Using Dynamic Data Classes

PxPlus 2017 (v14) & PxPlus 2018 (v15)
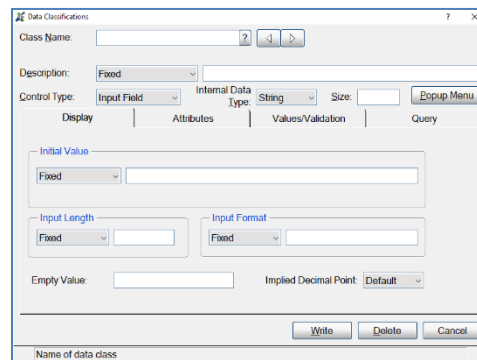
Agenda

Dynamic Data Classes

- Overview of 2018 Enhancements
- Data Class Definitions
- Data Dictionary
- NOMADS Designer
  - Usability Improvements
  - Radio Button Data Classes
  - Static Control Properties
  - Dynamic Control Properties
  - Property Sheets

Data Class Overview

- Used to implement standardized definitions for commonly used elements

- Provide consistency to Data Dictionary and panel design

- Various properties for the controls are defined and the Data Class then acts as a 'template' when defining controls in NOMADS or the Data Dictionary

- Not New

Data Class Controls

- Available for **input** type controls

Balance: $1,170.13

Multi Line

Txid	Description
CSTMNT	Client file maintenance
DPTMNT	Department file maintenance
GENRPT	Generate Report
INVPRT	Print Invoice
MNUMNT	Menu tree maintenance
ORDENT	Order Entry
PRDMNT	Product file maintancne

List Box

☑ Show unpaid only

Check Box

Send Output To

◉ Viewer   ○ PDF File

Radio Button

Default Payment Method: Cheque ⌄

Drop Box

Issue

- Historically, assigning a Data Class when creating a control in NOMADS would copy over Data Class values into the control.

- Once the control was created – the Data Class used to create the control no longer served any purpose

What if the Data Class changes?

PxPlus 2018 Enhancements

1. Introduced the concept of **Dynamic** Data Class properties

2. Added more properties to Data Class Definitions

3. Updated Data Dictionary Maintenance to support these changes

4. Usability enhancements in NOMADS designers

DireXions 2018

Dynamic Data Class Properties

- Select Data Class properties can now be designated as **Dynamic** on NOMADS controls

- Dynamic properties will be evaluated at run-time (NOMADS or *i*Nomads) - taking their values from what is defined in the class at that time

DATA CLASS DEFINITIONS

Data Class Definitions

- Re-organized panel control order to move **Control Type** after **Class Name**

- Renamed **Input Field** to **Multi Line**

- Added **Dynamic** checkbox
    - Defaults to checked for new Data Classes

- Indicated which Data Class properties can be made dynamic with *****

- Added **Visual Class**, *i***Nomads Class**, **Attributes** and other select properties

- Added message box warning when deleting a Data Class

DireXions 2018

Multi Line Data Classes

Data Class Definition

Properties with *asterisk* can be dynamic

Tab	New for PxPlus 2018
Display	Separator *Visual Class *iNomads Class
Attributes	9 new Attributes Scrollbars Object Persistence Alt-Key
User Aids (new)	*Help Reference *Floating Tip *Message Bar
Validation	n/a
Query	n/a

Other Controls

- Similar changes for **Drop Boxes**, **List Boxes** and **Check Boxes**

  - For Check Boxes - added definitions of Bitmaps for up to 3 states

- **Radio Buttons**

  - Added Control Height

  - Added User Aids tab (Help, Tip, Message Bar)

  - Addressed issues with duplicate/missing Translation Values

DATA DICTIONARY

Data Dictionary

- Data Classes can be assigned when defining an Element in the Data Dictionary

- Element is populated from information in the Data Class
  - Display Tab - Short Description, Length, Default Value, Validation, Print Format and User Defined Tag Field
  - User Aids
  - Query Tab

Dictionary Enhancements

- Edited Labels to correspond with labels in NOMADS designer

- Help Reference on User Aids tab is now also copied from the Data Class

- Added ability to have Non-Query logic come over from the Data Class

- Added a **Reapply Data Class** button to facilitate applying changes when Data Classes are updated
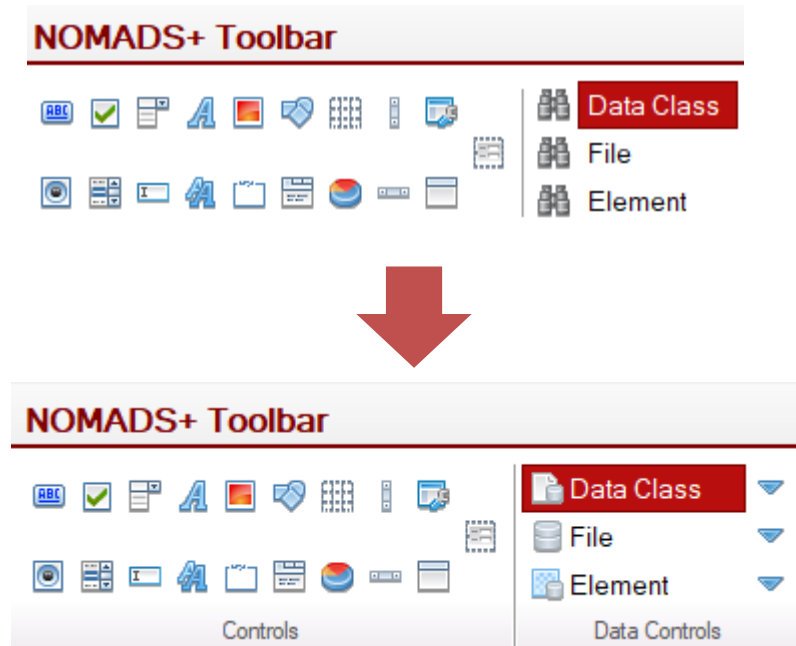
DireXions 2018

NOMADS DESIGNER

Data Classes in NOMADS

- Data Classes are used in the NOMADS designer in one of 3 ways:

  1. Assigned after drawing a control

  2. Creating a control directly using a Data Class

  3. Creating a control using a Data Dictionary Element which has a Data Class assigned

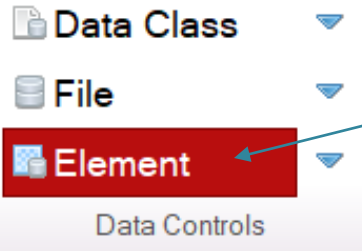# NOMADS Control Toolbars

Folder Style/ Property Sheets
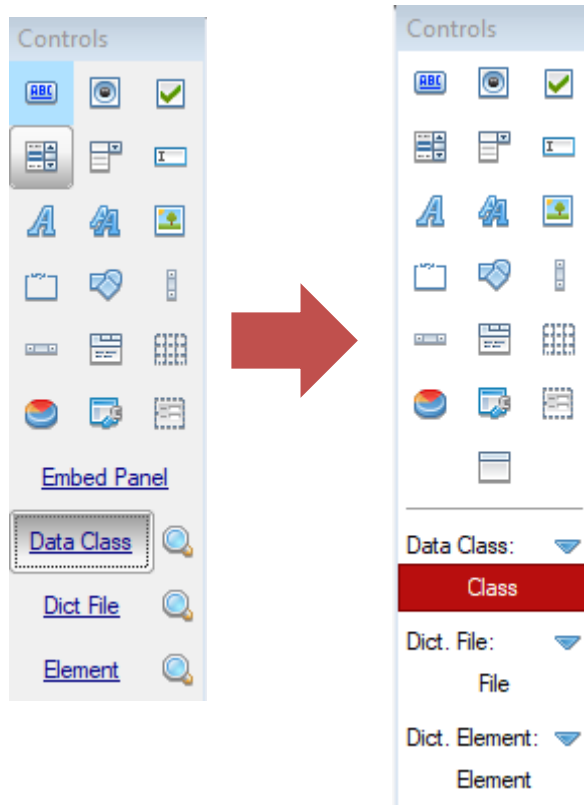
NOMADS+

Data Controls Usability

Added icons to radio buttons

Redesigned query buttons

Split NOMADS+ toolbar into **Controls, Data Controls, Update, Maintain** and **Edit** sections

Pressing radio button will launch the query if no prior selection has been made

Data Class ▽

File ▽

Element ▽

Data Controls

Table Name	Element Name	Description	Data Class
FW_CodeTables	codeValue	Value	
FW_CodeTables	codeDesc	Description	
FW_CodeTables	lastChangedDate	Date Last Changed	*DATE
FW_CodeTables	lastChangedUID	Last Changed User	
FW_ClassSeg	clsName	Class Name	
FW_ClassSeg	clsSegNo	Segment #	

New query for use with the Element radio button if no File has been selected

Made use of drop queries (NOMADS+ only)

DireXions 2018

Radio Button Data Classes

- Different than other Data Classes because multiple controls are created

- Cannot be **Dynamic**
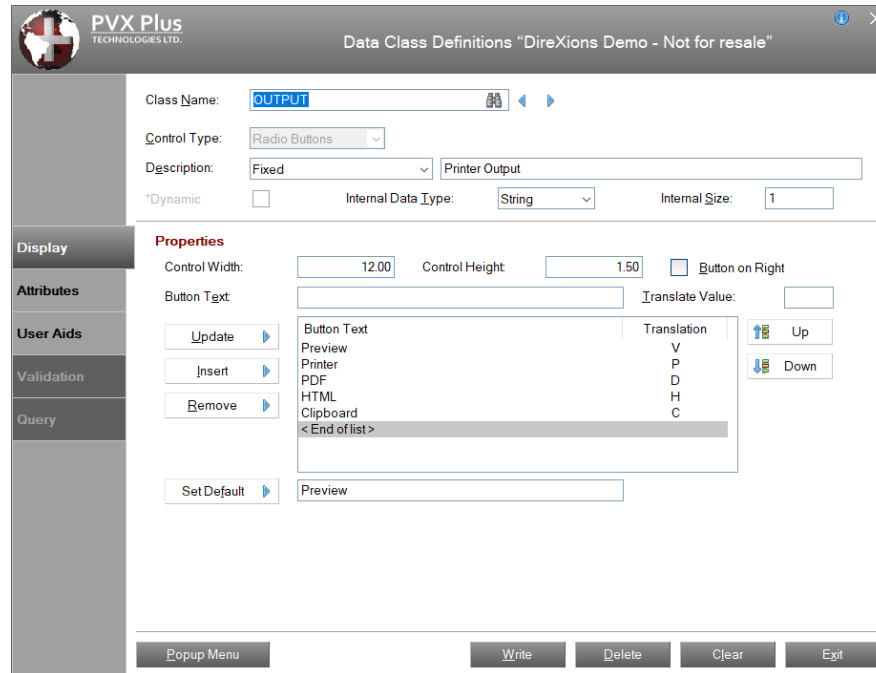
Radio Button Data Classes

- Only available when drawing a Data Class Data Control

- Select a Radio Button Data Class and draw a control in the designer

- Orientation of the control size drawn will determine radio button locations
  - Portrait will result in vertically stacked buttons
  - Landscape will result in side-by-side buttons

'Dynamic' vs. 'Static'

- A Data Class can now be designated as a **Dynamic** Data Class
    - This distinction is used *ONLY* when first applying the data class in the NOMADS designer
    - Static class will set static values from the Data Class
    - Dynamic classes will initially make all allowable properties dynamic

- Once a control is created - individual properties can be made dynamic or static regardless of how the Data Class was originally designated

Note:

NOMADS Reapply Data Class
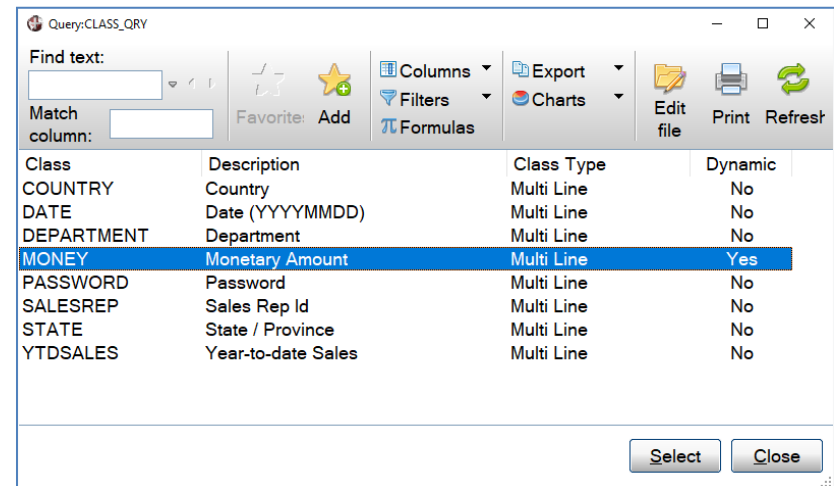
- Similar to the **Reapply Data Class** button in the Data Dictionary
- Available for:
    - Multi-lines
    - Check Boxes
    - Drop Boxes
    - List Boxes

- Current values from the Data Class (either static or dynamic) will be copied over existing values of the control
- Control's size (height and width) will **not** be changed

Query Enhancements

- Data Class Query is now filtered to only show Data Classes that match the control type
    - Tristate Check Boxes with Check Boxes
    - Variable Drop Boxes with Drop Boxes
    - Variable List boxes with List Boxes

- New Column to indicate if the Data Class is 'Dynamic'

DireXions 2018

Static Control Properties

- Dynamic checkbox in Data Class Definitions has not been checked

- Behavior when assigning a Data Class will remain the same as in previous versions

- Static values are written into the control from the current values in the Data Class

- Subsequent changes to the Data Class will not affect the values associated with the control

Static Data Class Defaults

- ## Data Class Control:
  - All properties are copied from the Data Class Definition

- ## Data Dictionary Element:
  - Non-Data Dictionary related properties will be copied from the Class definition
  - Data Dictionary properties will be copied from the Data Dictionary definition
  - In case of discrepancy between the Data Class and the Data Dictionary – the Data Dictionary wins

Dynamic Data Properties

- Expressions are used to make all allowable control properties dynamic

> `%nomads'class'text$`

- Values will be read from the settings associated with the Data Class at run time

- Changes made to the Data Class will automatically be applied to the control

- How is this accomplished?

NOMADS Data Class Object

*obj/class.pvc

- Mechanism for Dynamic Data Class properties

- Instantiated automatically within the NOMADS object **(*obj/nomads.pvc**) and can therefore be referenced as **%nomads'class**

- Setting the ID$ property to the current Data Class gives access to all other dynamic property values
  - NOMADS designer
  - Run-time in NOMADS
  - *i*Nomads

Dynamic Control Properties

- Dynamic options are not available if no Data Class has been assigned

Dynamic Data Class Defaults

- Data Class Control:
  - All properties are copied from the Data Class Definition – some as dynamic
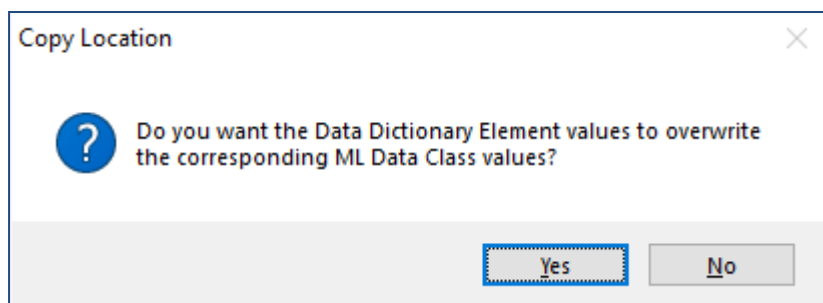
Copy Location

? Do you want the Data Dictionary Element values to overwrite the corresponding ML Data Class values?

Yes   No

- Data Dictionary Element:
  - Non-Data Dictionary related properties will be copied from the Class definition (may be dynamic)
  - User is prompted to determine if Data Dictionary properties will be copied from the Data Dictionary definition (static) or the Data Class Definition (may be dynamic)

NOMADS – PROPERTY SHEETS

Property Sheets Designer

- Similar to NOMADS+ and Folder Style

- Assign Data Class dialog

Property Sheets Designer

- ## Dynamic Check Box

- ## Dynamic Drop Box

Review

- Existing Data Class functionality has been reviewed and standardized

- Data Class Definitions have been expanded to include more properties

- **Re-apply Data Class** buttons created to simplify applying the new changes to existing controls or Data Dictionary Elements

- Select properties of controls with Data Classes may now be made **Dynamic** on a property by property basis

- Dynamic properties will be evaluated from the current Data Class settings at run time

Additional Resources

The help link(s) below refer to the current on-line help pages. The functionality may have been further updated since the PxPlus 2018 (version 15) release

- [Data Classes](#)
- [Dynamic Control Properties](#)
- [Data Classes – FAQs](#)
- [Data Dictionary Maintenance](#)
  - [Element Description](#)
- [NOMADS Controls Toolbar](#)