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Oracle ADF 11g: Building Rich Internet Applications with ADF Faces and Task Flows

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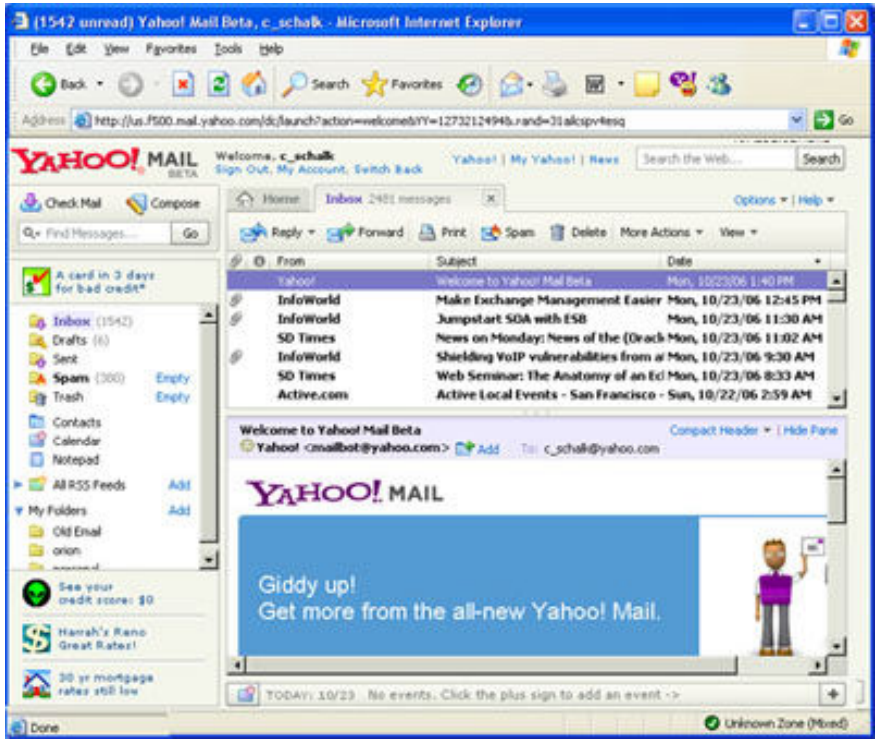
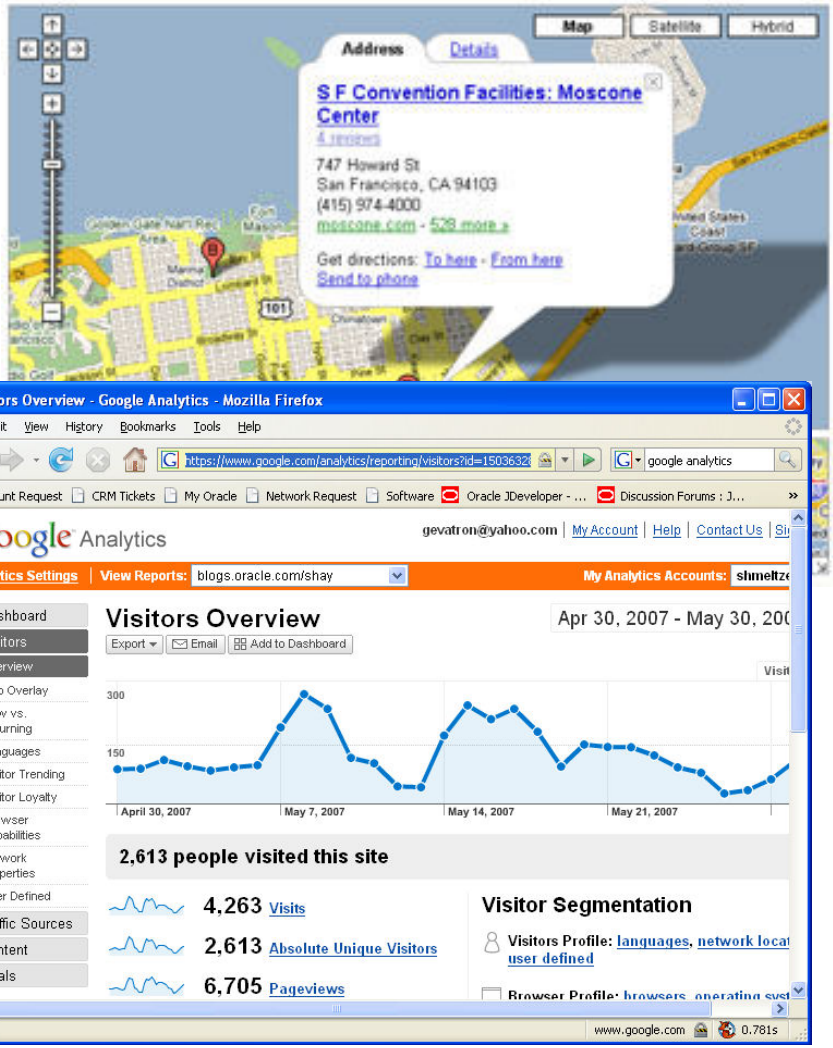
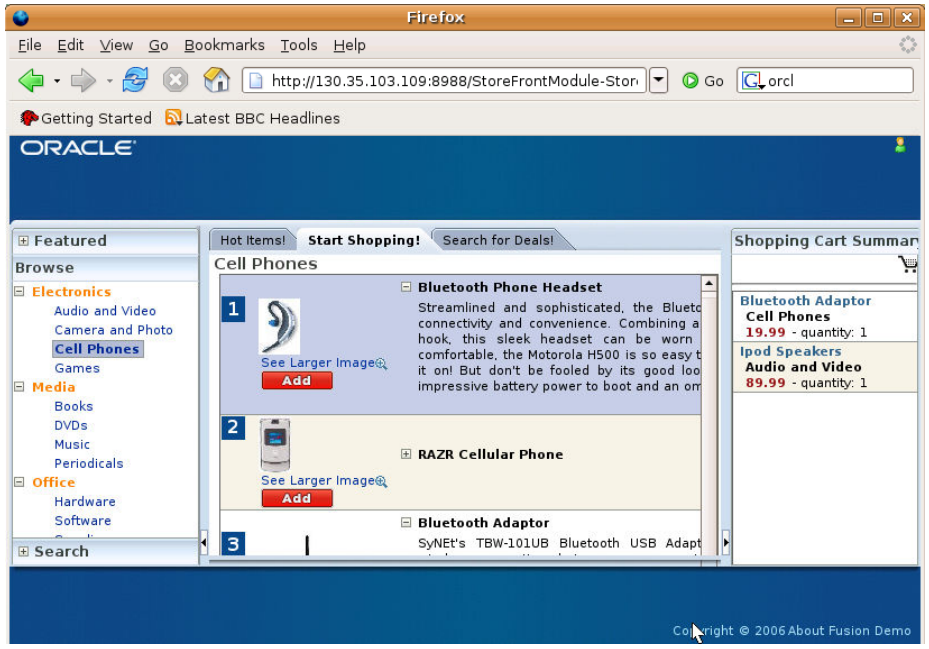
Web 2.0 User Interfaces





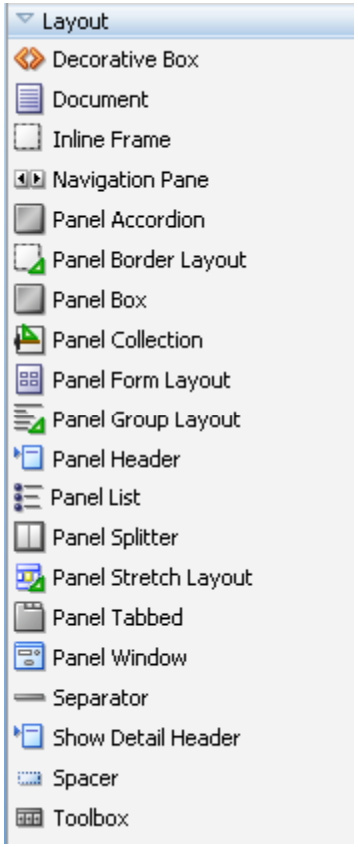
ADF Faces Rich Client 11*g*

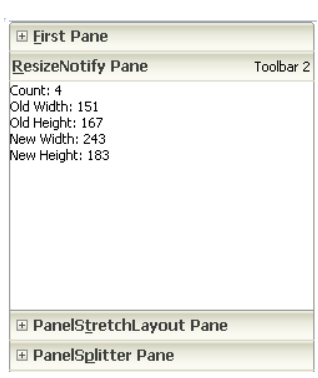
- 150+ AJAX enabled JavaServer Faces (JSF) components
- Data Visualization components
  - Graphs, Gauges, Maps, Gantt, Hierarchy Viewer
- More than just components – a framework
- More than just easy – a Java EE Standard

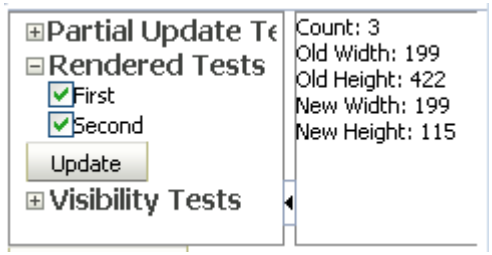


Layout Components

- Arrange your page using areas
- Change page layout at runtime
  - Splitter, Accordion
- Advanced layouts
  - Tabbed, Panel Collection
- Use in a Page Template for Consistent Look and Feel Throughout Your Application







Demonstration

Page Templates
and
Layout Components

Drag and Drop Databinding

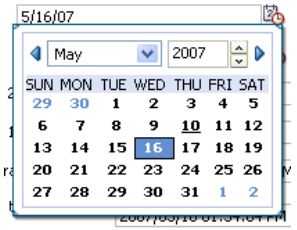
- You Focus on the *What*, Not the *How* !
- Sophisticated Search Capbilities
- Declarative Data Synchronization
- View the Same Data Collections Multiple Ways

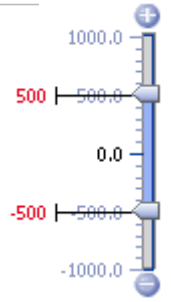
Demonstration

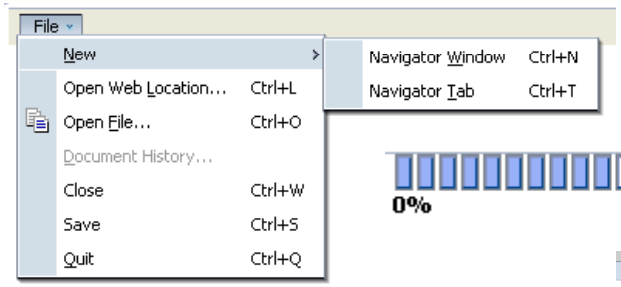
Drag and Drop Databinding

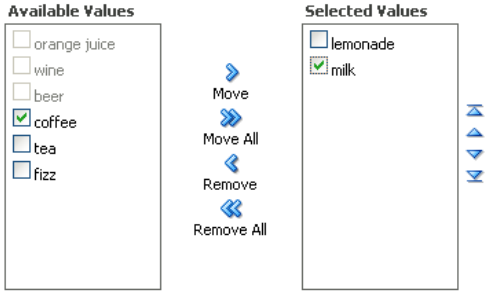
Common Components

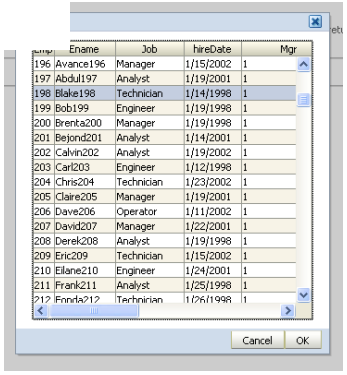
- Regular components
  - Text items, buttons, check boxes, radio buttons
- List selection components
  - Single select, multiple select, combo box, shuttle
- Data layout components
  - Table, tree, tree table
- Choosers
  - Choose date, choose color
- Menus
- Popup Windows
- Others
  - Progress bar, bread crumbs …









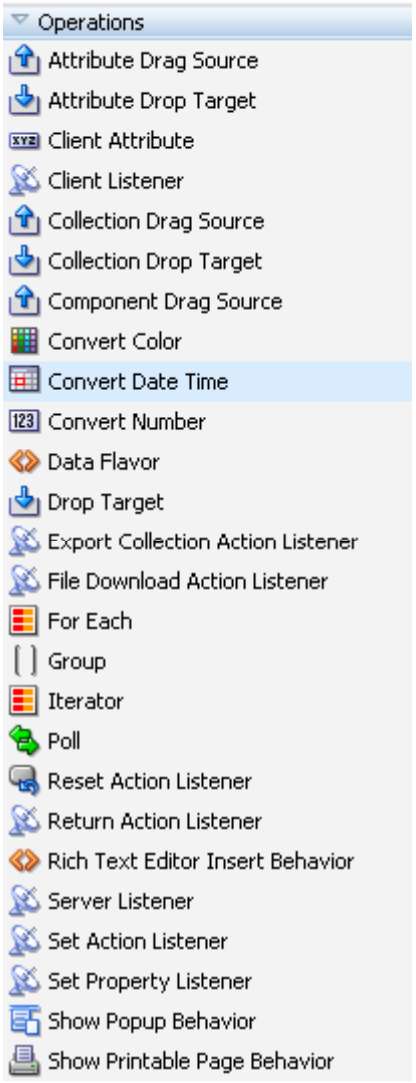


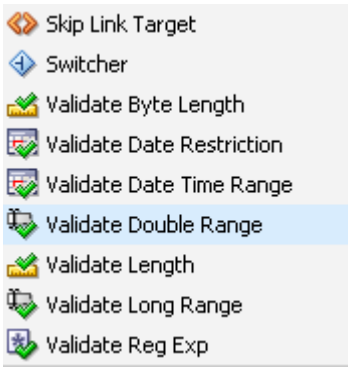
Demonstration

Common Components

Operation Components

- Validators
- Convertors
- Drag and drop
- Pop up
- Poll
- Listeners
- Export
- Print





Demonstration

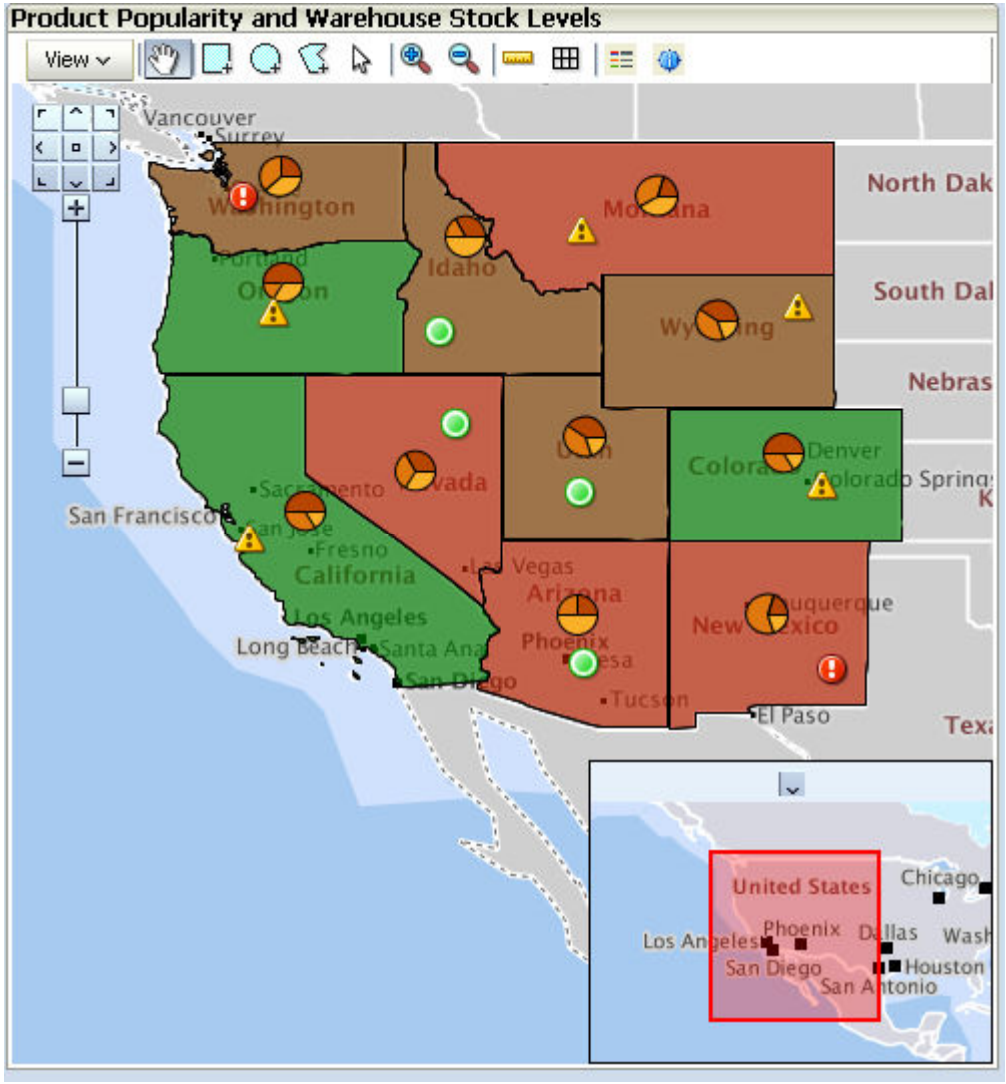
Menus and Operation Components

Demonstration

Declarative Popup Windows

ADF Data Visualization Geographic Map

- Represents business data on a geographic map
- Supports superimposing multiple layers of information on a single map
- Available Map types are:
  - Thematic
  - Pie
  - Bar
  - Point

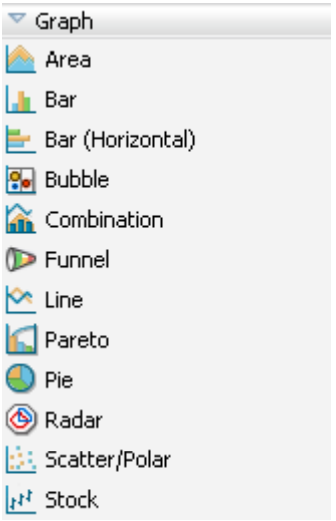


Demonstration

Map Component

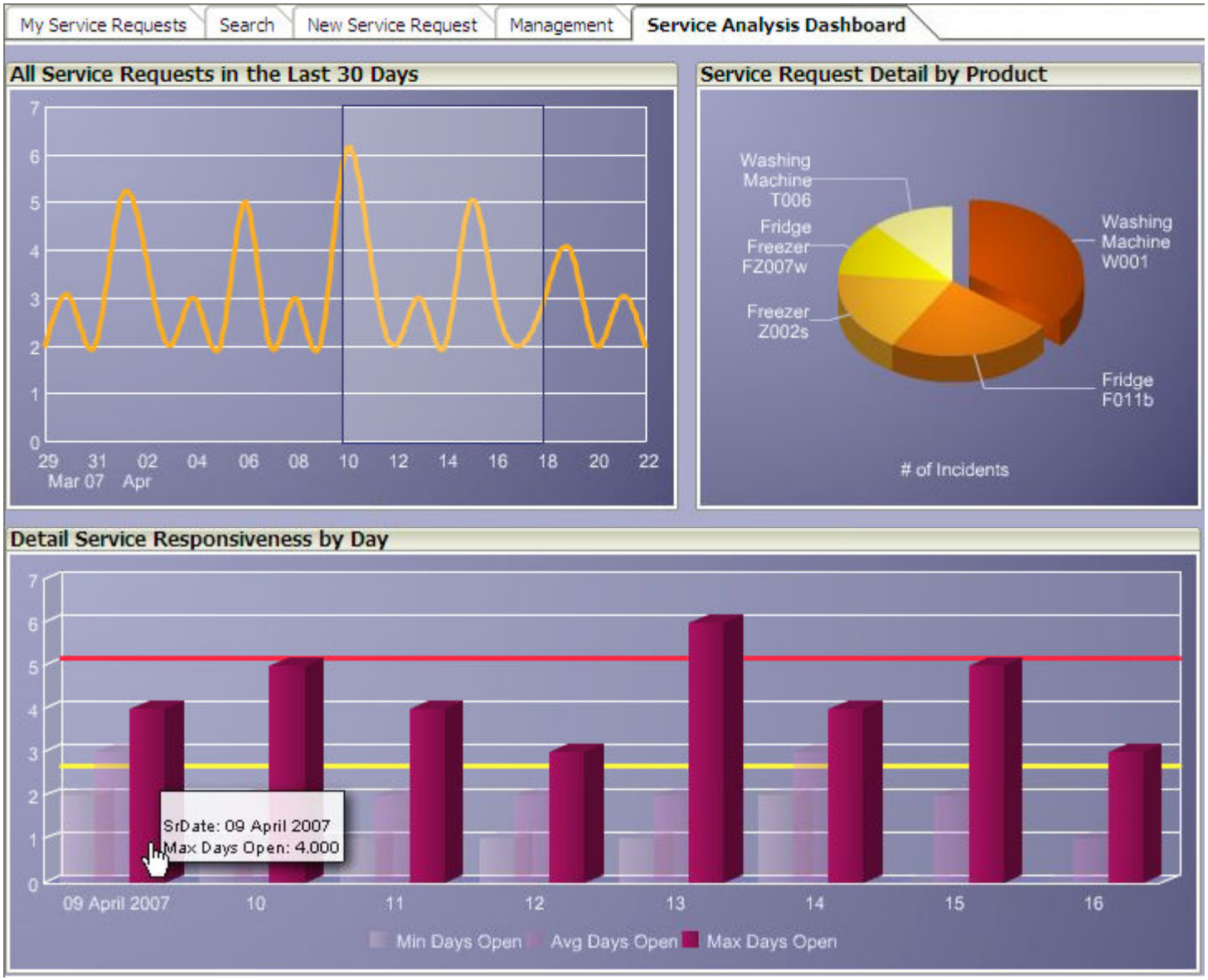
ADF Faces Visualization components

- Graphs
  - 50 graph types
  - Flash or SVG rendering
  - Interactive: zoom, scroll, time selector window, line and legend highlighting/fading, dynamic reference lines and areas
- Gauge
  - Dial: standard and threshold
  - Status Meter: standard and threshold
  - LED



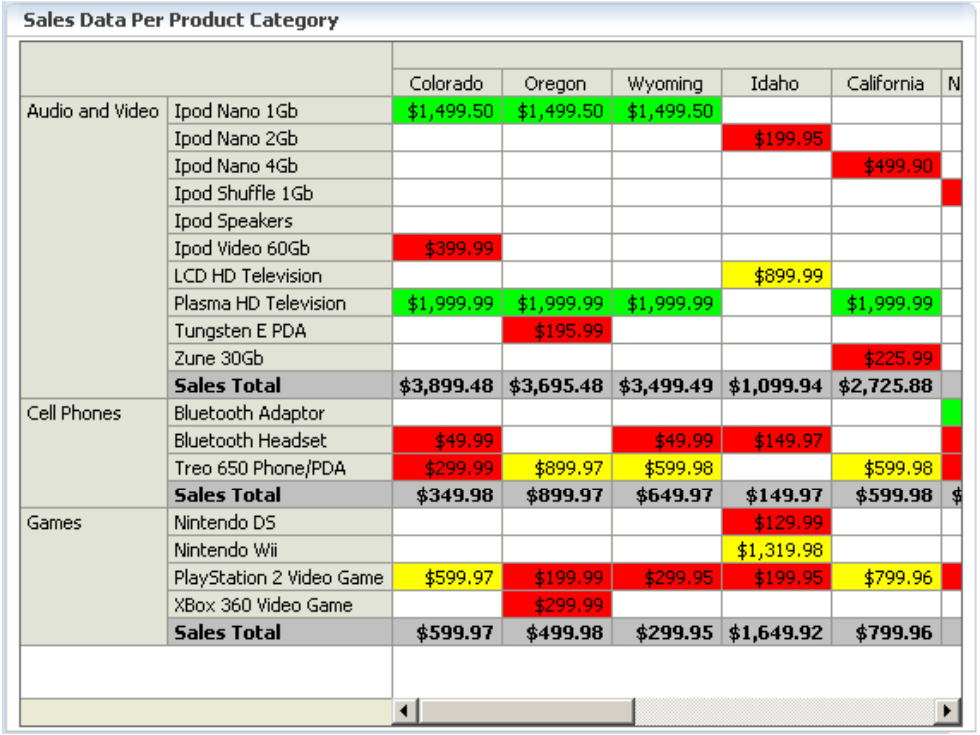
Demonstration

Data Visualization


My Service Requests
Search
New Service Request
Management
Service Analysis Dashboard
All Service Requests in the Last 30 Days
7
6
5
4
3
2
1
0
29 31 02 04 06 08 10 12 14 16 18 20 22
Mar 07 Apr
Service Request Detail by Product
Washing Machine T006
Fridge Freezer FZ007w
Freezer Z002s
Washing Machine W001
Fridge F011b
# of Incidents
Detail Service Responsiveness by Day
SrDate: 09 April 2007
Max Days Open: 4.000
09 April 2007 10 11 12 13 14 15 16
Min Days Open
Avg Days Open
Max Days Open

ADF Data Visualization Pivot Table

- Multiple layers of data labels on a row or a column edge
- Automatic calculation of subtotals and totals
- Drag and drop pivoting

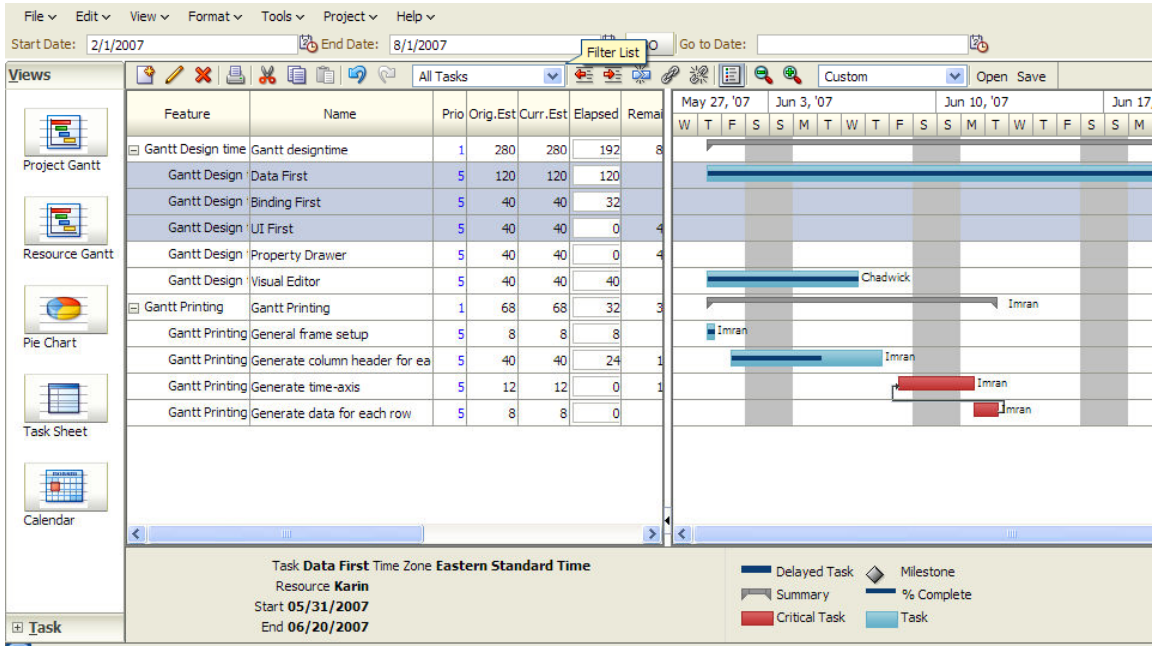


Sales Data Per Product Category

		Colorado	Oregon	Wyoming	Idaho	California	N
Audio and Video	Ipod Nano 1Gb	$1,499.50	$1,499.50	$1,499.50			
	Ipod Nano 2Gb				$199.95		
	Ipod Nano 4Gb					$499.90	
	Ipod Shuffle 1Gb						
	Ipod Speakers						
	Ipod Video 60Gb	$399.99					
	LCD HD Television				$899.99		
	Plasma HD Television	$1,999.99	$1,999.99	$1,999.99		$1,999.99	
	Tungsten E PDA		$195.99				
	Zune 30Gb					$225.99	
	Sales Total	**$3,899.48**	**$3,695.48**	**$3,499.49**	**$1,099.94**	**$2,725.88**	
Cell Phones	Bluetooth Adaptor						
	Bluetooth Headset	$49.99		$49.99	$149.97		
	Treo 650 Phone/PDA	$299.99	$899.97	$599.98		$599.98	
	Sales Total	**$349.98**	**$899.97**	**$649.97**	**$149.97**	**$599.98**	**$**
Games	Nintendo DS				$129.99		
	Nintendo Wii				$1,319.98		
	PlayStation 2 Video Game	$599.97	$199.99	$299.95	$199.95	$799.96	
	XBox 360 Video Game		$299.99				
	Sales Total	**$599.97**	**$499.98**	**$299.95**	**$1,649.92**	**$799.96**	

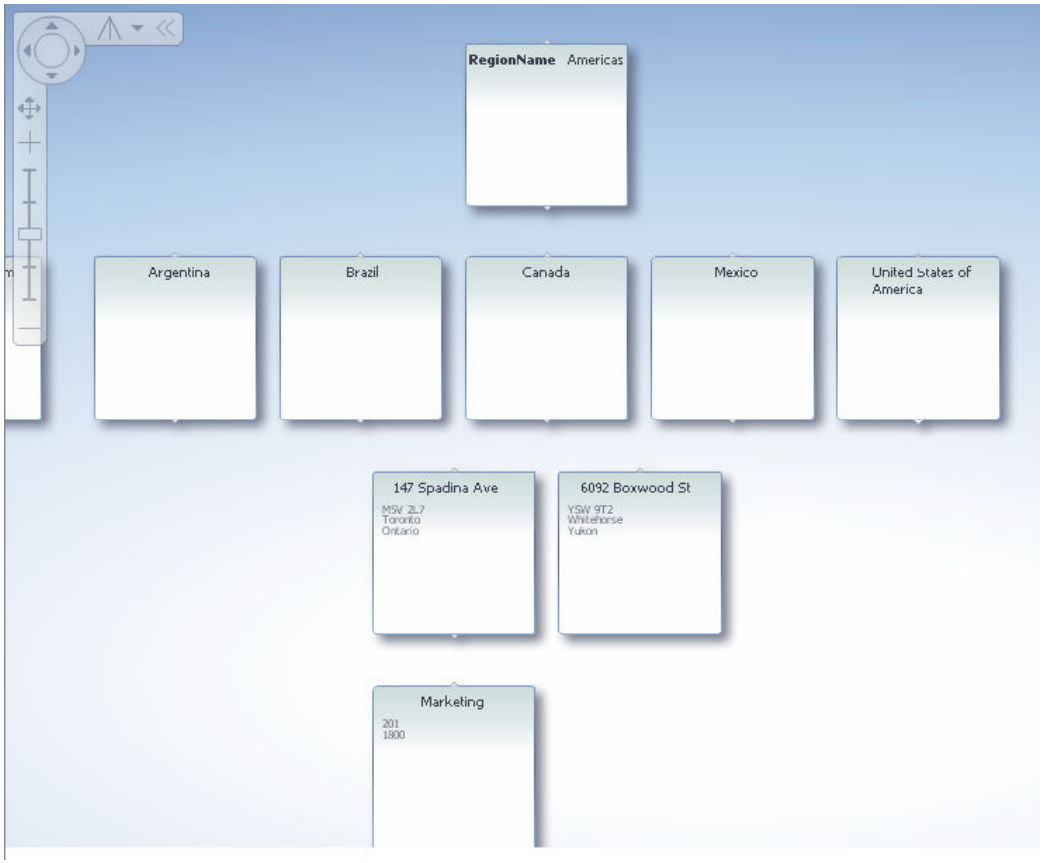
ADF Data Visualization Gantt Chart

- Track tasks and resources on a Time
- Gantt Chart types
  - Project Gantt
  - Scheduling Gantt



Hierarchy Viewer

- Visualize Relationships
- Dynamic navigation
- Zoom
- Flash based



ADF Faces RC - Framework

- Dialog and popup framework
- Drag-and-drop framework
- Navigation menu framework
- Partial page rendering
- Active data framework
- Advanced data streaming
- Complete JavaScript API
- Templating
- Skinning
- Accessibility

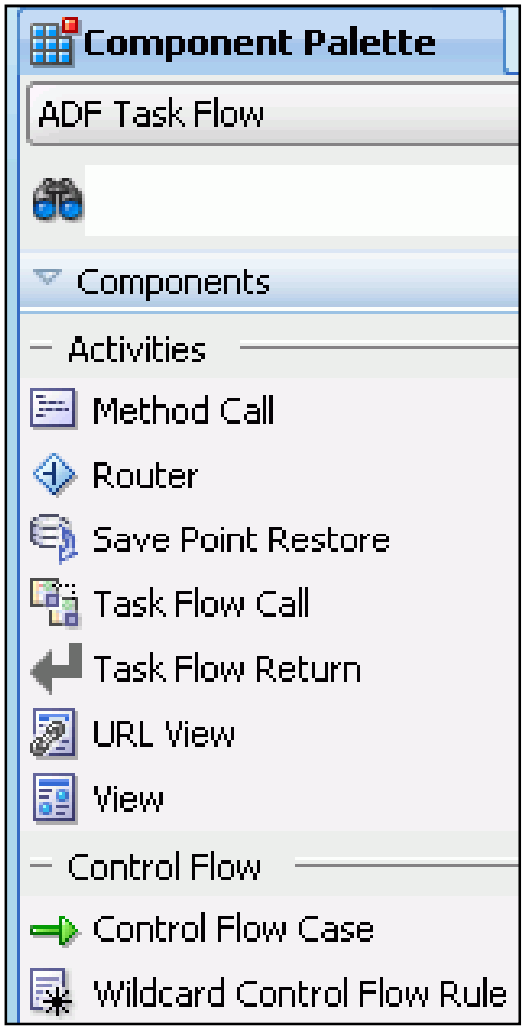
ADF Task Flows

What is ADF Taskflow?

- An extension to the JSF standard page flow engine
- Addresses some key enterprise requirements:
  - Page re-use
  - Executing code in a flow (hence *task* flow not page flow)
  - Security
  - Flow control
  - Exception and transaction management
- Defined using a page flow diagram
  - Just like JSF but with more components
- Also allows definition of managed beans – just like faces-config.xml

Key Concepts

- View Activity
- Transitions (navigation rules)
- Method Execution
- Router
- Exception handling



What we say, what we mean

- Unbounded Taskflow
  - Serve as the entry point to an application
  - First entry on task flow stack — the outer-most task flow
  - No well-defined boundary or single point of entry
  - Used to define the “top level” flow of an application
  - Used to build menu models
- Bounded Taskflow
  - Reusable "white box" navigation and processing
  - Single point of entry
  - Well-defined boundary
  - Own memory scope
  - Declarative transaction management
  - Declarative Back button support
  - Input/output parameters

Key Navigation Components

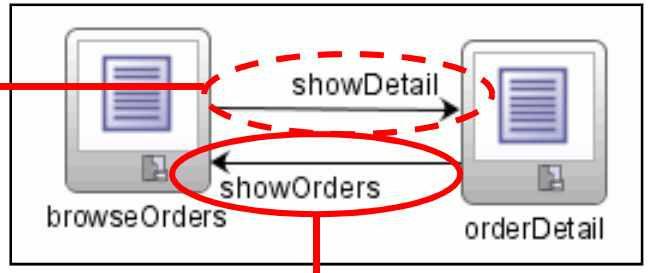
- Method Call
  - Invokes application logic within application control flows, not within the page markup itself as in standard JSF applications.
  - The method call activity typically invokes a method on a managed bean
- Router
  - Evaluates an EL expression and returns an outcome based on the value of the expression
- Save Point and Restore
  - Restores a previous persistent Save Point in an application supporting save for later functionality
- Task Flow Call
  - Calls an ADF bounded task flow from a particular point in an application
- Task Flow Return
  - Identifies when a bounded task flow completes and sends control flow back to the caller

Key Navigation Components

- URL View
  - Redirects the root view port (for example, a browser page) to any URL addressable resource, even from within the context of an ADF region
- View
  - Displays a JSF page or page fragment. Multiple View activities can represent the same page or same page fragment
- Control Flow Case
  - Identifies how control passes from one activity to the next in the application
- Wild Card Control Flow Rule
  - Represents a control flow rule that can originate from any activities whose ids match a wildcard expression.
  - Uses trailing wildcard such as foo*
- Parent Action
  - Option to call a parent navigation flow from a region

Example of ADF Control Flow Rules

```
<af:commandButton
text="Show Items"
action="showDetail"/>
```



browseOrders Page:

Show Items

OrderId	OrderDate	OrderShippedD
1001	2/28/2007	3/3/2007
1002	3/10/2007	4/9/2007
1003	2/27/2007	2/27/2007
1004	2/17/2007	
1005	1/23/2007	1/28/2007
1006	3/4/2007	
1007	2/2/2007	2/7/2007
1008	3/13/2007	
1009	3/11/2007	
1010	3/11/2007	
1011	3/8/2007	
1012	3/12/2007	

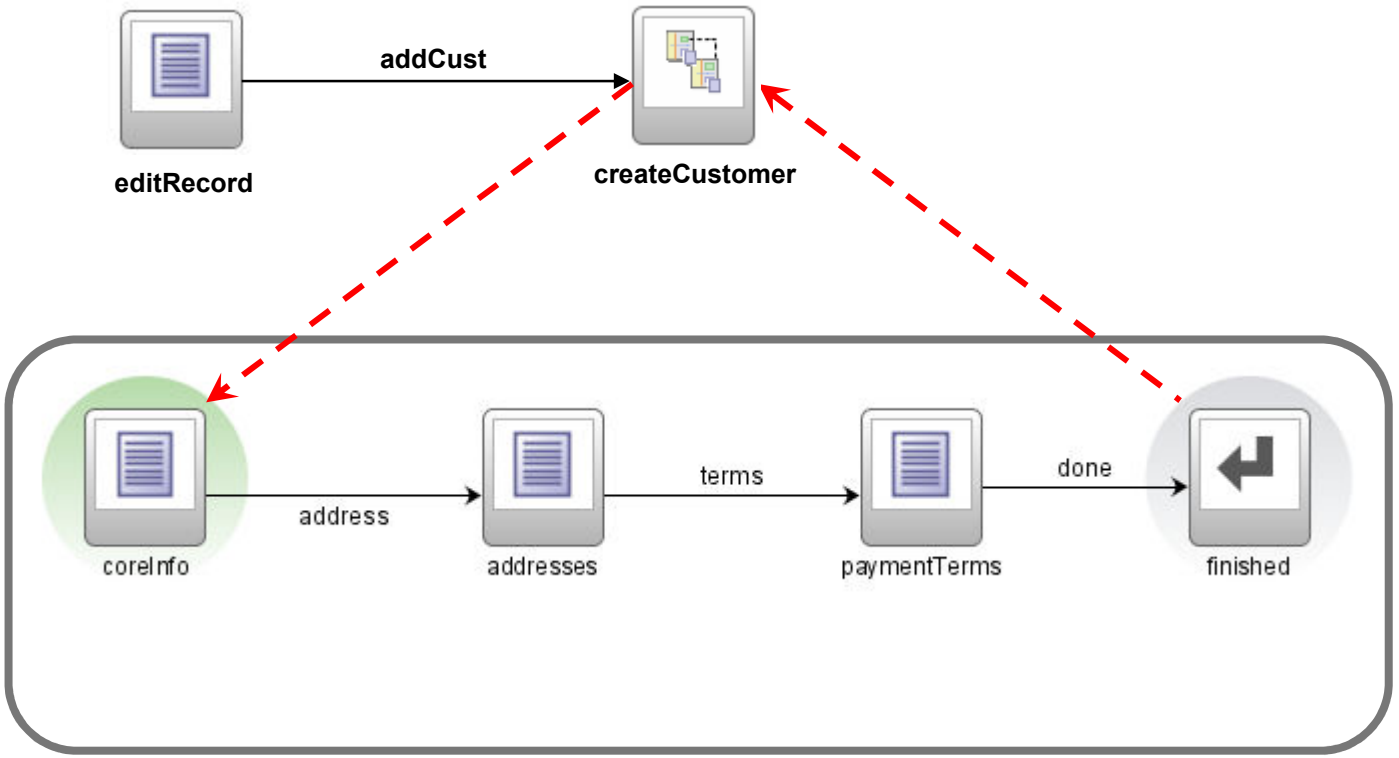
```
<af:commandButton
text= "Return to Orders"
action="showOrders"/>
```

orderDetail Page:

Return to Orders

OrderId	LineItemId	ProductId
1001	1	40
1001	2	63

Bounded Task Flow Example



Bounded Task Flow

Bounded Task Flows

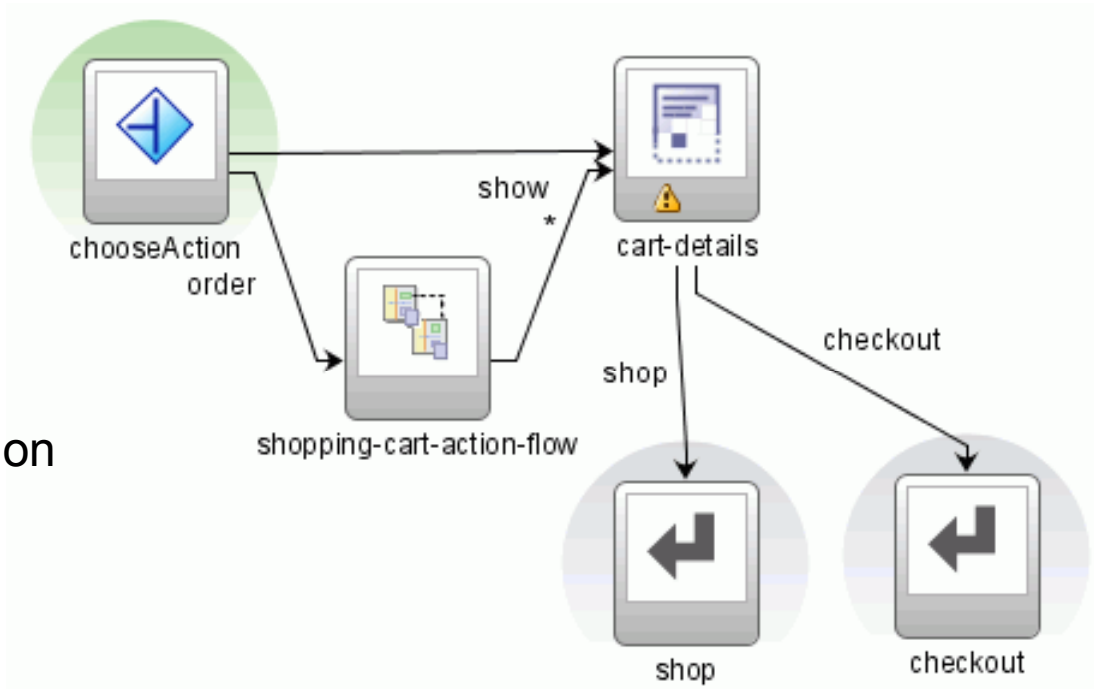
- Can be nested within and called from other task flows
  - Invoked Task flow call activity
  - Treated like any other activity
  - Parent is suspended whilst the sub-flow has “focus”
- Has a defined API
  - Parameters and outcomes (just like view activities)
- Has a strict entry point – users can't just jump to a page
  - Special handling for the browser back button
- Initializer and Finalizer code can be defined
  - Automatically run
- Can be created based on templates

Taskflow Private Scope

- Task flows have a private memory scope - **`pageFlowScope`**
  - Plus usual requestScope, sessionScope, applicationScope
- Accessed via EL like the other scopes
  - #{pageFlowScope.bean}
- Private to each flow *instance*
  - This allows nesting and reuse
- Map data in/out in call activities and task flow returns

Conditional Navigation

- Router activities:
  - Use expressions that evaluate to true or false
  - Define from-outcomes based on the value of the expression



Demonstration

Exploring a Task Flow

Transactional Semantics

- Bounded task flows can define transaction boundaries
  - When a flow is started, you can define:
    - A new transactional state should be created
    - The existing state should be reused
  - Declarative automatic commit or rollback when the flow ends
    - Depending on end state if required

Demonstration

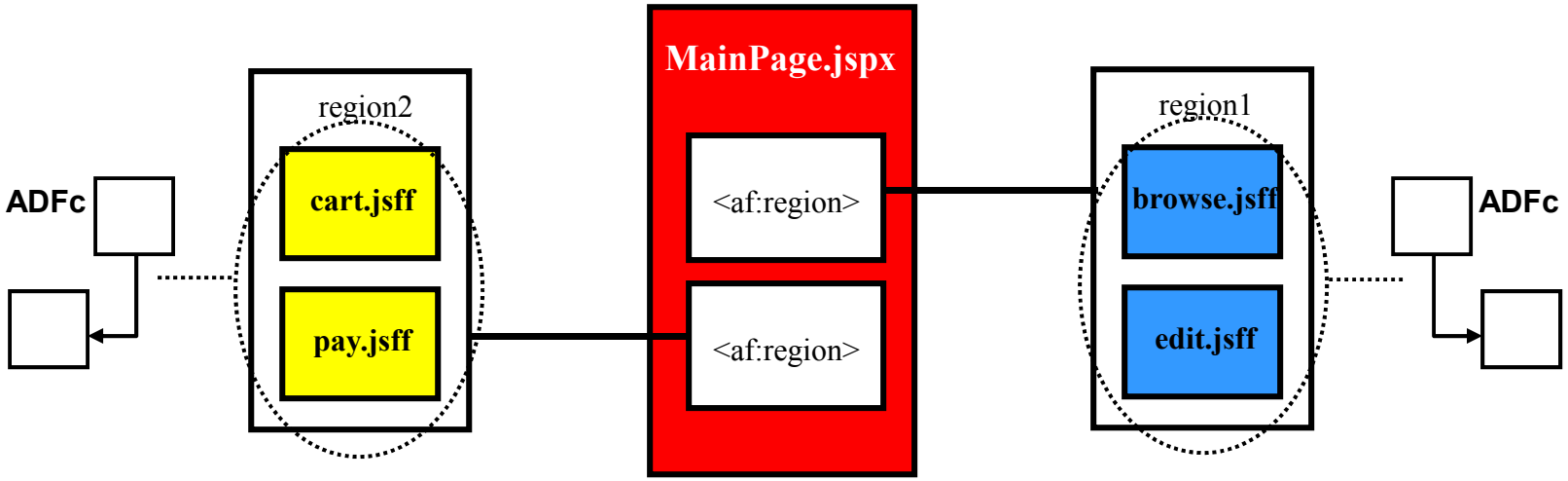
Create or Edit
Bounded Task Flow Example

It's Not Just Pages

- Bounded task flows can be made up of page fragments (.jsff files)
- Such flows can then be embedded into pages as "regions"
- This is a very common pattern allowing the creation of complex pages made up of a series of re-usable components (ie. Task Flows)
- Just drag and drop the flow into the page

Regions

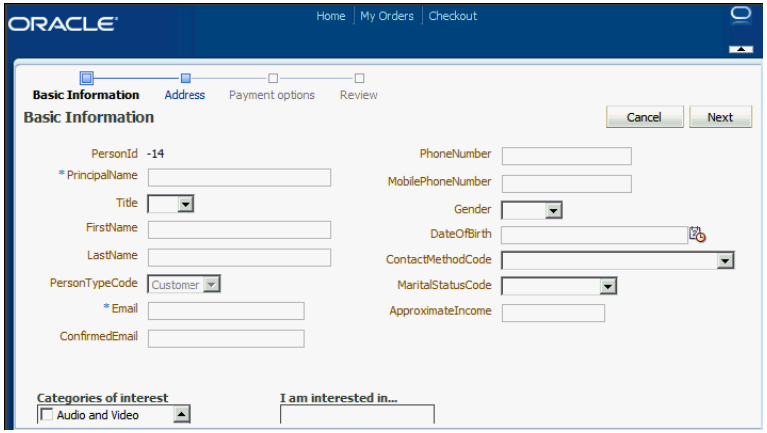
- Regions in ADF Faces RC
  - host reusable page flows
  - have their own Managed-beans
  - have their own ADFm Page Definitions.
  - use page-fragment (jsff)
- For More Interactive Region Selection, Can Be Dynamic

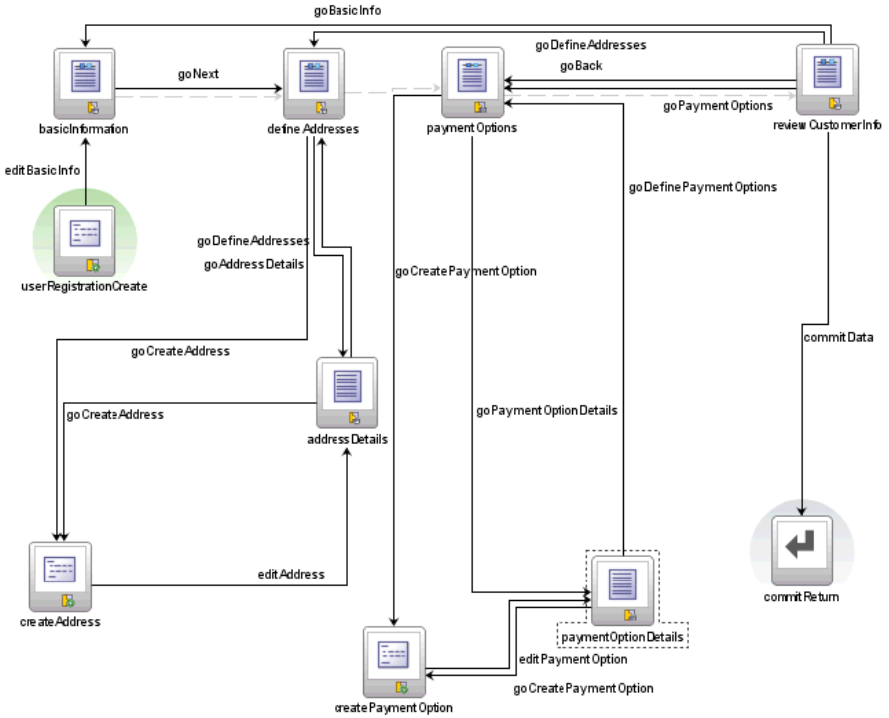


Demonstration

Regions

Trains





- Progression of related activities within a taskflow
- Trainstops point to view activities
  - Activities are grouped with sub taskflows or with wildcards
- Configured to be sequential or nonsequential
- Trainstops can be skipped

Making View Activities Bookmarkable

- You can enable users to save a view activity as a bookmark:
  - Available only in unbounded task flows
  - Can designate in Property Inspector at design time
  - Can designate at run time with `viewBookmarkable()` method
  - Can optionally specify:
    - URL parameters
    - Method to invoke before view is rendered
- You can use the redirect option for a view activity instead of making it bookmarkable.

Bounded vs. Unbounded Taskflows

Unbounded

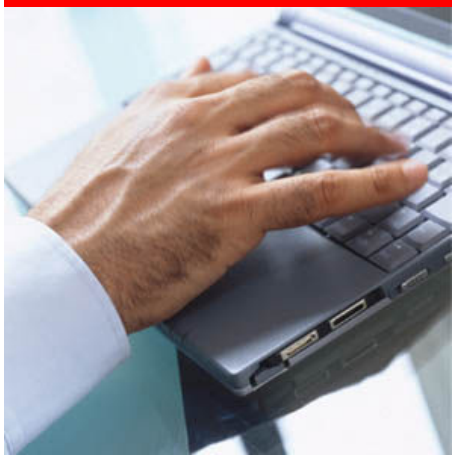
- First entry on task flow stack
- No well-defined boundary or single point of entry
- Cannot be used as a region on a page
- Not securable on its own; uses page security
- Cannot manage transactions or save for later
- Cannot be called
- Does not accept parameters
- Can use bookmarks

Bounded

- Added to task flow stack when called
- Single point of entry, with zero or more exit points
- Use as region on page with page fragments:
  - Can accept input parameters
  - Can return values
- Can be secured separately from containing page
- Declarative transaction management, save for later
- Must be called to be invoked
- Can accept parameters

QUESTIONS & ANSWERS

Learn More



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