

Demo Script: DevCon 2024

- I have 25 minutes for the demo portion:
 - 0:01: Download and open twinBASIC
 - 0:02: Customize add-in name and description
 - 0:04: Create the tool window controls
 - 0:05: Edit the Code in myToolWindow
 - 0:07: Test in Access
 - 0:10: Explain Strongly-typed collections and copy `BuildStronglyTypedCollection()` function
 - 0:15: Bring in other dependencies
 - 0:16: Test in Access
 - 0:18: Test in Barebones Access
 - 0:22: Convert fafalone's WinDevLib package
 - 0:24: Build 64-bit version
 - 0:25: Explain regsvr32 registration; mention InnoSetup

Download and Save Sample Code

1. Download [twinBASIC BETA 504](#)
2. Extract from Zip folder
3. Open twinBASIC > **Sample 4**
4. Enter Project Name: Demo2024 (*Do not put spaces in the name*)
5. Save as: %tmp%\Demo2024\Demo2024.twinproj
 1. Navigate to: %tmp%
 2. Create folder named: Demo2024
 3. Filename: Demo2024.twinproj

Customize the Addin Name and Description

Next, let's customize the friendly name and description of our addin. This is the info that appears in the VBA Add-in Manager dialog box.

1. Go to **dllRegistration.twin > DllRegisterServer**
2. In the "FriendlyName" line, replace `AddinProjectName` with "DevCon 2024 Demo"
3. In the "Description" line, replace `AddinProjectName` with "Create a strongly-typed collection class from an existing VBA class object."
4. Save the project
5. Build the project
6. Launch M:\Repos\NLS\DevCon2024\DevCon2024.accdb
7. Switch to VBA: **Ctrl + G**
8. Dock the add-in window
9. Go to "Add-Ins" > "Toggle myToolWindow Visibility"

10. Go to "Add-Ins" > "Add-in Manager"
 - Point out the "DevCon 2024 Demo" item with description below
11. Close "Add-In Manager" window

Create the Tool Window Controls

Next, we're going to customize the controls that appear on the tool window. I'll explain what these controls will be used for in a minute. For now, all you need to know is that we are adding two text boxes, a command button, and a label to hold a version number.

1. Open myToolWindow.tbcontrol
2. Select all controls and delete them
3. Click DIAGNOSTICS error to go to myToolWindow.twin and **delete all dead code**
4. Select form and set the following properties:
 - Height: 1700
 - Width: 2550
5. Create a text box and set the following properties:
 - Name: tbObjName
 - Anchors > Right: True
 - Height: 300
 - Left: 150
 - Text: *{blank}*
 - TextHint: Object Class Name
 - Top: 150
 - Width: 2250
6. Create a text box and set the following properties:
 - Name: tbCollName
 - Anchors > Right: True
 - Height: 300
 - Left: 150
 - Text: *{blank}*
 - TextHint: Collection Class Name
 - Top: 600
 - Width: 2250
7. Create a button and set the following properties:
 - Name: btnCreateClass
 - Anchors > Right: True
 - Caption: Create Collection Class
 - Height: 450
 - Left: 150
 - Top: 1050
 - Width: 2250
8. Create a version label
 - Caption: Version {hhmm}

Edit the Code in myToolWindow.twin

1. Delete the Timer1_Timer() and HelloWorld_Click() subroutines
2. Add a Click event handler for btnCreateClass using the code below

```
Private Sub btnCreateClass_Click()  
    MsgBox "Object class name: " & Me.tbObjName.Text & vbNewLine & _  
        "Collection class name: " & Me.tbCollName.Text, vbInformation,  
"Create Class"  
End Sub
```

Test the Updated Addin

1. Make sure Access is closed then **Build** the tB project
2. Reopen Access and switch to VBA
3. Enter sample text oVehicle for object class name and collVehicles for collection class name then click [Create Collection Class]

Strongly-Typed Collection Class

Now, let's talk about what this add-in will actually, you know, *do*.

The purpose of the add-in is to encapsulate the BuildStronglyTypedCollection() function as described here: [Strongly-Typed Collections: The Easy Way](#)

I put a link to this article in the Resources page for today's presentation. If you've never heard of strongly-typed collection classes, I recommend you read up on them later.

For our purposes, the important thing to know about them is that you CANNOT build them in the VBA editor. They require setting a couple of hidden code attributes that only appear when you export the code module to a text file.

As you can imagine, manually jumping through those hoops is inefficient and error-prone. The existing code I wrote in VBA does automate the process, but it requires importing several additional dependencies. Our VBE add-in will be a direct replacement for the BuildStronglyTypedCollection() function.

Copy the VBA Code Into twinBASIC

1. Create a new module named MyModule.twin

Build and Test the Addin on a Different Machine and Bitness

The following instructions assume you are building on a machine with 32-bit Office (mjw20), but installing on a machine with 64-bit Office (e.g., gbm18):

1. Ensure "**win64**" is selected in dropdown
2. **File > Build**
3. I copied M:\Repos\NLS\DevCon2024\Build\DevCon2024_win64.dll to %fb%\12114\DevCon2024_win64.dll (I will test registering it tomorrow on gbm18)
4. Open a non-admin cmd prompt
5. Run: `regsvr32 DevCon2024_win64.dll`
 - Receive message: "DllRegisterServer in DevCon2024_win64.dll succeeded."
6. Open Word (or Excel) - The add-in appears.

Copy and Paste Working VBA Code into twinBASIC

1. Add a standard code module named "MyModule":
 1. Right-click Sources > **Add > Add Module (.TWIN supporting Unicode)**
2. Go to [Strongly-Typed Collections: The Easy Way](#)
 1. Copy and paste the [GetGuidBasedTempPath code](#)
 2. Copy and paste the [FileWrite code](#)
3. Handle "Unrecognized datatype symbol 'Scripting'" error in DIAGNOSTICS pane:
 1. Go to **Project > References**
 2. Switch to "Available COM References" tab
 3. Search for "script" and then click the "Microsoft Scripting Runtime" reference
 4. Click [Save Changes]

Add fafalone's WinDevLib Package for API Calls

1. **Project > References...**
2. Switch to "Available Packages" tab
3. Search for "windows"
4. Check box next to " Windows Development Library for twinBASIC vX.Y.ZZZ"
 - The package will immediately begin downloading in the background
 - When the download finishes, the name will change to " [IMPORTED] Windows Development Library for twinBASIC vX.Y.ZZZ"
 - NOTE: "[WinDevLib for Implements](#)" is a different package
5. Click [Save Changes]
6. Comment out (or delete) API `Declare` lines throughout the project
 - Be aware that if you used non-standard `Alias` names, you may need to adjust your API calls to match the standard versions used in WinDevLib
 - **myAddIn.twin:**
 - Delete Private Type RECT structure
 - Delete GetClientRect() function declare

- **InterProcess.twin:**
 - Delete GetCurrentProcessId() function declare line...
 - ...through Type UUID structure
- **MyModule.twin:**
 - Delete Sleep sub declare
 - Comment out CoCreateGuid function declare and highlight the failure to compile due to the stricter typing of id As UUID in WinDevLib versus id As Any in my code
 - Uncomment the CoCreateGuid function to show that explicit API declares override the WinDevLib versions

7. Pass Unicode strings directly to API declare functions

- Most string-related API functions have ANSI and Unicode versions ("A" and "W" for "ANSI" and "Wide", respectively)
- Lots of legacy VB6/VBA code use the ANSI version of API functions
- WinDevLib [encourages the use of Unicode versions](#) by default
- This means that code that passes input strings to API functions may require wrapping the string in `StrPtr()` (or removing `StrPtr()`) from your existing code
- Remove StrPtr() from calls to FindWindowEx() in InterProcess.callerApplicationObject
- Convert final argument from 0& to vbNullString for calls to FindWindowEx() in InterProcess.callerApplicationObject

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