

ADF Patterns for Forms Modernization

Rob Nocera, NEOS/Vgo Software

- ❑ Introduction
- ❑ Need for Modernization
- ❑ Nature of the Changes
- ❑ Mapping Forms to ADF
- ❑ Screen Flow Changes
- ❑ UI Component Changes
- ❑ Code Changes
- ❑ Summary
- ❑ Questions



Robert Nocera

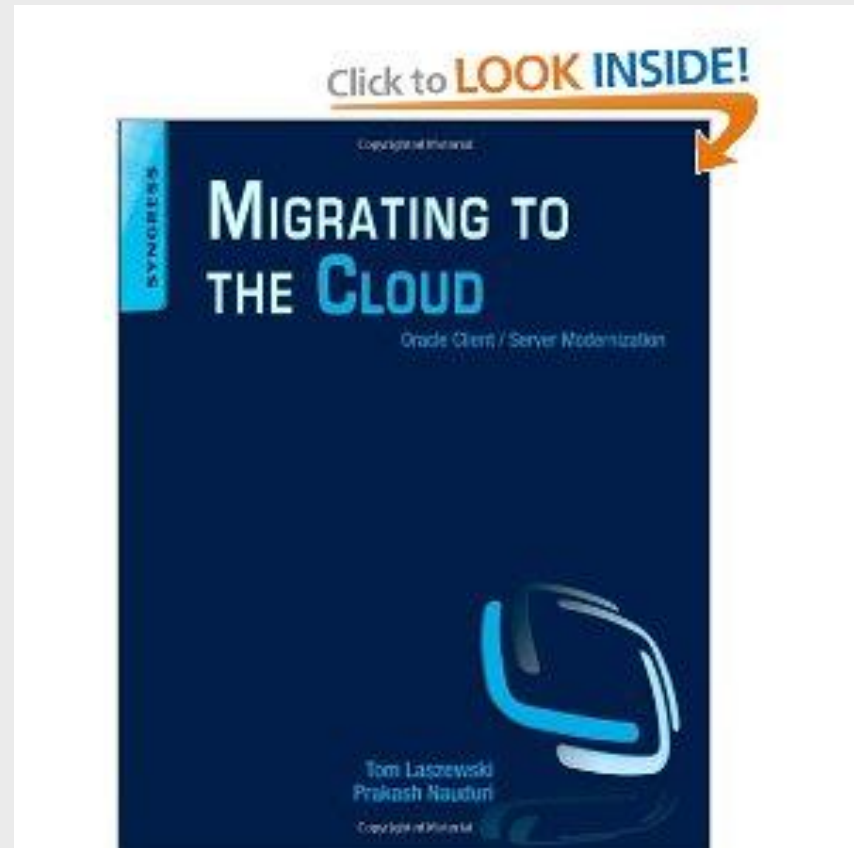
- ❑ CTO – NEOS / Vgo Software
- ❑ Started as a OO/Java Developer
- ❑ Founded NEOS / Vgo Software
- ❑ Many Oracle Forms Modernizations
 - Upgrades
 - Conversions to Java
 - Conversions to ADF




Migrating to the Cloud Book

[NEOS]

- ❑ Book Giveaway
- ❑ Authors:
 - Tom Laszewski
 - Prakash Nauduri
 - Vgo Contributed Chapter

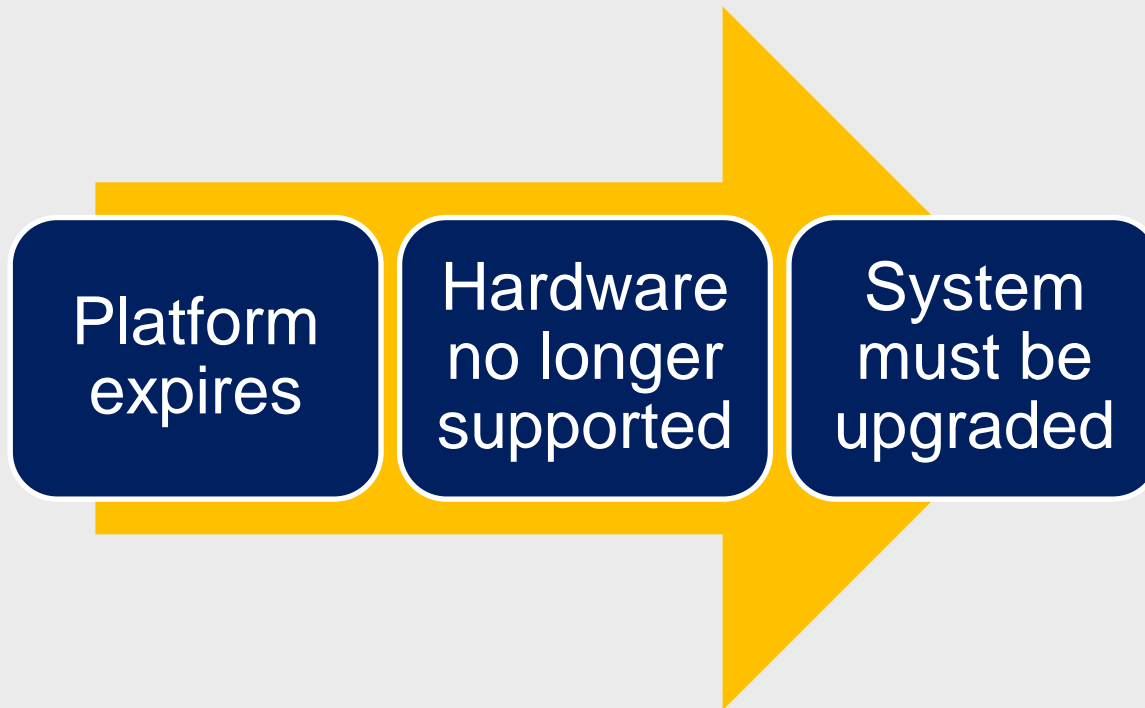


Jet Lag May Cause Stupidity

By Laura Sanders, Science News  November 16, 2010 | 8:03 pm | Categories: Brains and Behavior



- ❑ Aging Oracle Forms applications
 - “if it ain’t broke, don’t fix it”

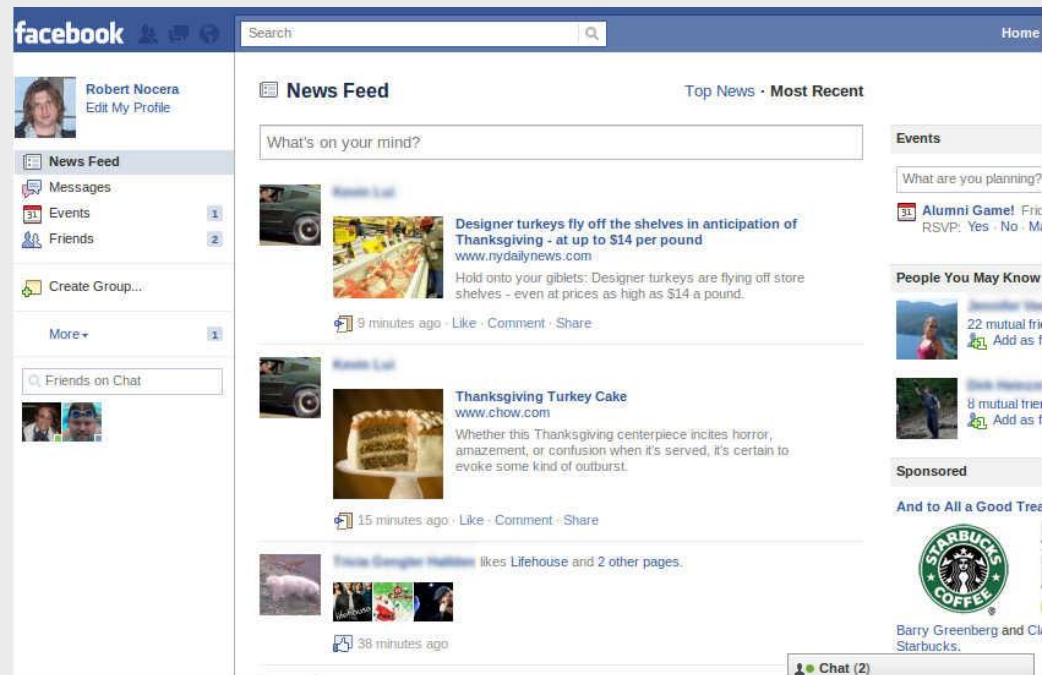


User Acceptance

[NEOS]

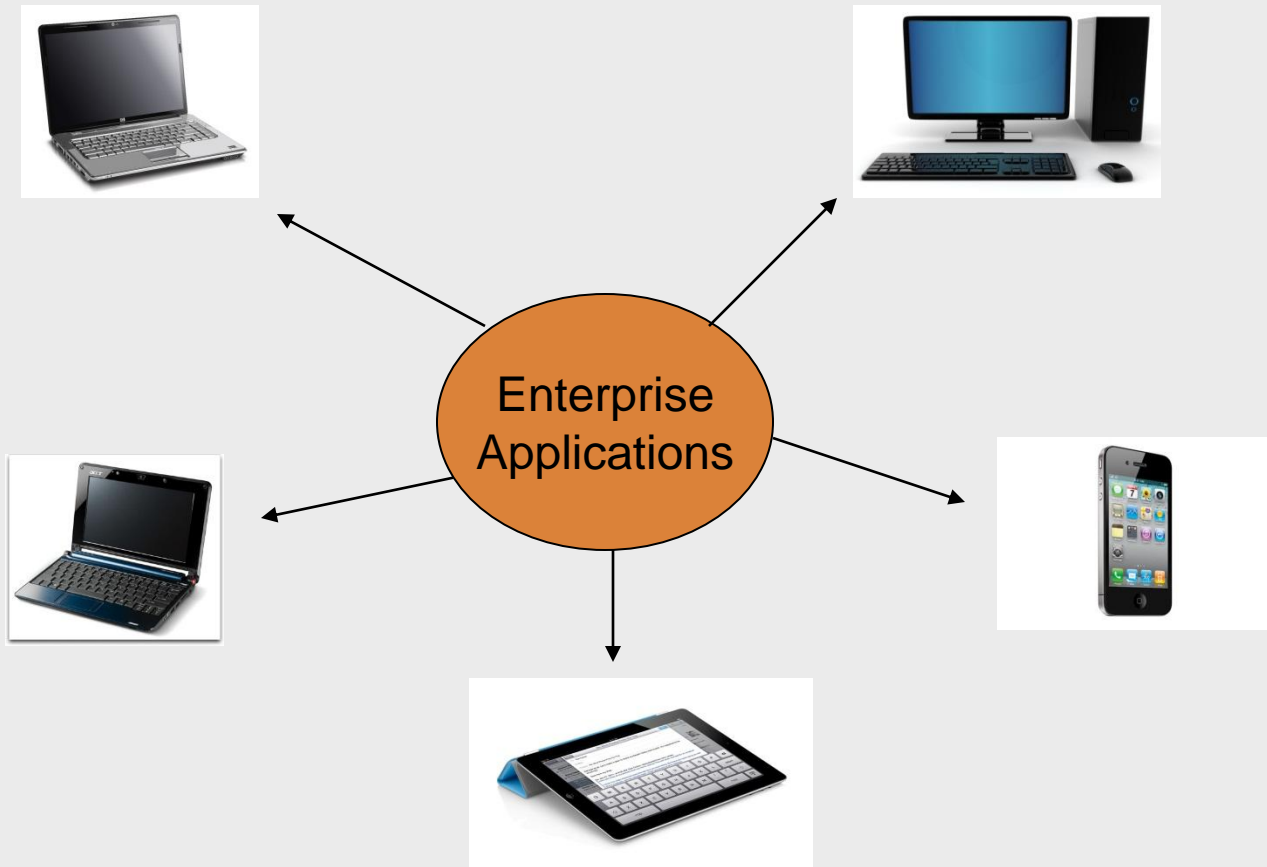
- ❑ User acceptance of UI changes
- ❑ Familiarity with sites like Facebook, Ebay, Yahoo, and Orbitz

The screenshot shows the Orbitz website's flight search interface. At the top, there's a navigation bar with 'Quick Search', 'Vacation Packages', 'Hotels', 'Flights', and 'Cars & R'. Below this, there are radio buttons for 'Flight', 'Hotel', 'Car', 'Activities', and 'Cruises'. To the right, there's a 'HOTEL PRICE ASSURANCE' badge. Under the 'Flight' section, there are radio buttons for 'Round-trip', 'One-way', and 'Multi-city'. Below these, there are input fields for 'From City name or airport' (with 'bdl' entered) and 'To City name or airport' (with 'bhx' entered). There are also input fields for 'Leave' (with '11/27/10' entered) and 'Return' (with '12/02/10' entered). Below these, there's a 'Travelers' section with a dropdown for 'Adult (18-64)' and a value of '1'. At the bottom, there's a 'Flight preference' section with a checkbox for 'I prefer non-stop flights'. There are two buttons: 'Find Flights' and 'Find Flight + Hotel'.



The Web and Beyond

[NEOS]



The Web and Beyond

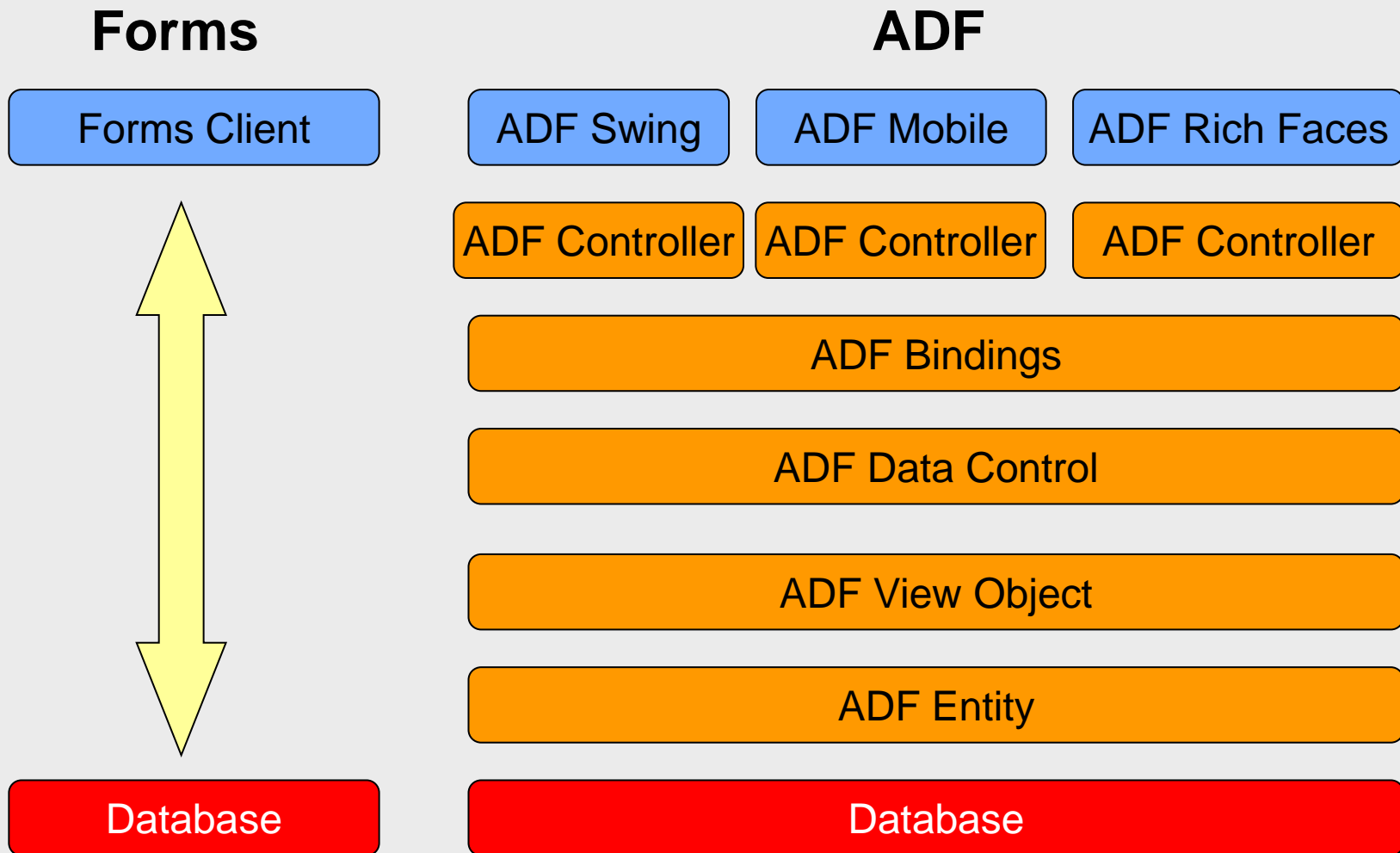
- ❑ Don't be restricted by the current process
- ❑ Think “out of the box”



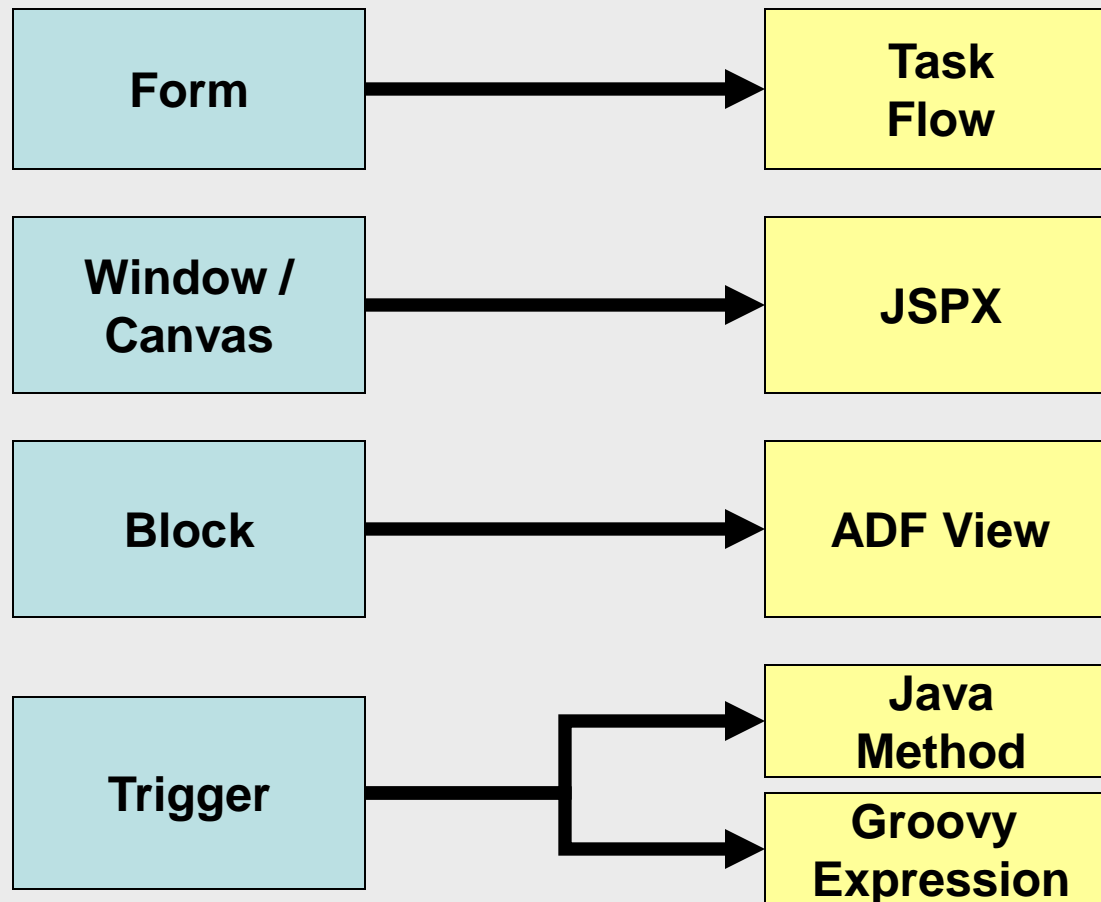
- ❑ Foundation change from Forms to a modern java-oriented ADF 11g framework
- ❑ UI Changes just the “tip of the iceberg”



Architecture Changes

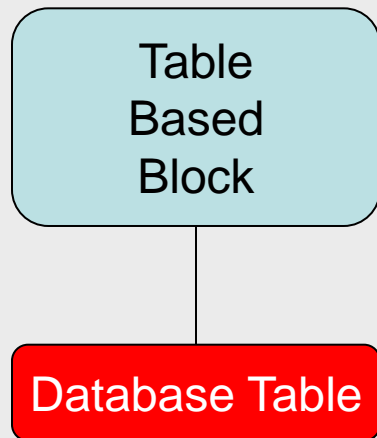


Mapping Forms to ADF

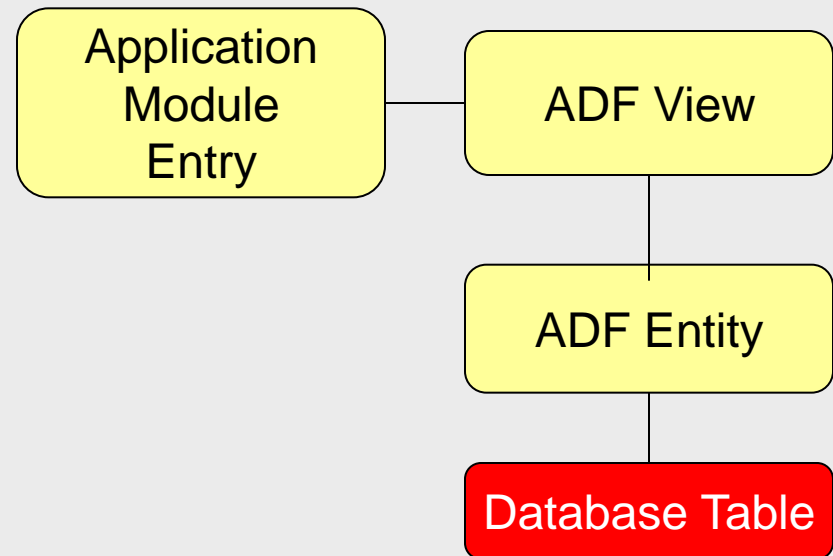


Mapping Forms to ADF

Forms



ADF



Mapping Forms to ADF

Forms

Control
Block

ADF

JSPX

Binding

Application Module

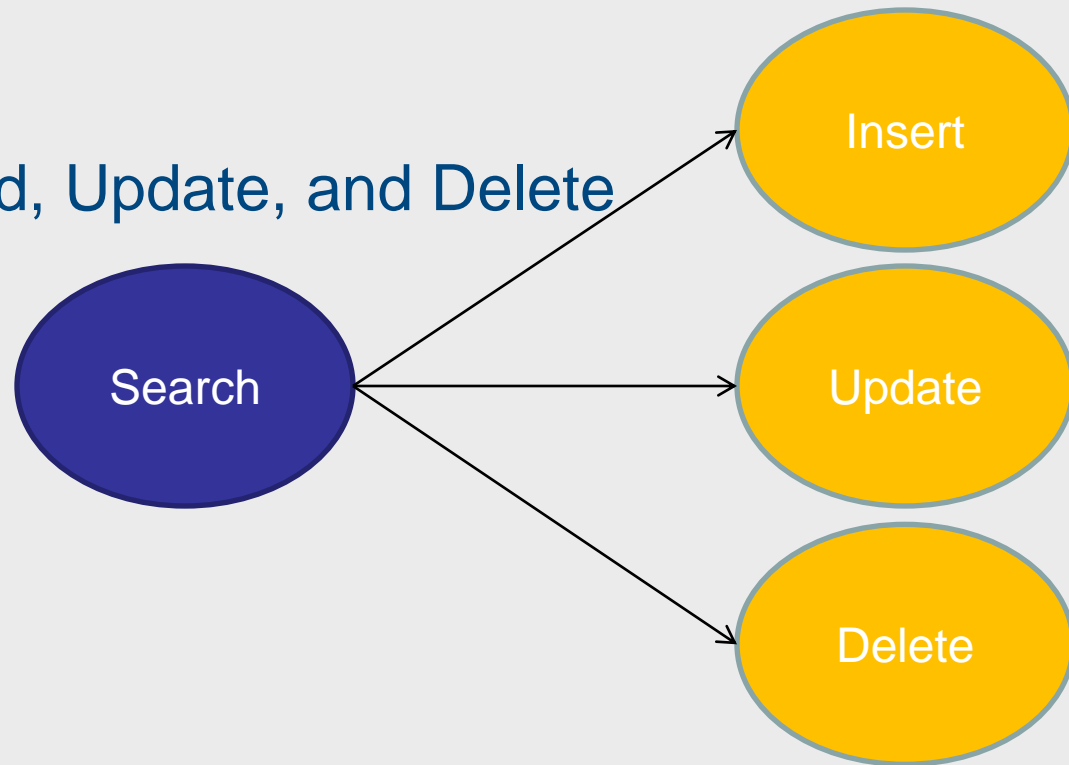
ADF View (Transient)

Control
Block

JSPX

Backing Bean
/ Managed Bean

- ❑ Data Manipulation
- ❑ Search Data
- ❑ CRUD
 - Create, Read, Update, and Delete




Forms Table-based Search/Edit



Enter Query Execute Query Cancel Query Clear All Add Save Prev Next Exit

ORACLE

TM_XREF

 Management System

TM CROSS REFERENCE

TM NUMBER	TM NO	TM NAME	TM DESCRIPTION	COUNTRY	CAT	TM CODE	CTL
9-1425-602-12	12	SUG	SOFTWARE USER GUIDE	US	3		
9-1425-2602-12-1	12-1	MSE SUG	SOFTWARE USER GUIDE MSE	US	3		
9-1425-602-12-1	12-1	SUG	SOFTWARE USER GUIDE	US	3	N13-1	
9-1425-2602-12-2	12-2	MSE SUG	SOFTWARE USER GUIDE MSE	US	3		
9-1425-602-12-2	12-2	SUG	SOFTWARE USER GUIDE	US	3	N13-2	
9-1425-602-12-3	12-3	SUG	SOFTWARE USER GUIDE	US	3	N13-3	
9-1425-2602-12-4	12-4	MSE SUG	SOFTWARE USER GUIDE MSE	US	3		
9-1425-602-12-4	12-4	SUG	SOFTWARE USER GUIDE	US	3	N13-4	
9-1425-602-12-5	12-5	SUG	SOFTWARE USER GUIDE	US	3	N13-5	
9-1425-602-34	34	SUG	SOFTWARE USER GUIDE	US	7	I7	
9-1425-602-34-1	34-1	SUG	SOFTWARE USER GUIDE	US	7	I7-1	
9-1425-2602-34-2	34-2	MSE SUG	SOFTWARE USER GUIDE MSE	US	7		
9-1425-602-34-2	34-2	SUG	SOFTWARE USER GUIDE	US	7	I7-2	

Main Menu

Enter Query


Execute Query

CLEAR CTL

ADF Search/Edit

[NEOS]

1



AddDeleteSaveCancel

Search

Advanced

Match ☒ All ☐ Any

TM NAME

TM NO

TM NUMBER

TM DESCRIPTION

CAT

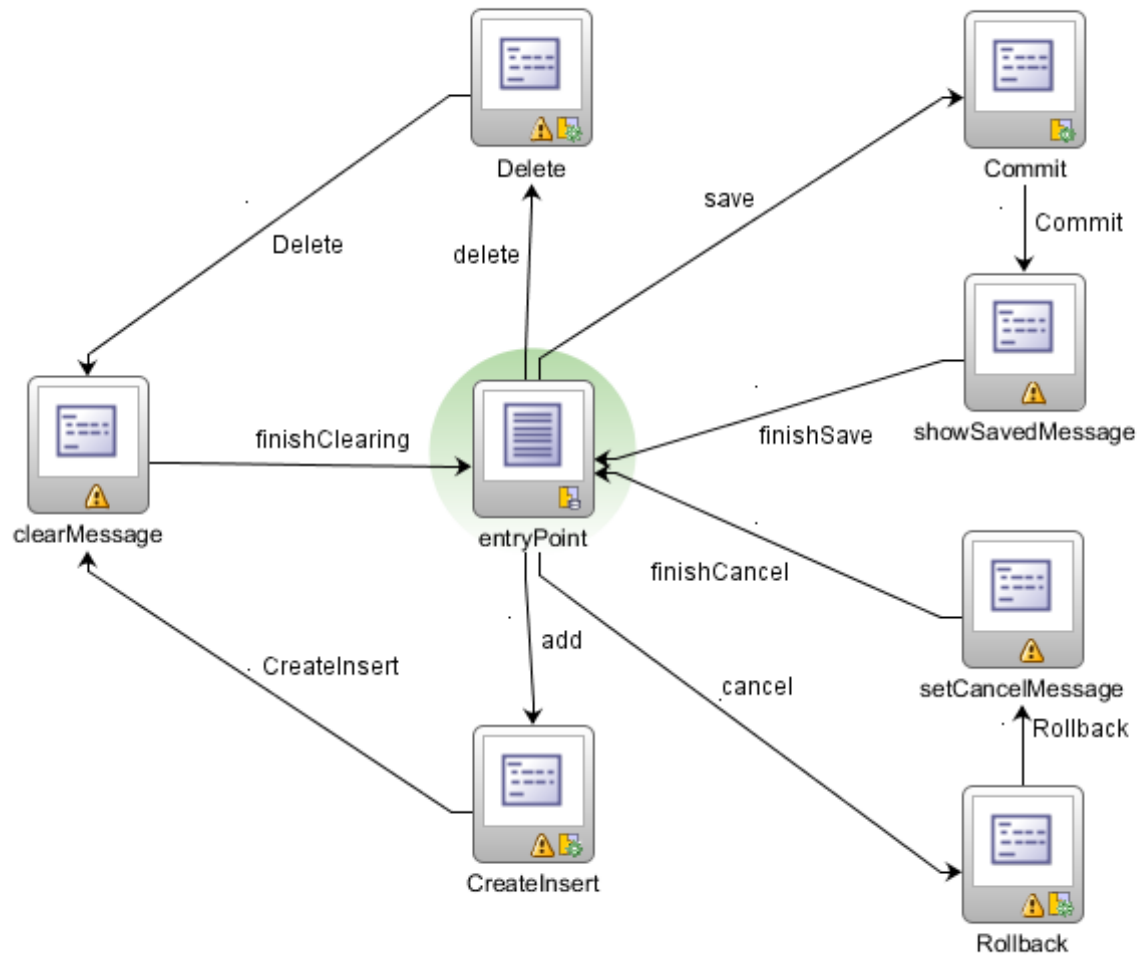
TM CODE

CTL

COUNTRY

SearchReset

TM NUMBER	TM NO	TM NAME	TM DESCRIPTION	COUNTRY	CAT	TM CODE	CTL	PRC
9-1425-2602-12-1	12-1	MSE SUG	SOFTWARE USER G	UNITED STATE	3			Pal
9-1425-2602-12-2	12-2	MSE SUG	SOFTWARE USER G	UNITED STATE	3			Pal
9-1425-2602-12-4	12-4	MSE SUG	SOFTWARE USER G	UNITED STATE	3			Pal
9-1425-2602-34-2	34-2	MSE SUG	SOFTWARE USER G	UNITED STATE	7			Pal
9-1425-602-12	12	SUG	SOFTWARE USER G	UNITED STATE	3			Pal
9-1425-602-12-1	12-1	SUG	SOFTWARE USER G	UNITED STATE	3	N13-1		Pal
9-1425-602-12-2	12-2	SUG	SOFTWARE USER G	UNITED STATE	3	N13-2		Pal
9-1425-602-12-3	12-3	SUG	SOFTWARE USER G	UNITED STATE	3	N13-3		Pal
9-1425-602-12-4	12-4	SUG	SOFTWARE USER G	UNITED STATE	3	N13-4		Pal
9-1425-602-12-5	12-5	SUG	SOFTWARE USER G	UNITED STATE	3	N13-5		Pal
9-1425-602-34	34	SUG	SOFTWARE USER G	UNITED STATE	7	I7		Pal
9-1425-602-34-1	34-1	SUG	SOFTWARE USER G	UNITED STATE	7	I7-1		Pal
9-1425-602-34-2	34-2	SUG	SOFTWARE USER G	UNITED STATE	7	I7-2		Pal



Forms Search-Edit

[NEOS]



Management System

PUBLICATIONS INPUT SCREEN

Page 1 of 1

Main Menu

Enter Query

Execute Query

Bulk Copy

<input type="text"/>	Class <input type="text"/>	Title <input type="text"/>
Type <input type="text"/>	Category <input type="text"/>	Event <input type="text"/>
Date Rcvd C27 <input type="text"/>	Date Rcvd C27 <input type="text"/>	Date <input type="text"/>
<input type="text"/>	Event <input type="text"/>	El <input type="text"/>
Description <input type="text"/>		PDB <input type="text"/>
Remarks <input type="text"/>		Key <input type="text"/>
Pubs C27 Rcvd <input type="text"/>		Pubs C29 Rcvd <input type="text"/>
Status <input type="checkbox"/>		Control Field <input type="checkbox"/>

ESTIMATE C27

Cat	TM Num	TM Name	New	Chg	Bkup	Approval	Year/Rate	Schedule	Cnt
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

ACTUAL C29

TM No	TM Name	Chg No	New&Change	Memo No	Date Del	Val/Ver
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>



ADF Search Screen

ADF Input

Search Edit

Search Advanced

Match: ☒ All ☐ Any

Class

Title

Date Rcvd C27

Date Comp C27

Event

Event

Date

Category

Search Reset

Class	Title	Type	Date Rcvd C27	Date Comp C27	Event	EventCode
No data to display.						

ADF Search and Edit

Input

Out Form

Save Cancel

Class 1

Type OTH

Date Rcvd C27 1/27/1995

Category

Date Comp C27

Event

Date 8/29/1995

EI	Effectivity
R3	880001
R5	870191

Description:

Remarks:

C27 Rcvd 1/27/1995

C29 Rcvd 10/25/1995

Events

Estimate C27

Add Delete Bulk Copy

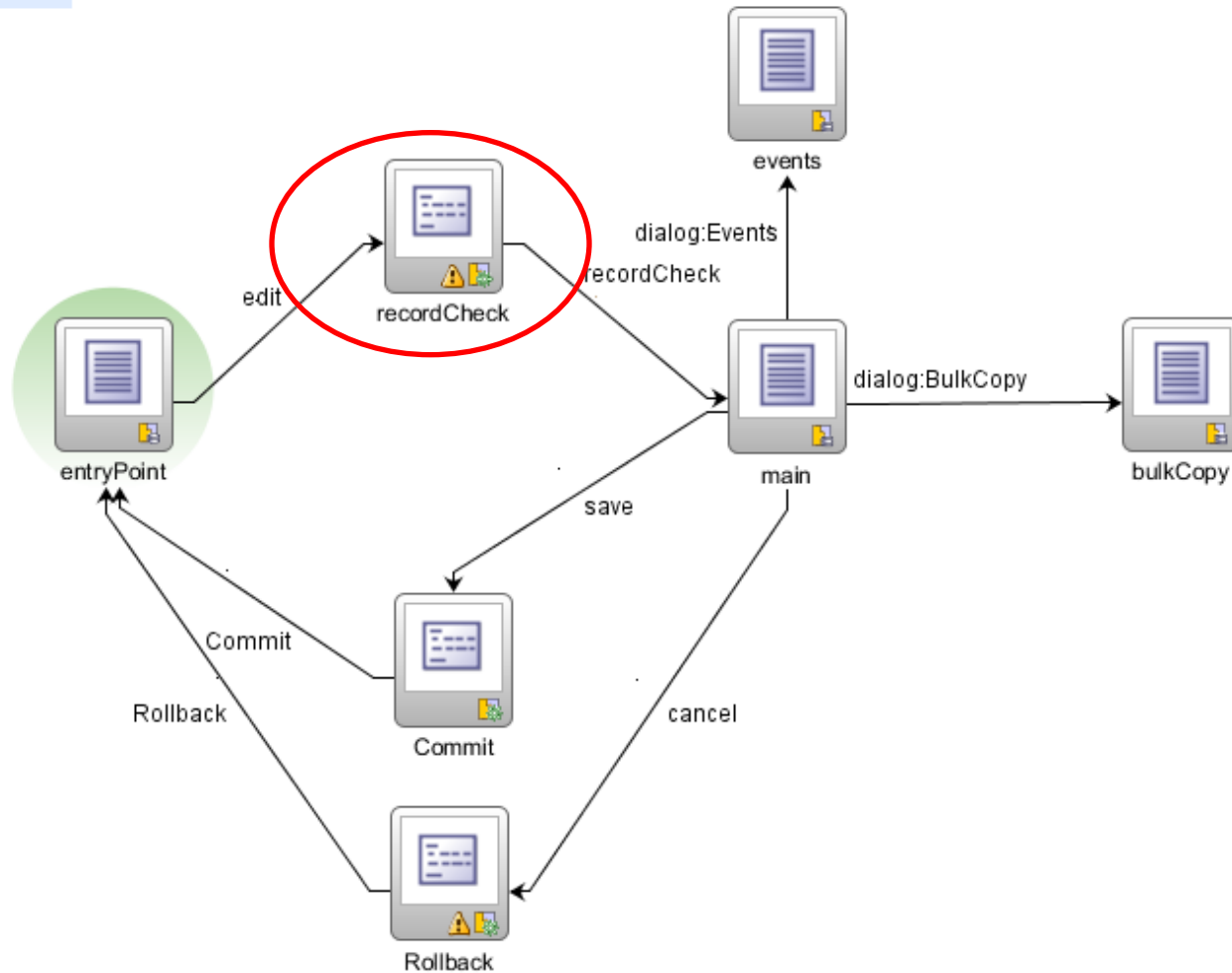
TM Num	TM Name	Cat	New	Chg	Bkup	Approval	Year/Rate
10-1		3	14	20	10		1994
20-2		3					2000
20-3		3					1999
24P-1		11	15	25	10		1994
24P-2		10	85	142	56		1994

Actual C29

TmNo	TmName	ChgNo	Total	HitListMemoNo	ToMicomDate	ValVer
10-1		RBBC00	0	TWB:00:040A		Y
10-1		OBSOLETE	0			N
20-2	3/C	RBBC00	0	IM:00:100A		Y
20-3	3/C	OBSOLETE	0			N

Search/Edit ADF Taskflow

Bounded Task Flow



- ❑ Insufficient screen space in Forms
 - Tabs solution
- ❑ Modern users expect scrolling
- ❑ Tabs can still be useful

Forms - Tabs

Action Edit Query Block Record Field Help Window

Forms 10.1 (Forms Runtime)

ORACLE

Management System

CHANGE CONTROL

MAIN Support Availability

Main Menu

Enter Query

Execute Query

Doc Number Class Type

Title

Program Driver Driver Date

Sweep/EI ☐ Date To CM IC

Draft Avail Comments

Configuration

Planned Customer Appr Log Impact ☐ Log Problem ☐

To Customer Status Log Book # RR

Customer Appr Status Complete ☐

Comments

Number Manager Sign Start Signoff

IE	Effectivity	P/S	HW Delivery	SW Delivery	Signoff
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Number

[NEOS]

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Use of Tabs in ADF

Management System

Impact

Impact Edit

Save Cancel

Number Class Title

72-10175B

Parts

Add Delete

Part Number						Signature	Sign Part Date
11	N	Y	N	N	✓		
11	N	Y	N	N	✓		
11	N	Y	N	N	✓	11	
11	N	Y	N	N	✓	11	
11	N	Y	N	N	✓	11	

5915014745720 Code PADD 11439882

Add Delete

3G	Y	Y
----	---	---

LOVs vs. Dropdowns

- ❑ Lists of Values
- ❑ Dropdown Lists
- ❑ Same LOV Functionality Available

ALL VALID CATEGORY CODES

Find %

CAT	TM NO	TM NAME
0	21886-2	PCOFT
0	21886-2.	PCOFT
0	23339	ISP
0	23463-1	MAINT. PLAN
0	23463-2	MAINT. PLAN
0	2A810903	PCOFT
0	2A810904	PCOFT
0	CSD	PCOFT CSD
0	MAD	MAD
0	MFP 1	MFP
0	MFP 2	MFP
10	24P	AMG H

Find OK Cancel

Search and Select: TM Num

Search

Match ☒ All ☐ Any

Cat

TmNo

TmType

Search Reset

Cat	TmNo	TmType
0	21886-2	PCOFT
0	21886-2.	PCOFT
0	23339	ISP
0	23463-1	MAINT. PLAN
0	23463-2	MAINT. PLAN
0	2A810903	PCOFT
0	2A810904	PCOFT
0	CSD	PCOFT CSD
0	MAD	MAD
0	MFP 1	MFP
0	MFP 2	MFP
10	24P	AMG H
10	24P	E/I/C C35 H
10	24P-2	CRG
10	24P-2	CRG C3
10	24P-2	CRG K
10	24P-2	CRG D

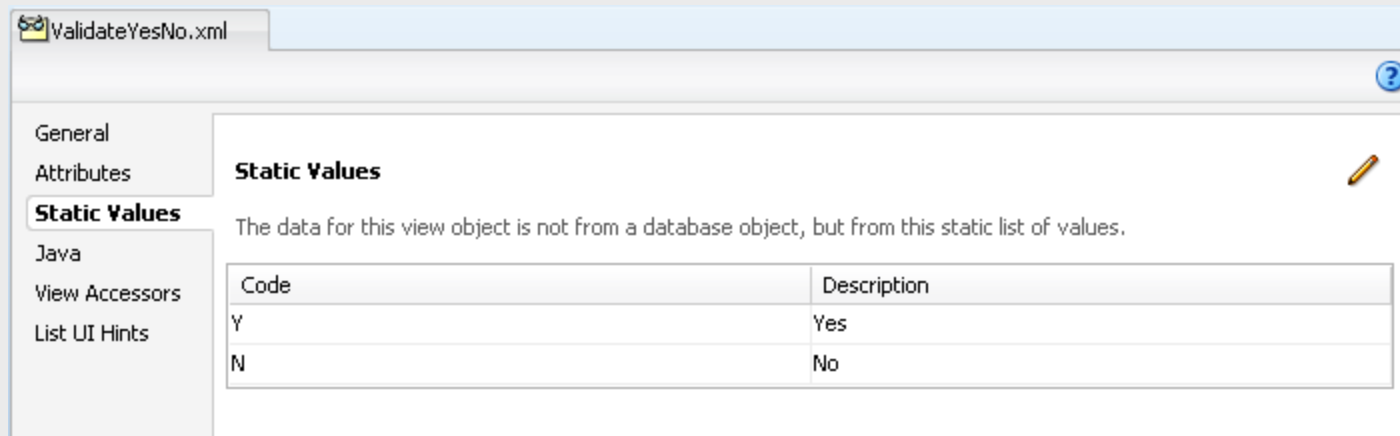
OK Cancel

**Static
LOVs**

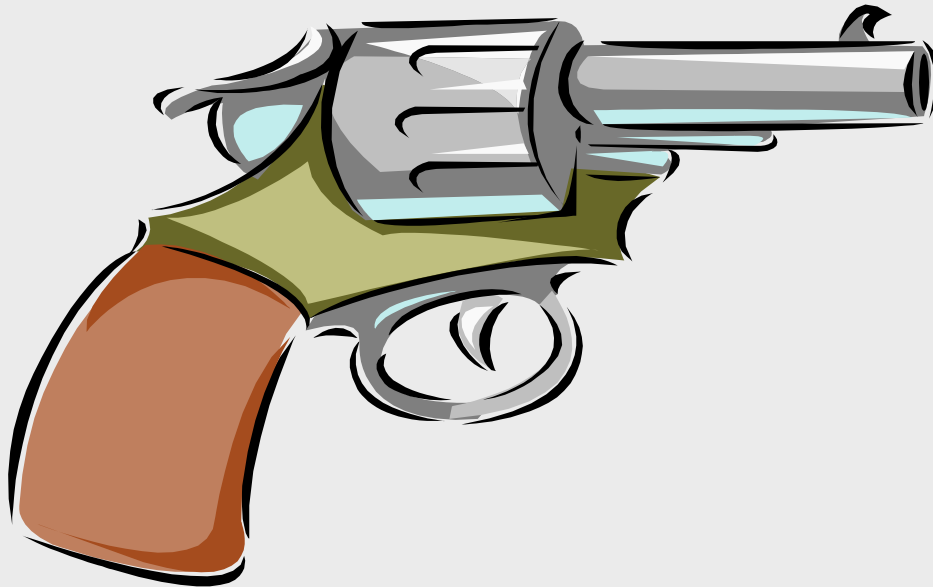


**Entity-
based
LOVs**

Good Idea to make static lists dynamic as above,
but static lists are possible in ADF



❑ **Handle with care!**



Post-Query Trigger VS View

[NEOS]

Looking up a description
is best implemented
using an LOV

Edit List of Values

List of Values Name:

Configuration **UI Hints**

Select a view accessor for the list data source, and then choose the list attribute that maps to the current view object attribute.

List Data Source: +

List Attribute:

List Return Values

Map any supplemental values that your list returns to the base view object (it always returns a value to the attribute for which the list is defined).

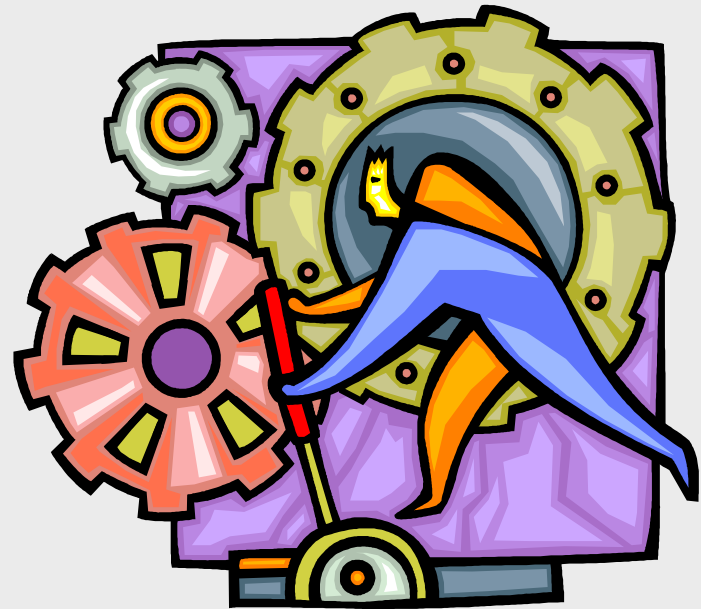
+ -

View Attribute	List Attribute
DepartmentId	DepartmentId
DepartmentName	DepartmentName

Help OK Cancel

□ More Advanced Post-Query Triggers

- Methods that can be run declaratively in task flow
- Reoccurring patterns for reuse



Post-Query Triggers

```
public void populateRelatedQueries() {
    //Check Record A Signatures
    populateNoDataMessage("RecordAView1", "Record A has not been signed off.");

    //Check Record B Signatures
    populateNoDataMessage("RecordBView1", "Record B has not been signed off.");
}

/**
 * Method to create a row and pouplate the Msg attribute of the row with
 * the given message if no row currently exists.
 */
private void populateNoDataMessage(String viewName, String msg) {
    ViewObject vo = this.findViewObject(viewName);
    Row row = vo.first();
    if (row == null) {
        row = vo.createRow();
        row.setAttribute("Msg", msg);
        vo.insertRow(row);
    }
}
```

❑ **Stored Procedure Based Blocks**

- Can build Entity and View Objects on them
- More complex than normal Entity Object

❑ **Consider replacing with DB View**

- If no updates required, less complex solution

Keystrokes/Menu vs. Buttons

[NEOS]



Keystrokes &
Menu Items

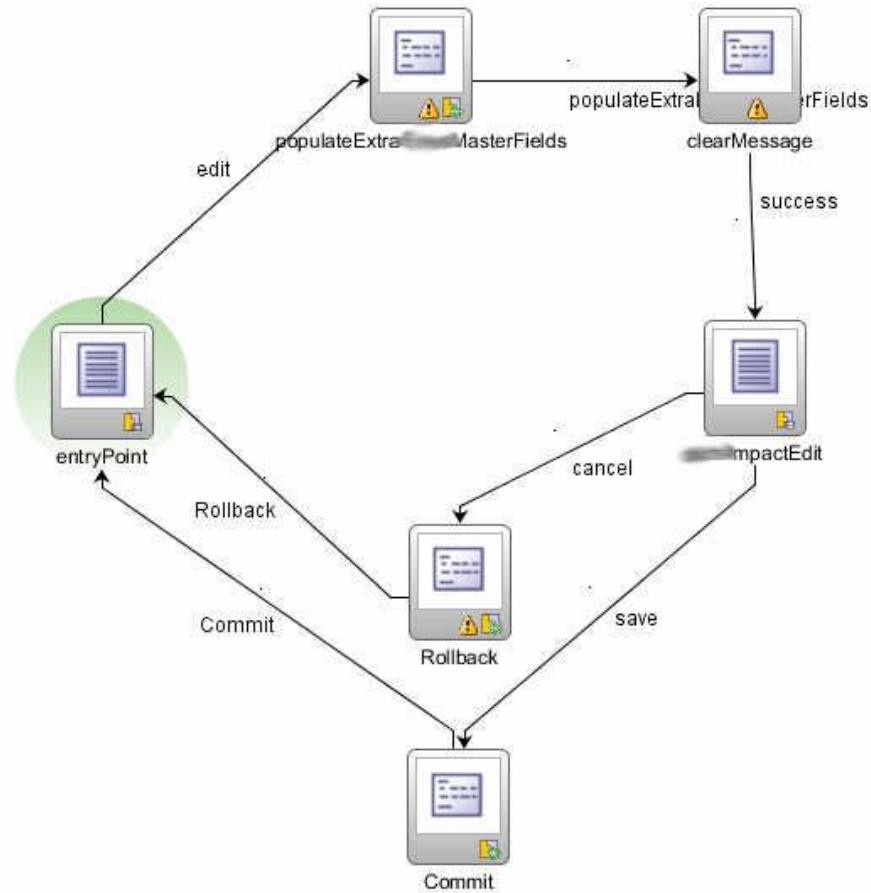
Buttons

Forms

ADF
(Better
usability)

Bounded Task Flows

Bounded Task Flow



Modifying Collection Queries

```
package com._____.model;

import oracle.adf.share.ADFContext;

import oracle.jbo.server.ViewObjectImpl;

public class DepartmentLimitedViewObjectImpl extends ViewObjectImpl {

    public DepartmentLimitedViewObjectImpl() {
        super();
    }

    /**
     * executeQueryForCollection - overridden for custom java data source support.
     */
    protected void executeQueryForCollection(Object qc, Object[] params,
                                             int noUserParams) {
        ADFContext context = ADFContext.getCurrent();
        String department = (String) context.getSessionScope().get("DEPARTMENT");
        this.setWhereClause("DEPARTMENT = '"+department+"'");
        super.executeQueryForCollection(qc, params, noUserParams);
    }
}
```


- ❑ Keyboard Shortcuts
- ❑ Basic Search/Edit Patterns
- ❑ Transaction Handling
 - Dirty Data Notifications
 - User Closing Window
- ❑ List of Values Implementations
 - Dropdown / Popup
- ❑ Mixed Case Data Entry

❑ **It's a Modernization not a Conversion**

- Should not be one to one
- Some things need to change

❑ **Look for Opportunity**

- Take advantage of ADF features
- Consolidate and Re-use

- ❑ Need for Modernization
- ❑ Nature of the Changes
 - Screen Design
 - UI Elements
 - Code Changes
- ❑ Design Considerations



- ❑ Questions?
- ❑ For follow-up questions:
 - Rob Nocera
 - rnocera@vgosoftware.com
 - Blog: <http://www.java-hair.com>

