

MBUG 2017

Banner Workflow Boot Camp

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Session Rules of Etiquette

- Please turn off your cell phone
- If you must leave the session early, please do so discreetly
- Please avoid side conversation during the session



Why would you use a Banner Workflow(WF)?

- ▶ Simplifies and directs the flow of work throughout your entire organization:
 - Replace paperwork
 - Send electronic notifications
- ▶ Provides timely movement of work between role players
- ▶ Perform repetitive tasks – update records using PL/SQL
- ▶ **Promotes process improvement within your organization**

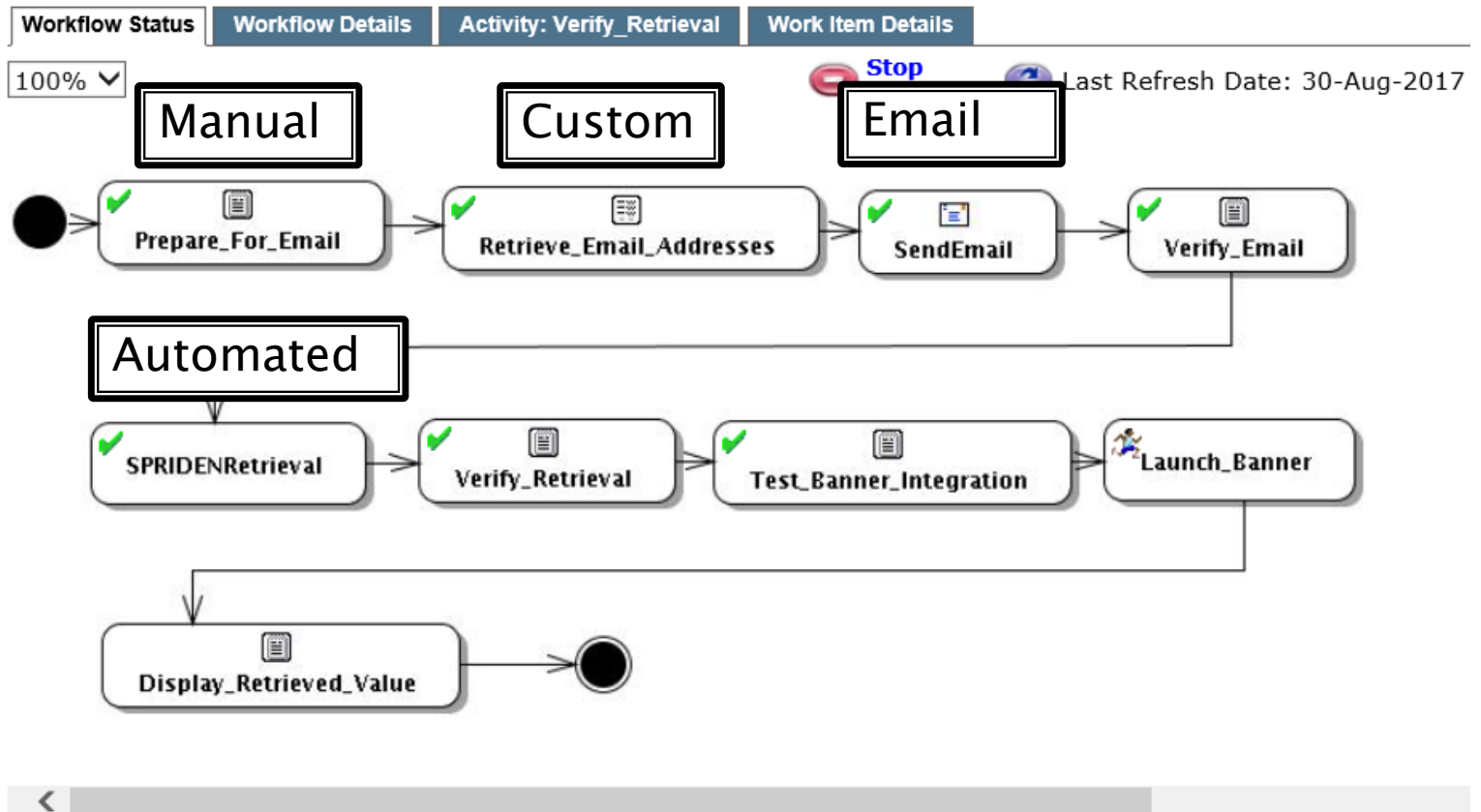


Banner WF Features

- ▶ Sequential/Parallel processing
- ▶ Directed activities
- ▶ Proxy support
- ▶ Banner integration
- ▶ Activity types
 - Interactive
 - Manual
 - Automated
 - Email
 - Custom
 - Approval



Example: System Verification Workflow



Examples of WFs at JSU

- ▶ Employees termination notification
- ▶ Admissions Checklist item notification (received, added)
- ▶ Admissions decision notification (Grad and Ugrad)
- ▶ Graduation Clearance Denial notification
- ▶ Next approver notifications for Requisitions and Budget Transfers
- ▶ Supervisor Timesheet Approval notice
- ▶ Change of Major workflow



WF Administrative tasks

- ▶ MIF/Organizations
- ▶ User/Role Management
- ▶ Security Management
- ▶ On-Line Users
- ▶ Business Components
- ▶ Workflow Alerts
- ▶ In-process Monitoring
- ▶ Deleting Workflows



WF Admin tasks (cont'd)

- ▶ Supports Multiple Institution Functionality (using Oracle VPD)
- ▶ User Management
 - Identified by User accounts
 - ID/Password
- ▶ Role management – groups of skills – more complex, since one user can have more than one role
 - Types – Primary, Proxy
 - Determines which activities you see on your worklist



WF Admin tasks (cont'd)

- ▶ Security Management
 - There exists a security group for all administrative tasks
 - Access is handled by adding roles to security groups
- ▶ On-Line users
 - Ability to view who is currently logged into the workflow system



Business Components

- ▶ Are reusable units of work: launch a Banner form; run a SQL procedure or query; launch a desktop application
- ▶ Define the data to be used and the work that will be performed
- ▶ Are organized logically, i.e. Student, Finance, HR
- ▶ Each component in a category is unique by name, product type, and release ID combination



Business Components (cont'd)

- ▶ **Component Types – Internal**
 - Runs on the WF server
 - No user interaction required
 - Examples: SQL query, SQL procedure
- ▶ **Component Types – Interactive**
 - Runs on the client's machine
 - Requires user interaction
 - Examples: Banner form, desktop application



Business Components (cont'd)

► Technology Types

- Tells Worklist how to launch
- User-defined technology types
- Delivered technology types
 - Desktop application, i.e. Word, Excel
 - Web application – default browser with URL populated
 - Banner forms – i.e. SPAPERS
 - SQL query
 - **SQL procedure – most common**



Business Components (cont'd)

- ▶ Component Parameters
 - Used for data communication between component and workflow
 - Can be used in launch parameter values
 - Examples: Stored procedure, Banner form



Workflow Alerts

- ▶ Used to notify workflow owner that a workflow instance has entered a stalled or error state
- ▶ Monitor on a daily basis
- ▶ Workflow alert examples:
 - Single guard condition not satisfied
 - User in directed activity not found
 - Error in automatic activity



Workflow Alerts (cont'd)

- ▶ Workflow Maintenance
 - Looks like workflow status
 - Contains the alert
 - Allows the following activities
 - Change context parameter values
 - Force transitions
 - Release alert
 - Stop workflow
 - Force complete on activity
 - Workflow alert will go away once it is handled



In-Process Monitoring

- ▶ Report of running workflow instance for a specified workflow model
- ▶ Applies to workflows with an 'Active' status and 'Test' status
- ▶ Example



Deleting Workflows

- ▶ Uses constraints to minimize search results
- ▶ Completely removes these workflow instances from the system
- ▶ Use extreme caution when deleting!
- ▶ Example



Workflow/Banner Events – Objectives

- ▶ Event Overview
- ▶ Set Up: Five-step process
- ▶ External Events



Event Overview


- ▶ A business event is an action that will eventually launch an instance of a workflow
- ▶ Examples of when to capture a business event in Banner
 - A change to a table in the Banner database
 - Specific conditions are met in PL/SQL code



Event Overview

Banner Form

General Person Identification: SPADEN 6.1 (WFLMWS)

Generate ID 

ID:

Current Identification

ID: Name Type:

Person Name Information

Last Name:

First Name:

Middle Name:

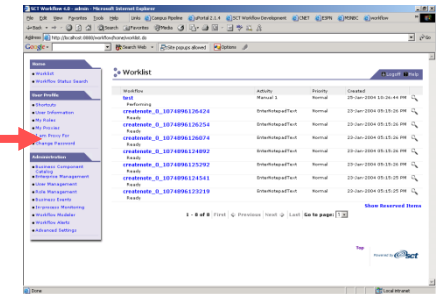
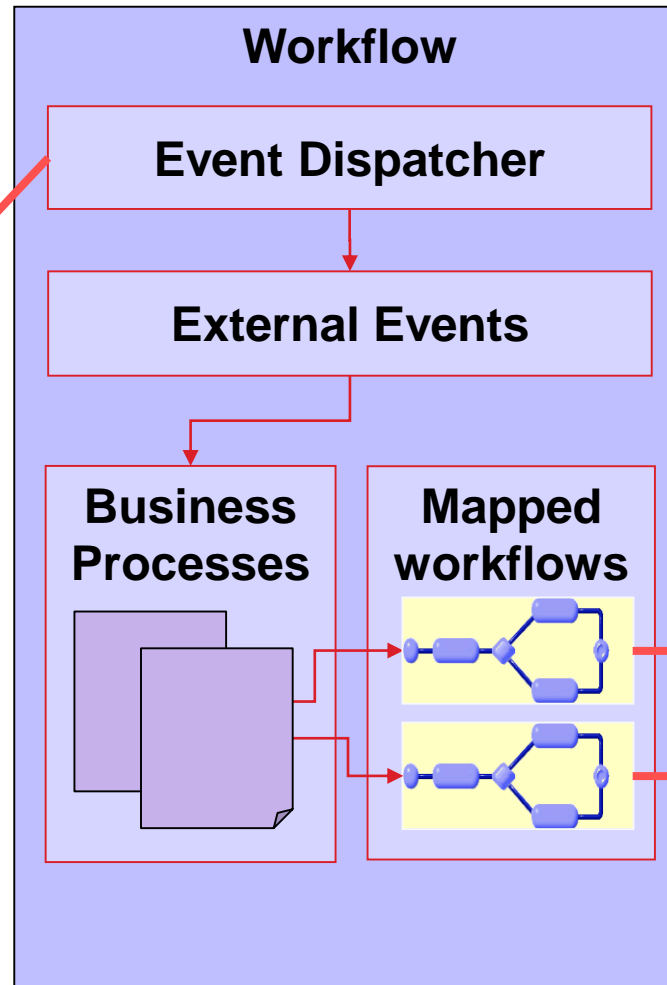
Prefa:

Suffix:

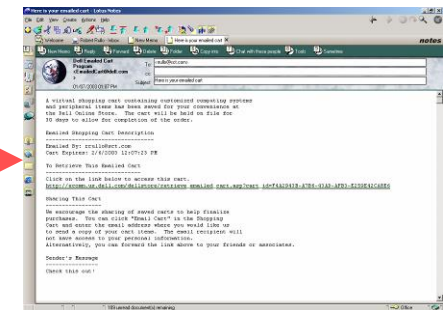
Pref. First Name:

Non-Person Name Information

Name:



Worklist



Email



WF Setup: Five-step process

1. Define event in Banner
2. Create trigger/procedure that fires an instance of the event
3. Model the WF that event will launch
4. Define event in WF
5. Define business process in WF



Step 1 – Define Banner Event

- ▶ Uses five forms/tables:
 - **GTVEQNM** – Event Name Validation
 - **GTVEQPM** – Parameter Name Validation
 - **GTVEQPG** – Parameter Group Validation
 - **GOREQPG** – Parameter Group Definition
 - **GOREQNM** – Event Definition



Step 1 – Define Banner Event (cont'd)

▶ GTVEQNM – Event Name Validation

Oracle Fusion Middleware Forms Services: Open > GTVEQNM

File Edit Options Block Item Record Query Tools Help

Event Queue Code Validation GTVEQNM 8.0 (H-TEST)

Event Code	Description	User ID	Activity Date
ADD_HOLD	Add Hold Smart Event	BASELINE	21-JUL-2000
ADD_NEW_FAC_USER	Add New Faculty User to CP	BASELINE	07-JAN-2000
ADD_NEW_STU_USER	Add New Student User to CP	BASELINE	11-NOV-1999
ADD_REGISTRATION	Add New Registration to CP	BASELINE	11-NOV-1999
ADD_SECTION	Add New Section to CP	BASELINE	11-NOV-1999
ADD_TEACH_ASSIGN	Add Teaching Assignment to CP	BASELINE	07-JAN-2000
ADD_TERM	Add New Term to CP	BASELINE	21-JUL-2000
ADM_CHECKLIST_ITEM	CHKL Item Notification	LOCAL	13-SEP-2016
ADV_ADDR_CP	Change in EMP addr by ADV Emp	LOCAL	05-AUG-2014
ADV_MAJ_GIFT	ADV Major Gift	LOCAL	23-JUL-2014
APPLICATION_RECEIVED	Admissions Application Receipt	BASELINE	21-DEC-1999
APPL_GR_STU	Grad Std Appl Decision	LOCAL	14-APR-2015
APPL_GR_TRANSMITTAL	APPL_GR_TRANSMITTAL	LOCAL	06-SEP-2016
APPL_UG_STU	UG Std Appl Decision	LOCAL	14-NOV-2016
BANSECREQWF	Security Request WorkFlow	LOCAL	18-AUG-2015
BUDGTRANSF_DENIED	Budget Transfer Denied	LOCAL	11-MAY-2016
BUDGTR_APPR_NT	Notify next Budget Transf appr	LOCAL	10-DEC-2015
BXS.B-A-ID.D	B-A-ID Delete Event	BASELINE	25-JUN-2014
BXS.B-A-ID.I	B-A-ID Insert Event	BASELINE	25-JUN-2014
BXS.B-A-ID.U	B-A-ID Update Event	BASELINE	25-JUN-2014
BXS.B-A-IDGP.D	B-A-IDGP Delete Event	BASELINE	25-JUN-2014

Enter Event Code
Record: 8/7

<OSC>

Step 1 – Define Banner Event (cont'd)

▶ GTVEQPM – Parameter Name Validation

Oracle Fusion Middleware Forms Services: Open > GTVEQPM

File Edit Options Block Item Record Query Tools Help

Parameter Code Validation GTVEQPM 8.0 (H-TEST)

Code	Description	User ID	Activity Date
ADMCHKLADMRCODE	ADM CHKL Admr Code	LOCAL	13-SEP-2016
ADMCHKLAPPLNO	ADM CHKL Appl Number	LOCAL	13-SEP-2016
ADMCHKLITEMSTATUS	ADM CHKL Item Status	LOCAL	13-SEP-2016
ADMCHKLRECVDATE	ADM CHKL Receive Date	LOCAL	13-SEP-2016
ADMCHKLSTUPIDM	ADM CHKL Stu PIDM	LOCAL	13-SEP-2016
ADMCHKLSTUTERM	ADM CHKL Std Term	LOCAL	13-SEP-2016

Parameter Code
Record: 6/6 | | | | <OSC>

Step 1 – Define Banner Event (cont'd)

▶ GTVEQPG – Parameter Group Validation

Oracle Fusion Middleware Forms Services: Open > GTVEQPG

File Edit Options Block Item Record Query Tools Help

Parameter Group Code Validation GTVEQPG 8.0 (H-TEST)

Group Code	Description	User ID	Activity Date
ADDFACULTY	Add New Faculty User to CP	BASELINE	07-JAN-2000
ADDHOLD	Add New Hold in CP	BASELINE	21-JUL-2000
ADDREG	Add New Registration to CP	BASELINE	11-NOV-1999
ADDSECTION	Add New Section to CP	BASELINE	11-NOV-1999
ADDSTUDENT	Add New Student User to CP	BASELINE	11-NOV-1999
ADDTCHASG	Add Teaching Assignment	BASELINE	07-JAN-2000
ADDTERM	Add New Term to CP	BASELINE	21-JUL-2000
ADMCHKLITM	ADM CHKL Item notif	LOCAL	13-SEP-2016
ADVADDRCP	ADDR CP change by ADV employee	LOCAL	05-AUG-2014
ADVMAJGIFT	ADV Major Gift	LOCAL	23-JUL-2014
APPLGRSTU	Grad Std Appl Decision	LOCAL	14-APR-2015
APPLGRTRAN	APPL_GR_TRANSMITTAL	LOCAL	06-SEP-2016
APPLUGSTU	UG Std Appl Decision	LOCAL	14-NOV-2016
BANSECREQ	Security Request Workflow	LOCAL	18-AUG-2015
BDTRAPPRNT	Budget Transfer Approver Note	LOCAL	10-DEC-2015
BDTRDENIED	Budget Transfer Denied	LOCAL	11-MAY-2016
BXS.496	Parameter Group of B-H-POSN	BASELINE	25-JUN-2014
BXS.497	Parameter Group of B-S-SECT	BASELINE	25-JUN-2014
BXS.498	Parameter Group of B-F-PROP	BASELINE	25-JUN-2014
BXS.499	Parameter Group of B-F-GRNT	BASELINE	25-JUN-2014
BXS.500	Parameter Group of B-A-ID	BASELINE	25-JUN-2014

Enter Group Code
Record: 8/?

Step 1 – Define Banner Event (cont'd)

▶ GOREQPG – Parameter Group Definition

Oracle Fusion Middleware Forms Services: Open > GOREQPG

File Edit Options Block Item Record Query Tools Help

Parameter Group Definitions GOREQPG 8.0 (H-TEST)

Group Code: ADMCHKLITM ADM CHKL Item notif

Sequence	Parameter	Default Value	Target Parameter
1	EVENTNAME	ADM_CHECKLIST_ITEM	
2	PRODUCTTYPE	Banner	
3	WORKFLOWSPECIFICNAME		
4	ADMCHKLSTUPIDM		
5	ADMCHKLSTUTERM		
6	ADMCHKLAPPLNO		
7	ADMCHKLADMRCODE		
8	ADMCHKLITEMSTATUS		
9	ADMCHKLRECVDATE		

Enter Parameter Code; List is available

Record: 3/9 <OSC>

Step 1 – Define Banner Event (cont'd)

► GOREQNM – Event Definition

Oracle Fusion Middleware Forms Services: Open > GOREQNM

File Edit Options Block Item Record Query Tools Help

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Event Queue Name Definitions GOREQNM 8.0 (H-TEST)

Target System: WORKFLOW Banner Workflow

Event Code	Description	Group Code	Description	Active	User ID
ADM_CHECKLIST_ITEM	CHKL Item Notification	ADMCHKLITM	ADM CHKL Item notif	✓	LOCAL
ADV_ADDR_CP	Change in EMP addr by ADV Emp	ADVADDRCP	ADDR CP change by ADV employee	✓	LOCAL
ADV_MAJ_GIFT	ADV Major Gift	ADVMAJGIFT	ADV Major Gift	✓	LOCAL
APPL_GR_STU	Grad Std Appl Decision	APPLGRSTU	Grad Std Appl Decision	✓	LOCAL
APPL_GR_TRANSMITTAL	APPL_GR_TRANSMITTAL	APPLGRTRAN	APPL_GR_TRANSMITTAL	✓	LOCAL
APPL_UG_STU	UG Std Appl Decision	APPLUGSTU	UG Std Appl Decision	✓	LOCAL
BANSECREQWF	Security Request Workflow	BANSECREQ	Security Request Workflow	✓	LOCAL
BUDGTRANSF_DENIED	Budget Transfer Denied	BDTRDENIED	Budget Transfer Denied	✓	LOCAL
BUDGTR_APPR_NT	Notify next Budget Transf appr	BDTRAPPRNT	Budget Transfer Approver Note	✓	LOCAL
BXS.B-A-ID.D	B-A-ID Delete Event	BXS.500	Parameter Group of B-A-ID	✓	BASELINE
BXS.B-A-ID.I	B-A-ID Insert Event	BXS.500	Parameter Group of B-A-ID	✓	BASELINE
BXS.B-A-ID.U	B-A-ID Update Event	BXS.500	Parameter Group of B-A-ID	✓	BASELINE
BXS.B-A-IDGP.D	B-A-IDGP Delete Event	BXS.501	Parameter Group of B-A-IDGP	✓	BASELINE
BXS.B-A-IDGP.I	B-A-IDGP Insert Event	BXS.501	Parameter Group of B-A-IDGP	✓	BASELINE
BXS.B-A-IDGP.U	B-A-IDGP Update Event	BXS.501	Parameter Group of B-A-IDGP	✓	BASELINE
BXS.B-F-DOCS.D	B-F-DOCS Delete Event	BXS.506	Parameter Group of B-F-DOCS	✓	BASELINE
BXS.B-F-DOCS.I	B-F-DOCS Insert Event	BXS.506	Parameter Group of B-F-DOCS	✓	BASELINE
BXS.B-F-DOCS.U	B-F-DOCS Update Event	BXS.506	Parameter Group of B-F-DOCS	✓	BASELINE
BXS.B-F-GRNT.D	B-F-GRNT Delete Event	BXS.499	Parameter Group of B-F-GRNT	✓	BASELINE

Enter Event Code; List is available

Record: 1/?

MIDDLEWARE

Step 2 – Create trigger/procedure that fires an instance of the event

- ▶ Most events are fired via a trigger
- ▶ Can also fire in a procedure or package
- ▶ Uses GOKPARM / GOKEVNT packages

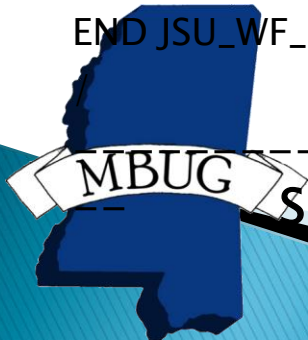


Step 2 – Create trigger/procedure that fires an instance of the event (cont'd)

```
CREATE OR REPLACE TRIGGER BANINST1.JSU_WF_FIN_FOBAPPH_INS
  AFTER INSERT
  ON FIMSMGR.FOBAPPH
  REFERENCING NEW AS NEW OLD AS OLD
  FOR EACH ROW
  WHEN (
    NEW.FOBAPPH_QUEUE_ID = 'DENY'
  )
  BEGIN

    SUBMIT_WF_EVENT ('REQUISITION_DENIED',
      'Requisition ' || :NEW.FOBAPPH_DOC_CODE || ' Denied',
      :NEW.FOBAPPH_DOC_CODE);

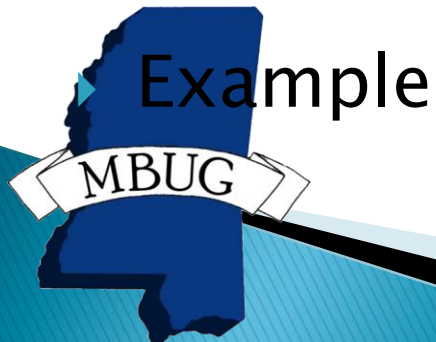
  END JSU_WF_FIN_FOBAPPH_INS;
```



SUBMIT_WF_EVENT package calls GOKEVNT and GOKPARM

Step 3 – Create the WF in Modeler

- ▶ Create the workflow model using the Workflow Modeler
 - Building blocks:
 - Start
 - Activities: component, email, manual, approval, custom
 - Transitions
 - Branching
 - Timer activity
 - Parallel activity
 - Stop



Step 3 – Create the WF in Modeler (cont'd)

▶ Parameters

- Parameters are the data used in a workflow
- Parameters are passed to the workflow when it starts
- Parameters are passed to and from workflow activities

▶ Parameters types:

- Context parameters (***need to be created***)
- Component parameters (define data fields used by an activity)
- Attributes (Originator; WF specific name)
- Event parameters

*discussed with Business Events



Step 3 – Create the WF in Modeler (cont'd)

- ▶ Parameter Mapping
 - **FROM context TO component**
 - **->input (IN)**
 - **FROM component TO context**
 - **<-output (OUT)**
- ▶ WF Modeler Demo

Context Parameter		Component Parameter	Type
Employee_ID	←	EMP_ID	Text
Employee_Name	←	EMP_NAME	Text
Termination_Date	←	EFF_TERM_DATE	Text
Originator_ID	←	ORIG_ID	Text
Originator_Name	←	ORIG_NAME	Text
Transaction_Number	→	TRANSACTION_NO	Text

Close



Step 4 – Define event in WF

- ▶ Workflow event names must match the Banner event names
- ▶ Workflow parameter names must match the Banner parameter names
- ▶ Wizard provides ability to get events from Banner –> Example
- ▶ Events are global
- ▶ Associate workflows that MAY get launched when workflow gets this event
 - Map event parameters to workflow parameters



Step 5 – Define business process in WF

- ▶ Defines the evaluation process to use when events get posted to workflow
- ▶ Events can be part of multiple business processes
- ▶ A business process can have multiple events
- ▶ Each business process can only launch one workflow instance per organization
 - If an event should launch more than one workflow for an organization, create multiple business processes
 - Can associate more than one workflow and organization with a business process for different periods of time only



WF Reports

- ▶ Workflows and specific tasks are reportable.
- ▶ – Report summary statistics
- ▶ – Time to completion
- ▶ – Workflow status
- ▶ – And more



WF Report example

```
SELECT A.WORKFLOW_NAME "WF_NAME",
       (SELECT C1.VALUE
        FROM WORKFLOW.ENG_PROPERTIES_VALUES C1
        WHERE C1.NAME = 'ADMS_APP_NUM_IN' AND A.WF_ID = C1.ID)
       "APP_NUMBER",
       C.VALUE "TERM",
       A.NAME "LOCATION",
       B.FIRST_NAME || ' ' || B.LAST_NAME "PERFORMER",
       ( TO_DATE ('1970-01-01', 'YYYY-MM-DD')
        + start_date / (1000 * 60 * 60 * 24)
        - (6 / 24))
       "RECEIVED DATE"
FROM WORKFLOW.VWORKITEMS      A,
   WORKFLOW.WFUSER            B,
   WORKFLOW.ENG_PROPERTIES_VALUES C
WHERE  A.PD_ID = 7183086
      AND A.STOP_DATE IS NULL --not completed
      AND A.RUNNING = 'Y'
      AND A.WORKLIST_OWNER = B.ID
      AND C.NAME = 'ADMS_TERM_IN'
      AND A.WF_ID = C.ID
ORDER BY 4, 5, 1, 2
```



Review/Wrap Up

- ▶ Questions
- ▶ Contact:

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