assemblies-using-tlbimp-exe>

DEBUGGING

Debuggen in Visual Studio:

→ Menü: Debug – Attach to Process

Hilfsmittel:

→ MessageBox

Abstürze beim Debuggen?

→ Andere Add-Ins deaktivieren

DEMO — ANDERE OFFICE APPS

FRAGEN?

DANKE!

Vielen Dank!

Guten Heimweg!