

Getting started with Embedded Windows

An introduction into WinKitLE

<http://www.consultingwerk.de/winkitle/>

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Mike Fechner, Consultingwerk Ltd.

- Independent IT consulting organization
- Focusing on OpenEdge and .NET
- Located in Cologne, Germany
- Vendor of tools and consulting programs
- 20 years of Progress experience (V5 ... V10)
- GUI for .NET early adaptor (since 10/2006)

Mike Fechner, Consultingwerk Ltd.

- Customers in Germany, Europe, USA
- Working with small to large Progress Partners and direct end users
- Supporting some of the largest Progress Partners in Germany, Belgium, The Netherlands, Austria and UK with application modernization and user interface technologies
- Network of partnering consultants, like ic4b for Web UI's

UI Modernization

- When making decisions: consider existing code, user requirements, man power, time and money constraints
- When 80% of the users need 90% of the application 95% of the time on the Windows desktop, then RIA is not the best solution for 100% of the application
- One size fits all, usually doesn't fit best
 - I prefer installed MS Office vs. Google apps or MS Office live
 - I prefer native iOS apps on the iPad vs. AJAX etc.
 - Accept no compromise on the target platform
 - 2 different 100% UIs are better than a single 80% fit on two platforms
- OERA is the key to flexibility, not shared UI definition
- See joint Exchange 2010 online presentation with Shelley Chase: Which UI is the right choice for you

Solutions for the OpenEdge GUI for .NET

- **WinKit**
- SmartComponent Library
- Dynamics4.NET

SmartComponent Library and WinKit

- ***SmartComponent Library*** and ***WinKit*** are part of our GUI for .NET adoption and migration strategy
 - WinKit: Enhancement of existing screens
 - SmartComponent Library: New functionality
- Shared framework foundation classes
- Compatible directory and project structure
- Used side by side in customer projects already, introduced together or in sequence

WinKit Introduction

- Embedded Windows are a great way of using ABL window widget based screens within GUI for .NET
- Consultingwerk has used the WinKit successfully in ~ 20 customer projects to improve the UI using embedded windows
- Demoable prototype usually after a few days
- The **WinKitLE** is a free version of the WinKit that contains the basic functionality of the WinKit

Demo

- Basic WinKit functionality
- 3 stages of sample Order Entry
- Toolbar & Ribbon Designer
- Real world samples
 - update texware, Germany
 - Shuttleworth, UK

Reference I: Update Texware / Germany

- ERP for textile producers of a German Progress partner
 - AppBuilder view
 - Runtime GUI for .NET
- Own framework, developed in V7/V8
- Transition to multi-window application
- Challenge with pessimistic locking and large transactions
- 10 days of research, customization of customers framework and WinKit



Reference I: Update Texware / Germany

<Stammdaten - Firma>

Menü: Datei, Extras, Hilfe, Fenster

Stammdaten - Firma

Firma: 1 Nation: DE
 Bezeichnung: Progress Sprache: K
 Steuernummer: 123 123123 345 Währung: EUR
 Umsatzsteuer-Identnr.: DE1234567890
 ILN-Nummer:
 Zollnummer:

Firma	Bezeichnung	Nation	Sprache	Währung	ZWE
1	Progress	DE	K	EUR	
2	Mustermendant	DE	D	EUR	

Schnellzugriff

Funktionen

- Adressen
- Bereiche

International

- Sprache
- Währung
- Nation

Schlüsselwörter

- EAN-Nummer
- Löschgründe
- Blocktexte
- Kopftexte
- Fußtexte

Schnellzugriff Termine

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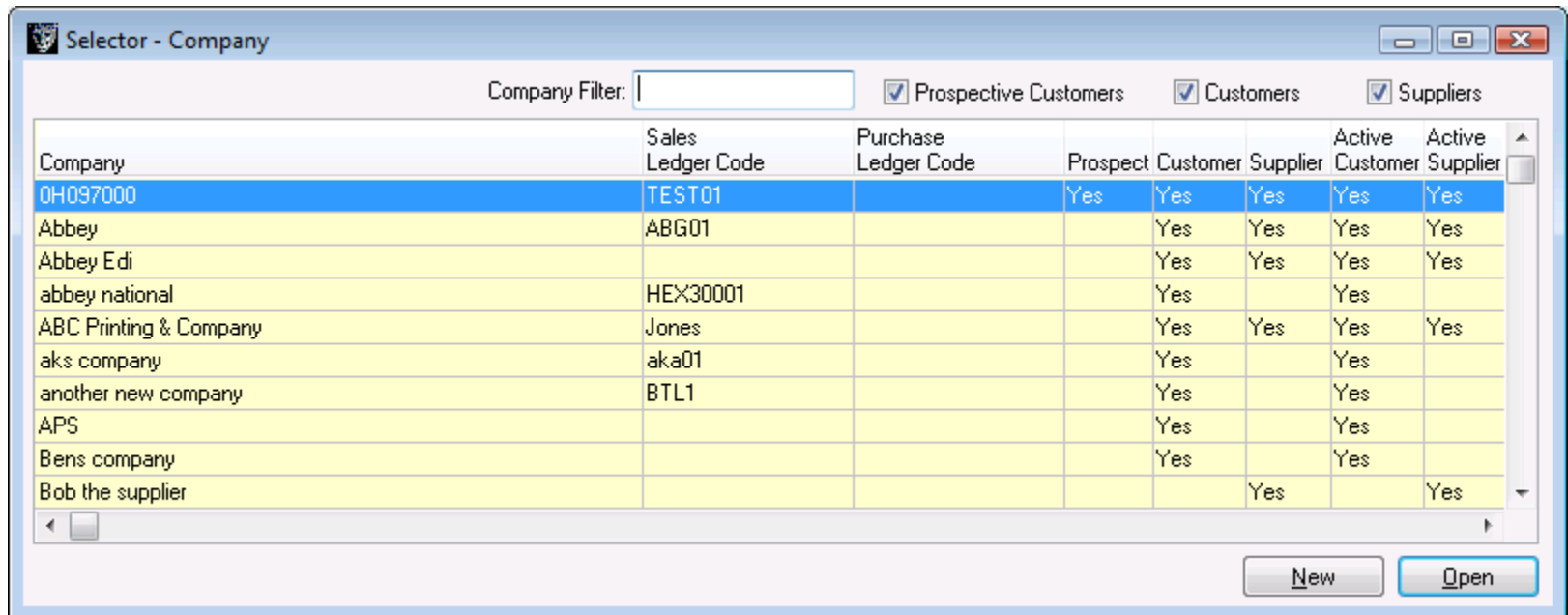
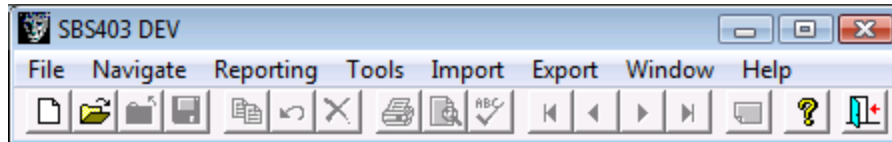
- Case study available at:
- <http://www.consultingwerk.de/update-texware/>

Reference II: Shuttleworth / UK

- UK-based Progress Partner
- Huge ERP system for printing industry
- V8 style framework (ADM1-like)
- Clear vision of Outlook look-and-feel
- Browse windows as MDI children
- Data windows as separate windows
 - Similar to Outlook where Emails and Appointments are opened separately
- Majority of changes in existing framework
- Minor changes to existing screens



Menu Toolbar & Browse Window



The Shuttleworth System <Selector - Company>

Home Functions Style Selector

New Open Copy Delete Notes First Previous Next Last Reports

Record Navigation Reporting

Navigation Selector - Company

Company Filter: Prospective Customers Customers Suppliers

Drag a column header here to group by that column.

Company	Pros	Activ	Acti	Main Site!Post Code
0H097000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CW7 3ALXXX
Abbey	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	AB1 2BA
Abbey Edi	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	SD2 5FG
abbey national	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
▶ ABC Printing & Company	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	NG1 3MA
aks company	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NN3 44N
another new company	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
APS	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	APS
Bens company	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NN9 6TT
Bob the supplier	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	LE16 7PQ
BOS Payment Services	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EH12 9HP
Bradbury and Co	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
BT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Butlin and Co.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LE16 8AY
Dave	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Dave 2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Eastpoint	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Halifax	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LK3 5TT
HBOS plc	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EH1 1YZ
highland company	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Howard Smith (csv)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Howard Smith Demo Bite	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Imported Company 1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	bb99 6FS

Entities

- Home
- Company
- Event

Entities

- New Group
- New Group

The Shuttleworth System <Selector - Company>

Home Functions Style Selector

New Open Copy Delete Notes First Previous Next Last Reports

Record Navigation Reporting

Navigation

Entities

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Imported Company 1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	bb99 6FS

Entities

- New Group
- New Group

Shuttleworth: Data Window

Company - ABC Printing & Company

Company | Customer Details | Supplier Details | Sites | Contacts | Communication Numbers | Events

Main Representative: Mark Bradley
 Market: England g
 Default Pricing Group: martins test
 Default Special Uplift: (None)
 Default Special Uplift %: 0.00
 Default General Uplift: (None)
 Default General Uplift %: 0.00
 Round Up: 0
 Default Quote Print Price: (None)
 Quote Print Run On Price: (None)
 Company Code:
 Business Unit:
 Pecs Code:
 Pecs Overall Code:
 Job/Orders Available
 Deliveries Available
 Multiple Jobs on Automatic Invoices
 Multiple Sop Orders on Automatic Invoices

Default Sales Nominal:
 Vat Code: (None)
 Vat Registration Number: ABC135798642
 Accounts System: Company 1
 Sales Ledger Code: Jones
 Settlement Days: 0
 Settlement Discount %: 0.00
 Invoice Discount %: 0.00
 Default Invoice Template: Bob Invoice
 Default Credit Template: (None)
 Default Quotation Template: (None)
 Default Production Delivery Template: Bob del note
 Summary Exchange Values: System Default
 Default Currency:
 Exchange Rate: 0.00000000
 Default Commodity:
 Default Delivery Term:
 Default Carrier: Standard UPS UK
 Warehousing Charges

Customer | SOP Details | Other Details | Reps | Estimates | Jobs | Master Estimates | Completed Jobs | Brands | Charge C

New OK Cancel Apply



Company - ABC Printing & Company



Data



Record

Navigation

Company **Customer Details** Supplier Details Sites Contacts Company Events

Main Representative:

Market:

Default Pricing Group:

Default Special Uplift:

Default Special Uplift %:

Default General Uplift:

Default General Uplift %:

Round Up:

Default Quote Print Price:

Quote Print Run On Price:

Company Code:

Business Unit:

Pecs Code:

Pecs Overall Code:

Default Sales Nominal:

Vat Code:

Vat Registration Number:

Accounts System:

Sales Ledger Code:

Settlement Days:

Settlement Discount %:

Invoice Discount %:

Default Invoice Template:

Default Credit Template:

Default Quotation Template:

Default Production Delivery Template:

Summary Exchange Values:

Job/Orders Available

Deliveries Available

Multiple Jobs on Automatic Invoices

Multiple Sop Orders on Automatic Invoices

Default Currency:

Exchange Rate:

Default Commodity:

Default Delivery Term:

Default Carrier:

Warehousing Charges

- Customer
- SOP Details
- Other Details
- Reps
- Estimates
- Jobs
- Master Estimates
- Completed Jobs
- Brands
- Charge Codes

Company - ABC Printing & Company

Data

New OK Cancel Save Delete Notes First Previous Next Last

Record Navigation

Company Customer Details Supplier Details Sites Contacts Company Events

ABL Frame

Main Representative: Mark Bradley
Market: England g
Default Pricing Group: martins test
Default Special Uplift: (None)
Default Special Uplift %: 0.00
Default General Uplift: (None)
Default General Uplift %: 0.00
Round Up: 0
Default Quote Print Price: (None)
Quote Print Run On Price: (None)
Company Code:
Business Unit:
Pecs Code:
Pecs Overall Code:
 Job/Orders Available
 Deliveries Available
 Multiple Jobs on Automatic Invoices
 Multiple Sop Orders on Automatic Invoices

Default Sales Nominal:
Vat Code: (None)
Vat Registration Number: ABC135798642
Accounts System: Company 1
Sales Ledger Code: Jones
Settlement Days: 0
Settlement Discount %: 0.00
Invoice Discount %: 0.00
Default Invoice Template: Bob Invoice
Default Credit Template: (None)
Default Quotation Template: (None)
Default Production Delivery Template: Bob del note
Summary Exchange Values: System Default
Default Currency:
Exchange Rate: 0.00000000
Default Commodity:
Default Delivery Term:
Default Carrier: Standard UPS UK
Warehousing Charges

Customer
SOP Details
Other Details
Reps
Estimates
Jobs
Master Estimates
Completed Jobs
Brands
Charge Codes

Agenda

- Overview
- Adoption challenges and strategies
- Running .NET Forms from ABL menus
- Embed an ABL window using the WinKit
- Add an Icon to the .NET Form
- Rendering of Toolbars
- Refreshing Toolbars
- Color customization
- Rendering of Browsers
- Conclusion

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OpenEdge GUI for .NET

A Microsoft® **.NET™** based Windows graphical user interface that can **replace** or be **integrated** into an existing OpenEdge GUI application

OpenEdge GUI for .NET

- State-of-the-art UI on the Windows desktop
- Integrated feature of OpenEdge 10.2A and 10.2B
- Supported by both GUI clients
 - fat client, prowin32.exe
 - WebClient
- No separate license required
 - Deployment
 - Development
- Access and use any .NET control

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Adoption challenges and strategies

- Need to support pre-10.2A users as well
- Thousands of existing screens
- Training requirements
 - OO fundamentals (new programming paradigm)
 - .NET fundamentals
 - Infragistics controls (or any other vendor)
 - OpenEdge 10.0: ProDatasets etc.
- New tool: OpenEdge Architect

Adoption challenges and strategies

- What are our architecture requirements?
- Where's the ADM3? Or at least a working complete sample application?
- I've never used Office 2007, but my customers or sales people request the ribbon...
- Dockable panes, Explorer bars? What are you talking about?
- Where the heck is the "Orb" in Office 2010?

Adoption challenges and strategies

- Progress client supports ABL widgets and .NET controls at the same time
- Procedures may instantiate and interact with classes
- Classes may run procedures
- Procedures may create .NET controls and subscribe to events

Adoption challenges and strategies

- ABL Windows embedded into .NET Forms
- Core feature of OpenEdge 10.2A and 10.2B, contents of Window will be embedded into a .NET control
- Original intention was mixed mode MDI
- Upgrading the appearance of ABL application by using .NET controls (menu, toolbar, Explorer bars, dockable panes, lookups with UltraGrid, ...)
- Step-by-step introduction of additional (Infragistics) controls to increase users productivity
- Active X controls contained on the window are well supported (documented in K-Base)

Adoption challenges and strategies

ASSIGN

```
oContainer = NEW WindowContainer ()  
oContainer:EmbeddedWindow = hWindow .
```

- Window may not yet be REALIZED (i.e., HIDDEN and VISIBLE not yet set, no LOAD-ICON)
- When using AppBuilder generated code, this is only possible by using the Method-Library and include files

Adoption challenges and strategies

- Use include files for modifications on existing .w files; use compile-time check for pre 10.2A support
- Render .NET controls dynamically from existing ABL widgets (menu, toolbar first)
- Identification of additional ABL widgets that may be substituted with .NET controls (low-hanging-fruits first, tab folder, browser, ...)
- Design specialized .NET controls using Visual Designer, no dynamic code without need

Menu Bar

Window
Border

The screenshot shows a classic Windows-style window titled "Auftragsstatus - veryold-order.w". The window contains a form with the following fields and controls:

- Menu Bar:** A single menu item labeled "Datei".
- Window Border:** Standard Windows window controls (minimize, maximize, close) in the top right corner.
- Form Fields:**
 - Order Num:
 - Ordered:
 - Order Status: - Cust Num: Name:
 - Sales Rep:
 - Promised:
 - Shipped:
- Navigation Buttons:** A row of five buttons: "First", "Prev", "Next", "Last", and "Print".

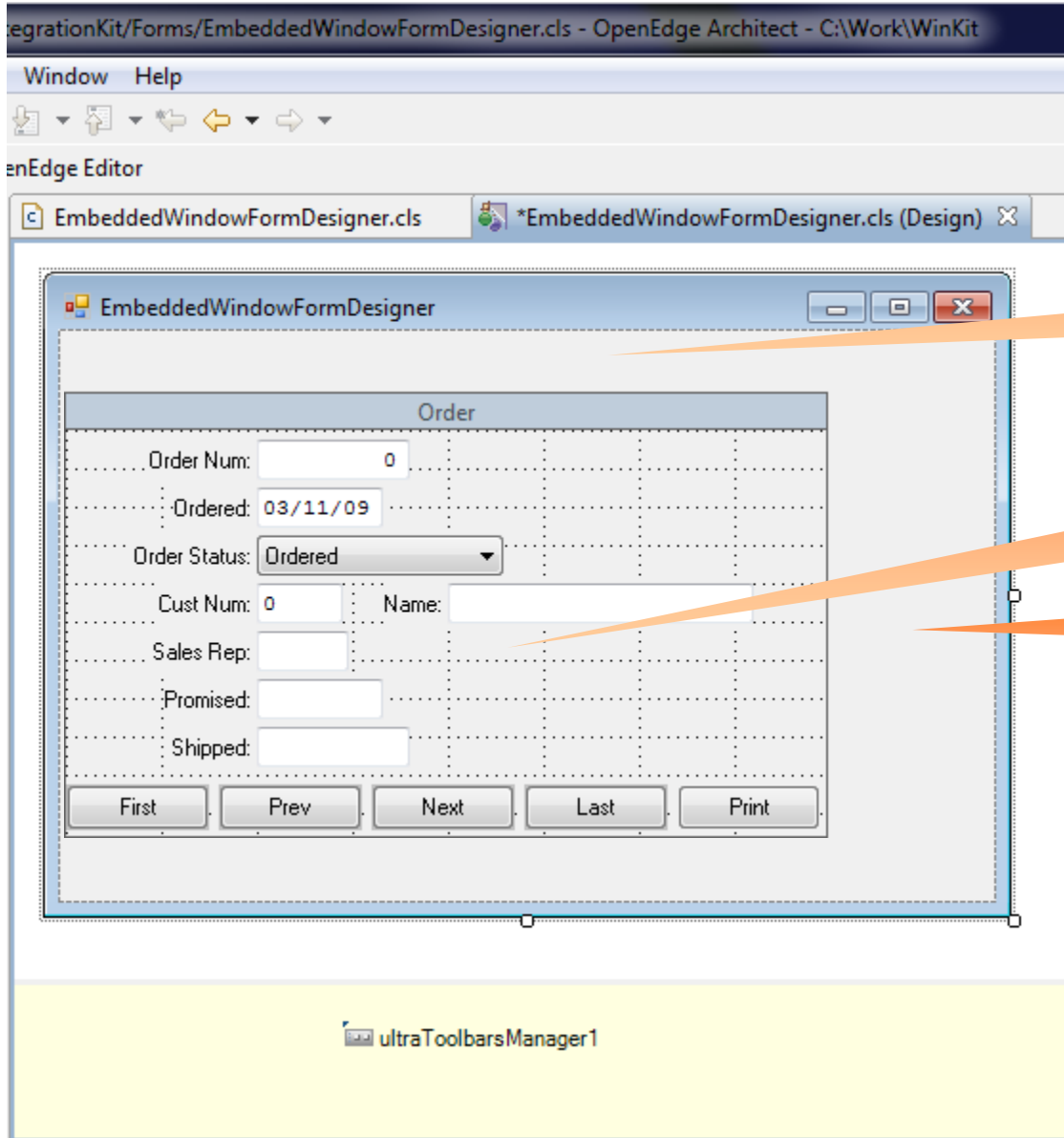
Client Area
(FRAMEs)

Message
Area

Status Area

Order	
Order Num:	<input type="text" value="0"/>
Ordered:	<input type="text" value="03/11/09"/>
Order Status:	<input type="text" value="Ordered"/>
Cust Num:	<input type="text" value="0"/>
Name:	<input type="text"/>
Sales Rep:	<input type="text"/>
Promised:	<input type="text"/>
Shipped:	<input type="text"/>
<input type="button" value="First"/> <input type="button" value="Prev"/> <input type="button" value="Next"/> <input type="button" value="Last"/> <input type="button" value="Print"/>	

Client Area
(FRAMEs)



.NET Form

Client Area (FRAMEs)

Window Container

Adoption challenges and strategies

- Keep the control in the .w file to reuse existing logic
- .NET Event handlers should APPLY ABL Events
 - CLOSE OF WINDOW
 - FormClosing Event should always be cancelled as ABL WINDOW-CLOSE trigger might terminate with RETURN NO-APPLY
 - CHOOSE of MENU-ITEM, BUTTON, ...
 - .NET ToolClick Event Handler executes ABL Event (i.e., CHOOSE on ABL widget)

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Running .NET Forms from ABL menus

- Requires: The (one and only) WAIT-FOR Statements needs to be .NET style
- Small modification in mainmenu.w program

~~WAIT-FOR CLOSE OF THIS-PROCEDURE .~~

```
/* .NET WAIT-FOR not associated to a .NET Form */
```

```
WAIT-FOR System.Windows.Forms.Application:Run () .
```

```
/* Use this method to terminate the WAIT-FOR, e.g  
from a WINDOW-CLOSE trigger. */
```

```
System.Windows.Forms.Application:Exit() .
```

Running .NET Forms from ABL menus

- Requires: The (one and only) WAIT-FOR Statements needs to be .NET style
- Small modification in mainmenu.w program

**Replace
WAIT-FOR for
.NET support**

~~WAIT-FOR CLOSE OF THIS-PROCEDURE .~~

```
/* .NET WAIT-FOR not associated to a .NET Form */
```

```
WAIT-FOR System.Windows.Forms.Application:Run () .
```

```
/* Use this method to terminate the WAIT-FOR, e.g  
from a WINDOW-CLOSE trigger. */
```

```
System.Windows.Forms.Application:Exit() .
```

Running .NET Forms from ABL menus

- Code of MAIN-BLOCK after implementing the .NET WAIT-FOR

MAIN-BLOCK:

```
DO ON ERROR UNDO MAIN-BLOCK, LEAVE MAIN-BLOCK
ON END-KEY UNDO MAIN-BLOCK, LEAVE MAIN-BLOCK:
RUN enable_UI.
IF NOT THIS-PROCEDURE:PERSISTENT THEN
    WAIT-FOR System.Windows.Forms.Application:RUN ().
/* WAIT-FOR CLOSE OF THIS-PROCEDURE.*/
END.
```

Running .NET Forms from ABL menus

- Code of CLOSE Trigger to end the session

```
ON CLOSE OF THIS-PROCEDURE DO:
```

```
  RUN disable_UI.
```

```
  System.Windows.Forms.Application:Exit ().
```

```
END.
```

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Embed an ABL window using the WinKit

- List of include files supplied by the WinKit
 - {src/winkit/embedwindow.i}
 - {src/winkit/embedfinalize.i}
 - {src/winkit/closewindow.i}

Embed an ABL window using the WinKit

- Demo

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Add an Icon to the .NET Form

- Set the Icon property of the oFormControl

```
PROCEDURE finalizeEmbedding :
```

```
/*-----
```

```
    Purpose:
```

```
    Notes:
```

```
-----*/
```

```
/* Mike Fechner, Consultingwerk Ltd. 11.11.2010
```

```
    Load an Icon for the .NET Form */
```

```
FILE-INFO:FILE-NAME = "images\window2.ico".
```

```
IF FILE-INFO:FULL-PATHNAME > "" THEN
```

```
    oFormControl:Icon = NEW System.Drawing.Icon
```

```
        FILE-INFO:FULL-PATHNAME ) .
```

```
END PROCEDURE.
```

Add an Icon to the .NET Form

- Demo

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Rendering of Toolbars

- Build a Toolbar from the button widgets in the first 1.5 rows of the ABL window
- Move up the window frame to hide the buttonwidgets

```
Consultingwerk.Util.UltratoolbarsHelper:BuildToolbarFromFrame  
  (FRAME {&frame-name}:HANDLE,  
   {&window-name}:HANDLE,  
   1.5,  
   oForm:ToolbarsManager) .
```

```
oForm:WindowContainerRowOffset = 27.
```

Rendering of Toolbars

- Demo

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Refreshing Toolbars

- Invoke the RefreshTools method of the UltratoolbarsHelper wherever the state of a button gets changed in code

FINALLY:

```
Consultingwerk.Util.UltratoolbarsHelper.RefreshTools  
    (oForm:ToolbarsManager) .
```

END FINALLY.

Refreshing Toolbars

- Demo

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Color customization

- Set the background color of each frame
- Set the background color of the ABL window

```
Consultingwerk.Util.WidgetHelper:SetFrameBackgroundColor  
    (&window-name, 33, 15, 15).
```

```
{&window-name}:BGCOLOR = 33.
```

- In the real world, we'd dynamically modify the Progress color table to match Infragististics AppStylist

Color customization

- Demo

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Rendering of Browsers

- Define reference variable for the RenderedBrowseControl

```
DEFINE VARIABLE oGrid AS
```

```
Consultingwerk.WindowIntegrationKit.Controls.RenderedBrowseControl  
NO-UNDO.
```

- **Hint:** Use USING statement, to shorten code (usually more readable)

Rendering of Browsers

- Create the .NET control

```
oGrid =  
    NEW Consultingwerk.WindowIntegrationKit.Controls.RenderedBrowseControl  
        (BROWSE {&browse-name} :HANDLE,  
         oForm,  
         oForm:ClientArea,  
         FALSE,  
         THIS-PROCEDURE) .
```

Rendering of Browsers

- Implement view and hide logic for the RenderedBrowseControl

```
IF rs-show = 1 THEN DO:
    VIEW FRAME frame-a .
    HIDE FRAME frame-b .
&IF DEFINED (winkitactive) NE 0 &THEN
    IF VALID-OBJECT (oGrid) THEN
        oGrid:VISIBLE = TRUE .
&ENDIF
END .
ELSE DO:
    HIDE FRAME frame-a .
    VIEW FRAME frame-b .
&IF DEFINED (winkitactive) NE 0 &THEN
    IF VALID-OBJECT (oGrid) THEN
        oGrid:VISIBLE = FALSE .
&ENDIF
END .
```

Rendering of Browsers

- Demo

Agenda

- Overview
- Adoption challenges and strategies
- Running .NET Forms from ABL menus
- Embed an ABL window using the WinKit
- Add an Icon to the .NET Form
- Rendering of Toolbars
- Refreshing Toolbars
- Color customization
- Rendering of Browsers
- Conclusion

Conclusion

- Embedded Windows provide a rapid UI face lifting without the need for an architectural shift
- WinKit has successfully proven to work with 20 different Progress/OpenEdge applications already
 - Different kinds of frameworks
 - Including ADM1, ADM2, custom frameworks
- Dramatically reduces training requirements of development staff

Conclusion

- Takes away time pressure from Progress ISV
 - Recognizable UI improvements with minimal effort
 - Reduced implementation risk (reduces testing and training)
- Same source code remains usable on V9, V10.0, V10.1 (preprocessor checks)
- Simplified maintenance, single code base
- Developers can still use the well-known tools (AppBuilder) to maintain the application
- Technology change at the pace of the team, not a technology trend
- No “shock” for existing users, but sales easier

What's next?

- **WinKit Workshop** with the full version of the WinKit
 - Automated migration of windows, i.e using AppBuilder API
 - Toolbar and Ribbon Designer
 - Consulting, mentoring and “creativity”
 - Customization
 - Typically 10 days onsite
 - Experience from various applications... feels like we've seen them all!

What's next?

- **SmartComponent Library** for development of new screens
 - following OO and OERA principles
 - integrated into the Visual Designer
 - Business Logic Designer
 - rapid application development
 - unlimited .NET functionality

 - **Meet us outside for more information!**

Questions

