

# GUI for .NET

A simple sample

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# GUI for .NET – A simple sample

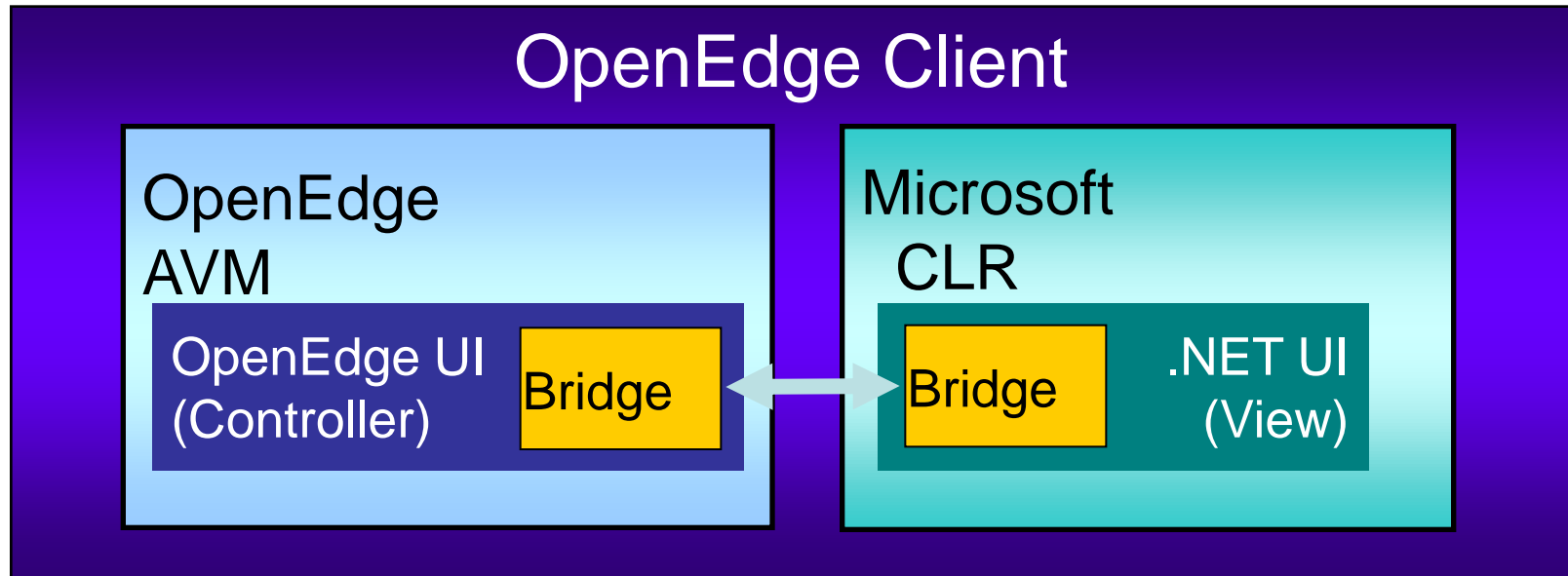
- Introduction
- Importing the sample
- OpenEdge Architect Visual Designer
- Opening the Sample Screen
- Data Binding in GUI for .NET

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

# Primary Features and Benefits

- **Leverages ABL**
  - Single language – No need to learn C#, VB.NET
  - Direct access to .NET controls – no control container required
  - Data binding between ABL data sources and UI controls
  - Event binding between ABL methods and UI events
- **Single tool set: OpenEdge Architect**
  - No need to purchase, learn or use non-OpenEdge products
- **Integrates with existing GUI**
- **Independent of deployment topology**
- **Extensible with 3<sup>rd</sup> party and custom controls**
- **.NET Windows Forms UI growth**

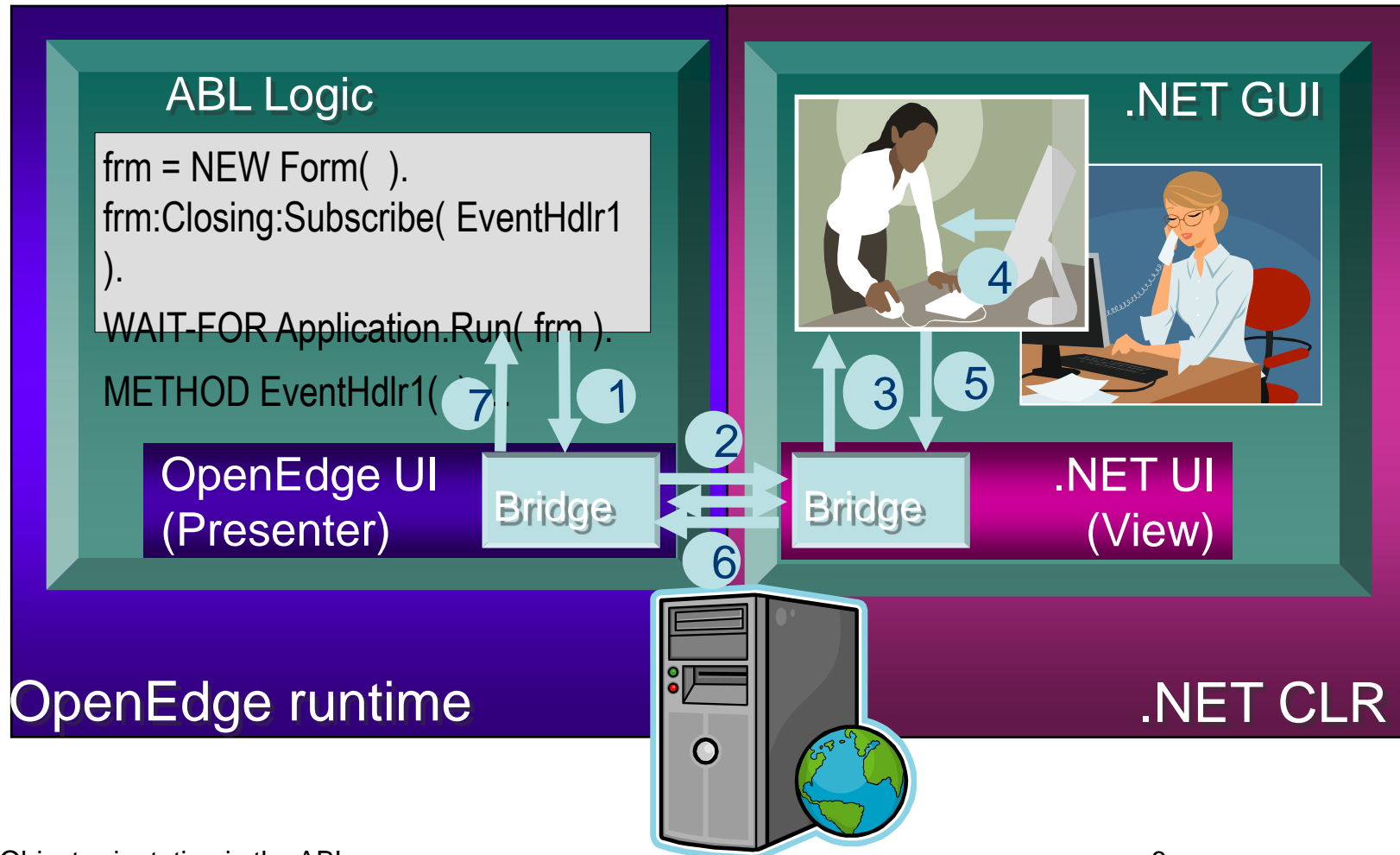
# OpenEdge and .NET in a single process



- GUI components
- Data access
- I/O blocking
- Event handlers

- GUI Visualization
- User interaction and events

## GUI for .NET Architecture



## OO Extensions

### OpenEdge Form


Progress.Lang.Object	ABL
System.Object	.NET
System.MarshalByRefObject	T
System.ComponentModel.Component	
System.Windows.Forms.Control	
System.Windows.Forms.ScrollableControl	
System.Windows.Forms.ContainerControl	
System.Windows.Forms.Form	
Progress.Windows.Form	OE
CustEntryForm	OE

### .NET Control

Progress.Lang.Object	ABL
System.Object	.NET
System.MarshalByRefObject	
System.ComponentModel.Component	
System.Windows.Forms.Control	
Infragistics.Win.UltraControlBase	
Infragistics.Win.Misc.ControlBase	
Infragistics.Win.Misc.AutoSizeControlBase	
Infragistics.Win.Misc.UltraButtonBase	
Infragistics.Win.Misc.UltraButton	

 ABL Class

 .NET class

 Infragistics Class

 OpenEdge form

 OpenEdge derived

## Access to .NET objects based on OO

- .NET classes used like ABL classes
  - Share common base class **Progress.Lang.Object**
  - Can refer to .NET object type using namespace
  - Case-sensitive type names

```
DEFINE VARIABLE myForm AS Progress.Windows.Form.  
DEFINE VARIABLE helloBtn AS System.Windows.Forms.Button.  
myForm      = NEW Progress.Windows.Form ( ).  
helloBtn    = NEW System.Windows.Forms.Button ( ).  
helloBtn:Text = "Hello World".  
myForm:Controls:Add(helloBtn).  
MESSAGE helloBtn:Text VIEW-AS ALERT-BOX.
```

...

## Strong typed WAIT-FOR and Subscribe

- Enhanced **WAIT-FOR** to work with .NET forms

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

```
myFormA = NEW myForm() . myFormB = NEW myFormB() .  
myForm:Show() . myFormB:Show() .  
WAIT-FOR Application:Run( ) .
```

```
Application:Exit() .
```

```
WAIT-FOR myDialog:ShowDialog(myForm) .
```

- Subscribe** ABL code to a .NET event

```
myForm:Load:SUBSCRIBE(myFormLoad) .  
METHOD myFormLoad( sender AS System.Object,  
                  e AS System.EventArgs ) :  
...
```

## ABL .NET Data Binding

- Bind ABL data to .NET controls (data binding)
  - New **Progress.Data.BindingSource**
    - Enables design-time binding to business objects
    - Currency Manager Functionality
    - Provides layer of abstraction between data and UI
  - Can bind UI control with various data sources:
    - Buffers, queries, ProDataSets

```
DEFINE VARIABLE custbs AS Progress.Data.BindingSource.  
CREATE QUERY hdlQry.  
... /* Prepare and open query */  
custbs = NEW Progress.Data.BindingSource( hdlQry, "*", "" ).  
custGrid:DataSource = Custbs.
```

# GUI for .NET – A simple sample

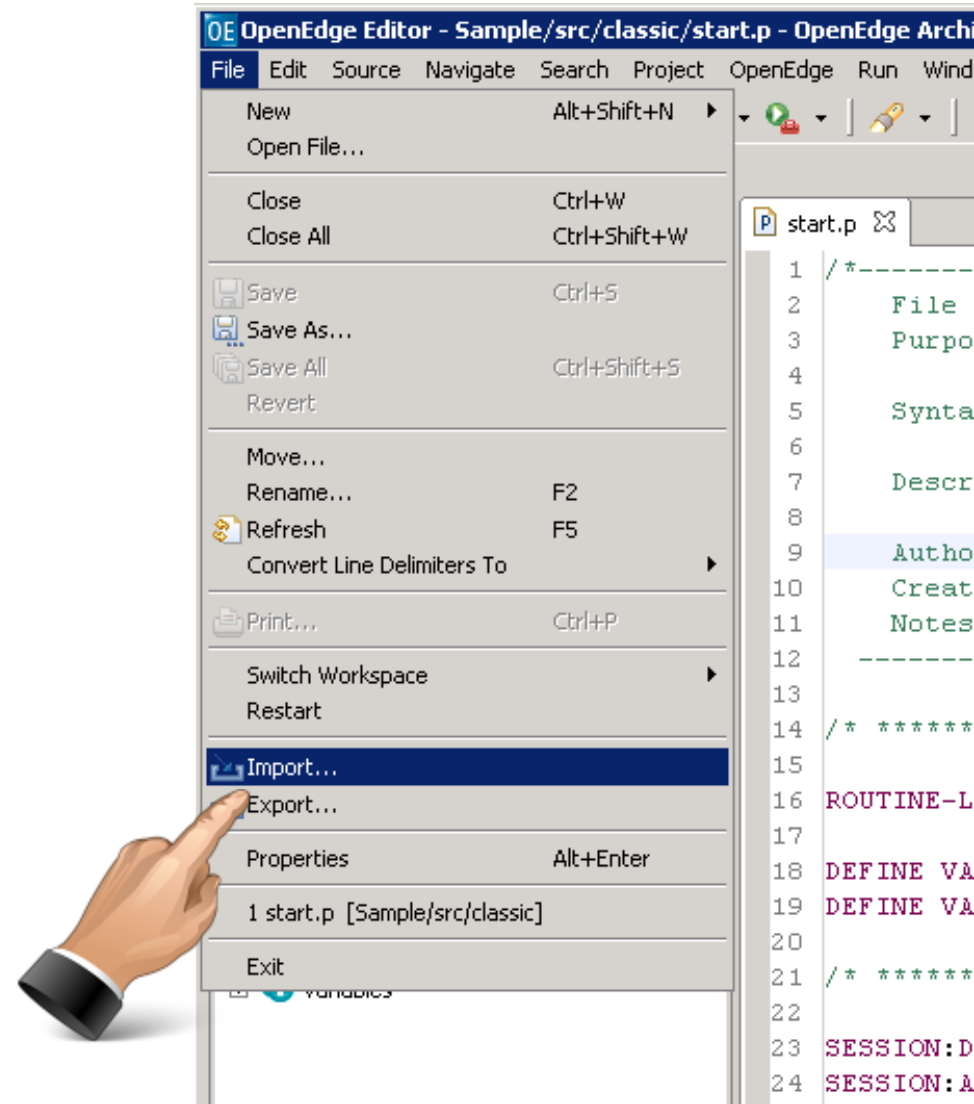
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## Importing the Sample

- Download DotNetGuiSample.zip from <http://www.consultingwerk.de/nepugdownload/>
- Unzip to C:\ (the ZIP will preserve proper path)
- Explore c:\Work\DotNetGuiSample.zip

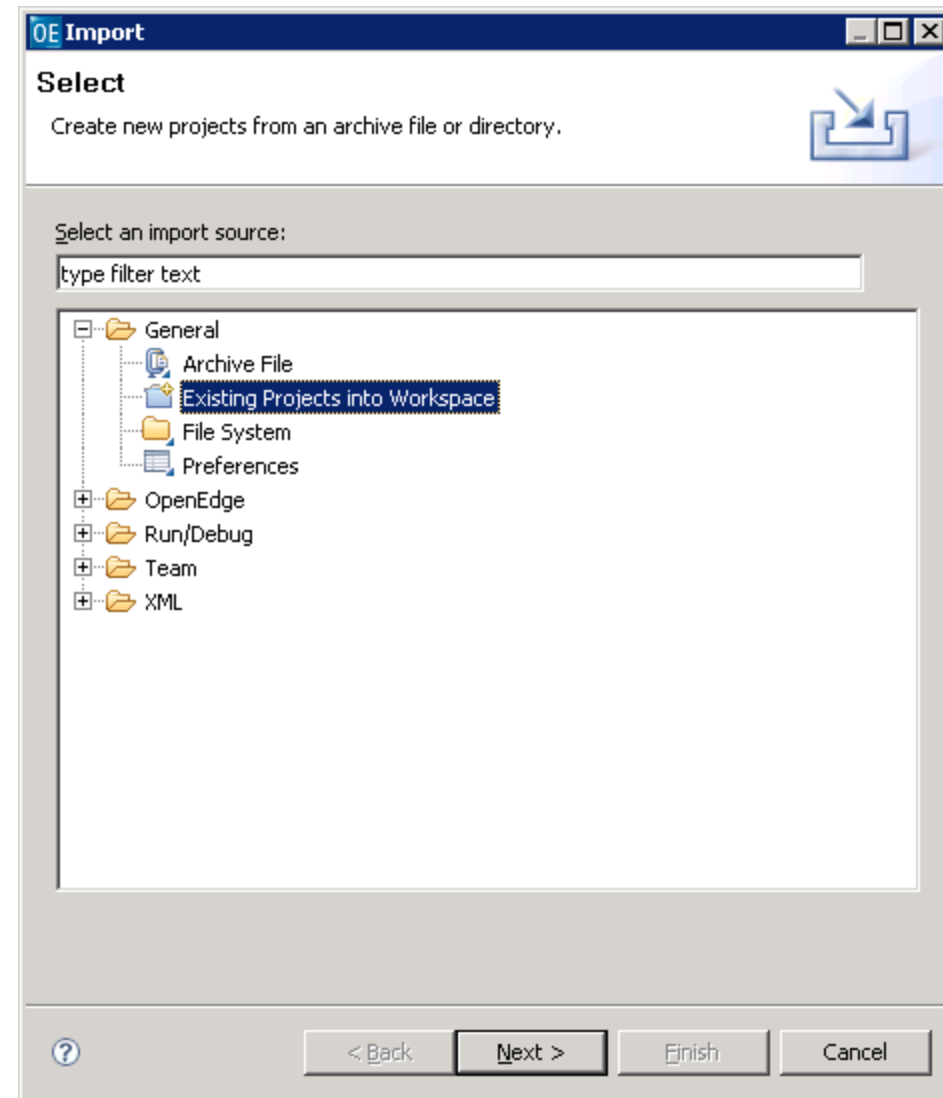
## Importing sample as a project

- File -> Import



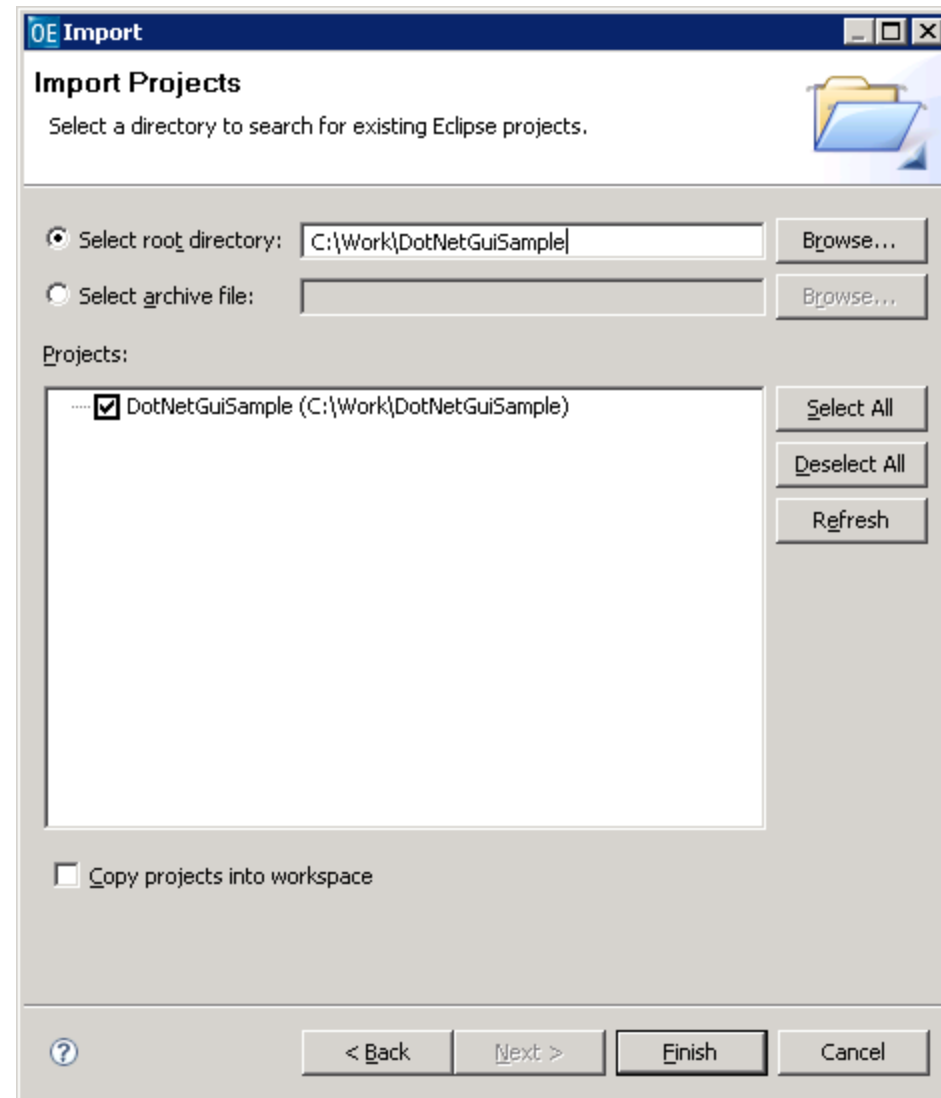
# Importing sample as a project

- Existing Projects into Workspace

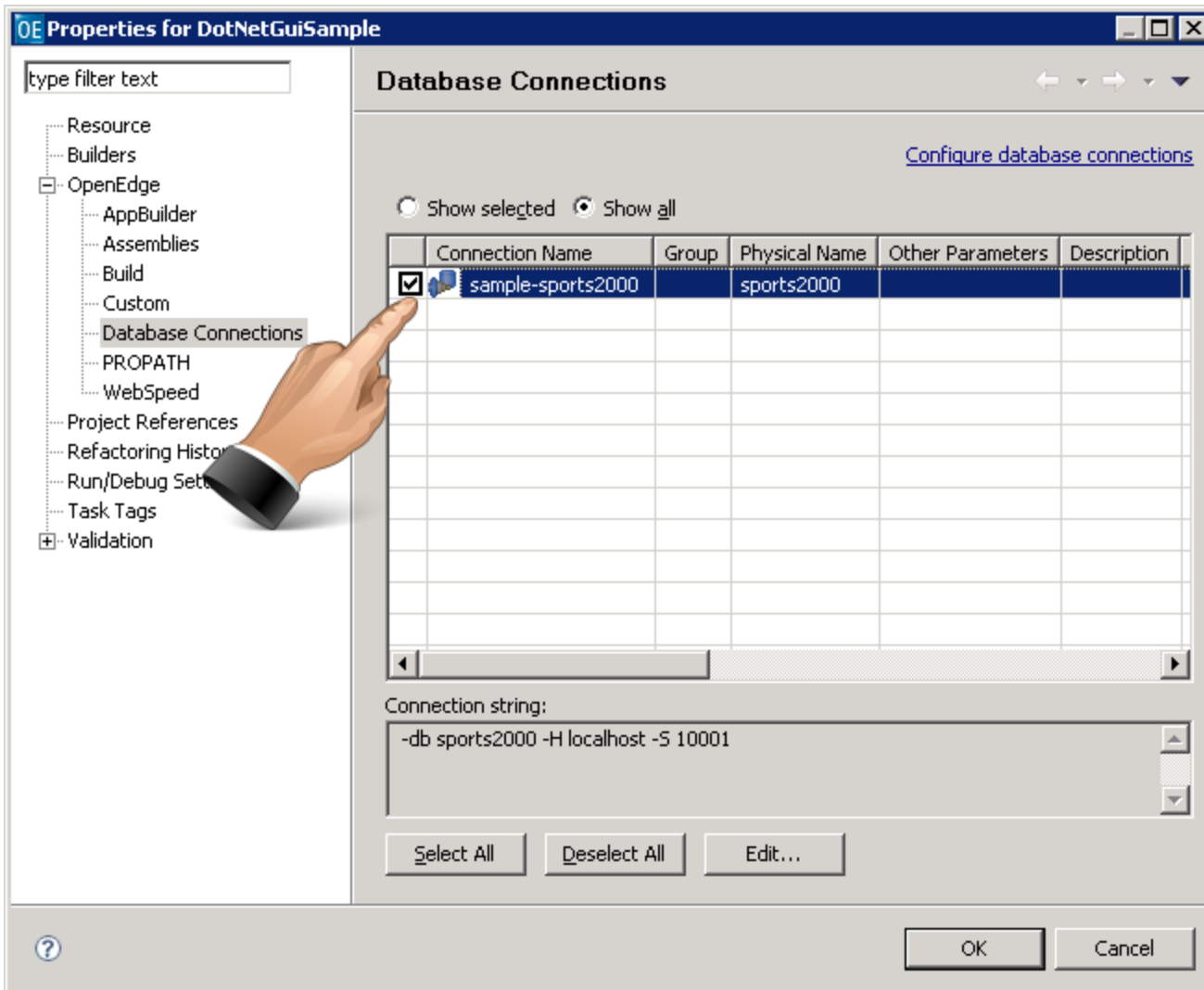


## Importing sample as a project

- Root directory:  
C:\work\DotNetGuiSample
- Hit „Finish“



# Ensure the new project has DB connection

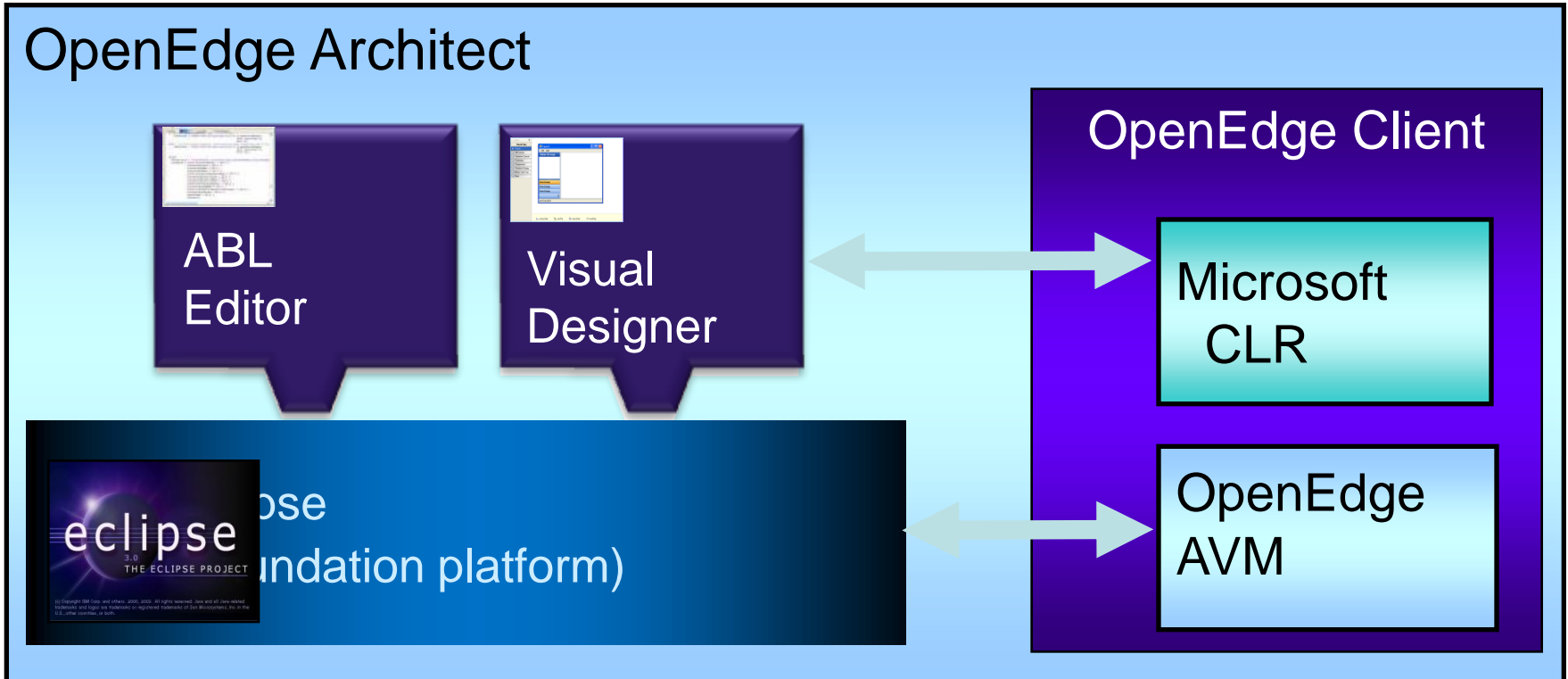


## GUI for .NET – A simple sample

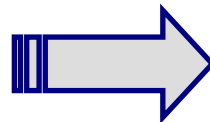
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## OpenEdit Architect Visual Designer

*Eclipse, OpenEdge and .NET CLR work together*



Visual Designer

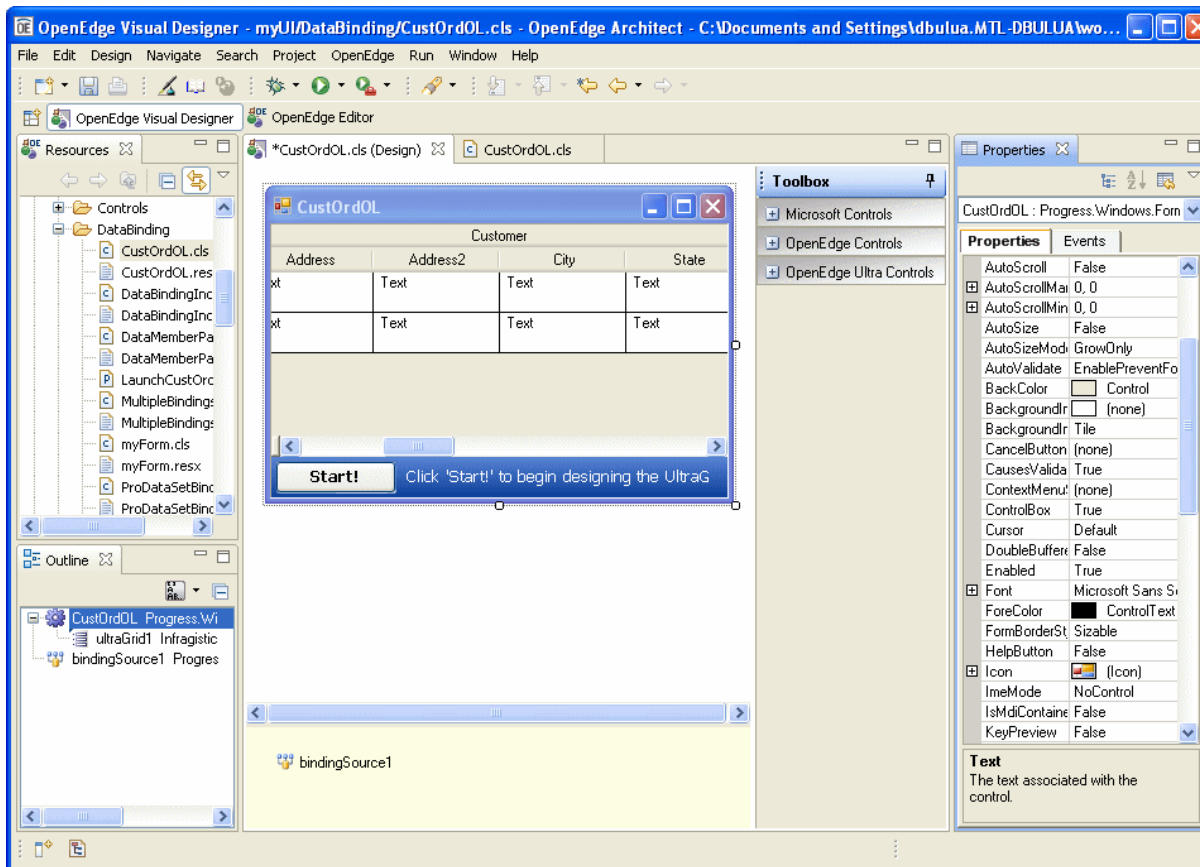


- WYSIWYG designer
- ABL Code generation
- Event subscriptions & handler methods
- Properties view

# OpenEdit Architect Visual Designer

*Built as an Eclipse plug-in for OpenEdge Architect*

- WYSIWYG Form creation and editing

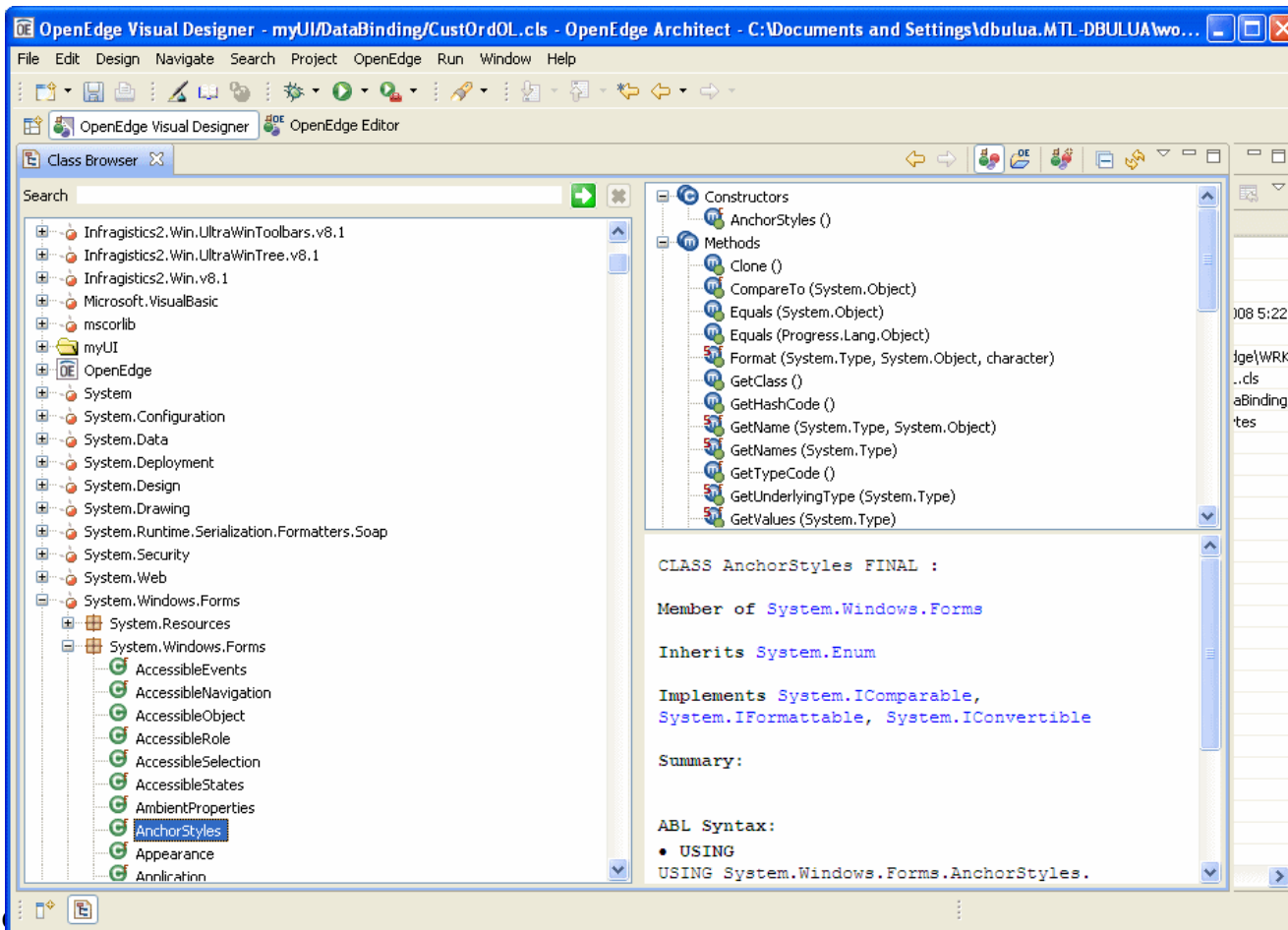


- Define Form
- Add .NET controls
- Set properties
- Define data binding objects
- Add event subscriptions

# OpenEdit Architect Visual Designer

*Class browser for inspecting .NET classes*

## ■ Class Browser



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# Opening the Sample Screen

- Locate  
Consultingwerk\Samples\CustomerMaintenance  
Form.cls and open it

## Switching btw. Source code and Design

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Undo	Ctrl+Z
Revert File	
Save	Ctrl+S
<b>View Design</b>	<b>Shift+F9</b>
Show In	Alt+Shift+W ▶
Quick Outline	Ctrl+O
Cut	Ctrl+X
Copy	Ctrl+C
Paste	Ctrl+V
Shift Right	
Shift Left	
Source	▶
Check Syntax	Ctrl+Shift+C
Compile	
Keyword Help	Shift+F2
Toggle Breakpoint	

Save	Ctrl+S
Close Visual Designer	Ctrl+F4
<b>View Source</b>	<b>F9</b>
Cut	Ctrl+X
Copy	Ctrl+C
Paste	Ctrl+V
Delete	Del
Select ultraTabControl1	
Select splitContainer1.Panel2	
Select splitContainer1	
Select CustomerMaintenanceForm_Fill_Panel	
Select CustomerMaintenanceForm	
Design	
Lock Controls	
Reload Design Surface	

## GUI for .NET – A simple sample

- Introduction
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- **Data Binding in GUI for .NET**

# Data Binding in GUI for .NET

- **DataSource**
  - Object that holds or contains the data
  - ABL: Buffer, Query or ProDataset
  
- **DataBinding**
  - Integration between UI components (controls) and the data sources
  - e.g. Establishes the connection between ABL data source and the .NET UI component

# Data Binding in GUI for .NET

*Data binding in .NET (not using OpenEdge GUI for .NET)*

- .NET **DataSource** and **DataBindings** properties
  - Used to associate a data source with a control
- .NET class that handles data binding
  - **System.Windows.Forms.BindingSource**
- Compliance with a binding interface allows binding to .NET controls
  - e.g. **IList** or **IListSource**

# ProBindingSource

- **Progress.Data.BindingSource**
  - BindingSource object
- Acts as a **data source** for UI controls
  - Reading, adding, updating
- Includes a **currency manager**
  - Controls cursor position

Progress.Data.BindingSource

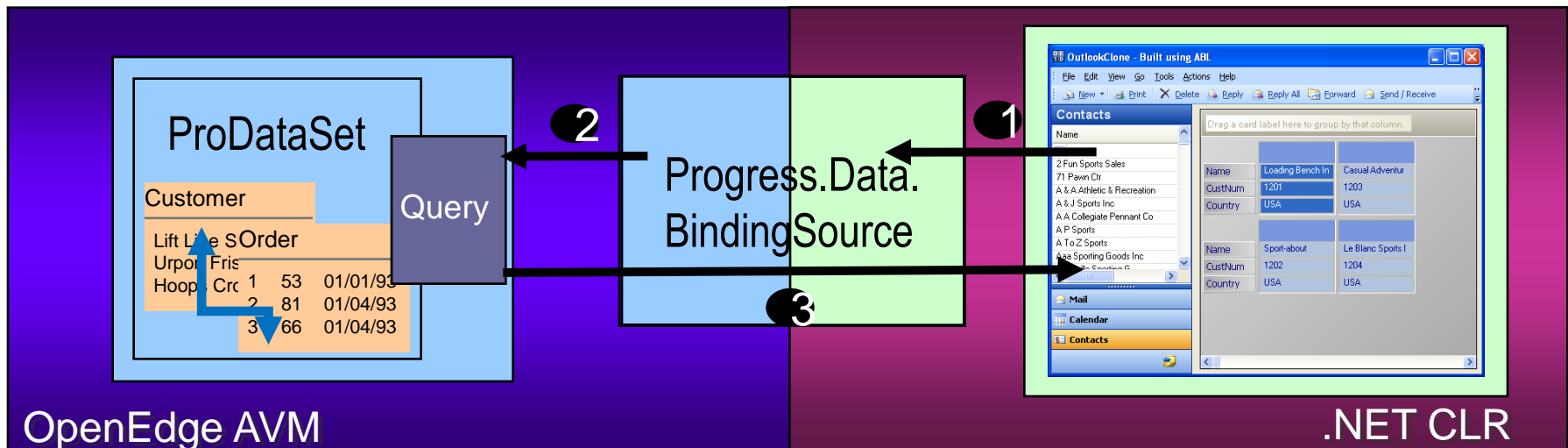
# ProBindingSource

*Three objects that can act as a data source*

- **Queries**
  - Static, dynamic, joined
  - Database table or temp-table
  - Also can be a query that is part of a ProDataSet
- **Buffers**
  - Single record
- **ProDataSets**
  - Hierarchal view of parent and child records
  - Single parent table only

# Progress.Data.BindingSource

- Provides data for .NET UI Controls
  - **How:** Provides required APIs to .NET Controls
  - **Why:** OpenEdge data provided as .NET needs
  - **What:** Any ABL Query, Buffer or ProDataSet™



# Progress.Data.BindingSource

- Brings ABL data-centric behavior to .NET
  - Automatic data synchronization
  - Automatic updating
  - Automatic batching
  - Automatic currency
- Properties
  - Updating: `AllowEdit`, `AllowNew`, `AllowRemove`
  - Current row state: `NewRow`, `RowModified`
  - Typed screen value: `InputValue`, `ChildInputValue`
  - General Information: `Position`, `Count`

## Demo / Tasks

- Exploring the sample
  - Structure of the Form (Outline View)
  - BindingSource Designer
  - DataBinding properties of TextBox Controls
- Exploring the code
  - Constructor
  - EnableControls method
  - ultraToolbarsManager1\_ToolClickHandler
  - ...

## Demo

- If time allows...
- Completion of sample with Order Grid on second Tab

# Questions



**Thank you**

