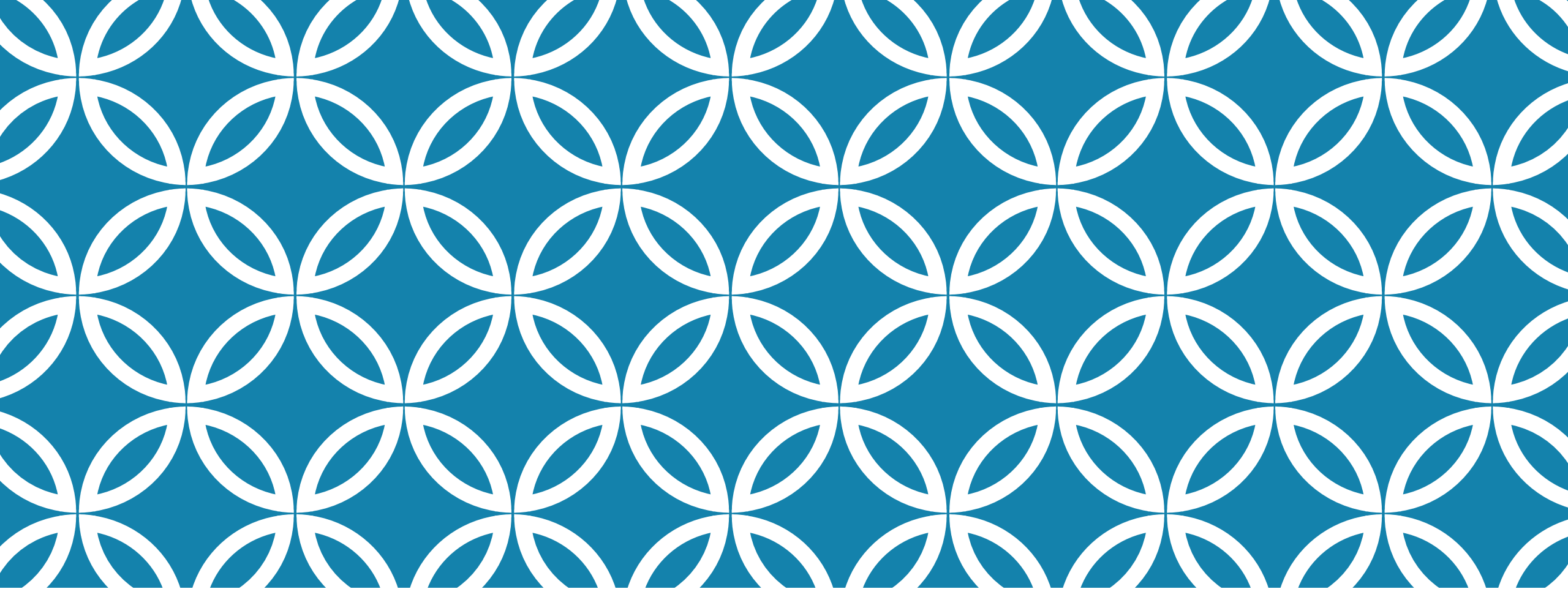




COM-ADD-INS

For
Microsoft Access &
Office

WHY USE ADD-INS?

Additional functionality for the Access **development** environment

Powerful programming tools

Seamless integration into Access UI

Integration into other Office applications

WHAT IS COM?

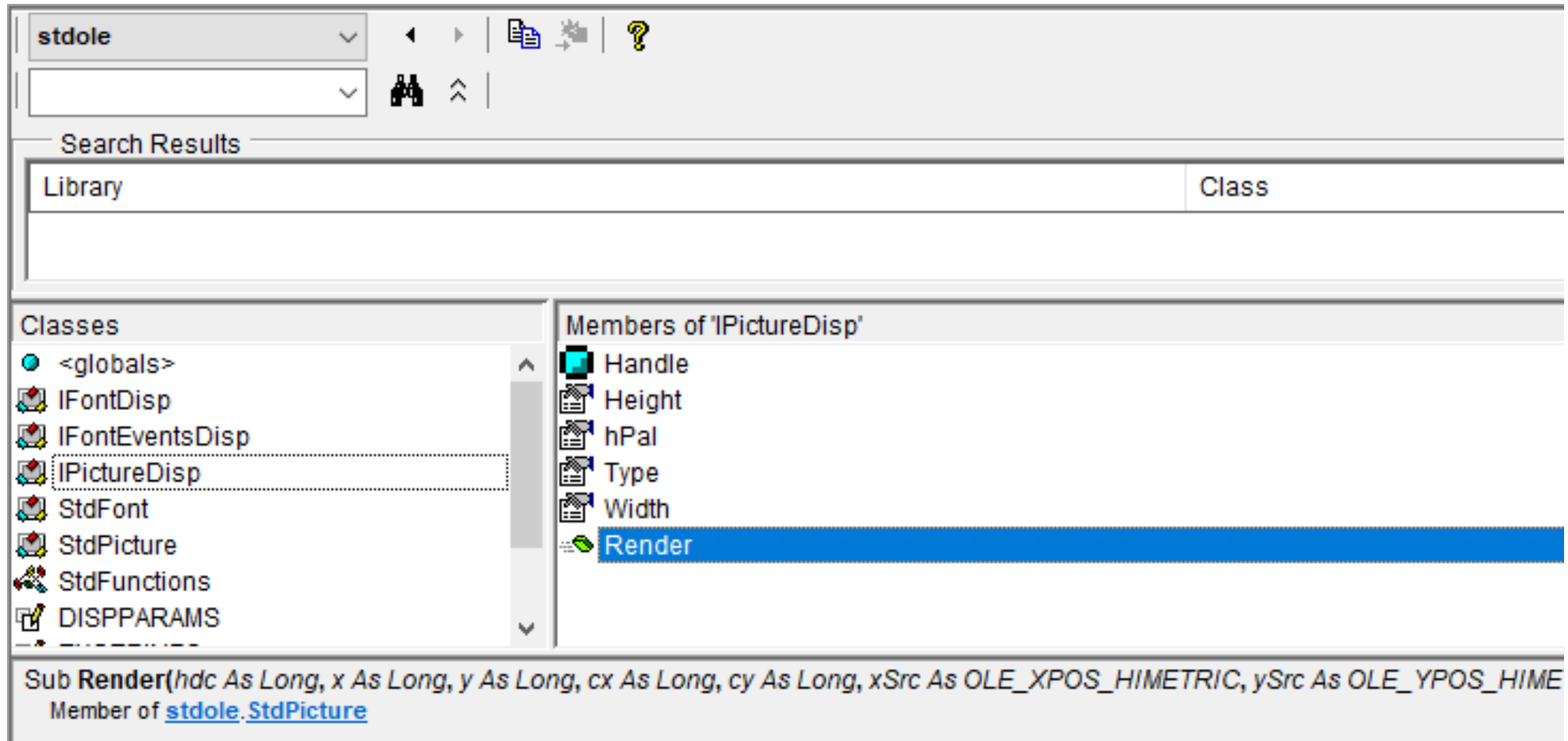
Component Object Model

Binary Interface standard

Programming language independent

Basis for object libraries (References)

INTERFACE IN THE OBJECT BROWSER



INTERFACE VS. CLASS

Interface defines (public) method signatures

No functionality in an interface

Class implements the interface (to provide functionality)

DEMO — INTERFACES IN VBA?

Who implemented one already?

USAGE OF TERMS (IN THIS PRESENTATION)

„Interface“ => Technical COM-Interface

„Connectivity“ => General interface definition
(of the Office Add-in System)

WHAT ARE ADD-INS / PLUG-INS?

Optional extensions of functionality

Use defined Connectivity of the host application

PLUG-INS - VISUALIZED

Host application



Plug-Ins



CLASSIC ACCESS ADD-INS

Connectivity: Name, File name,
Where/for what, VBA-Function

Registry (*USysRegInfo*)

Add-In is loaded upon first use

COM-ADD-INS

Connectivity: Name, File name, **Class**
(implements *IDTExtensibility2*), When to
load (automatic/manually)

Registry

Add-In is loaded independently of use

COM-ADD-IN - REGISTRY

1. Register COM-Class

HKCU\Software\Classes*ProgId*

HKCU\Software\Classes\CLSID\

CLSID **32bit** Office on 64bit Windows =>

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

2. Register Add-In for Access

HKCU\Software\Microsoft\Office\Access\Addins

REGISTRY — HKCU vs HKLM

HKCU — HKey Current User (recommended)

Only for the current user

No Admin permissions required

HKLM — HKey Local Machine

For all users

Admin permissions required

User has no control over Loading/Unloading

DEMO - ?

Registry, Batch Script, Screenshots

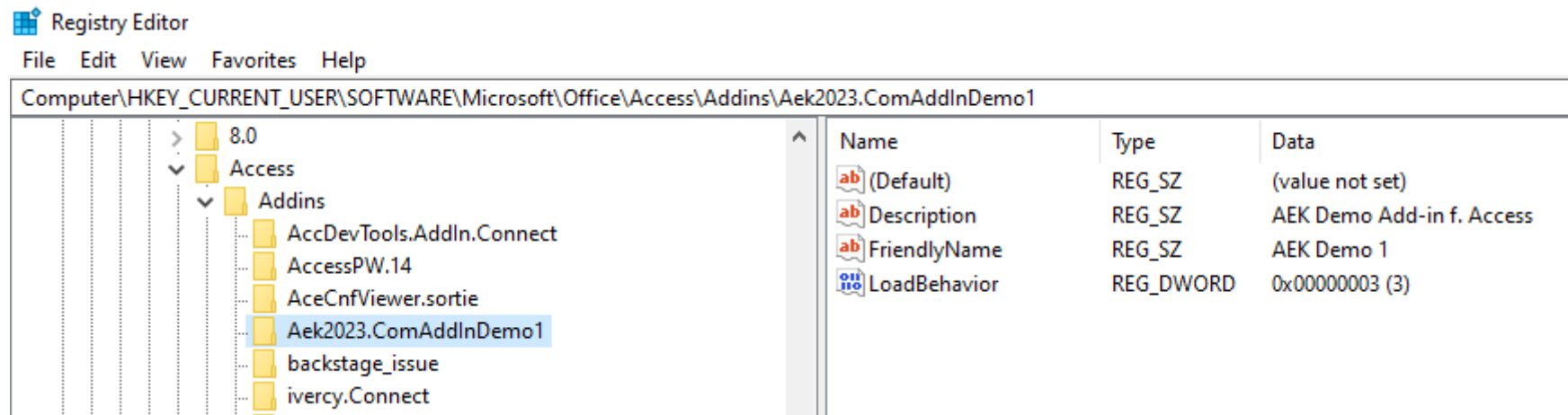
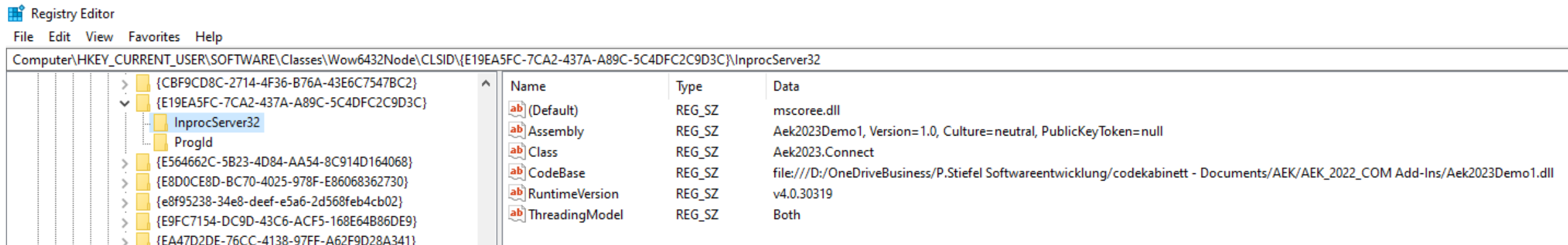
(.NET) COM ADD-IN REGISTRATION

```
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 "mscorlib.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



LOADBEHAVIOR (SIMPLIFIED)

0 = Do not load

3 = Load automatically on startup

8 = Load manually

16 = automatically once, then manually

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

COM-ADD-IN INTERFACE - **IDTEXTENSIBILITY2**

OnAddInsUpdate	– Something with Add-Ins
OnBeginShutdown	– Access is shutting down
OnConnection	– Add-In loaded
OnDisconnection	– Add-In unloaded
OnStartupComplete	– Access startup complete

DEMO!

- Implement Interface
- Add-In with *MsgBox*
- Info form
- Interaction with DB
- Add-In dialog in Access

EXTENDED CONNECTIVITY



RIBBON?

Implement Interface `IRibbonExtensibility`

Method `GetCustomUI` → Ribbon XML

Ribbon call backs → „Call by Name“

DEMO - RIBBON

LATE BINDING vs REFERENCE

Reference mandatory:

IDTExtensibility, Office (Ribbon)

Everything else:

Optional, Late Binding

Which References?

Access vs DAO vs ADO

PRIMARY INTEROP ASSEMBLIES (.NET)

.Net Wrapper around COM libraries

Visual Studio (Extensibility, Office DLL)

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

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

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

OTHER INTEROP ASSEMBLIES (.NET)

New MS Office versions

Own/3rd party COM-Components

=> Create your own with Tlbimp.exe

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

DEBUGGING

Debug in Visual Studio:

→ Menu: Debug – Attach to Process

Utilities:

→ MessageBox

Crashes when Debugging?

→ Disable all other Add-Ins

DEMO — OTHER OFFICE APPS



QUESTIONS?



THANK YOU!

Thank you very much!

Safe travel home (to your living room)!