



Go to <http://JavaDevTools.com> for presentations, demos, tutorials and other resources
(a.k.a. This is the SAME website as <http://RationalCentral.com> & <http://WebSphereCentral.com>)



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Application Development Challenges

- It takes too long to deliver applications
"We need to *Design, Develop and Deploy applications more quickly*"
- J2EE is perceived to be too complex
"We need to leverage open standards, keep it simple and make it easy for Microsoft heritage developers to get on board"
- Integration is cost prohibitive
"We need to integrate our people, processes and information using web services, databases and existing systems"



Developing Applications More Quickly

- Drag-n-drop development of J2EE applications (*No Coding Required*)

The screenshot displays the IBM WebSphere Portal interface within a Microsoft Internet Explorer browser. The browser's address bar shows the URL <http://yclidesktop.raleigh.ibm.com/wps/myportal/.scr/LoggedInIn>. The portal features a navigation bar with links such as 'Home', 'Banking Account', 'Portfolio', 'Mortgage/Loans', 'Bill Pay', and 'ExtremePlace'. The main content area is divided into several panels:

- Accounts:** A sidebar menu with links for 'Order Checks', 'Payment', and 'Help'.
- Banking Accounts:** A table displaying account information.
- Account Details:** A section for 'Account Number: 96666' showing a list of transactions.
- Transfer Funds:** A form titled 'Make Transfer' with fields for 'From', 'To', and 'Amount'.
- Expense Allocation:** A pie chart showing the distribution of expenses across various categories.

Callouts highlight specific features:

- Database Query:** Points to the 'Accounts' sidebar.
- Web Service:** Points to the 'Make Transfer' form.
- Tabbed Panels:** Points to the 'Banking Accounts' and 'Account Details' panels.
- Spreadsheet Control:** Points to the 'Account Details' table.
- Graphing Controls:** Points to the 'Expense Allocation' pie chart.

Account #	Account Type	Balance
96,666	Credit	2,000.00
74,444	Checking	1,432.44
85,555	Saving	2,567.56

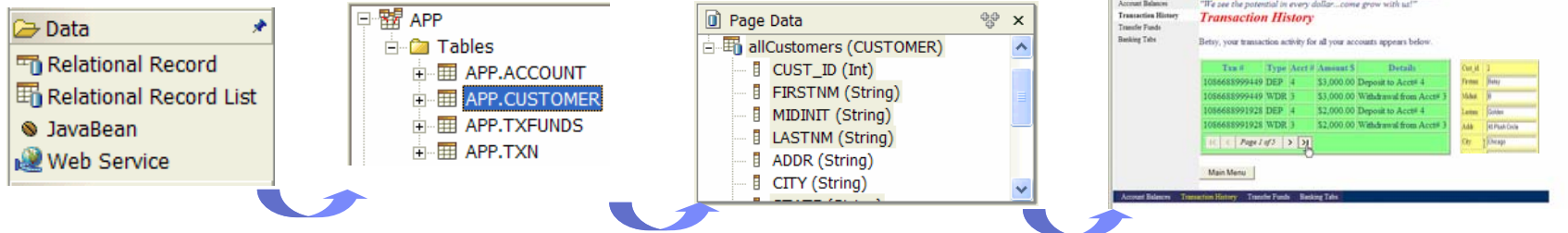
Trans #	Amount	Date	Type	Expense Purpose
355	72.62	2000-11-06	Visa	Taxes
356	31.78	2001-06-16	Visa	Entertainment/Travel
357	61.02	2000-08-25	Visa	Clothing
358	21.75	2000-01-25	Visa	Transportation
359	13.01	2001-03-24	Visa	Telephone
360	24.51	2002-01-20	Visa	Transportation
361	15.87	2001-02-11	Visa	Food
362	13.81	2001-05-23	Visa	Telephone

Expense Allocation

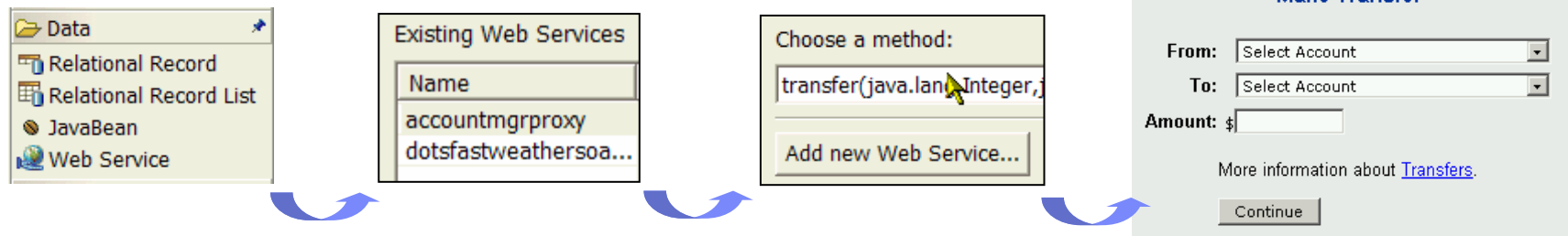
- Mendical/Dental
- Mortgage/Rent
- Food
- Gas/Electric
- Cloth
- Insurance
- Dependent Care
- Taxes
- Entertainment/Travel
- Transportation
- Telephone

Simplifying J2EE Development

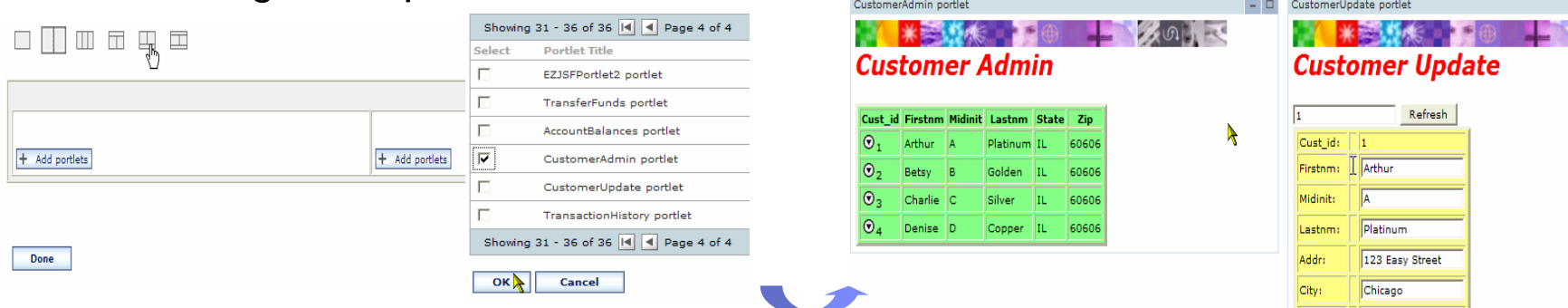
- Database development drag-n-drop ease-of-use ^{1 2}



- Web Services development drag-n-drop ease-of-use ^{1 2}

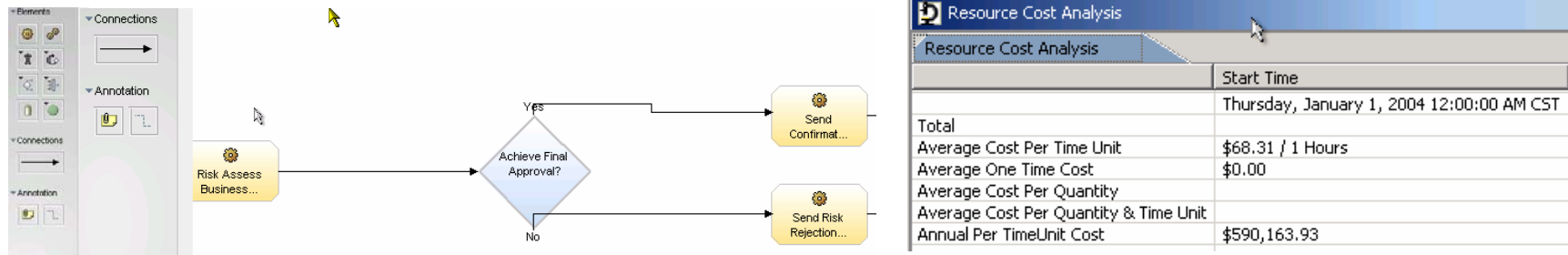


- Portals drag-n-drop ease-of-use ^{1 2}

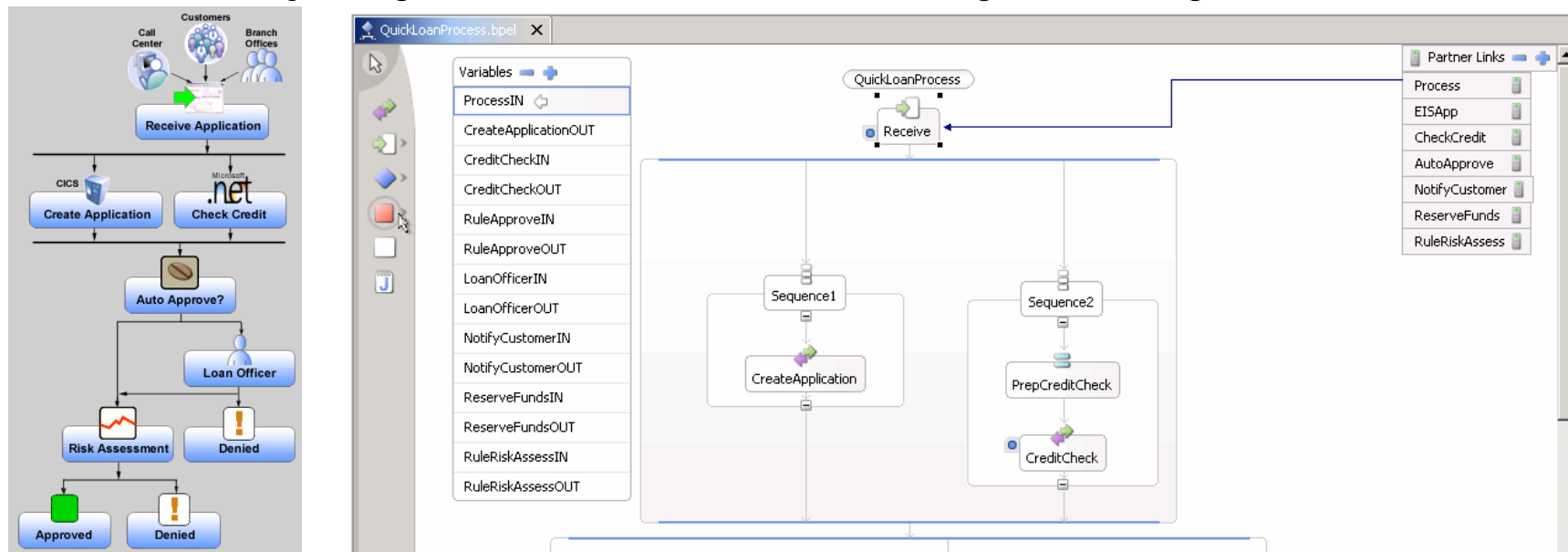


Integrating People, Processes and Information

- Model your business, simulate a process and assess cost savings



- Describe everything as a web service and integrate using workflow tools

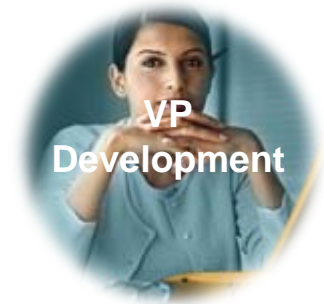


Application Development Challenges Addressed

- It takes too long to deliver applications

"We need to *Design, Develop and Deploy applications more quickly*"

- ✓ IBM's new JavaServer Faces (JSF) tools accelerate development using a drag-n-drop approach (no coding required)



- J2EE is perceived to be too complex

"We need to leverage open standards, keep it simple and make it easy for Microsoft heritage developers to get on board"

- ✓ IBM's new JSF tools make J2EE easier and very attractive to Microsoft heritage developers



- Integration is cost prohibitive

"We need to integrate our people, processes and information using web services, databases and existing systems"

- ✓ IBM's new JSF tools automate web services and database integration
- ✓ IBM's business process integration and workflow tools save time





IBM Software Group

IBM Application Development **End-to-End Development**

➔ V6 Update and RAD Top 10 Highlights ➔

(For Complete “RAD Top 10” Presentation visit <http://JavaDevTools.com>)

“Delivering applications faster, easier and with higher ROI”



 e-business software

Name
Title
Company

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V6 Tools Highlights - Areas of Innovation and Enhancements

■ Lifecycle Integrations (Enhanced Rational/WebSphere Eclipse based Integrations)

- Requirements Explorer View
- Model Explorer View
- ClearCase Views for managing changing artifacts
- ClearQuest Views for managing collaborative activities
- Testing Tools Views

■ RAD Construction Tooling Enhancements

- JSF, SDO, Web Services, etc.
- J2EE 1.4/1.3/1.2 and WAS V6.x/V5.x
- Portal/Portlet Integration
- Enhanced Unit/Component Testing
- Code Review and Runtime Analysis for Profiling
- Built-in Coder-friendly UML Visualizations for Class/Sequence diagrams
- Crystal Reports
- And much more...

■ New UML2 Engine

- New code base
- End-2-End UML2 modeling
- Easier GUI development
- Transformations between models and generating Java/C/C++ code

■ Testing Tools Enhancements (Manual, Functional and Performance Testing)



V6 App Server Highlights

- New Infocenter and Education Assistant
- Concepts and Terminology
- Programming Model
- System Management
- Rapid Deployment
- Enterprise Service Bus
- Clustering and High Availability
- Security



New Infocenter, including “Education Assistant”

- New Infocenter
<http://ibm.com/software/webervers/appserv/infocenter.html>
- Education Assistant
 - Presentations narrated with sound
 - Tutorials
 - Reference information
- Installed with WAS and on ibm.com

WebSphere Application Server Library - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://ibm.com/software/webervers/appserv/infocenter.html>

United States [change] Terms of use

Home Products Services & solutions Support & downloads My account

Software > Application Servers > WebSphere Application Server >

WebSphere Application Server WebSphere software

V 6.0 V 5.1.x V 5.0.x V 4.0.x

WebSphere Application Server Version 6.0.x Information Center

Express - distributed platforms Show | Hide

WebSphere Application Server - distributed platforms Show | Hide

Network Deployment - distributed platforms Show | Hide

Documentation - Information center format
[WebSphere Application Server Network Deployment, Version 6.0.x](#)
[WebSphere Help System plug-in: Network Deployment](#)
[WebSphere Help System plug-in: Javadoc](#)

Documentation - Book format
[Migrating, coexisting, and interoperating](#) (PDF)
[Installing your application serving environment](#) (PDF)
[Administering applications and their environment](#) (PDF)
[Setting up the application serving environment](#) (PDF)
[Using the administrative clients](#) (PDF)
[Securing applications and their environment](#) (PDF)
[Developing and deploying applications](#) (PDF)
[Troubleshooting and support](#) (PDF)

Evaluation and overview
[Literature: Case studies, data sheets, and more](#)

Tutorials, samples and demos
[IBM Education Assistant](#)
[Accessing the Samples Gallery \(requires product installation\)](#)

Release notes
[Release notes](#)

Supported hardware and software
[Supported hardware and software](#)
[Supported hardware](#)
[Supported software](#)

Papers and articles
[WebSphere Application Server zone on developerWorks](#)
[WebSphere Developer Technical Journal](#)
[White papers](#)
[Links recommended by product support](#)

Supplemental books
[WebSphere Redbooks Domain](#)

Related software

- WebSphere Application Server - Express
- WebSphere Application Server
- WebSphere Application Server Network Deployment
- WebSphere Application Server for iSeries
- WebSphere Application Server for z/OS
- WebSphere Extended Deployment
- Rational Application Developer for WebSphere Software
- Rational Web Developer for WebSphere Software
- Macromedia ColdFusion MX for WebSphere

Related solutions

- WebSphere Business Integration Server Foundation
- WebSphere Industry Solutions

Resources

- WebSphere Help System [?]

Related libraries

- WebSphere Application Server for iSeries library
- WebSphere Application Server Express library
- IBM HTTP Server library
- WebSphere Application Server - Edge Components library
- WebSphere Extended Deployment library
- WebSphere Business Integration Server Foundation library
- WebSphere Business Integration Server Foundation for z/OS library

“Education Assistant” – RAD V6 and WAS V6

IBM Education Assistant - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Reload Home Search Favorites Print Mail

Address <http://www-306.ibm.com/software/info/education/assistant/noflash.shtml>

Country/region [select]

Home Products Services & solutions Support & downloads My account

IBM Education Assistant





IBM Education Assistant

Related links:

- WebSphere training and technical enablement

Software for the e-business on demand era

IBM Education Assistant provides an organized collection of self-study educational materials that are simple, short, and focused. You can access content in several formats:

-  Narrated Presentations - include audio explanation of the task or concept
-  Show Me Demonstrations - illustrate how to complete a specific task
-  Tutorials - step-by-step instructions to complete bigger or more complex tasks
-  Additional resources - links to product documentation, Redbooks, and whitepapers

How it works

The IBM Education Assistant user interface allows you to select your configuration and specify how you want to display links to the educational material. Clicking on an education module link presents a navigational hierarchy of available educational content.

→ [Click here to go to the education modules](#)

Select your configuration:

Please select a configuration

Please select a configuration

- IBM® WebSphere® Application Server V6.0
- IBM® WebSphere® Application Server V5
- IBM® Rational® Application Developer V6.0


Go

“Education Assistant” – RAD V6 and WAS V6


IBM Education Assistant

IBM® WebSphere® Application Server V6.0

Overview and new features

 Return to the IBM Education Assistant selection page

 [Icon key](#)

 New to WebSphere Application Server V6

[Architecture overview \(7 min\)](#)



869K

[Topology and terminology \(11 min\)](#)




907K

[Topology and terminology - Express \(5 min\)](#)



346K

 Overview and new features

[Main themes, product packaging and development tools \(11 min\)](#)





378K

[Overview of new features \(18 min\)](#)



508K


 Download the full content of this flow in zip format

 See all of the above topics in a list and provide feedback on this material


IBM Education Assistant

IBM® Rational® Application Developer V6.0

Overview and new features

 Return to the IBM Education Assistant selection page


 [Icon key](#)


 Overview and new features


[Rational Application V6 Overview and new features \(37 min\)](#)





789K


 Download the full content of this flow in zip format


 See all of the above topics in a list and provide feedback on this material


 Click here to expand or collapse a category and see education flowcharts


 A technical overview that provides background on a topic

 A guided demonstration that shows how to complete a specific task

 Step by step instructions to follow for completing a task

 Additional reading material

 Includes audio

 To view PDF format, get [Adobe Acrobat Reader](#)

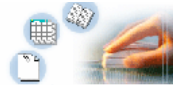
“Education Assistant” – WAS V6 – Modules

IBM Education Assistant

Related links:

- WebSphere training and technical enablement

IBM Education Assistant



Select your configuration:

IBM® WebSphere® Application Server V6.0

Select how to display results:

Task based view

Go

Click on links below to view educational material.

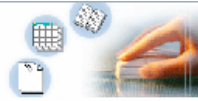
Tasks	IBM WebSphere Application Server V6 and V6.0.1 for Distributed
Big picture and overview	Big picture, overview, product packaging, new V6 features, topology and terminology
Installation and migration	Installation (WebSphere Application Server, IBM HTTP Server and Web server plug-in) and migration WebSphere Application Server profiles
Programming model	J2EE™ 1.4 programming model JavaServer™ Faces (JSF) and Service Data Objects (SDO) Web services Programming model extensions (PME)
System and application management	System, application and Web Server plug-in management
Security	Security architecture and details

Service integration technologies	Service integration technology, including messaging
Scalability and high availability	Work load management and high availability details
Other runtime functions	Class loader and JNDI naming Transport Channel Service
Performance	Performance, caches and tools
Problem determination and serviceability	Problem determination - overview and details



“Education Assistant” – RAD V6 – Modules

IBM Education Assistant



Select your configuration:

IBM® Rational® Application Developer V6.0 ▼

Select how to display results:

Task based view ▼

Go

Click on links below to view educational material.

Application development	IBM Rational Application Developer V6
Getting started	Tool overview Eclipse overview
Installation and migration	Installation and migration
J2EE™ application development	Developing Java™ and J2EE applications with Unified Markup Language (UML) Analyzing coding practices in Java and J2EE applications J2EE Web and EJB™ development
Web application development	Developing Web applications (including J2EE Web applications) Developing Web applications with JavaServer™ Faces (JSF)
Portal application development	Developing portal applications

Data application development	Developing applications with Service Data Objects (SDO) Developing applications for databases
XML application development	XML application development
Web services applications	Developing Web services applications Securing Web services applications Testing Web services applications
Test, debug and profile applications	Testing applications with WebSphere Application Server V6 Component testing applications Debugging Java and J2EE applications Profiling Java and J2EE applications
Applying security	Applying J2EE security to EJBs and Web applications



New WebSphereCentral.com Tutorial Demos and more...



JavaDevTools.com
"Navigating WebSphere, Rational, Workplace and other IBM Eclipse Based Tools..."
 Homepage for: RationalCentral.com, WebSphereCentral.com, WorkplaceDev.com, JavaSOA.com, Bill-Hahn.com

Disclaimer: This is a private web site intended for IBM Eclipse Tools enthusiasts. The materials on this site are offered as-is, no support, no warranties. This is not an official IBM website. To achieve the official IBM experience, please visit <http://ibm.com>.

Welcome! Rational Application Developer (RAD) is the foundation of the IBM Software Development Platform (SDP). The **links**, **demos** and **presentations** below can speed your navigation of IBM development tools. **Executives, managers, architects** and **developers** can use this site to learn more about Rational, WebSphere, Lotus and other IBM Eclipse-based development tools.

Featured Demo

- o [RAD V6 Introduction and Tour Demo](#)
 This demonstration showcases RAD in action and concisely explains the breadth and depth of RAD V6. Executives, managers, architects and developers can use this overview and the referenced resources to quickly learn about the power and value of RAD V6.

Most Popular Links

- o [Presentations and Seminar Demos \(Downloads\)](#)
- o [Eclipse - Platform, Evolution, Ecosystem, and beyond \(Article\)](#)
- o [Rational - IBM Software Development Platform \(SDP\) Overview \(Whitepaper\)](#)
- o [WebSphere - IBM Enterprise Service Bus + WBI \(Whitepaper\)](#)
- o [Workplace - IBM Workplace Overview and Resources \(website\)](#)
- o [Portal DevZone - V5.0 Whitepaper](#) and [Portal V5.1 Enhancements](#)

2005/03/24 Updates

- o [RAD V6 Tutorial Demo Series has arrived!](#)

WebSphereCentral.com
 RationalCentral.com
 WorkplaceDev.com
 JavaDevTools.com
 JavaSOA.com
 Bill-Hahn.com

o [RAD V6 Tutorial Demo Series has arrived!](#)

(Getting Started Guide, Introduction and Tour)

Four scenarios with > 75 demos

- 1) End-2-End (Soup-to-nuts J2EE Build Scenarios)
- 2) Quick Success (Short Ad-hoc Build Scenarios, < 10 min each)
- 3) Banking and Finance (Web App/Site Scenario)
- 4) Financial Advisor Dashboard (Portal/Portlet Scenario)

RAD V6 Tutorial Demo Series

Executives and Managers

- *Watch and Learn:* Simply view the "Tutorial Demo" movies to see ROI in action...in just minutes!

Architects and Developers

- *Watch and Do:* Use the "Tutorial Demo" movies to build the reference applications from scratch!

#1 End-2-End Application

End-2-End Page (End2EndPage.jsp and .java)
Call All

Type of Calls	Input-->Submit-->Results	Diagrams
Web Services: o Temperature (www.xmethods.net) o FastWeather (ServiceObjects.com)	Temperature Web Service FastWeather Web Service Zip Code: 11101 Cond: Clear License Key: WS14-PBJ1-K0Y3 City: Long Island City State: New York Temp°F: 28 Submit	Internet WebServiceProxy xmethods.net Temperature Web Service End2EndPage WebServiceProxy ServiceObjects.com FastWeather Web Service End2EndPage
XML: o Create XML Doc o Receive XML Doc	Create XML Doc Read XML Doc Id: 123 Info: Hi XML! Submit XML: <?xml version="1.0" encoding="UTF-8"?> <E2E> Doc: <ID>123</ID> <INFO>Hi XML!</INFO> </E2E>	Create XML End2EndPage E2E XML Doc Read XML End2EndPage E2E XML Doc E2E XML Attributes XML SDO Beans
JSF: Client-side data: o Table o Graphs	COUNTER COUNT CounterA 111 CounterB 200 Page 1 of 2 Jump to page: <input type="text"/> Counter Usage 	Counter Usage Counter Usage Counter Usage Counter Usage

#2 Quick Success Apps

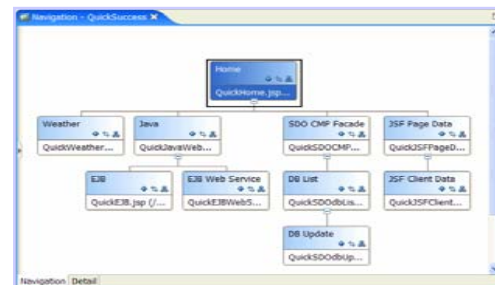
Navigation - QuickSuccess Web Browser

http://localhost:9080/QuickSuccess/faces/QuickHome.jsp

Welcome to the Quick Success Gallery

Home
Weather
Java
EJB
EJB Web Service
SDO CMP Facade
DB List
JSF Page Data
JSF Client Data

Portfolio Performance



#3 Banking & Finance

Financial Advisor Dashboard

BankCustomers portfolio

Customer	First Name	Last Name	City	State	Zip	Work Phone	Invested	Projected	% Rate of Return
1	Arthur	Platinum	Long Island	NY	11101	773-123-1111	\$500,000.00	\$527,761.13	5.55%
2	Betty	Golden	Arlington	VA	22202	773-123-2222	\$500,000.00	\$527,568.79	5.51%
3	Charlie	Silver	Fort Lauderdale	FL	33303	773-123-3333	\$500,000.00	\$536,468.79	5.33%
4	Dennis	Copper	Burghill	OH	44404	773-123-4444	\$500,000.00	\$510,415.00	2.12%

Customer Portfolios Performance

Banking > Finance > Portfolio Management

Customer # 1

Analyze Customer Portfolio

Portfolio details for Arthur Platinum appear below
Invested: \$500,000.00 Projected: \$527,761.13 Rate of return: 5.55%

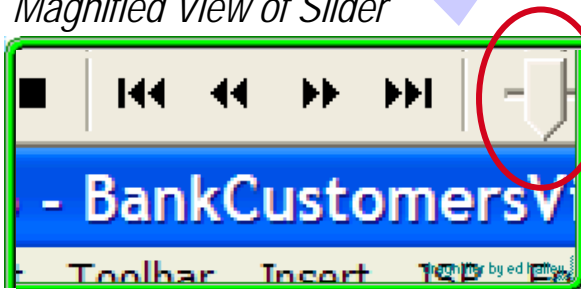
Portfolio	Allocation	Graphics	Market Simulation	
Fund Asset #	Fund Name	% of Folio	\$ Invested Risk % Return \$ Projected	
101	Blended - Income Plus Life Strategy	5%	\$25,000.00 1 2.124%	\$25,531.00
102	Blended - Conservative Life Strategy	4%	\$20,000.00 2 2.240%	\$20,849.00
103	Blended - Moderate Life Strategy	6%	\$30,000.00 3 6.374%	\$31,612.30
104	Blended - Aggressive Life Strategy	7%	\$35,000.00 4 8.424%	\$37,348.40
105	Money Market	5%	\$25,000.00 1 2.124%	\$25,531.00
106	Bond - Stable Value	5%	\$25,000.00 1 2.127%	\$25,518.79
107	Bond - Total Market	5%	\$25,000.00 2 8.372%	\$26,592.71

RAD V6 Tutorial Demo Series – How They Work...

- The embedded movie player has playback controls like a DVD player.
- The SLIDER allows accelerated forward/reverse playback control.



Magnified View of Slider



Web - Web Browser - IBM Rational Software Development Platform

File Edit Navigate Search Project Run Window Help

BankCustomersView.jsp BankPortfoliosView.jsp Web Browser X

http://localhost:9081/wps/myportal/ut/p/_s_7_0_A/7_0_407/.cmd/ad/.ar/1847068225/.pm/-/.c/6_0_3T3/.ce/7_0_40A/.p/5_0_3T1/.d/

BankCustomers portlet

Bank Customers

Customers Portfolios Dashboard

Cust #	First Name	Last Name	Address	City	State	Zip	e-mail	Work Phone
1	Arthur	Platinum	123 Easy Street	Long Island	NY	11101	Cash.A.Plenty@mail.com	773-123-1111
2	Betsy	Golden	45 Plush Circle	Arlington	VA	22202	Gold.P.Lated@mail.com	773-123-2222
3	Charlie	Silver	67 Humble Avenue	Fort Lauderdale	FL	33303	Simply.E.Nuff@mail.com	773-123-3333
4	Denise	Copper	89 Trailer Park Drive	Burghill	OH	44404	Always.N.Debt@mail.com	773-123-4444

BankPortfolios portlet

Bank Portfolio Management

Customer #

Analyze Customer Portfolio

Portfolio Allocation Graphics Market Simulation

Fund Acct #	Fund Name	% of Folio	\$ Invested	Risk	% Return	\$ Projected
301	Blended - Income Plus Life Strategy	5%	\$25,000.00	1	2.125%	\$25,531.25
302	Blended - Conservative Life Strategy	5%	\$25,000.00	2	4.25%	\$26,062.50
303	Blended - Moderate Life Strategy	5%	\$25,000.00	3	6.375%	\$26,593.75
304	Blended - Aggressive Life Strategy	5%	\$25,000.00	4	8.425%	\$27,106.25
305	Money Market	5%	\$25,000.00	1	2.125%	\$25,531.25
306	Bond - Stable Value	10%	\$50,000.00	1	2.125%	\$51,062.50

Paused 00:59/01:06

End-2-End Application

Demo

"Accelerate development...
increase productivity...
maximize ROI !\$! "

Iterative Development Demos

➔ Model, Build, Test, Debug, Deploy

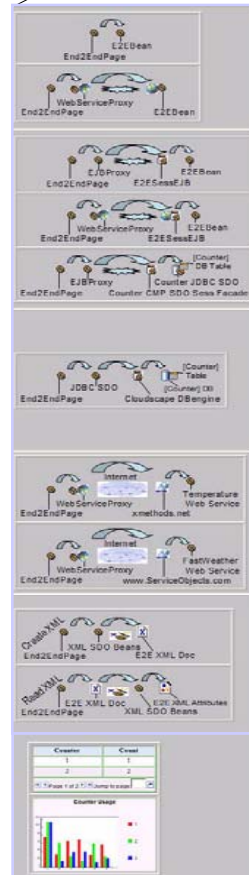
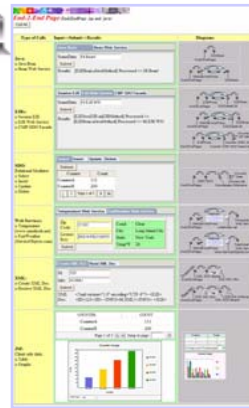
- UML Model Visualizations
- Dynamic Development
- Automated Deployment

J2EE+ Builder Demos

➔ Includes JSF, SDO, Web Services

- Java
- Databases
- Web Services
- Drag-n-Drop GUI

#1

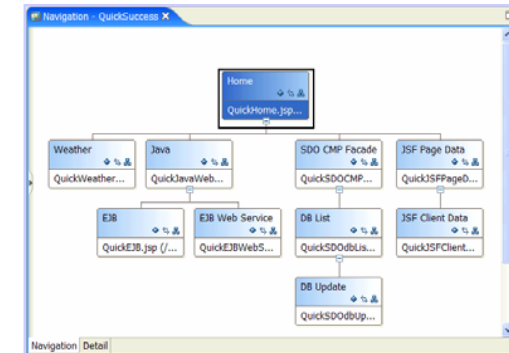
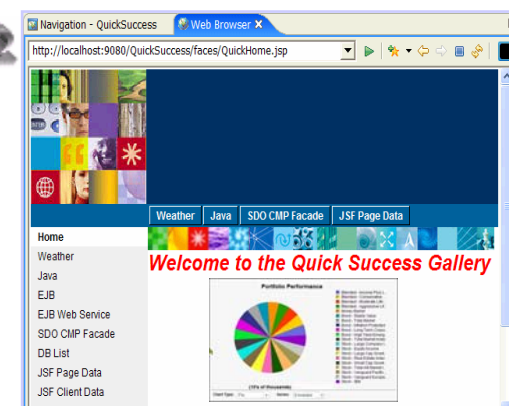


Quick Success Applications

Demo

- Easy build scenarios
- You watch or build
- < 10 minutes each

#2

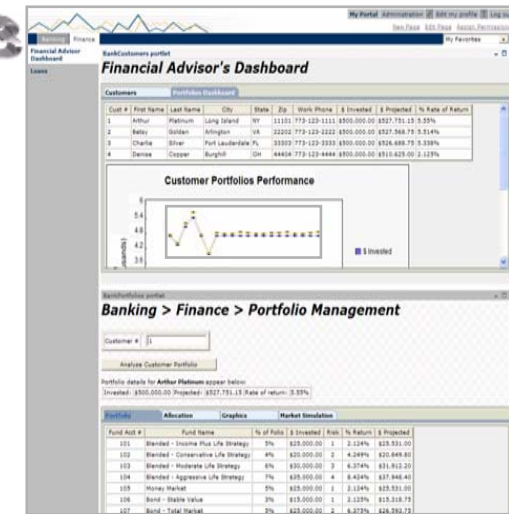


Banking & Finance Web/Portal Applications

Demo

- Banking Accounts
- Portfolio Management
- Financial Advisor Dashboard

#3



End-2-End Application

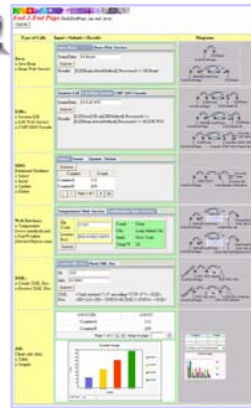
"Accelerate development...
increase productivity...
maximize ROI !\$! "

Iterative Development Demos

- ➔ Model, Build, Test, Debug, Deploy
- UML Visualizations
- Dynamic Development
- On-the-fly code changes
- Incremental build engine
- Testing for Java, EJBs, Web Services, etc...
- Dynamic Interactive Debugger
- Automated Application Packaging and Deployment

J2EE+ Builder Demos

- ➔ Includes JSF, SDO, Web Services
- Java and EJBs (Session, CMP)
- Service Data Objects (SDO)
- SDO CMP Session Facades
- XML and XSD Schemas
- XML SDO JavaBean Bindings
- JavaServer Faces (JSF)
- Database and SQL
- Web Services Creation and Consumption



End-2-End Page (End2EndPage.jsp and java)

Call All

Type of Calls	Input>>Submit>>Results	Diagrams								
Java: o Java Bean o Bean Web Service	Java Bean Bean Web Service SomeData: Hi Bean! Submit Results: [E2EBean.aJavaMethod] Processed >> Hi Bean!									
EJBs: o Session EJB o EJB Web Service o CMP SDO Facade	Session EJB EJB Web Service CMP SDO Facade SomeData: Hi EJB WS! Submit Results: [E2ESessEJB.aEJBMethod] Processed >> [E2EBean.aJavaMethod] Processed >> Hi EJB WS!									
SDO: Relational Mediator: o Select o Insert o Update o Delete	Select Insert Update Delete Refresh <table border="1"> <thead> <tr> <th>Counter</th> <th>Count</th> </tr> </thead> <tbody> <tr> <td>CounterA</td> <td>111</td> </tr> <tr> <td>CounterB</td> <td>200</td> </tr> </tbody> </table> Page 1 of 2	Counter	Count	CounterA	111	CounterB	200			
Counter	Count									
CounterA	111									
CounterB	200									
Web Services: o Temperature (www.xmethods.net) o FastWeather (ServiceObjects.com)	Temperature Web Service FastWeather Web Service <table border="1"> <tr> <td>Zip Code: 11101</td> <td>Cond: Clear</td> </tr> <tr> <td>License Key: WS14-PBJ1-KKY3</td> <td>City: Long Island City</td> </tr> <tr> <td></td> <td>State: New York</td> </tr> <tr> <td></td> <td>Temp*F: 28</td> </tr> </table> Submit	Zip Code: 11101	Cond: Clear	License Key: WS14-PBJ1-KKY3	City: Long Island City		State: New York		Temp*F: 28	
Zip Code: 11101	Cond: Clear									
License Key: WS14-PBJ1-KKY3	City: Long Island City									
	State: New York									
	Temp*F: 28									
XML: o Create XML Doc o Recieve XML Doc	Create XML Doc Read XML Doc Id: 123 Info: Hi XML! Submit XML: <?xml version="1.0" encoding="UTF-8"?><E2E> Doc: <ID>123</ID><INFO>Hi XML!</INFO></E2E>									
JSF: Client-side data: o Table o Graphs	<table border="1"> <thead> <tr> <th>COUNTER</th> <th>COUNT</th> </tr> </thead> <tbody> <tr> <td>CounterA</td> <td>111</td> </tr> <tr> <td>CounterB</td> <td>200</td> </tr> </tbody> </table> Page 1 of 2 Jump to page:	COUNTER	COUNT	CounterA	111	CounterB	200			
COUNTER	COUNT									
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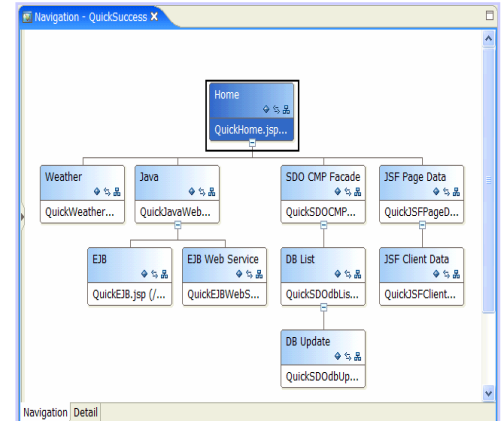
Quick Success Gallery Applications

- Easy J2EE build scenarios
- Internet Weather Web Service
- JavaBean Web Service
- EJB Web Service
- Service Data Objects (SDO)
 - Database Mediator: Select, Insert, Update, Delete
- Java Server Faces (JSF)
 - Rich UI Controls, Charts/Graphs, drag-n-drop
 - Custom coding, Event Driven, MVC Framework

Banking & Finance Web/Portal Applications

- Transfer Funds
- Transaction History
- Account Management
- Portfolio Management
- Asset Allocation
- Graphical portfolio analysis
- Stock Market Simulation
- Mutual Funds, Stocks, Bonds, Money Mkt

#2



#3

My Portal Administration Edit my profile Log out
New Page Edit Page Assign Permissions

Banking Finance My Favorites

Financial Advisor Dashboard

BankCustomers portlet

Financial Advisor's Dashboard

Customers Portfolios Dashboard

Cust #	First Name	Last Name	City	State	Zip	Work Phone	\$ Invested	\$ Projected	% Rate of Return
1	Arthur	Platinum	Long Island	NY	11101	773-123-1111	\$500,000.00	\$527,751.15	5.55%
2	Betsy	Golden	Arlington	VA	22202	773-123-2222	\$500,000.00	\$527,568.75	5.514%
3	Charlie	Silver	Fort Lauderdale	FL	33303	773-123-3333	\$500,000.00	\$526,688.75	5.338%
4	Denise	Copper	Burghill	OH	44404	773-123-4444	\$500,000.00	\$510,625.00	2.125%

Customer Portfolios Performance

BankPortfolios portlet

Banking > Finance > Portfolio Management

Customer # 1

Analyze Customer Portfolio

Portfolio details for **Arthur Platinum** appear below:
Invested: \$500,000.00 Projected: \$527,751.15 Rate of return: 5.55%

Fund Acct #	Fund Name	% of Folio	\$ Invested	Risk	% Return	\$ Projected
101	Blended - Income Plus Life Strategy	5%	\$25,000.00	1	2.124%	\$25,531.00
102	Blended - Conservative Life Strategy	4%	\$20,000.00	2	4.249%	\$20,849.80
103	Blended - Moderate Life Strategy	6%	\$30,000.00	3	6.374%	\$31,912.20
104	Blended - Aggressive Life Strategy	7%	\$35,000.00	4	8.424%	\$37,948.40
105	Money Market	5%	\$25,000.00	1	2.124%	\$25,531.00
106	Bond - Stable Value	3%	\$15,000.00	1	2.125%	\$15,318.75
107	Bond - Total Market	5%	\$25,000.00	2	6.375%	\$26,593.75



IBM Software Group

Rational/WebSphere V6 Family and RAD/RSA Highlights

➔ “The next generation of WSAD...IBM’s Foundational Eclipse based Tools” ➔



 **e**business software

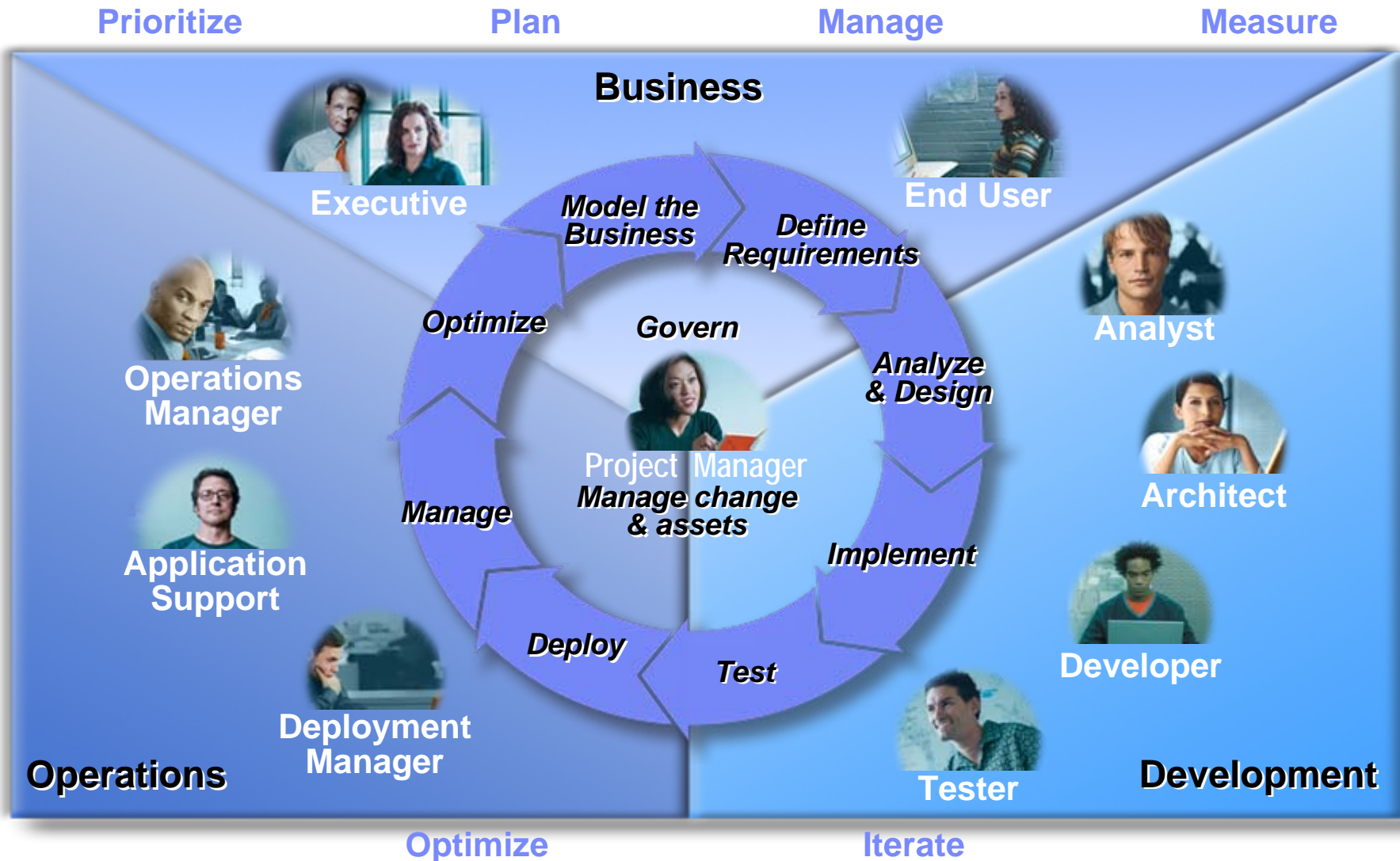
Name

Title

Company

© 2003 IBM Corporation

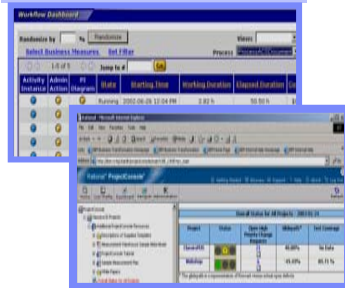
The business-driven development lifecycle



Full Lifecycle Development

IBM Software Development Platform

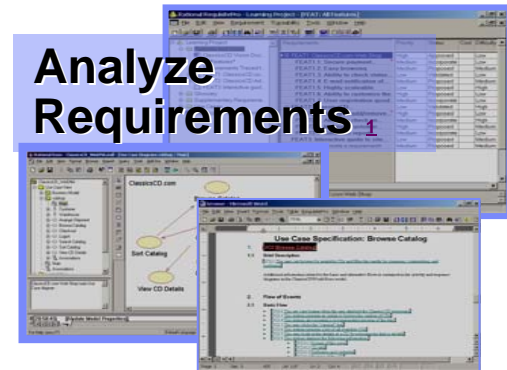
Monitor



Model Business Process



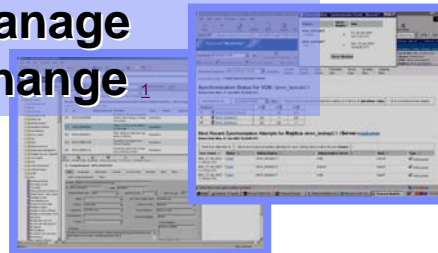
Analyze Requirements



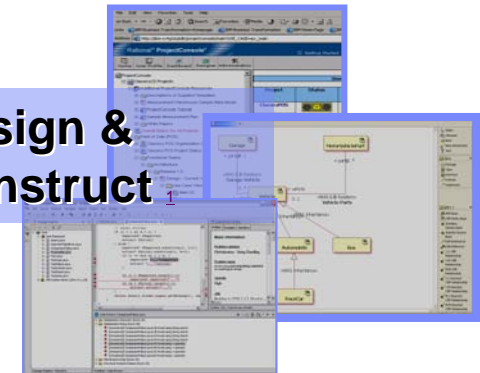
Test & Deploy



Manage Change

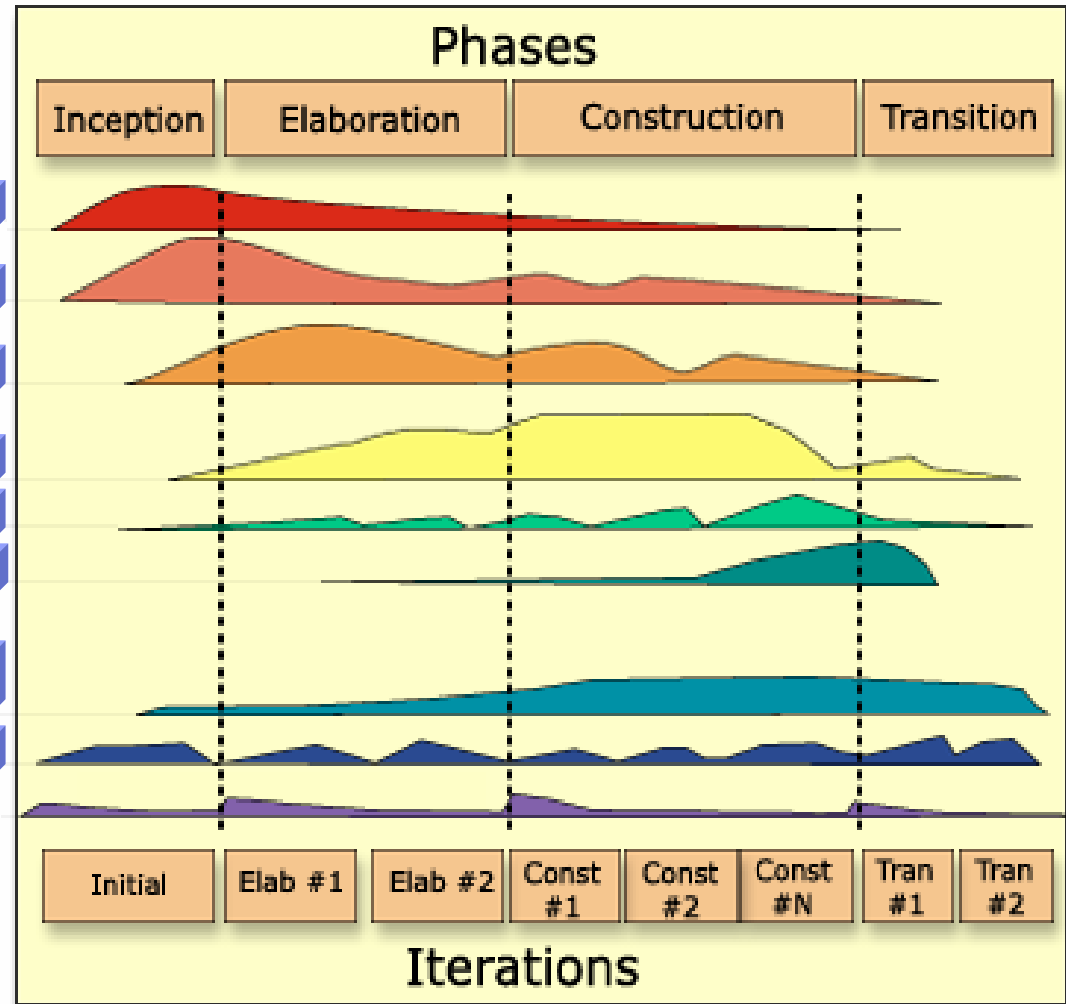
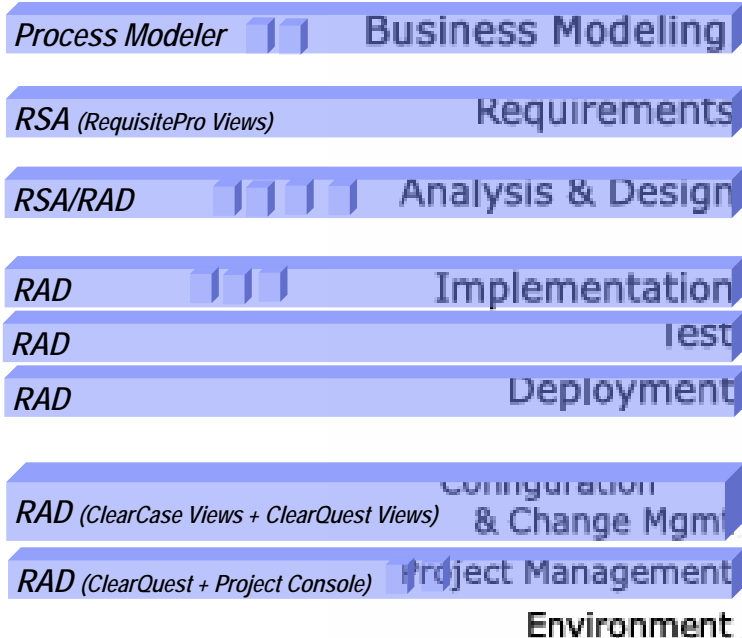


Design & Construct



Lifecycle Tools – RUP Development Disciplines

Disciplines



Simplified Packaging and Names

V4 & V5	V6
WSAD	RAD (Rational App Developer)
Rose XDE	RSM (Rational SW Modeler)
WSAD + XDE	RSA (Rational SW Architect)

Existing Tools In WSAD V5.x and RAD V6

Disciplines

Business Modeling

Requirements

UML 2-way Modeling

Analysis & Design

J2EE, Web Services, JSF, SDO...

Implementation

Unit Testing, etc.

Test

Automated J2EE Packaging

Deployment

Configuration

& Change Mgmt

Project Management

Environment

Simplified Packaging and Names

V4 & V5	V6
WSAD	RAD (Rational App Developer)
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Phases

Inception

Elaboration

Construction

Transition

Analyst

Model,
Simulate
and
Monitor
Business
Processes

Architect

Model
Application
Components,
Services
and
Data

Developer

Visually
Construct,
Hand Code
and
Generate
Applications

Tester

Design,
Create,
Execute
and
Report
Tests

Project Mgr

- Follow a common process
- Track project status
- Manage Change and assets
- Manage requirements
- Manage Quality

IBM's Eclipse Software Development Platform

New V6 Integrated Views/Perspectives

Disciplines

Process Modeler Business Modeling

RequisitePro Eclipse Views Requirements

Analysis & Design

Implementation

Functional, Manual, Performance, Analysis Test

Deployment

ClearCase Eclipse Views Configuration & Change Mgmt

ClearQuest Eclipse Views Project Management

Environment

Simplified Packaging and Names

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IBM's Eclipse Software Development Platform

Lifecycle Tools are Integrated as Views in V6 ¹

Disciplines

Business Modeling

Requirements

Analysis & Design

Implementation

Test

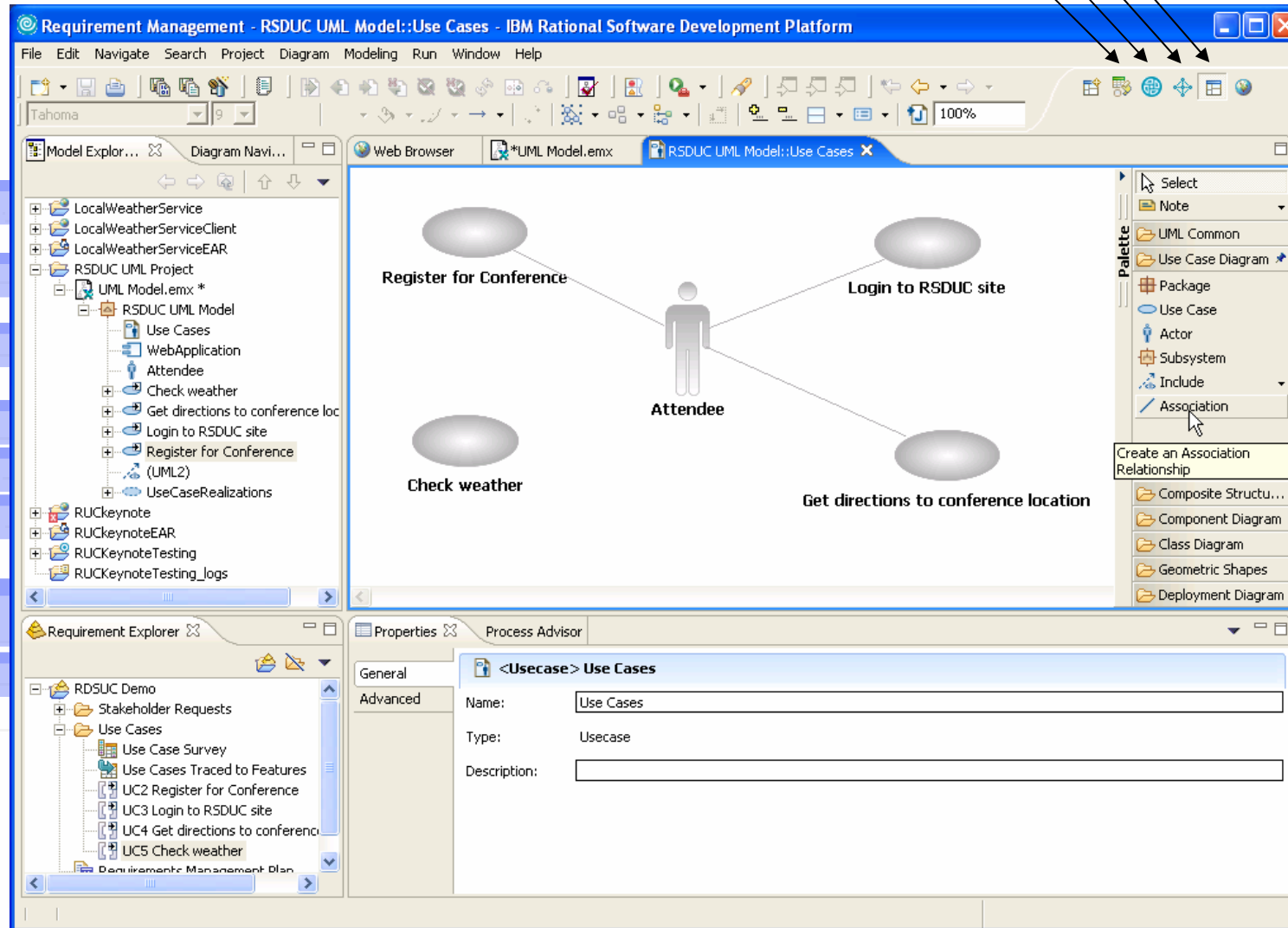
Deployment

Configuration

& Change Mgmt

Project Management

Environment



Rational V6 Tools – Product Packaging Overview



System Analyst



Architect



Developer



Tester

**Rational
Software Architect**

**Rational
Performance Tester**

**Rational
Software
Modeler**

**Rational
Application
Developer**

**Rational
Functional Tester**

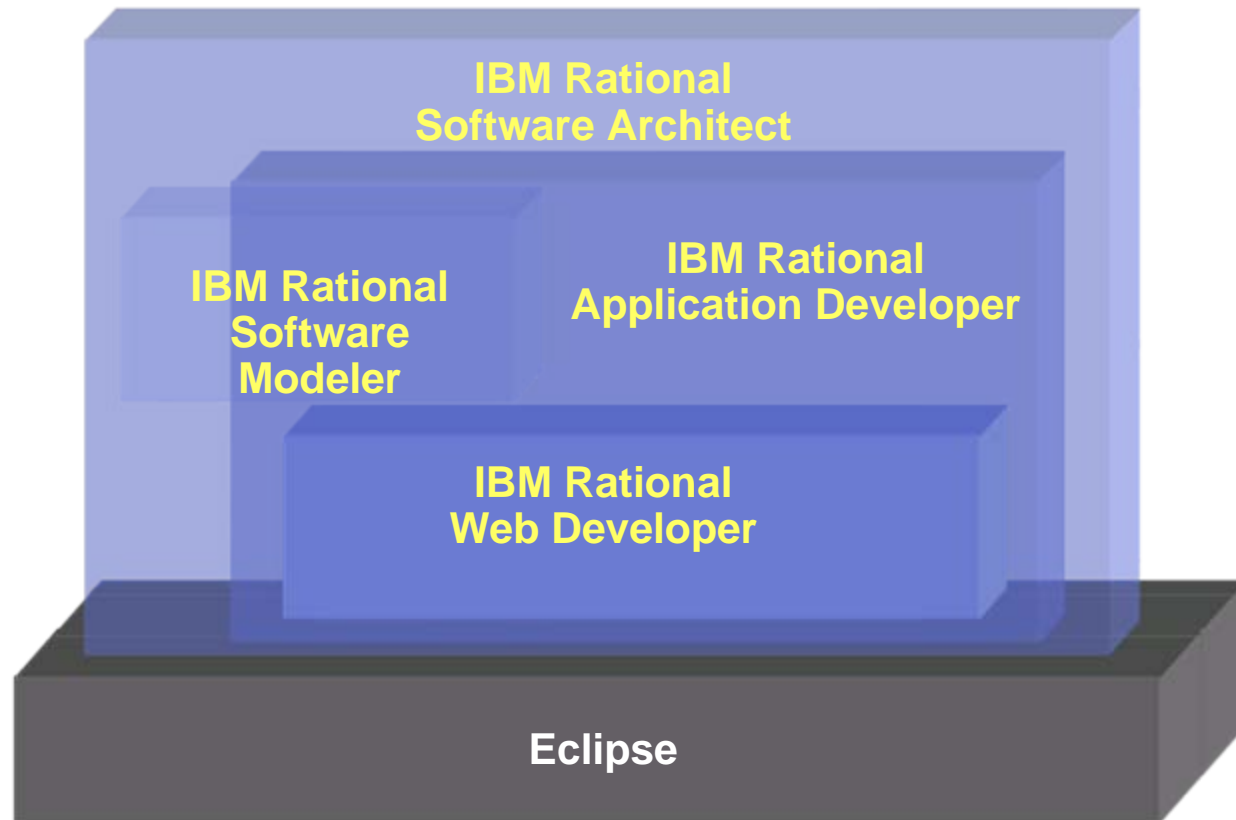
**Rational
Web Developer**

**Rational
Manual Tester**

Eclipse 3.0



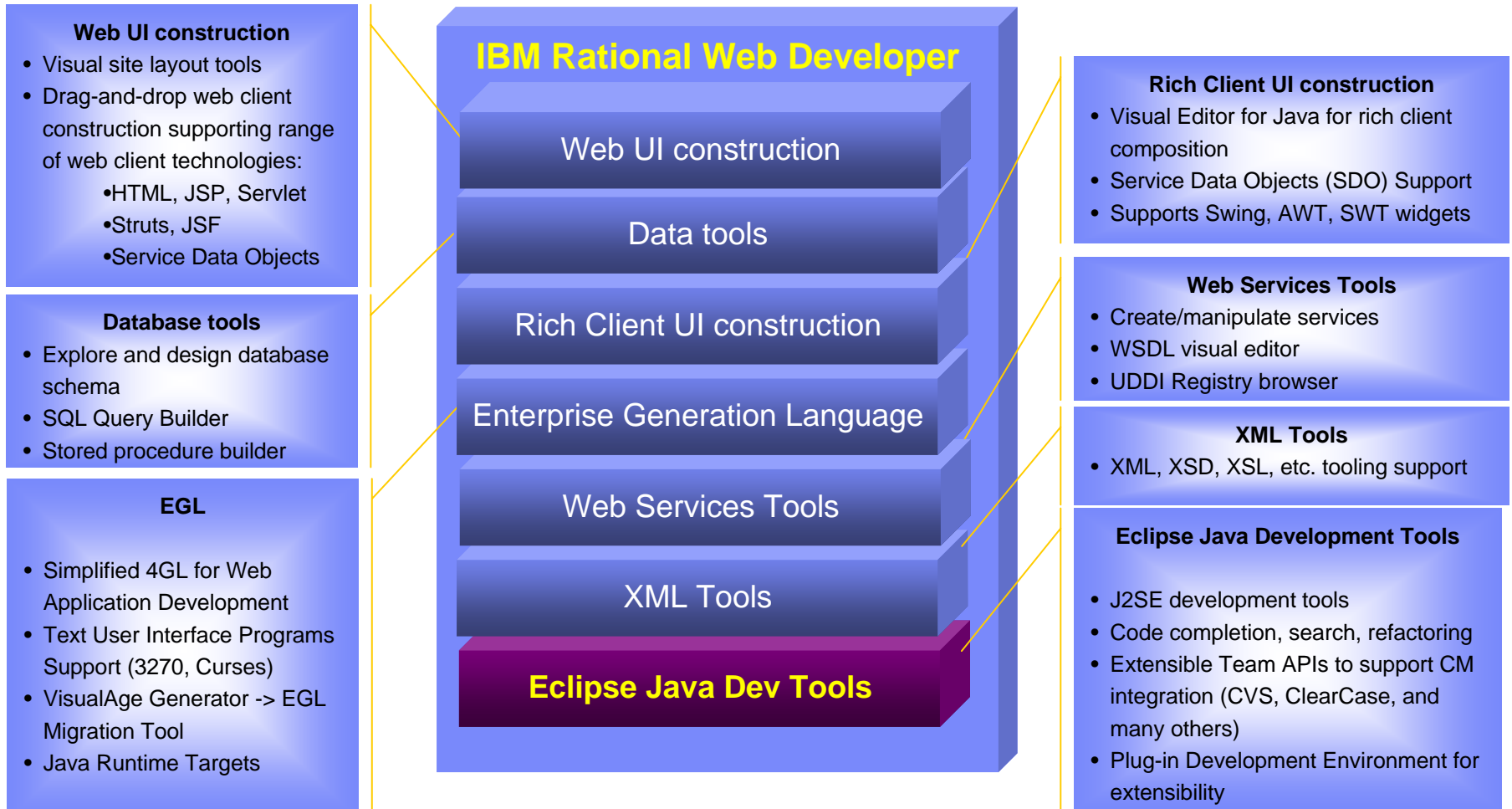
Design and construction tools



IBM Rational Web Developer

Follow on to WebSphere Studio Site Developer

New Rapid Application Development capabilities focused on ease of use



IBM Rational Application Developer

Follow on to WebSphere Studio Application Developer

J2EE/EJB Tooling

- J2EE construction tools
- Supports WebSphere and WebLogic
- Supports J2EE 1.3 and 1.4
- Rapid Deployment for WAS v6
- Integrated WAS test environments
- O/R mapping

Code Analysis Tools

- Both static source code analysis and dynamic runtime analysis
- Source code analysis for rule violation detection: Globalization, J2EE/J2SE Best Practices, Private API Usage, Performance
- Sequence diagram runtime trace with performance, thread and code coverage annotation
- Advanced memory leak detection
- Remote data collection across multiple servers
- User-defined run-time probes
- Interactive reports and metrics

IBM Rational Application Developer

Component/Unit Test

J2EE/EJB Tooling

Portal/Portlet Design Tools

Code Analysis Tools

UML Visual Editors

Rational Web Developer

RUP Configuration for J2EE

ClearCase LT

Component/Unit Test

- JUnit-based testing of Java components, EJBs and Web Services
- Test prioritization recommendation based on code analysis
- Automated test case generation through usage of test patterns
- Datapool editor for data-driven testing
- Optimized unit testing through a set of metrics in the test creation wizard
- Test creation wizard offers a set of test patterns to automatically generate test

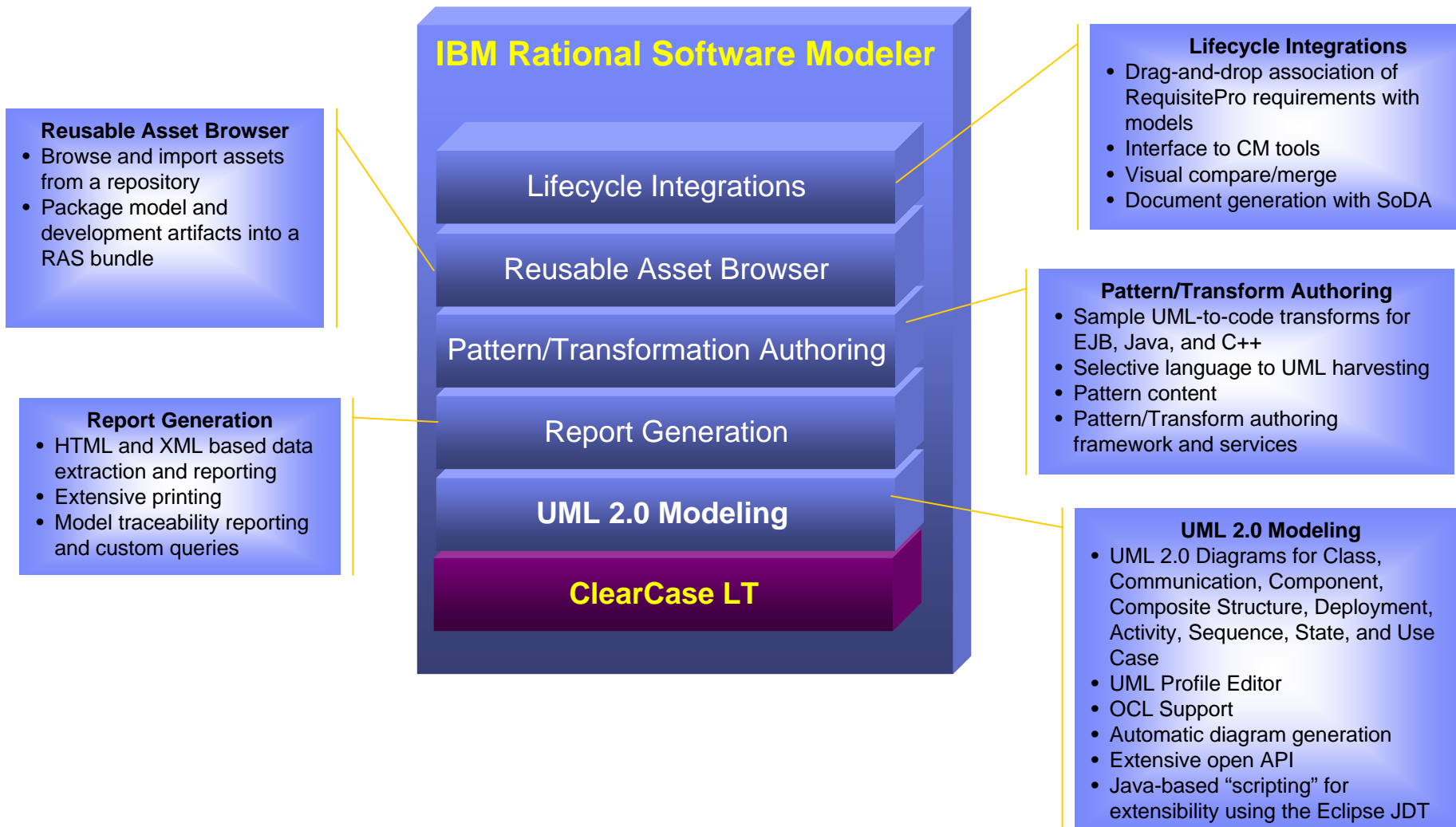
Portal/Portlet Design Tools

- Visual Portal site and page layout tools
- Visual Portlet layout and preview
- Integrated Portal test environment

UML Visual Editors

- Class diagrams for Java/EJB structure
- Sequence diagrams for method body visualization
- IDEF1X/IE diagrams for Database and XML schema
- Dynamic topic diagrams
- Javadoc integration
- Visual refactoring

IBM Rational Software Modeler



IBM Rational Software Architect

Application Analyzer

- Automatic anti-pattern and pattern detection
- Architectural discovery, analysis, metrics, and stability reporting
- Implementation level architectural rules

Modeler

- UML 2.0 Diagrams for Class, Communication, Component, Composite Structure, Deployment, Activity, Sequence, State, and Use Case
- OCL Support
- Automatic diagram generation
- Pattern content
- Pattern/Transform authoring framework and services
- Extensive open API
- Java-based "scripting" for extensibility
- HTML and XML based data extraction and reporting
- Extensive printing
- RAS tools

IBM Rational Software Architect

Java Structural Analysis

UML Language Transforms

Software Modeler

C/C++ Development Tools

Application Developer

RUP Configuration for SW Architects

ClearCase LT

Transformations

- Sample UML-to-code transforms for EJB, Java, and C++
- Selective language to UML harvesting

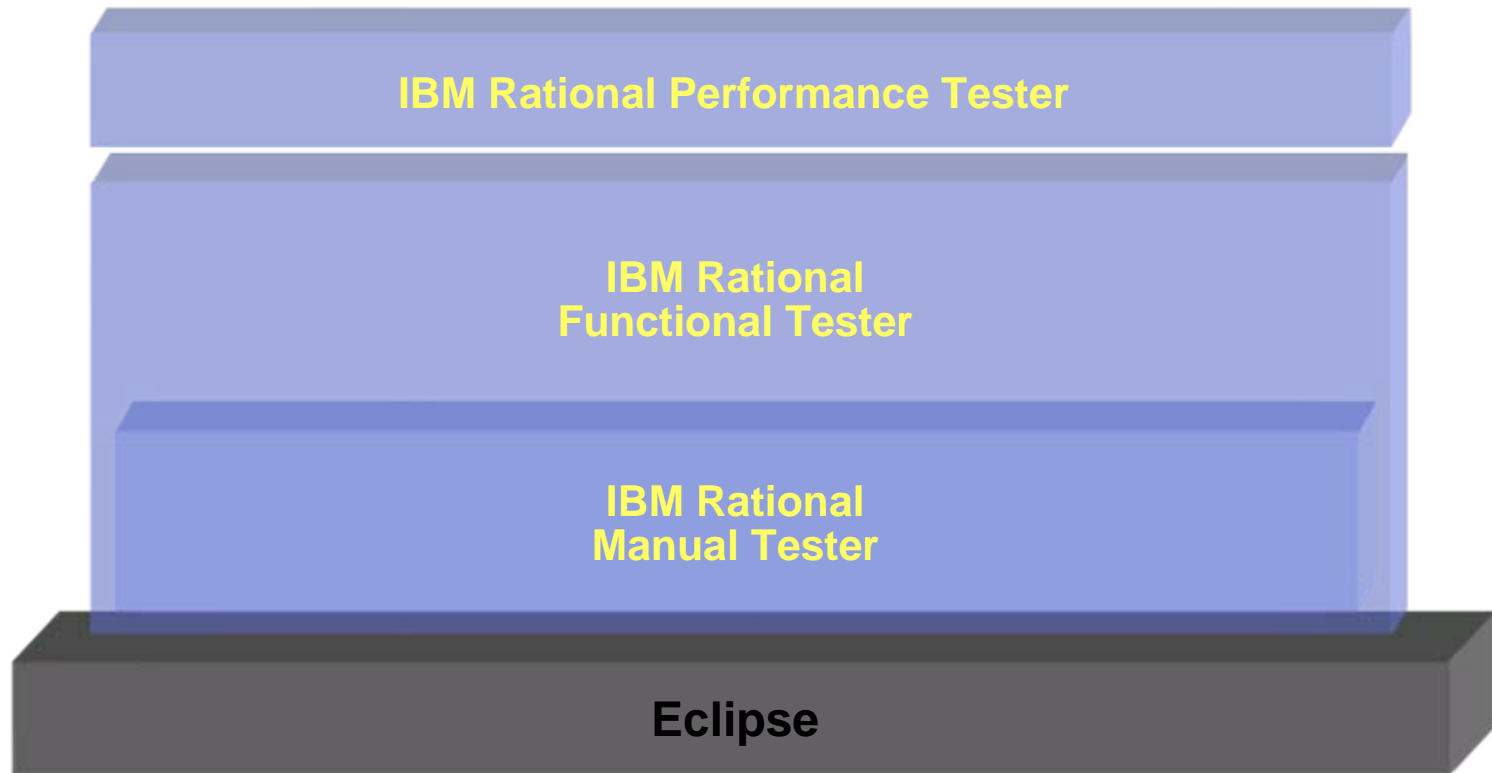
C/C++ Support

- C/C++ editors and build management
- Compiler and debugger integration
- UML code editors

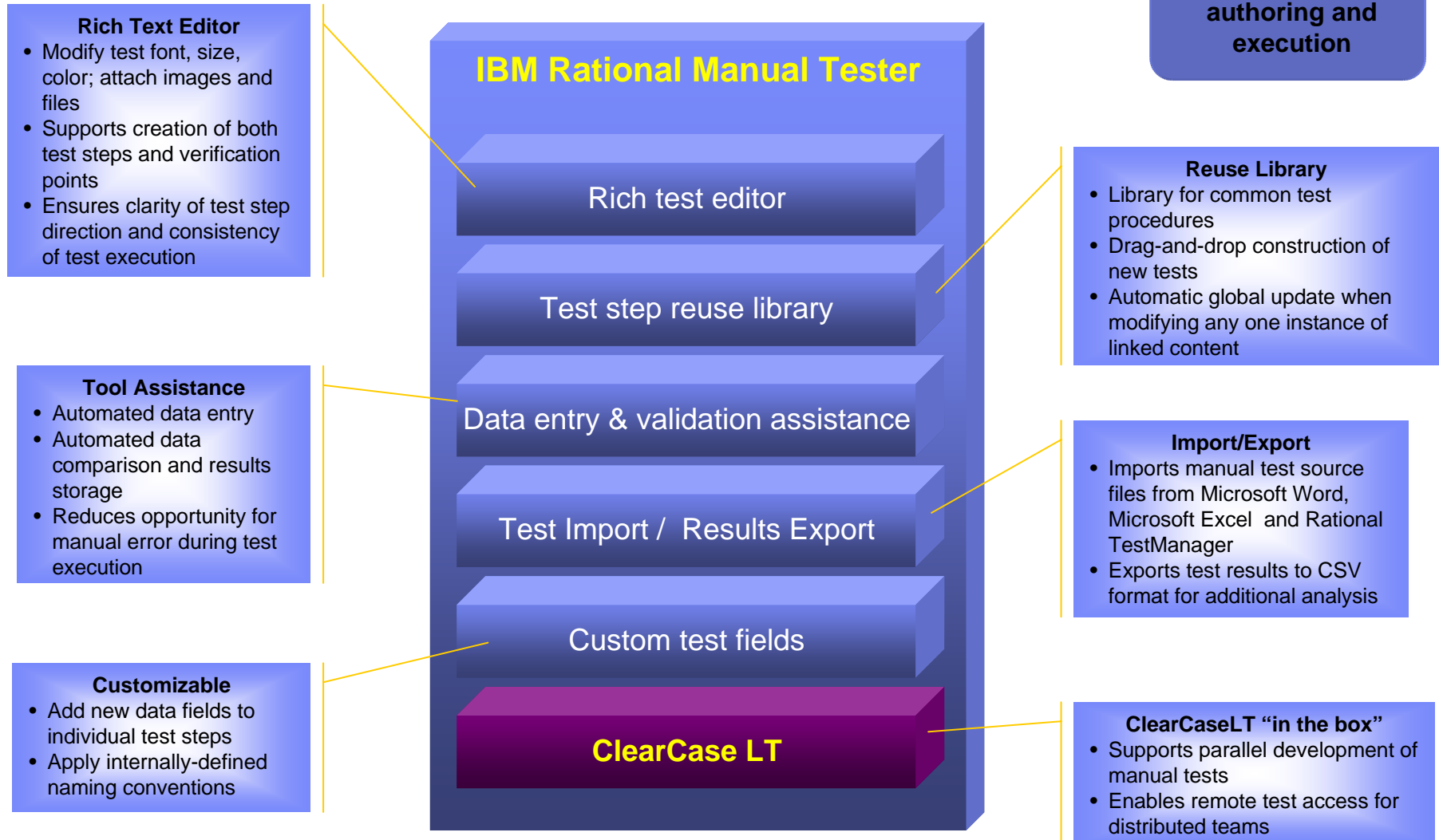
WSAD v6

- JSF, SDO, Struts
- Java GUI editor
- Web diagram editor
- Site designer
- Web Services development tools
- Database editing tools
- EGL
- EJB development tools
- UML code editors: EJB, Java, Data
- Static Analysis
- Runtime Analysis
- Component test automation
- Portal/Portlet development tools

Software quality tools



IBM Rational Manual Tester



IBM Rational Functional Tester

**Automated
functional
regression testing**

GUI Technologies

- Automates regression testing of Java, .NET, Web and terminal emulator-based applications

Data-driven Testing

- Simplified data-driven testing enabled by wizards and Excel-like data tables

Eclipse availability

- When using Java scripting, runs inside Eclipse/RSA/RAD shell
- Full Eclipse JDT features are accessible
- Accessible to developers from within their IDE

ClearCaseLT “in the box”

- Supports parallel development of manual tests
- Enables remote test access for distributed teams

IBM Rational Functional Tester

Tests Java, .NET, Web and terminal emulator-based apps

Java and VB.NET-based test scripts

Wizard and table-assisted data-driven tests

Linux-based test authoring

Eclipse Java Dev Tools

Manual Tester

ClearCase LT

Test Script Language

- User has choice of two test script languages – Java and VB.NET
- Use of Java implies editing and debugging in Eclipse/RAD/RSA-based editor
- Use of VB.NET implies usage of Microsoft VS.NET-based editor/debugger
- Identical capabilities in both editors

Improved Linux support

- Users can author and modify test scripts on Linux (no script recorder)
- Scripts can also be executed on Linux

Manual Tester in the box

- Customers receive one Manual Tester license per Functional Tester license
- Improve return on manual testing efforts while adopting automated test methods

IBM Rational Performance Tester

Load testing technology

- New load test recorder and execution engine
- Supports HTTP/S; additional protocol support

High scalability

- High scalability, low footprint due to hyper-threaded architecture
- Significant improvement over Robot technology

Platform Support

- Multiple platform support for load generation

ClearCaseLT “in the box”

- Supports parallel development of manual tests
- Enables remote test access for distributed teams

IBM Rational Performance Tester

HTTP/S load testing

Visual test construction and editing

High scalability hyper-threaded execution architecture

Graphical test scheduler and user profiler

Windows and Linux load generation support

Eclipse Java Dev Tools

ClearCase LT

Load and performance testing

Visual Test Editor

- Test viewer requires no coding for test modification and execution
- Automated identification and variation of dynamic data
- Insertion of Java code is supported for advanced customization needs

Test scheduler

- Graphical user profiling and transaction modeling
- Eases modeling of user populations

Eclipse-based

- Runs inside Eclipse/RSA/RAD shell
- Accessible to developers from within their IDE

Lifecycle Tools – RUP Development Disciplines

Disciplines

Process Modeler Business Modeling

RSA (RequisitePro Views) Requirements

RSA/RAD Analysis & Design

RAD Implementation

RAD Test

RAD Deployment

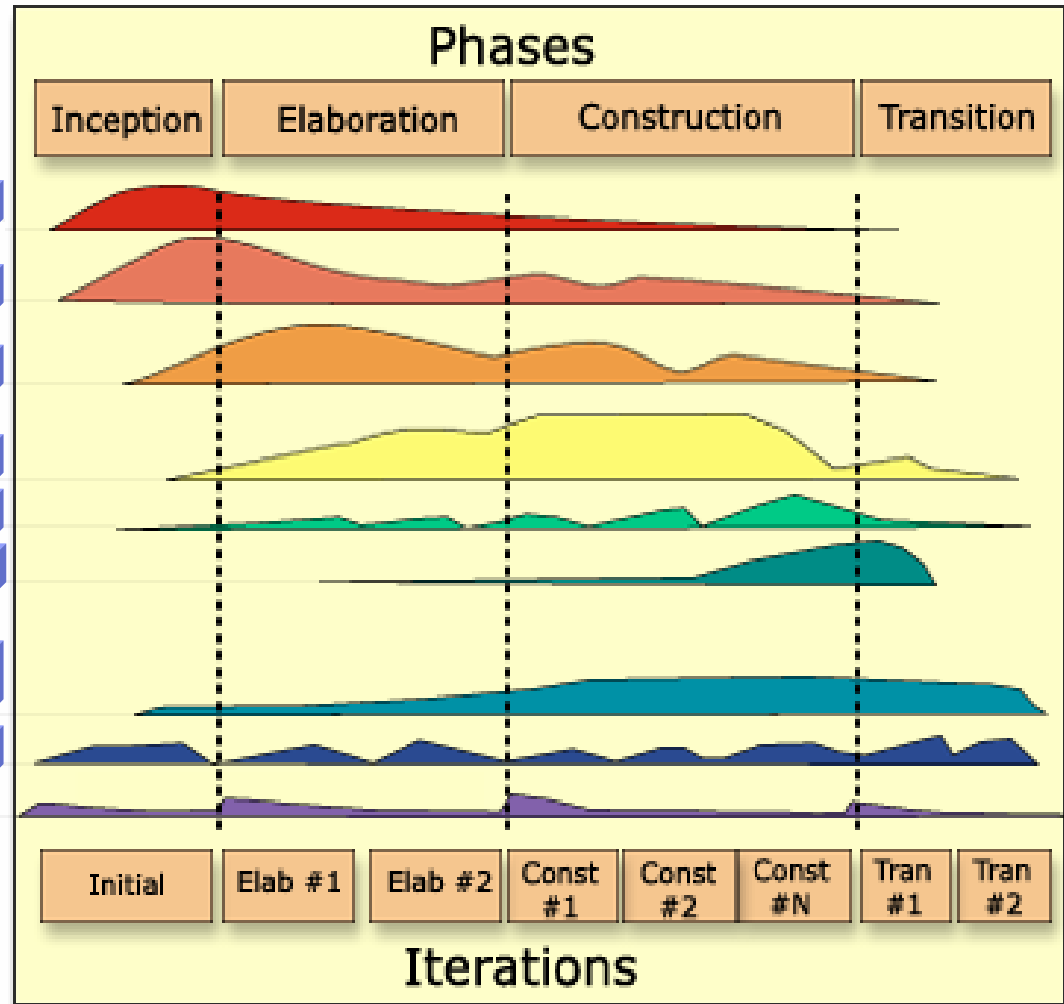
RAD (ClearCase Views + ClearQuest Views) Configuration & Change Mgmt

RAD (ClearQuest + Project Console) Project Management

Environment

Simplified Packaging and Names

V4 & V5	V6
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RAD Top 10 of IBM AD Tools (Adaptable, Automated, Accelerated)

Adaptable - Eclipse-based Workbench

#1 Customizable **Perspectives** and **Views** support **roles-based** tools

Automated - IDE Infrastructure (Code, Build, Test, Debug, Deploy)

#2 **Dynamic build engine** incrementally updates and hot-deploys (on-the-fly, while you type)

#3 **Testing and Debugging** for Java, Web Services, XML, database and EJB

Accelerated - End-2-End Builders

#4 **Java and UML** core coding tools

#5 **Web App Builders**: Pages, Sites, Portals, Portlets, Struts, JavaServer Faces

#6 **Web Services** and **XML** Builders

#7 **Database and SDO** (Service Data Objects) Builders

#8 **J2EE** and **EJB** Builders

#9 **SOA workflow** builders (Service Oriented Architecture)

#10 **Legacy/Enterprise** development, integration and Web Services tools



RAD Top 10 of IBM AD Tools (Adaptable, Automated, Accelerated)

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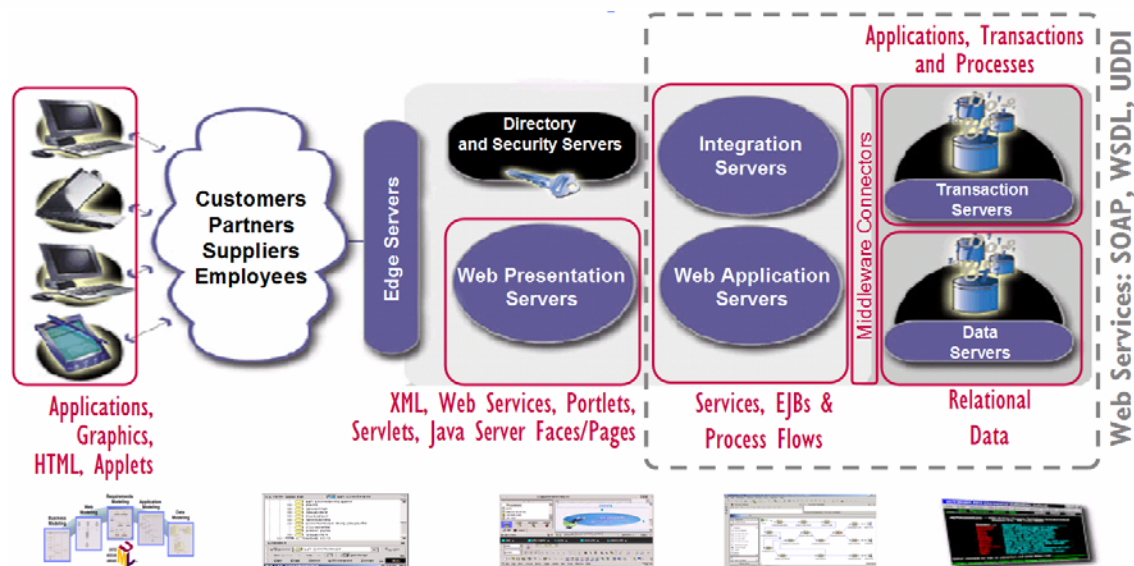
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JSF Ease-of-Use In Action

➔ Developer/Architect Overview ➔

“Delivering applications faster, easier and with higher ROI”



© 2003 IBM Corporation

J2EE Development *Automated by JSF*

Input → Process → Output

- **Input**

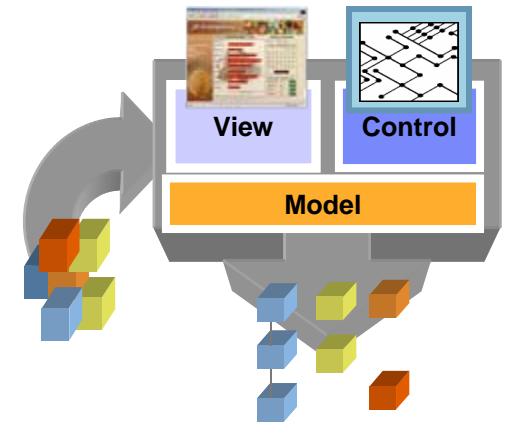
- Constructing web page forms, formatting, validation, etc.
- GUI widget richness
- Calling appropriate "Action" when button pressed, etc.
- Passing data to business logic

- **Processing**

- Integrating to web services, databases, backends, biz logic, etc.
- Maintaining user session and application state information
- MVC layering, page flow and business logic modularity

- **Output**

- Forwarding control to results screen/page
- Displaying data, GUI controls, formatting, etc.

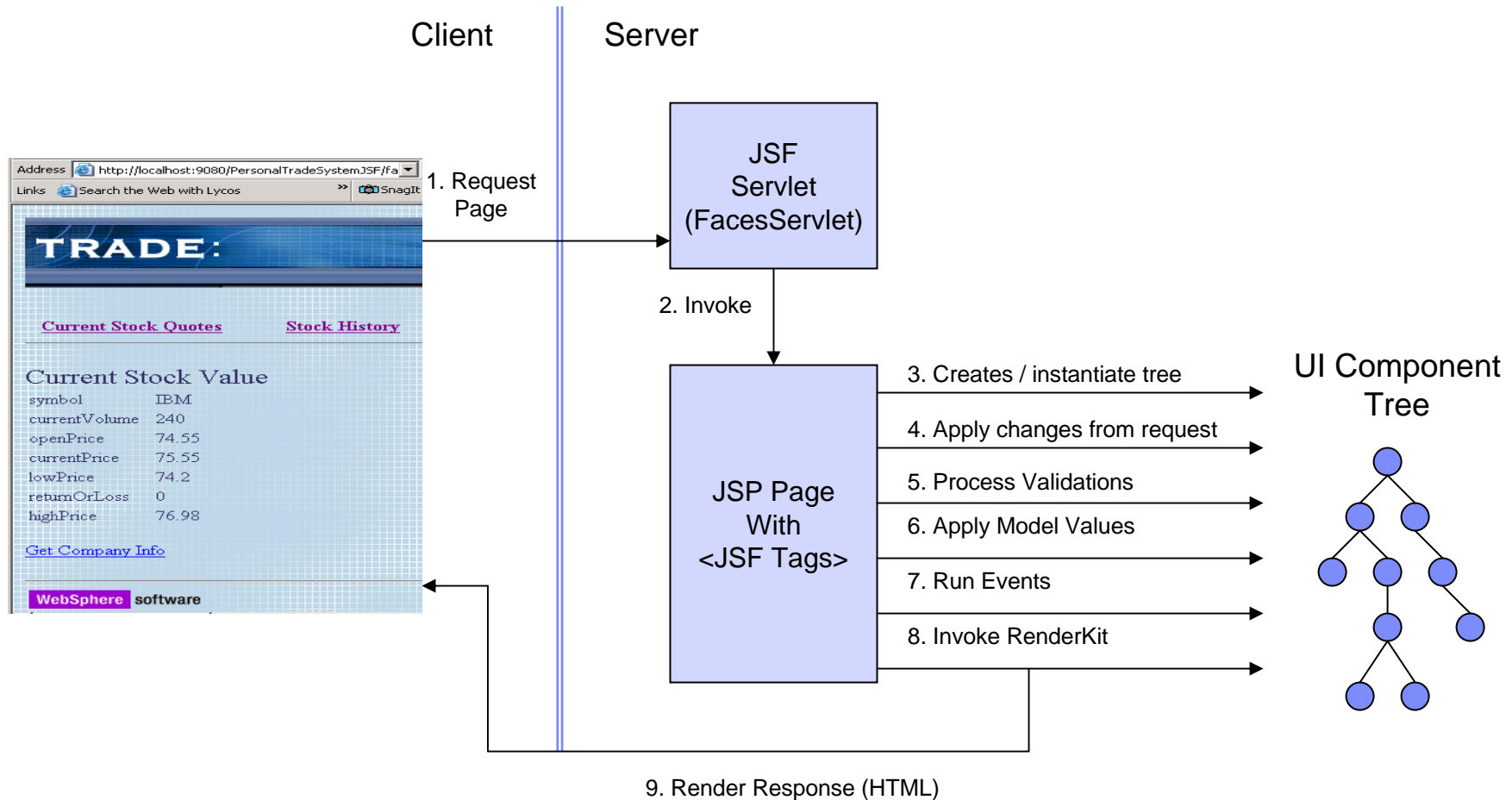


JavaServer Faces (JSR 127) – What Does it Provide?

- **Based on MVC design pattern**
 - Clean separation of Model, View, and Controller
- **User Interface Component Model – Set of standard widgets**
 - Specification allows extending custom GUI components (i.e. DataTable, Graphing, Tree, Panel)
- **User Interface components are decoupled from its rendering**
 - Allows for other technologies and pervasive devices (e.g. WML, etc) to be used
- **Validation Framework allows server-side validation**
- **Server side management of User Interface, session and state info**
- **Event driven architecture**
 - Server-side rich user interface components respond to client events
- **Actions organize and process business logic**
- **Navigation model manages page flow using JSP path aliases**



Java Server Faces- How it works



Application Developer V6 JSF Design Points

- **Accelerate GUI, Web Services, Database, Portlet and MVC development**
 - Visual drag-n-drop development of UI, events, actions, page navigation, etc.
- **Simplify J2EE development for non-Java programmers**
- **Enhance Web Application Development for J2EE experts**
- **Appeal to Microsoft developers (VB/Visual Studio .Net)**
- **Reduce development and deployment time and cost**
- **Standards based technologies**
 - JavaServer Faces - JSR 127
 - Service Data Objects - JSR 235
 - Portlets – JSR 168



JavaServer Faces Tools in RAD V6

Web Perspective

Project
Navigator

Page Data

Attributes

Page
Designer

Palette

Event
Panel

Agenda

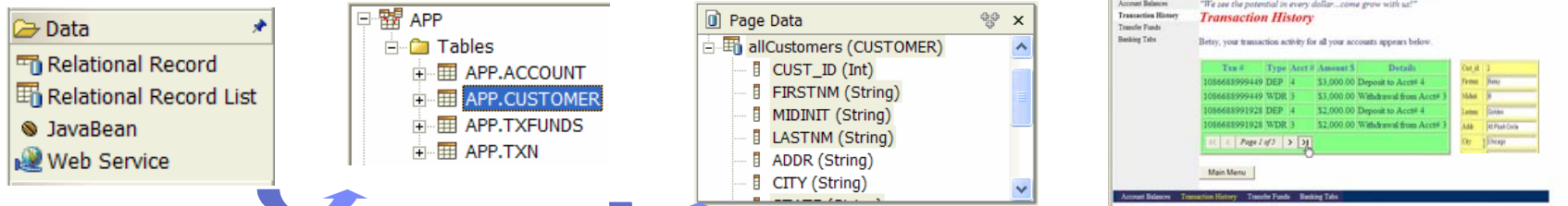
- **JSF in Action**

- Web Services Creation and Consumption
- Service Data Objects (SDO) Heterogeneous data
- MVC Web App Rich Thin Clients
- Portlet Apps and Portal Integration

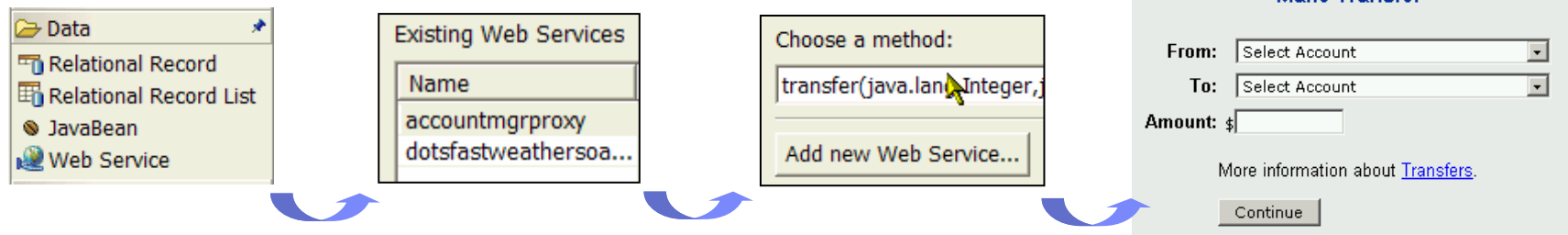


Simplifying J2EE Development

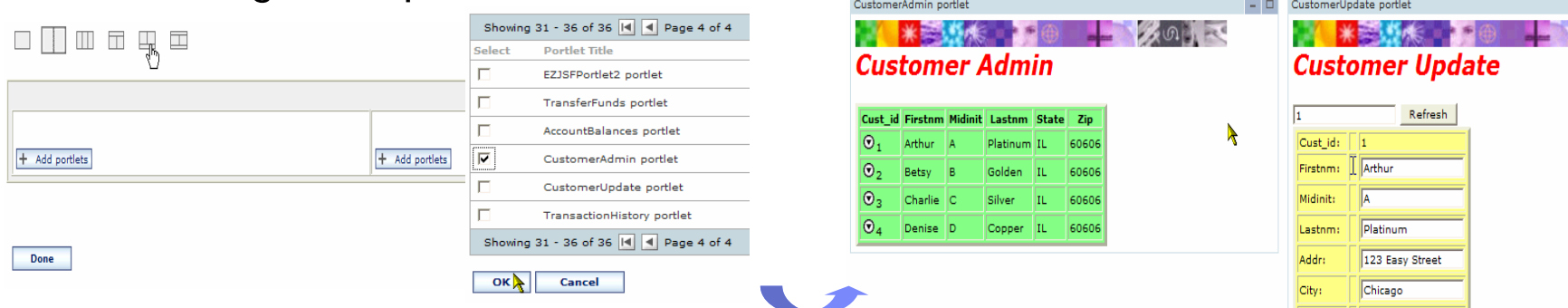
- Database development drag-n-drop ease-of-use ^{1 2}



- Web Services development drag-n-drop ease-of-use ^{1 2}

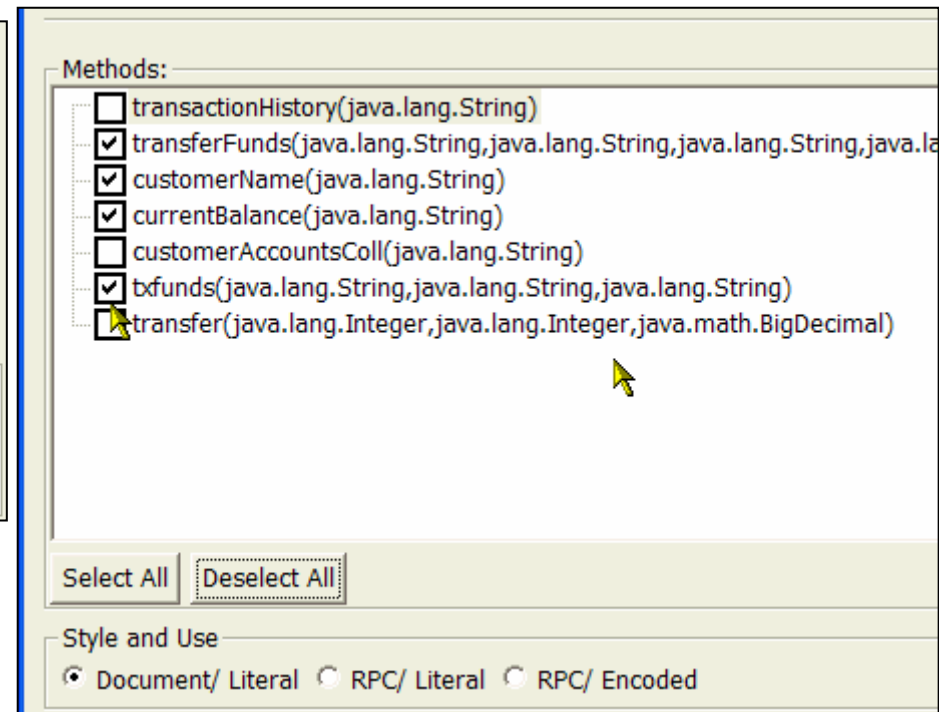
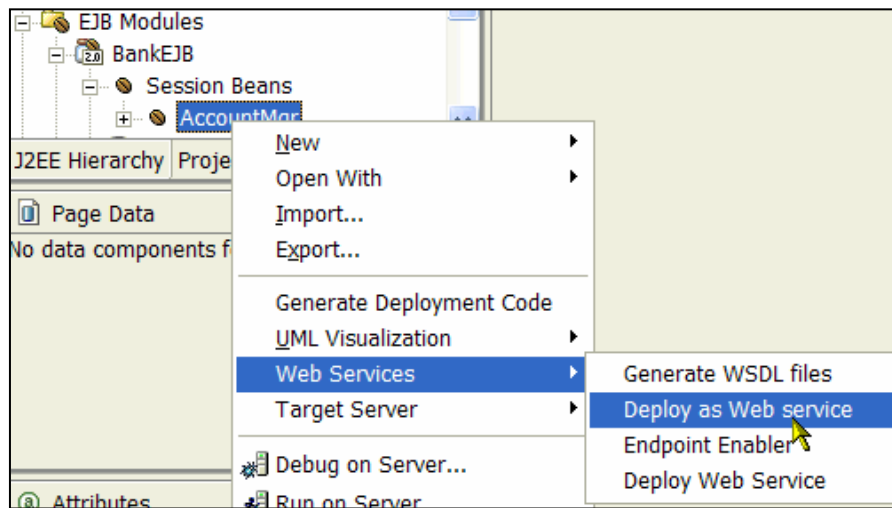


- Portals drag-n-drop ease-of-use ^{1 2}



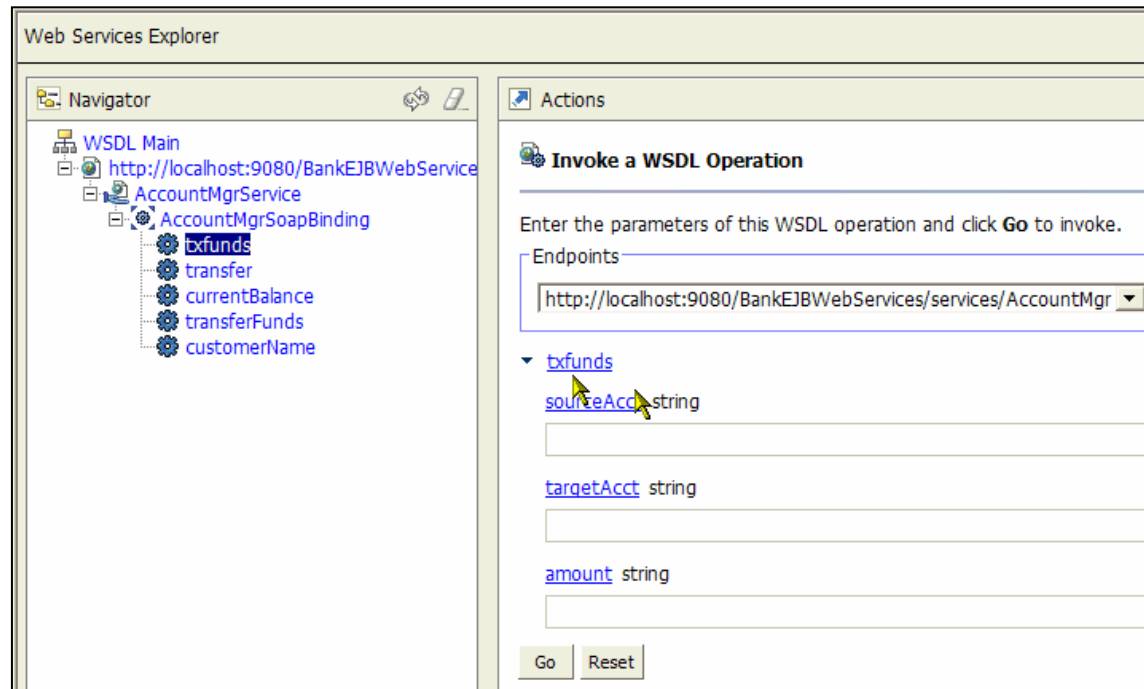
Creating New Web Services

- **Generates all web services artifacts** ¹²
 - Easily choose Java Class/EJB and methods to expose
 - WSDL service definition file for chosen Class/EJB and methods
 - Other infrastructure: Deployment descriptor, JAX/RPC request/response data definitions



Consuming Existing Web Services – Discover and Test

- Discovery tools use UDDI, a well known URL or a WSDL file ¹
- Web Services Explorer automates discovery and testing
 - Launch separately or while building Faces JSPs
 - Browse Web Service operations, request input parameters, response output
 - Great general purpose unit testing environment



Consuming Existing Web Services – Calling From Application

JSF Web Services Wizards Automate Construction ¹

- Creates web service proxy bean
- Creates Action method that calls proxy
- Creates input parameter bean and output results bean
- Drag-n-drop to create UI controls
- Binds input, output and action to UI controls

SourceAcct: {sourceAcct} 123

TargetAcct: {targetAcct} 123

Amount: {amount} 123

* {Error Messages} BR

Submit

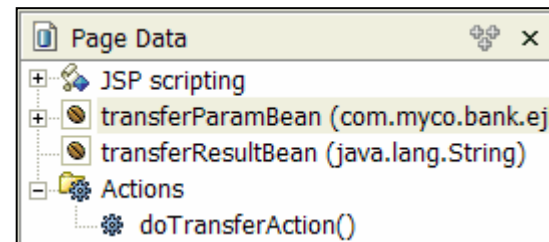
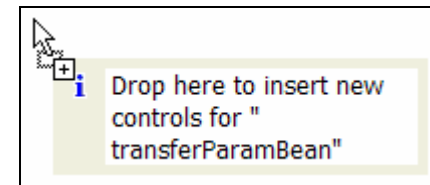
Existing Web Services

Name	Class
accountmgrproxy	com.myco.bank.ejb.AccountMgr...
dotsfastweathersoa...	com.serviceobjects.www.DOTS...

Choose a method:

transfer(java.lang.Integer,java.lang.Integer,java.math.BigDecimal)

Add new Web Service...



Web Services Ease-of-Use Summary

• External Web Services ¹

- Web Services Explorer
 - Great for unit testing and experimenting
 - Launched separately or while building a new Faces JSP
- Adding a Web Service to a project
 - Proxy created that knows how to call the Web Service
 - Input Parameters Bean
 - Results Bean
 - Action method created that uses the proxy bean
- Drag-n-drop is used to create the UI
- Once a Web Service is added to a project, any Faces JSP can use it

• Local Web Services ²

- Easily explored using Web Services Explorer
- Easily added from local workspace



Agenda

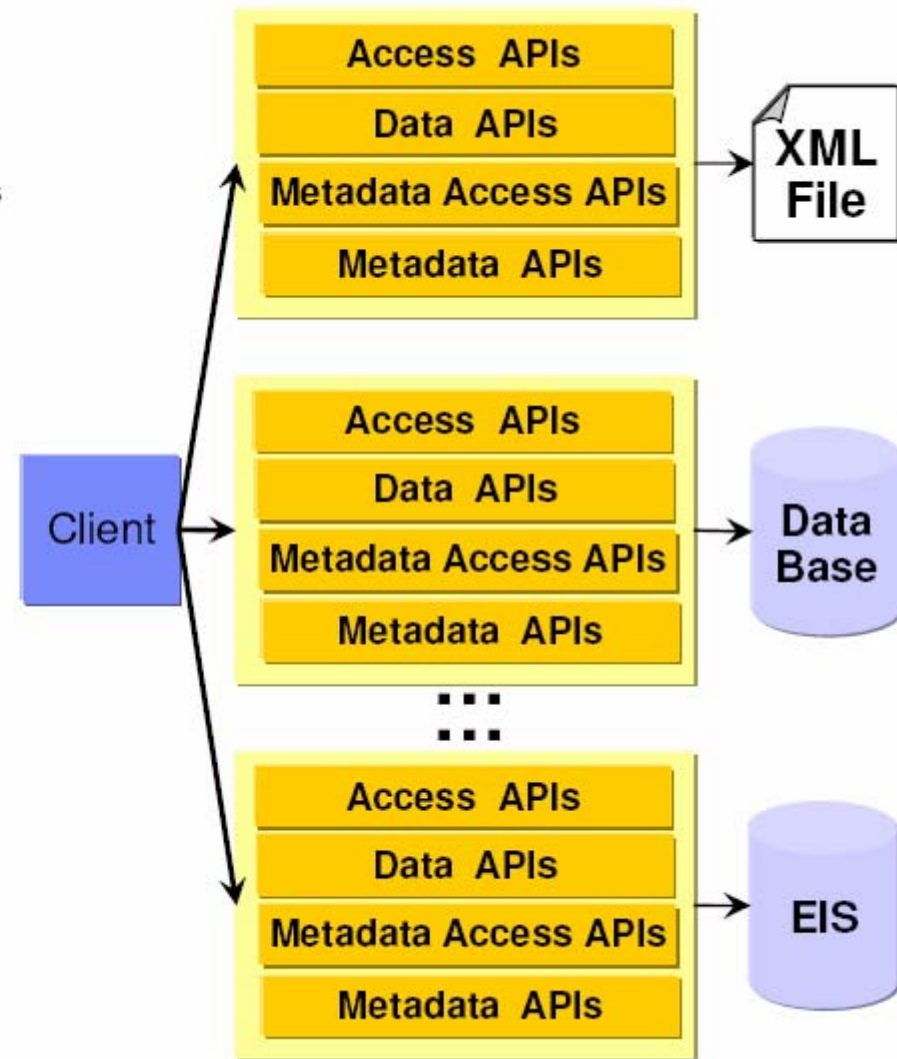
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Current Data Access Challenges

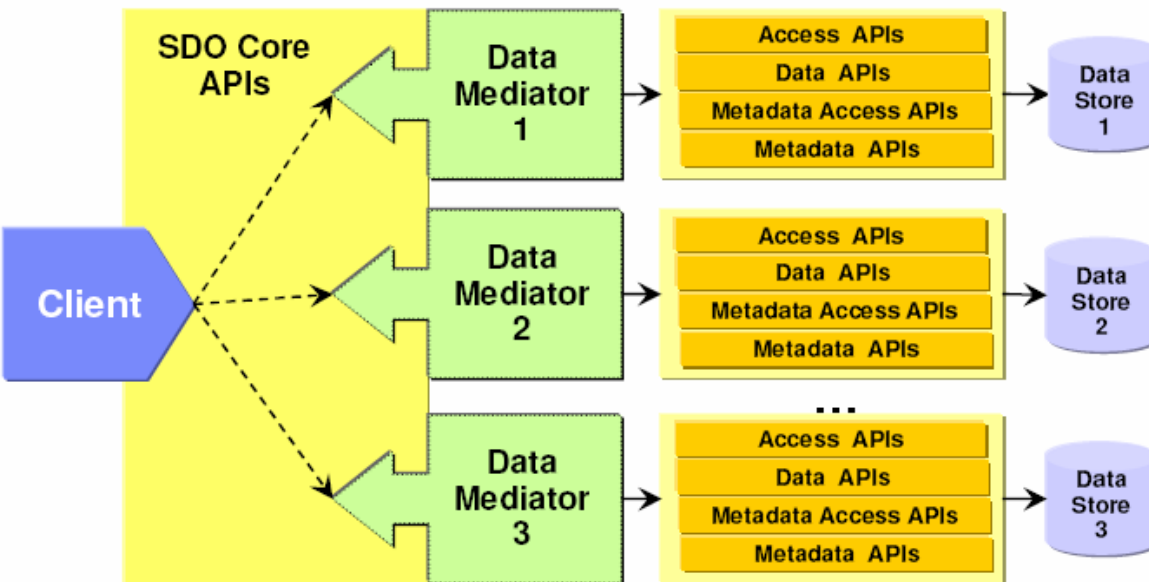
- Many different models/APIs for Data and Metadata retrieval and representation
 - Relational Databases (JDBC), XML files, JMS, Web Services (JAX-RPC), Enterprise Information Systems (EIS)
- Lack of support for standard application patterns
 - Optimistic concurrency, pagination of large data-sets
 - Asynchronous invocation
 - Stateful services
- Consequences:
 - Programmers forced to focus on the technology, rather than the business problem
 - Requires programmers to do a lot of low-level coding
 - Tools do not provide a higher-level task orientation data abstraction



Current Data Access Challenges

Solution → Service Data Objects (SDO)

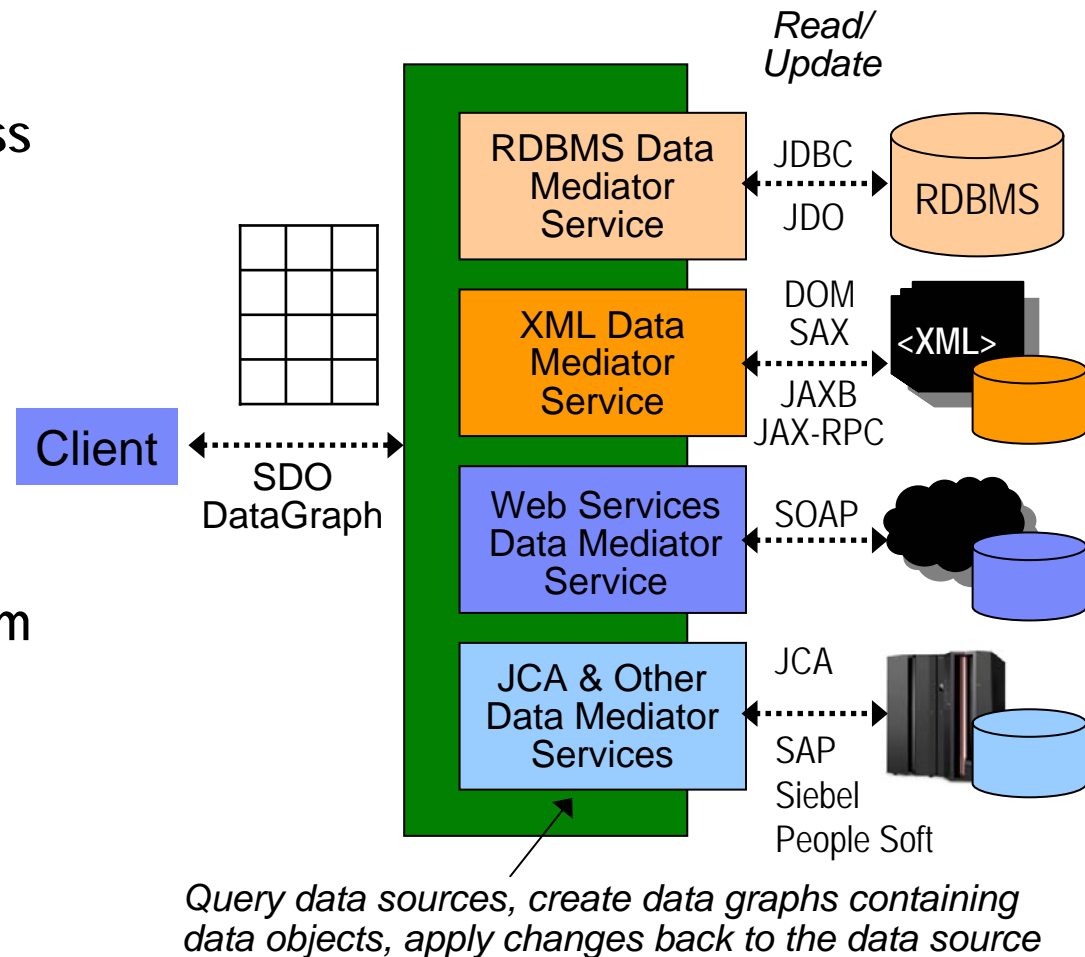
- Unified data representation & retrieval across heterogeneous data sources in a disconnected, source-independent format
- Exploitable by tools to provide simple application development experience
- Support of XML typed data
- Support for dynamic and statically type data



- Supported Mediators:
 - ▶ Relational database
 - ▶ EJB
- Future
 - ▶ Web Services
 - ▶ XML
- RAD V6.x drag-n-drop tooling today
 - Relational
 - EJB
 - Web Services
 - JCA
 - SAP, Siebel, People Soft

Service Data Objects (SDO): Unified Access to Heterogeneous Data Sources

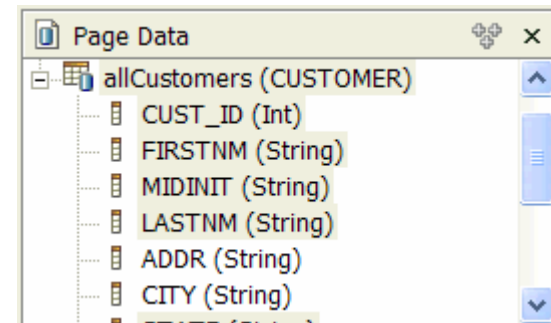
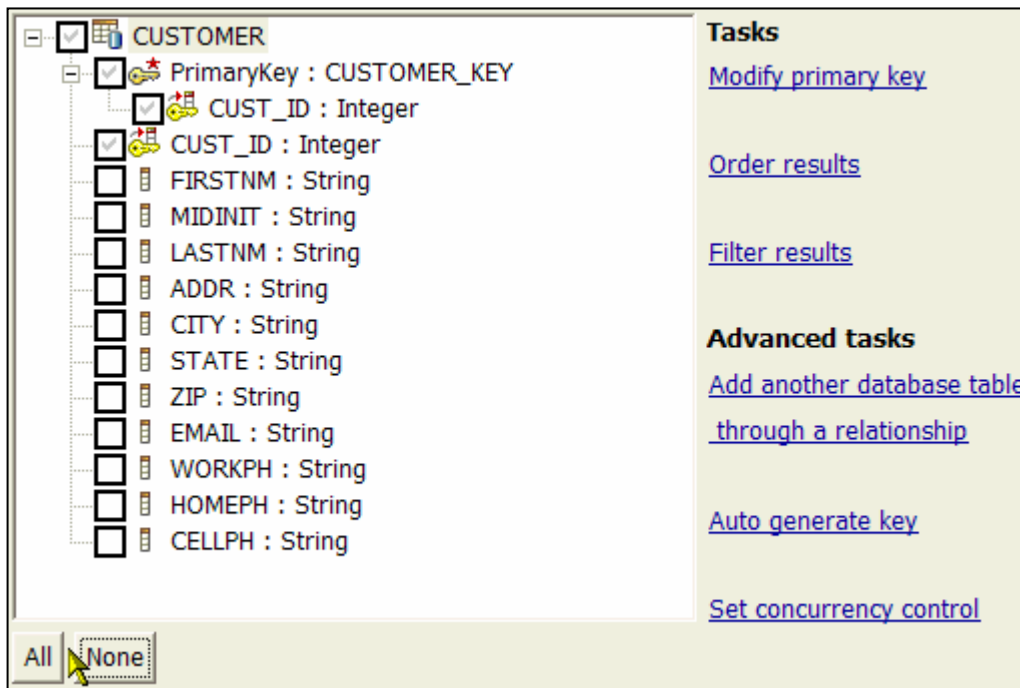
- Provides a common programming interface to access data from multiple heterogeneous sources
- Supports both static and dynamic data APIs
- Supports disconnected operation
- Decouples application code from data access code
- Designed for use with tools to increase programmer productivity



Service Data Objects (SDO) is a specification created by IBM & BEA, submitted to JCP as JSR 235 in December 2003. Expert Group Formation Stage, not part of J2EE yet

Creating Database Apps – Select “Relational Record List”

- **Relational wizards automate Select queries** ¹²
 - Connect to any relational database, select table(s) and columns graphically
 - Construct query without knowledge of SQL, including input parameters and conditions
 - Drag-n-drop to create UI controls for data display (DataTable)
 - Binds input, output and action to UI controls
 - Format data display for numbers, currency, dates, text, masks, etc.



Cust_id ^{abc}	Firstnm ^{abc}	Midinit ^{abc}
{CUST_ID} ^{abc}	{FIRSTNM} ^{abc}	{MIDINIT} ^{abc}

Creating Database Apps – Insert, Update, Delete Rows “Relational Record”

• Relational wizards automate Update queries ¹²

- Connect to any relational database, select table(s) and columns graphically
- Construct query without knowledge of SQL, including input parameters and conditions
- Drag-n-drop to create UI controls for data display (Form)
- Binds input, output and action to UI controls
- Format data input/output display for numbers, currency, dates, text, masks, etc.

Create controls for:

☐ Displaying an existing record (read-only)

☒ Updating an existing record

Fields to display:

Field Name	Label	Control Type
<input checked="" type="checkbox"/> CUST_ID (int)	Cust_id:	Output Field
<input checked="" type="checkbox"/> FIRSTNM (java.lang.String)	Firstnm:	Input Field
<input checked="" type="checkbox"/> MIDINIT (java.lang.String)	Midinit:	Input Field
<input checked="" type="checkbox"/> LASTNM (java.lang.String)	Lastnm:	Input Field
<input checked="" type="checkbox"/> ADDR (java.lang.String)	Addr:	Input Field
<input checked="" type="checkbox"/> CITY (java.lang.String)	City:	Input Field
<input checked="" type="checkbox"/> STATE (java.lang.String)	State:	Input Field

All None Options...

Cust_id:	{CUST_ID} abc
Firstnm:	{FIRSTNM} abc
Midinit:	{MIDINIT} abc
Lastnm:	{LASTNM} abc
Addr:	{ADDR} abc
City:	{CITY} abc
State:	{STATE} abc
Zip:	{ZIP} abc

Relational Data Ease-of-Use Summary

- **Service Data Objects (SDO)** ¹²
 - Records and Record Lists abstract data access
 - Build a query without knowledge of SQL, JDBC, etc.
 - Select, Insert, Update, Delete
 - Drag-n-drop tables and forms of data onto UI
 - UI data display is automatically bound to Record/List queries
 - Supports conditions, relationships, optimistic concurrency, etc.
 - Easy to pass input parameters to queries
 - Drill-down using hyperlinks
 - Format display types like Currency, Decimal, String, Custom Masks, etc.
 - Once created, Record and Record List queries can be re-used across the app/pages
 - Drag-n-drop is granular and iterative...you can change your mind and not be limited by the style of a wizard
 - Foreign Key relationships easy to navigate (leading to complex queries through an easy and intuitive process)
 - Paging controls for automatic cursor control
 - Service Data Objects (SDO) are a standard (JSR235)



Agenda

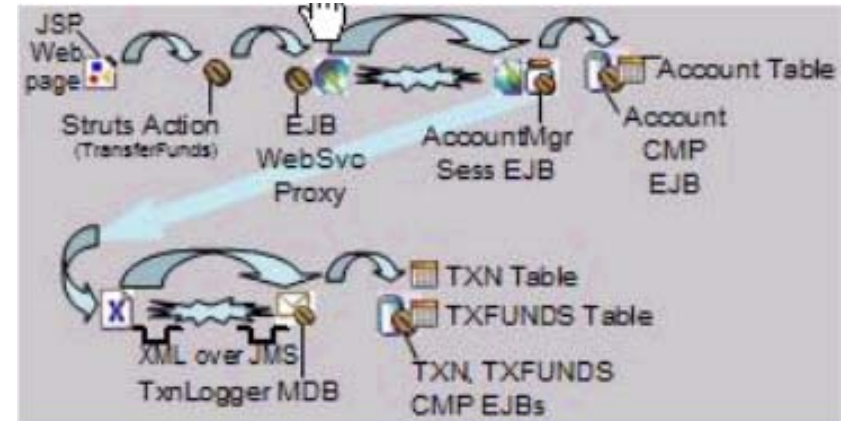
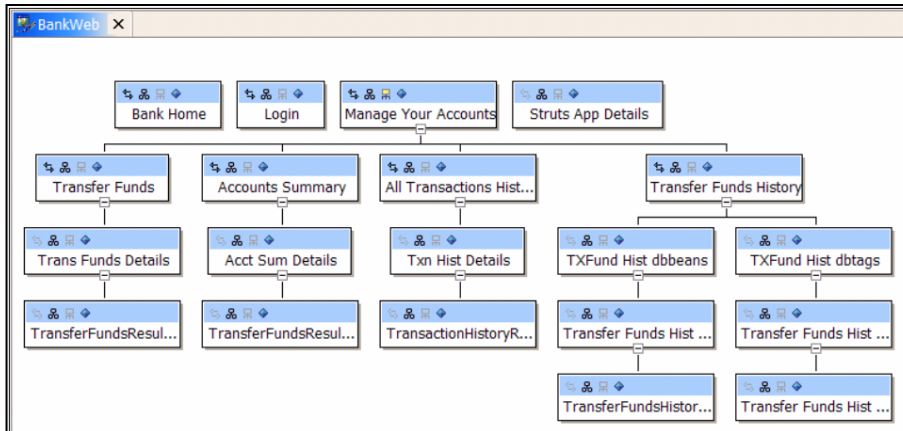
- **JSF in Action**

- Web Services Creation and Consumption
- Service Data Objects (SDO) Heterogeneous data
- MVC Web App Rich Thin Clients
- Portlet Apps and Portal Integration



Banking and Finance Application Scenarios ¹

Building a J2EE application



Struts Application Details

Transfer Funds

Accounts Summary

Transaction History

Transfer Funds History

Manage Your Accounts

Struts Application Details

Transfer Funds

Transfer Funds Details

Accounts Summary

Acct Sum Details

Transaction History

Txn Hist Details

Transfer Funds Hist...

Trans Funds Hist Details

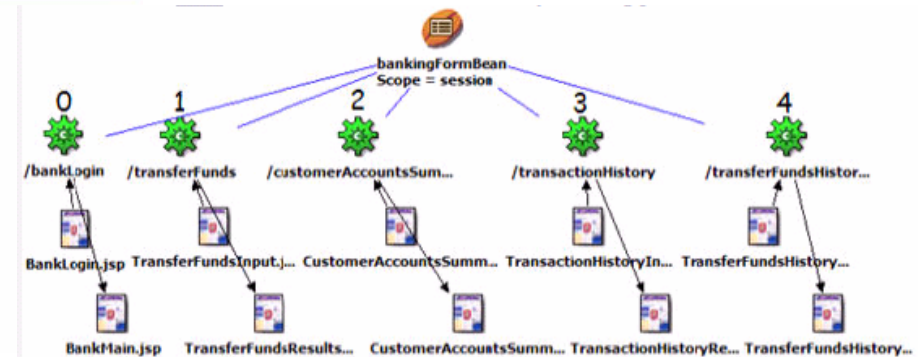
We see the potential in every dollar...come grow with us!

Manage Your Accounts

Welcome, Arthur Platinum, to our online bank!
You may manage your accounts below or [logout](#).

Main Menu

- 1) Transfer funds between your accounts
- 2) Summary of your account balances
- 3) History of all your transactions
- 4) History of all your fund transfers



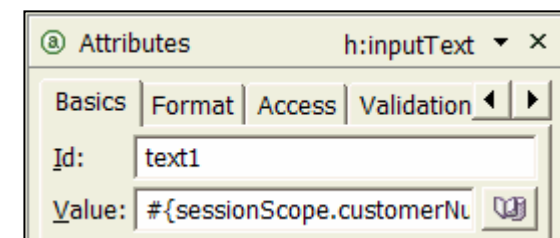
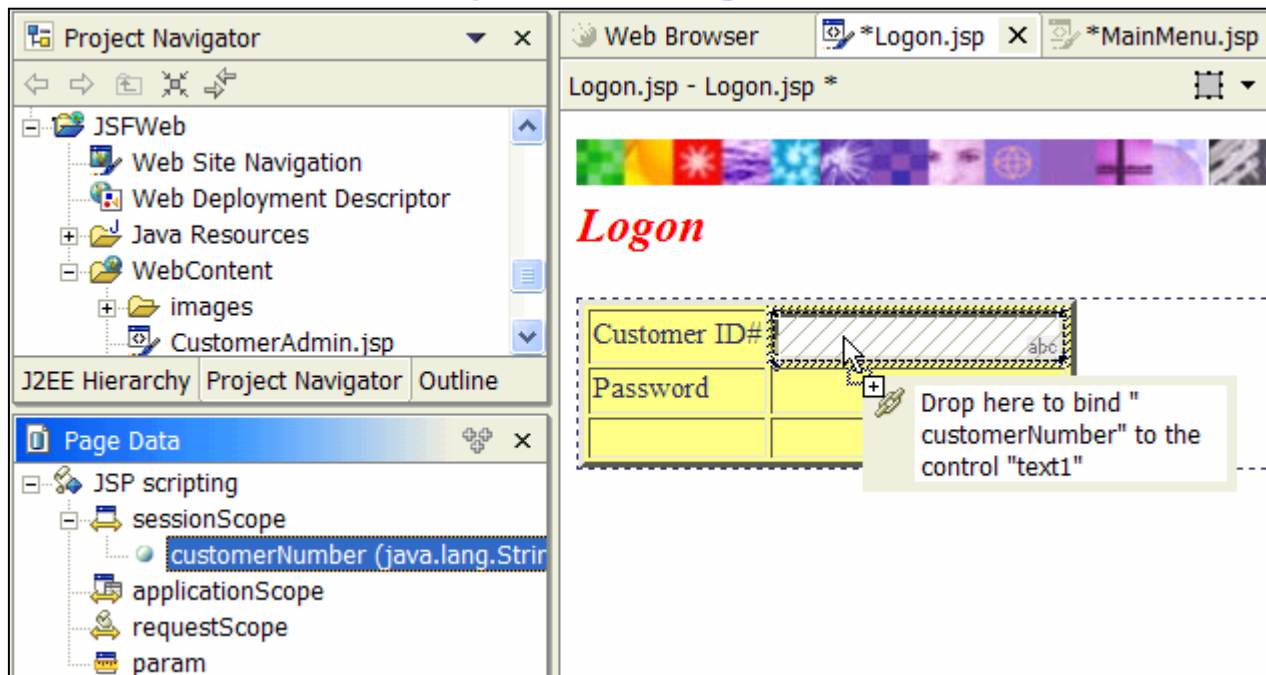
JSF Ease-of-Use Banking Application Scenario

- Logon page and binding customer number into user session/state
- Main Menu page with welcome greeting using user session & Relational Record SDO
- Account Balances page using Relational Record SDO and user session
- Transfer Funds page using Web Service and SDO account numbers combo box
- Web site navigation and common look-and-feel using Web Site Designer & Templates
- Transaction history: DB foreign keys , Tab Panels, Odyssey browser client FW, charts/graphs
- Portal Portlet development, testing, customization and Click-to-Action integration
- Portal Site/Page Designer, Page Layout and adding Portlets to Pages (People-Awareness not covered in this scenario)



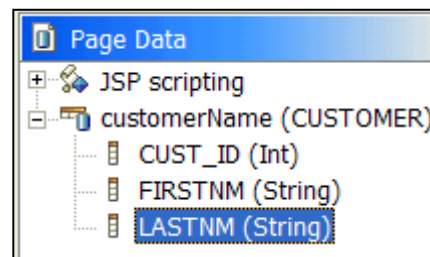
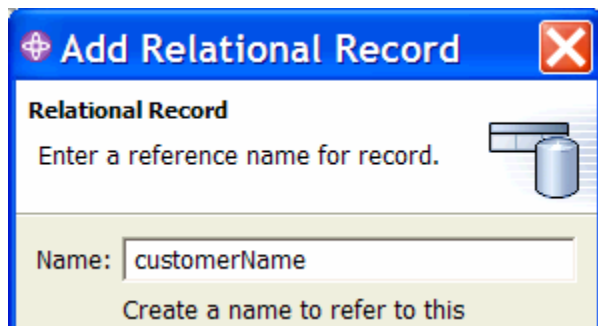
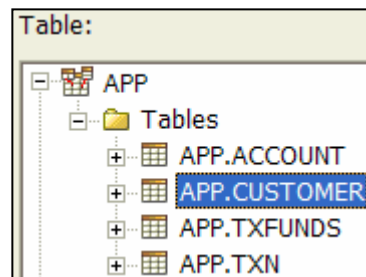
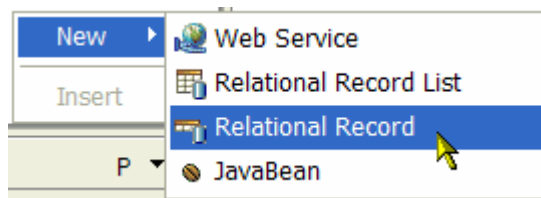
JSF Ease-of-Use Banking Application Scenario ¹²

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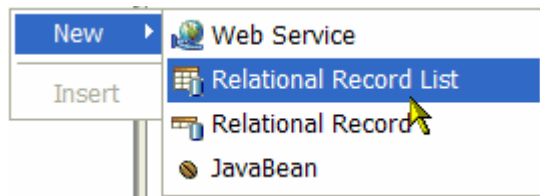
JSF Ease-of-Use Banking Application Scenario ¹²

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JSF Ease-of-Use Banking Application Scenario 3a 3b

- Logon page and binding customer number into user session/state
- Main Menu page with welcome greeting using user session & Relational Record SDO
- **Account Balances page using Relational Record SDO and user session**
- Transfer Funds page using Web Service and SDO account numbers combo box
- Web site navigation and common look-and-feel using Web Site Designer & Templates
- Transaction history: DB foreign keys , Tab Panels, Odyssey browser client FW, charts/graphs
- Portal Portlet development, testing, customization and Click-to-Action integration

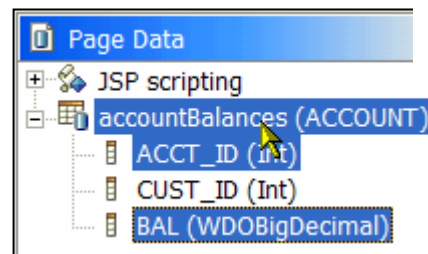
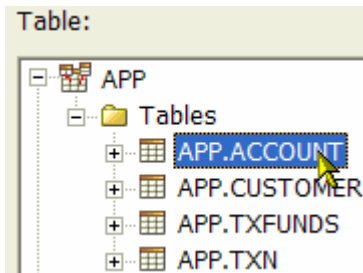


Add Relational Record List

Relational Record List

Enter a reference name for record list.

Name:



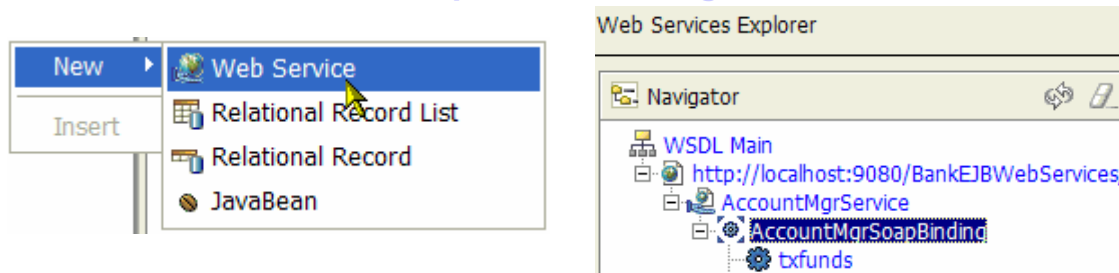
Drop here to insert new controls for selected data

Account Balances

Acct_id	Bal
{ACCT_ID}	{BAL}

JSF Ease-of-Use Banking Application Scenario 4a 4b 4c

- Logon page and binding customer number into user session/state
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Web Service Discovery Home

[Web Services from a UDDI Registry](#)
Search for Web services by name or key in a public or private UDDI registry.

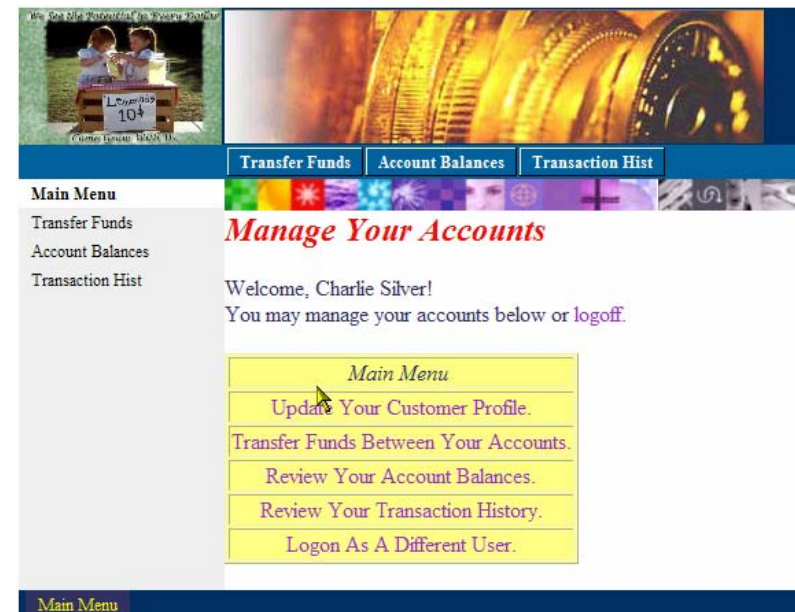
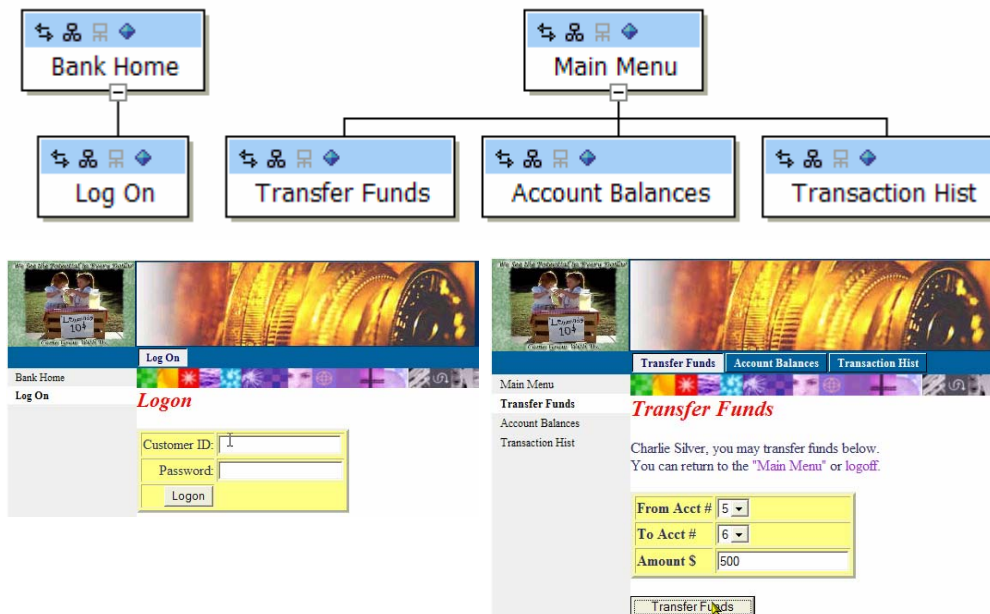
[Web Services from a known URL](#)
Search for Web services using a URL to a document.

[Web Services from your workspace](#)
Search for Web services deployed and running in my current workspace.

The image shows a web form titled 'Transfer Funds'. It has a header with a colorful bar and the text 'Transfer Funds' in red. Below the header, there is a text field with the value '{LASTNM}' and a label 'you may transfer funds below.'. The form contains three input fields: 'SourceAcct' with a dropdown menu showing 'item 1', 'TargetAcct' with a dropdown menu showing 'item 1', and 'Amount' with a text field containing '{amount}' and a small '123' label. Below these fields is a section for error messages labeled '{Error Messages}' and a 'Transfer Funds' button.

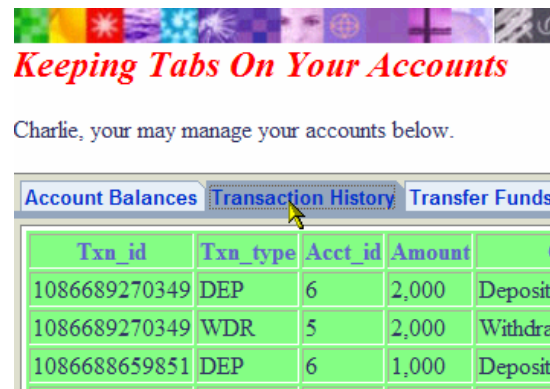
JSF Ease-of-Use Banking Application Scenario w

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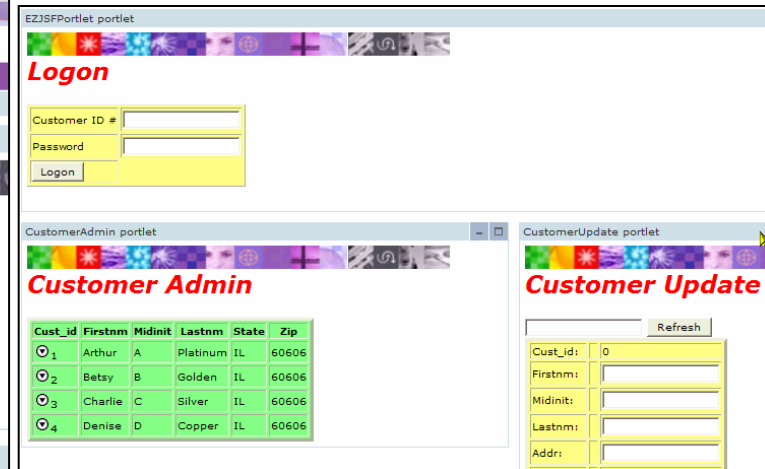
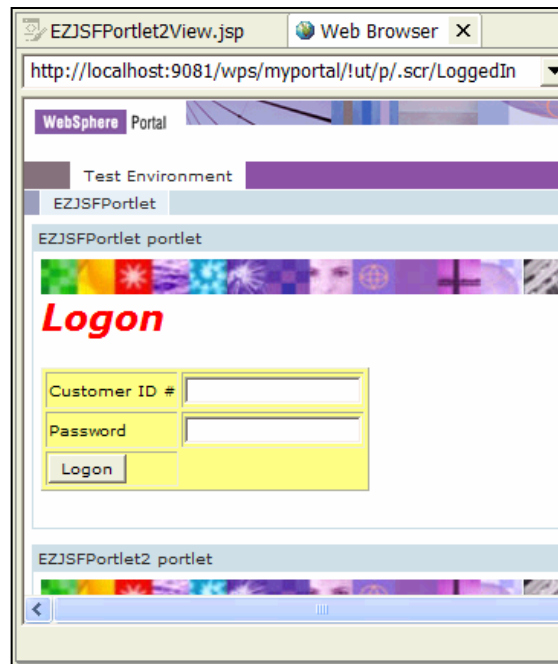
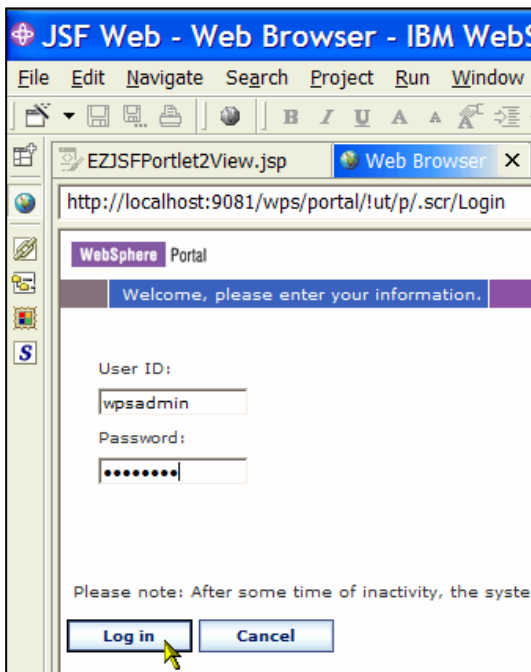
JSF Ease-of-Use Banking Application Scenario ⁵

- Logon page and binding customer number into user session/state
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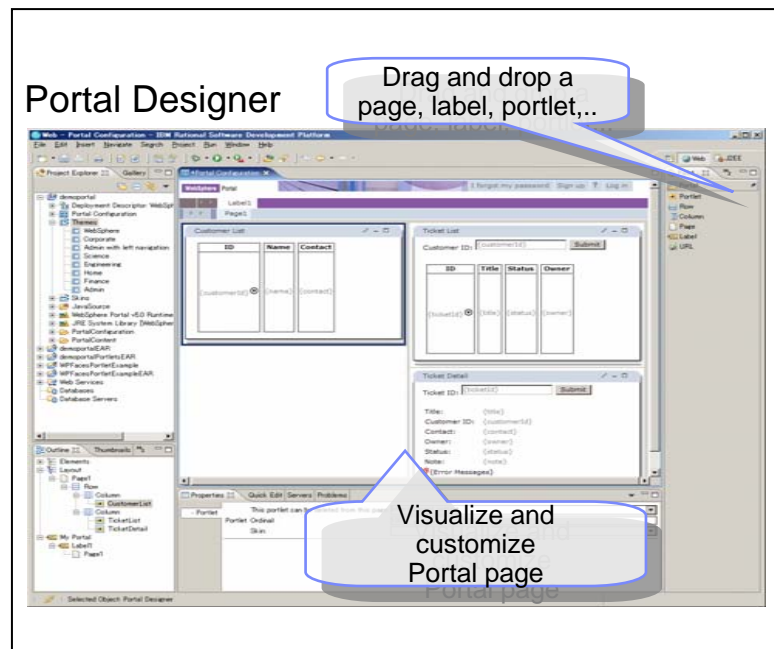
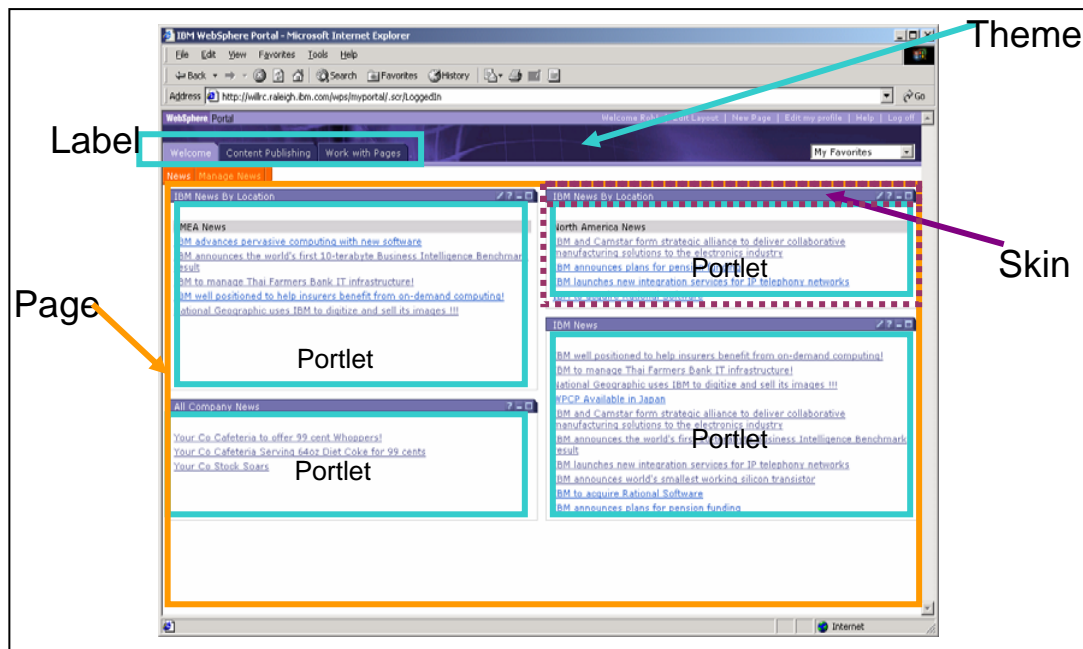
JSF Ease-of-Use Banking Application Scenario 1 2 3 4

- Logon page and binding customer number into user session/state
- Main Menu page with welcome greeting using user session & Relational Record SDO
- Account Balances page using Relational Record SDO and user session
- Transfer Funds page using Web Service and SDO account numbers combo box
- Web site navigation and common look-and-feel using Web Site Designer & Templates
- Rich thin client tab panel view for account summary consolidation
- Click-2-Action integrated, drag-n-drop automation



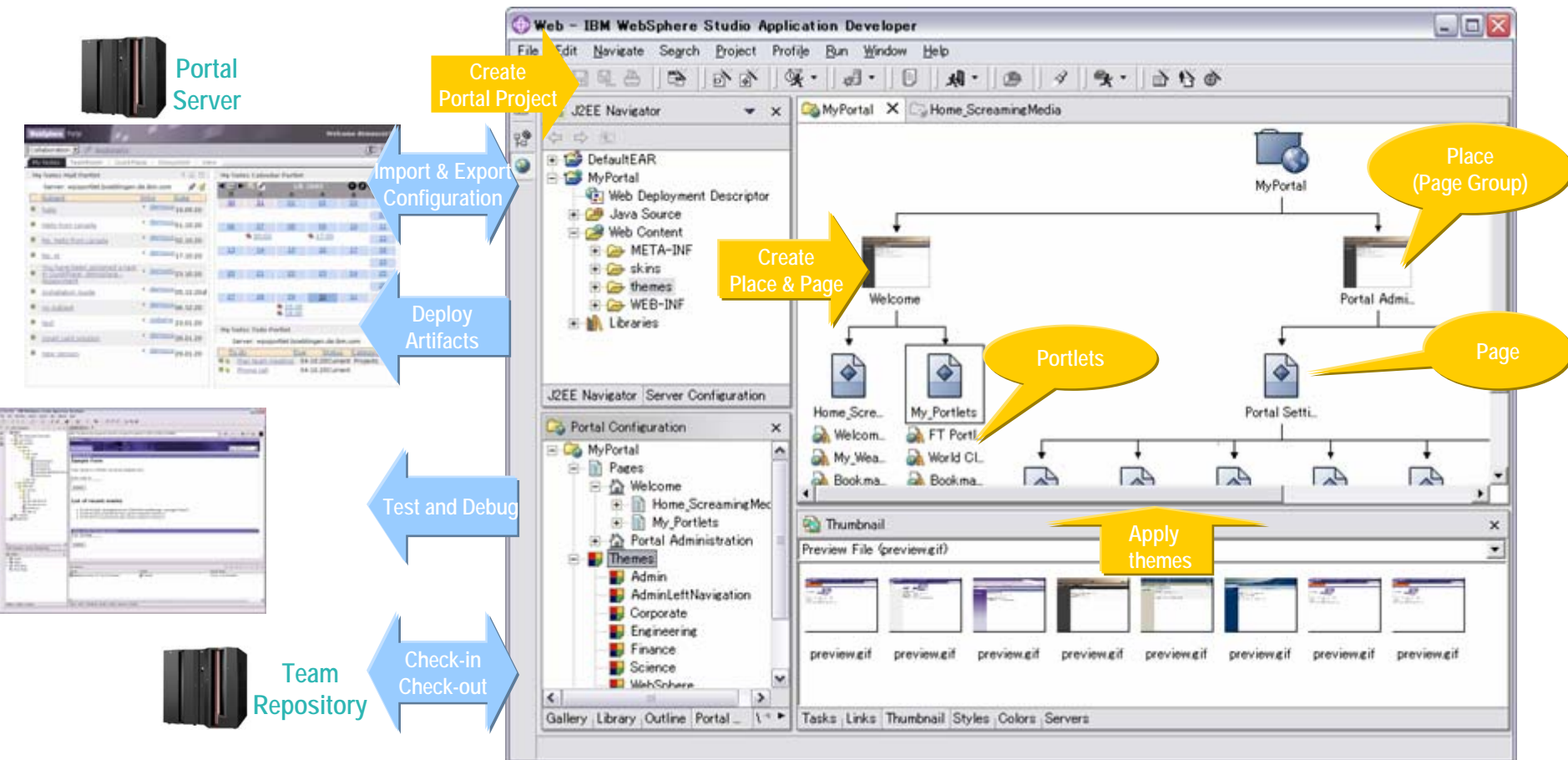
JavaServer Faces Ease-of-Use ⁴

- Logon page and binding customer number into user session/state
- Main Menu page with welcome greeting using user session & Relational Record SDO
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- Transfer Funds page using Web Service and SDO account numbers combo box
- Web site navigation and common look-and-feel using Web Site Designer & Templates
- Rich thin client tab panel view for account summary consolidation
- Portal Designer, Page Layout and adding Portlets to Pages (note: People Awareness Not Covered )



Portal Designer: Site, Page, Themes, Skins

1234



Demonstration Agenda

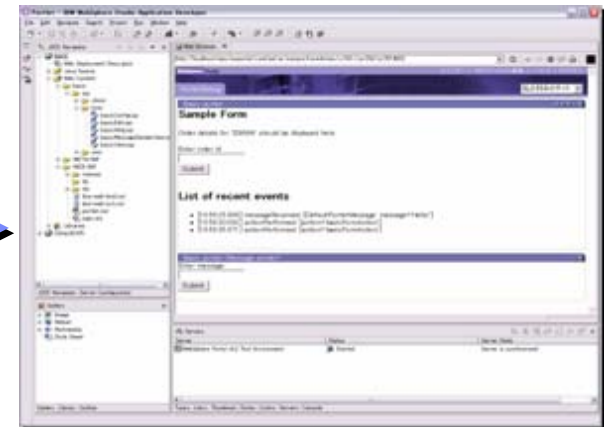
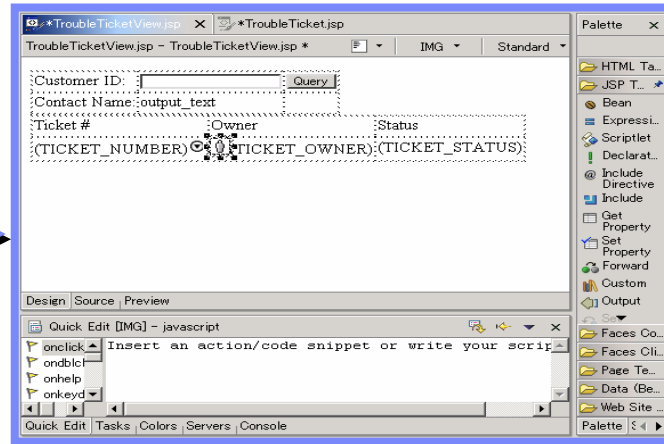
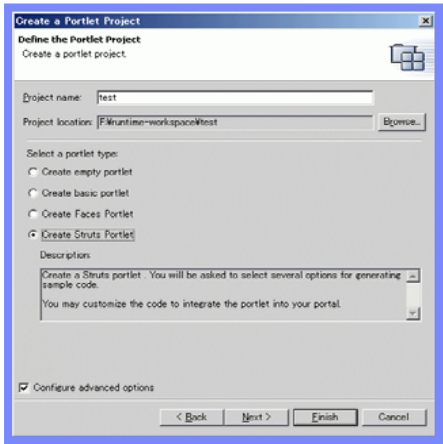
• JSF in Action

- Web Services Creation and Consumption
- Database App CRUD and UI
- MVC Web App Rich Thin Clients
- Portlet Apps and Portal Integration

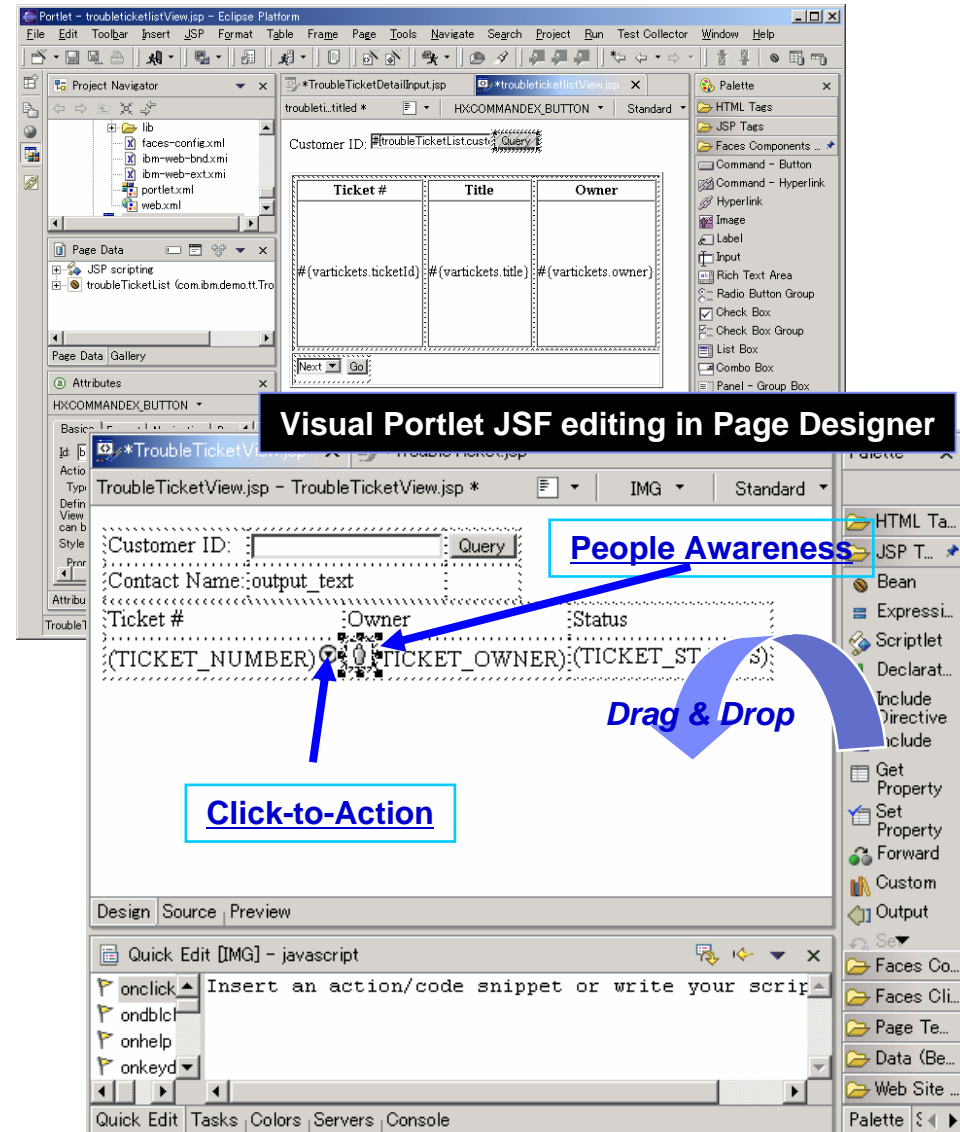
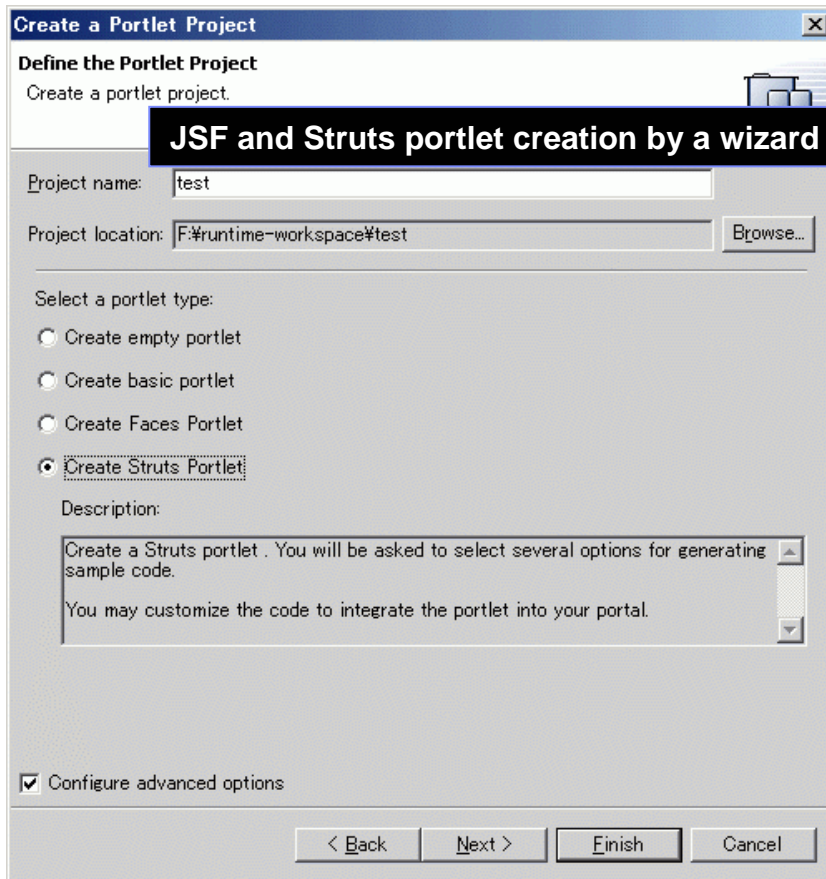


Portlet/Portal Development Ease-of-Use 1 2 3 4

- Visual portlet development uses the JSF styles of construction
- Visual Portal Designer makes site-wide themes/skins look-n-feel easy
- Portlet specific syntax and deployment descriptors are generated
- Click-2-Action and People Awareness drag-n-drop development
- Portal Server Test Environment is turnkey (Improved Portal Toolkit installation)
- Bottom line:
 - Web Services, UI and MVC enhancements in JSF apply to portlets
 - Portlet development is significantly enhanced and easier than ever before



Portlet Development



Demonstration Agenda

• JSF in Action

- ✓ Web Services Creation and Consumption
- ✓ Service Data Object (SDO) Heterogeneous Data
- ✓ MVC Web App Rich Thin Clients
- ✓ Portlet Apps and Portal Integration



J2EE Development *Automated by JSF*

Input → Process → Output

• Input

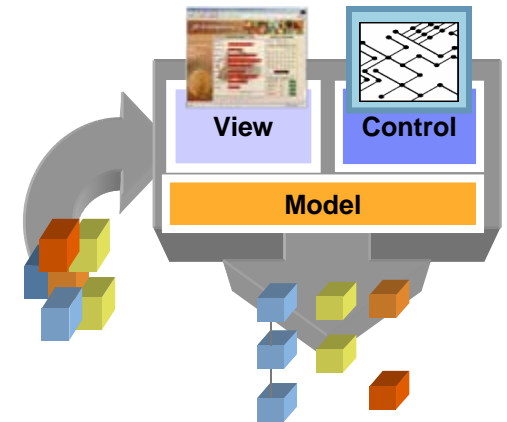
- Constructing web page forms, formatting, validation, etc.
- GUI widget richness
- Calling appropriate "Action" when button pressed, etc.
- Passing data to business logic

• Processing

- Integrating to web services, databases, backends, biz logic, etc.
- Maintaining user session and application state information
- MVC layering, page flow and business logic modularity

• Output

- Forwarding control to results screen/page
- Displaying data, GUI controls, formatting, etc.



IBM RAD JSF Tools Summary

- ✓ Takes Web, J2EE and Portal development to a new level of productivity
- ✓ Appeals to Web Developers
 - ✓ J2EE is more powerful than .NET and JSF now makes it both easy and attractive to Microsoft heritage developers
 - ✓ JSF Simplifies and enhances RAD development for both J2EE newbies and experts
- ✓ Appeals to Portal Developers
 - ✓ Improved integration, visual portlet construction and JSF tools provide a comprehensive portlet development environment
- ✓ Bottom Line
 - ➔ Accelerates GUI, Web Services, Database, Portlet and MVC Web App development

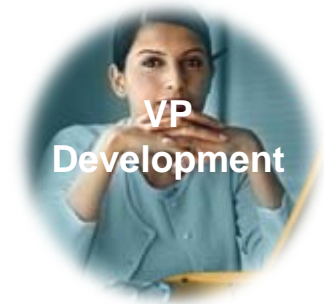


Application Development Challenges Addressed

- It takes too long to deliver applications

"We need to *Design, Develop and Deploy applications more quickly*"

- ✓ IBM's new JavaServer Faces (JSF) tools accelerate development using a drag-n-drop approach (no coding required)



- J2EE is perceived to be too complex

"We need to leverage open standards, keep it simple and make it easy for Microsoft heritage developers to get on board"

- ✓ IBM's new JSF tools make J2EE easy and very attractive to Microsoft heritage developers



- Integration is cost prohibitive

"We need to integrate our people, processes and information using web services, databases and existing systems"

- ✓ IBM's new JSF tools automate web services and database integration
- ✓ IBM's business process integration and workflow tools save time





Lifecycle Tools – Integrated into a single IDE Platform

Disciplines

Process Modeler Business Modeling

RSA (RequisitePro Views) Requirements

RSA/RAD Analysis & Design

RAD Implementation

RAD Test

RAD Deployment

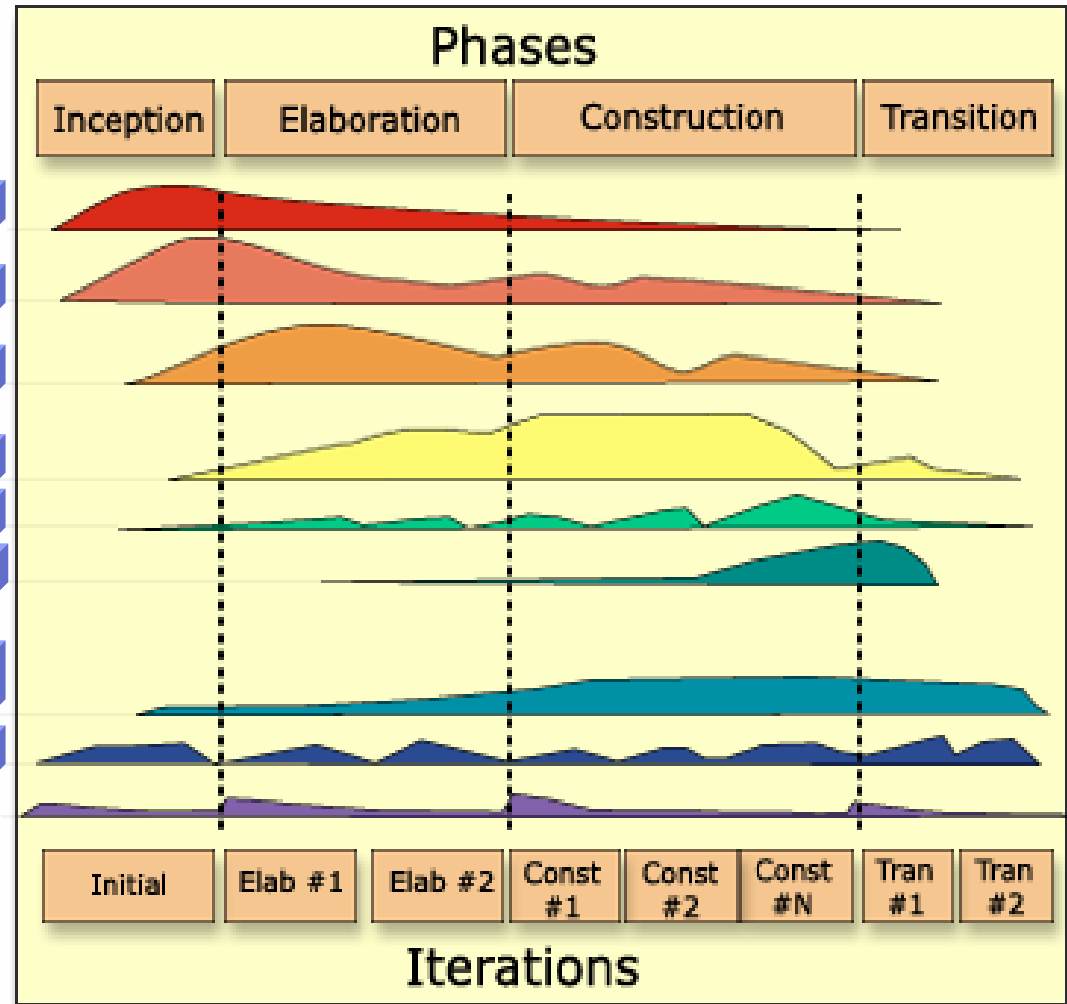
RAD (ClearCase Views + ClearQuest Views) Configuration & Change Mgmt

RAD (ClearQuest + Project Console) Project Management

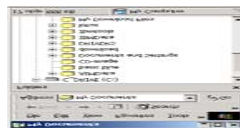
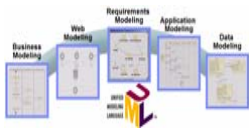
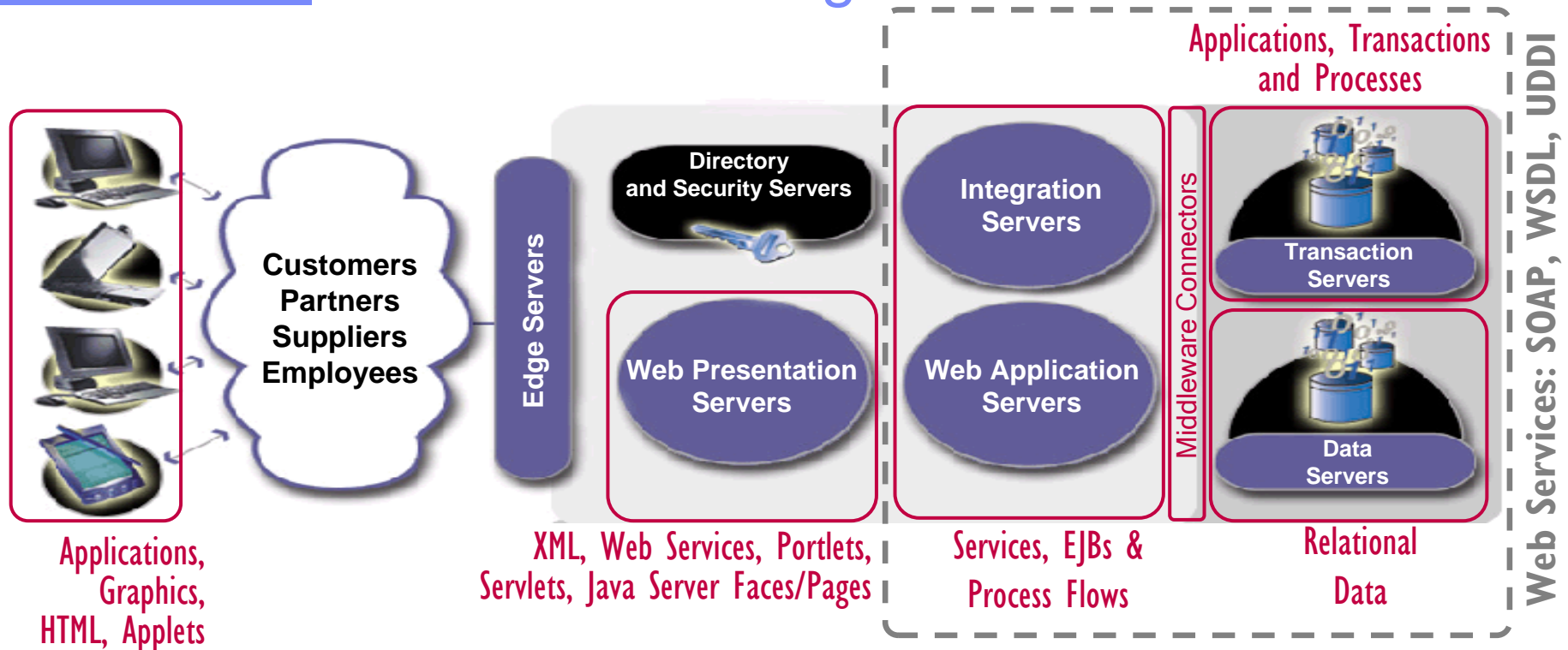
Environment

Simplified Packaging and Names

V4 & V5	V6
WSAD	RAD (Rational App Developer)
Rose XDE	RSM (Rational SW Modeler)
WSAD + XDE	RSA (Rational SW Architect)



Build Tools - End-2-End Design & Construction



Development Roles

Application
Modeling



Java/J2EE
Development



Web/Portal
Development



XML Web Services
Development



Database App
Development



Business Process
SOA Integration



Cobol, CICS/IMS,
4GL Development



RAD Top 10 of IBM AD Tools (Adaptable, Automated, Accelerated)

Adaptable - Eclipse-based Workbench

#1 Customizable **Perspectives** and **Views** support **roles-based** tools

Automated - IDE Infrastructure (Code, Build, Test, Debug, Deploy)

#2 **Dynamic build engine** incrementally updates and hot-deploys (on-the-fly, while you type)

#3 **Testing and Debugging** for Java, Web Services, XML, database and EJB

Accelerated - End-2-End Builders

#4 **Java and UML** core coding tools

#5 **Web App Builders**: Pages, Sites, Portals, Portlets, Struts, JavaServer Faces

#6 **Web Services** and **XML** Builders

#7 **Database and SDO** (Service Data Objects) Builders

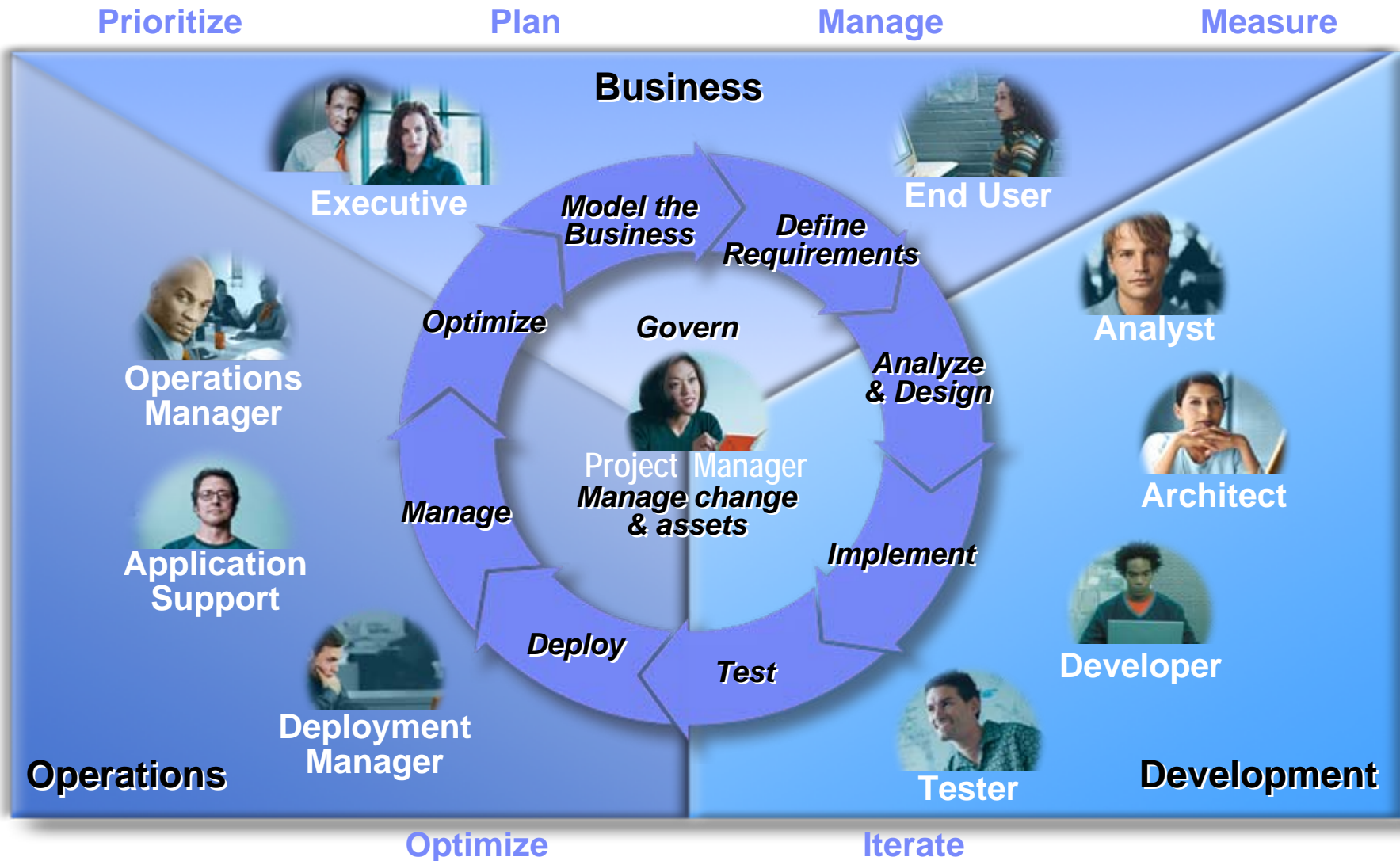
#8 **J2EE** and **EJB** Builders

#9 **SOA workflow** builders (Service Oriented Architecture)

#10 **Legacy/Enterprise** development, integration and Web Services tools



The Business-Driven Development Lifecycle



Resources

- <http://ibm.com/developer>
(IBM developerWorks for technologies and products)
 - ibm.com/developer/websphere
(WebSphere Developers Domain)
 - ibm.com/developer/rational
(WebSphere Developers Domain)
 - ibm.com/developer/ibm
(All other product developer domains)
- <http://www.redbooks.ibm.com>
(How To Books)
- <http://ibm.com/software/ad>
(IBM App Dev Tools Homepage)
- <http://ibm.com/websphere>
(WebSphere Family Homepage)
- <http://JavaDevTools.com> (a.k.a. RationalCentral.com and WebSphereCentral.com)
(Presentations, references, tutorials, white papers, articles, links, etc.)

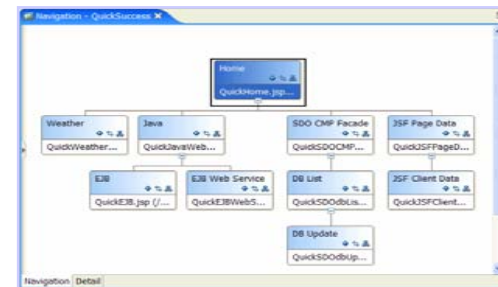


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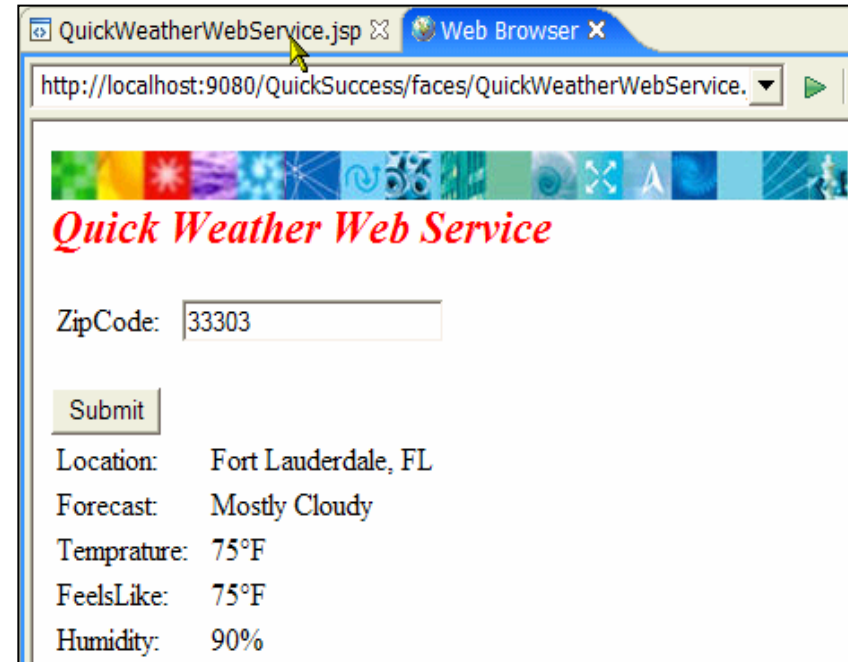
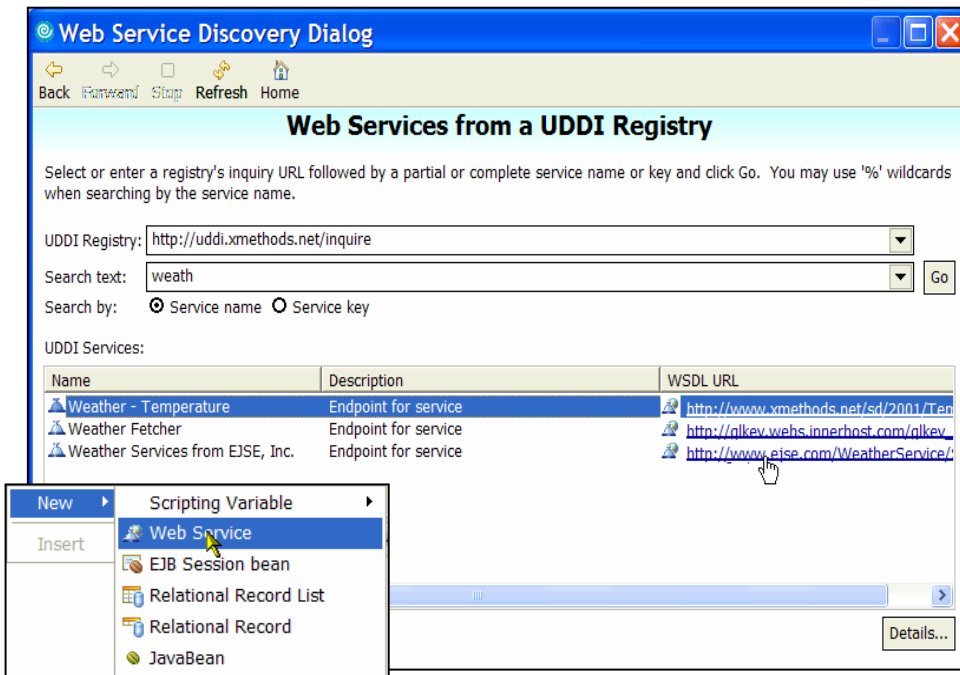
Quick Success Scenarios – Ad Hoc Build Tasks

- Weather Web Service – Consuming an internet based Web Service
- Java Web Service – Creating and consuming a JavaBean Web Service
- Session EJB - Creating, coding, testing, and web service enablement
- CMP EJBs – Mapping to a relational database
- CMP SDO Facade – Creating an SDO façade for a CMP EJB
- SDO CRUD – Create, retrieve, update and delete relational data
- JSF Client Data – Enhanced Browser cached JSF UI Components
- Web Site Designer – Constructing and configuring web site navigation



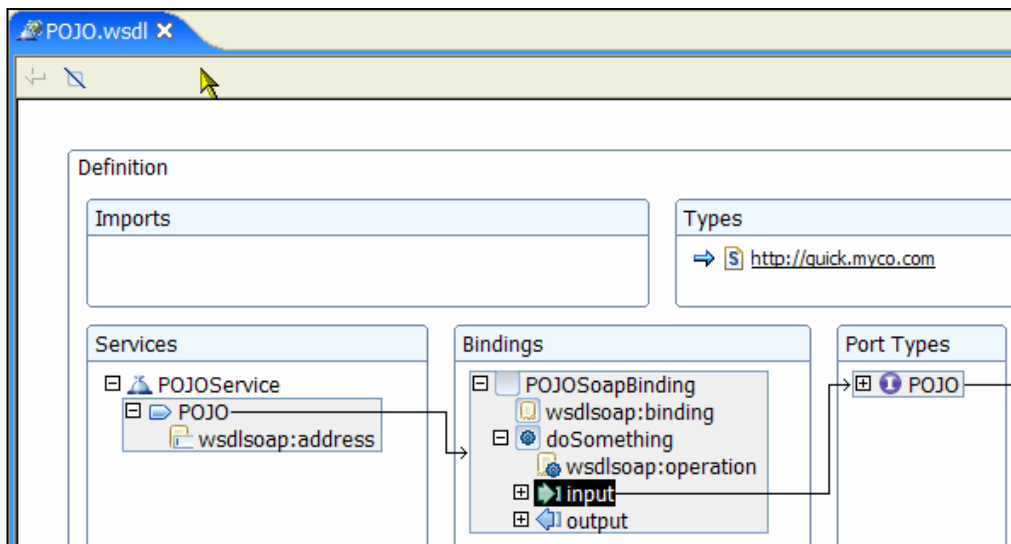
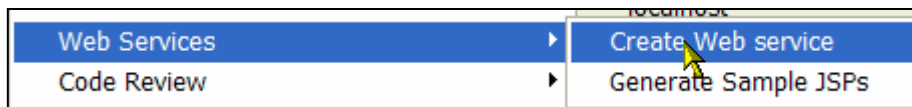
Quick Success Scenarios – Ad Hoc Build Tasks

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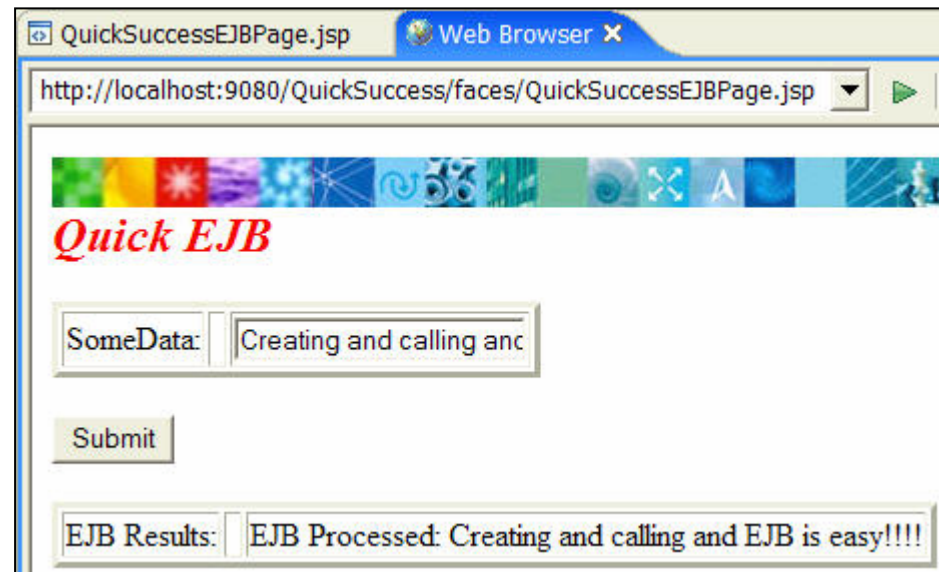
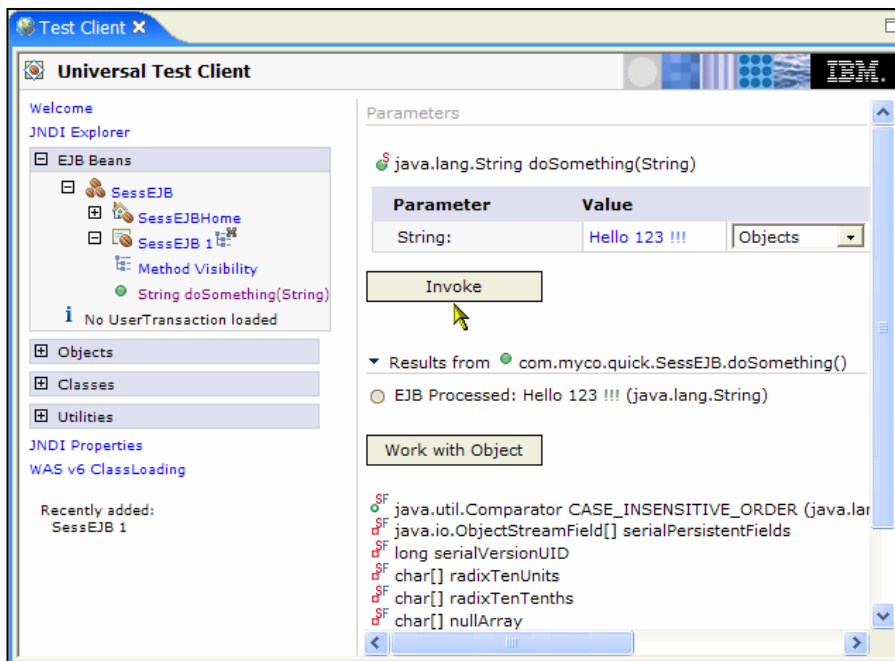
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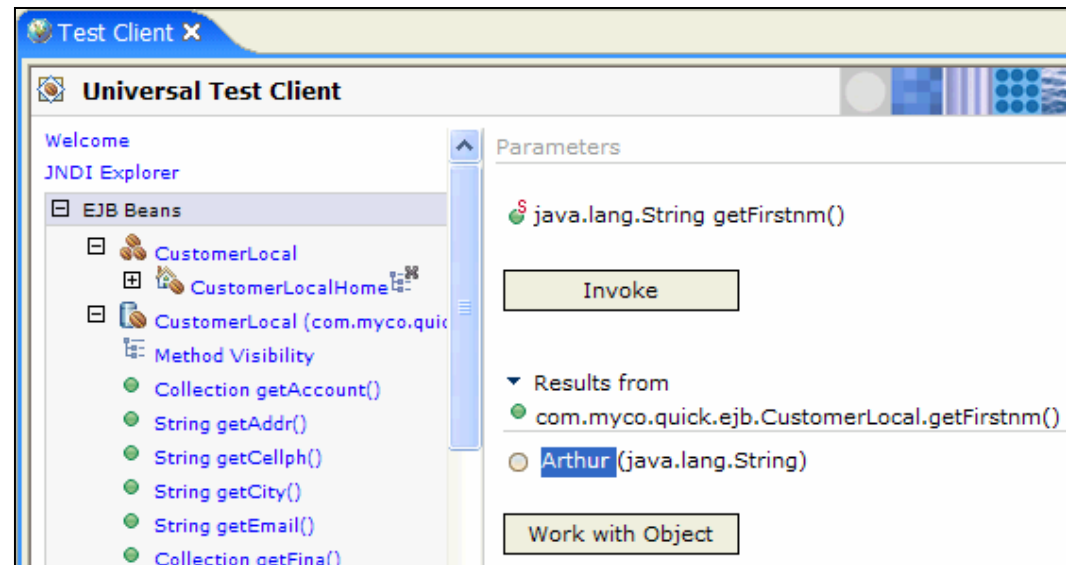
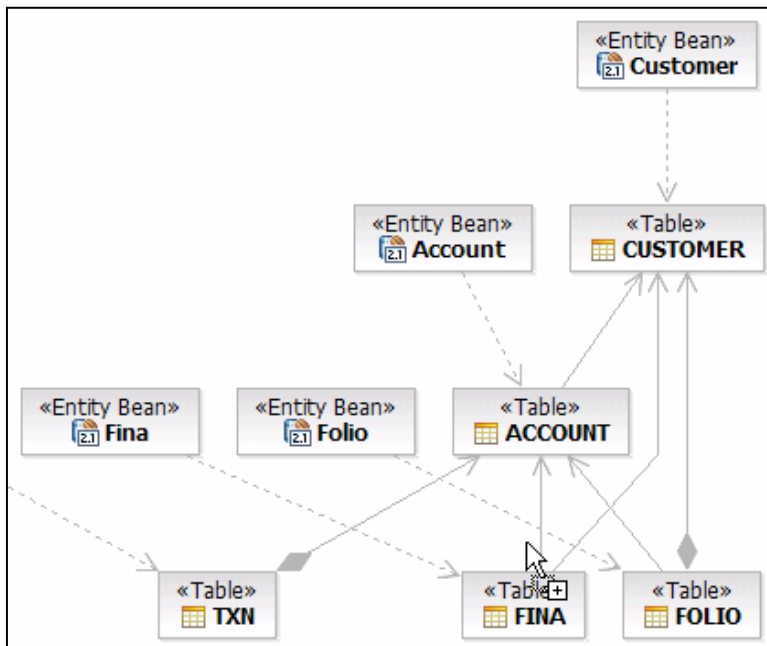
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Create Session Bean Facade

Session Bean Facade
Create a session bean facade for CMP entity beans.

Name:

Package Name:

Source Location:

Available CMP beans:

- Customer**
- Account
- Fina
- Folio
- Txn

QuickSDOCMPFacadePage.jsp Web Browser

http://localhost:9080/QuickSuccess/faces/QuickSDOCMPFacadePage.

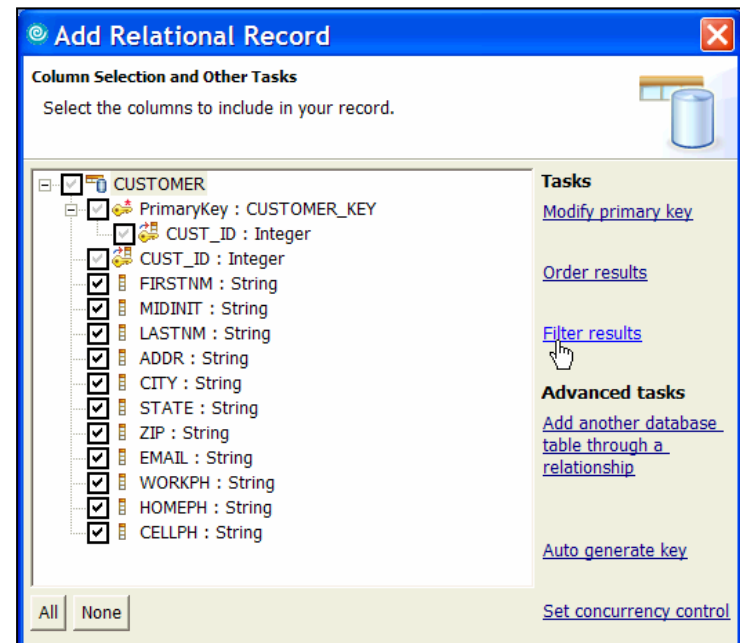
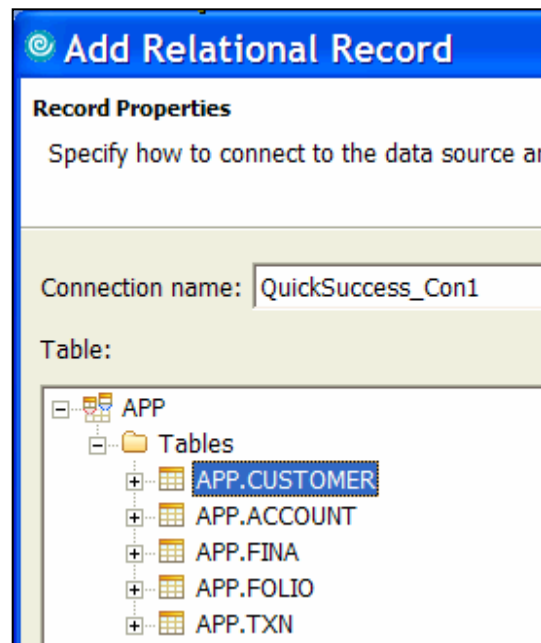
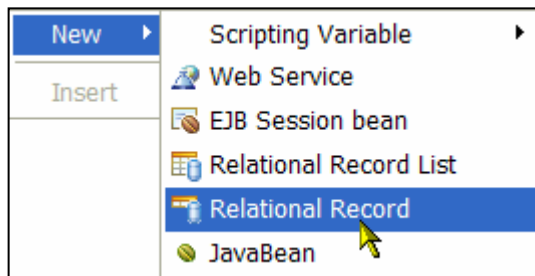
Quick SDO CMP EJB Session Bean Facade

Submit

Cust_id	Firstnm	Lastnm	Addr	City	State	Zip
1	Arthur	Platinum	123 Easy Street	Long Island	NY	11101
2	Betsy	Golden	45 Plush Circle	Arlington	VA	22202
3	Charlie	Silver	67 Humble Avenue	Fort Lauderdale	FL	33303
4	Denise	Copper	89 Trailer Park Drive	Burghill	OH	44404

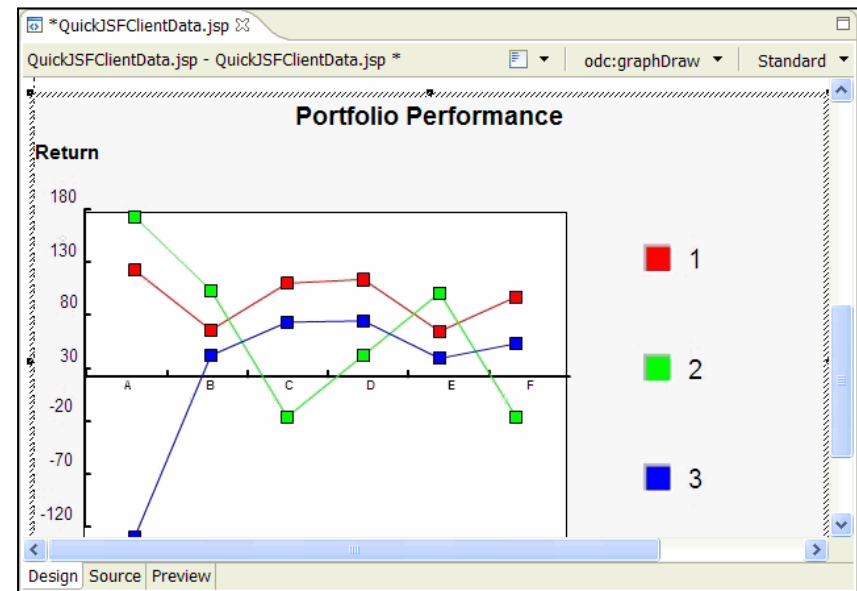
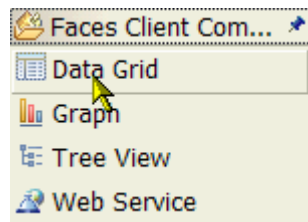
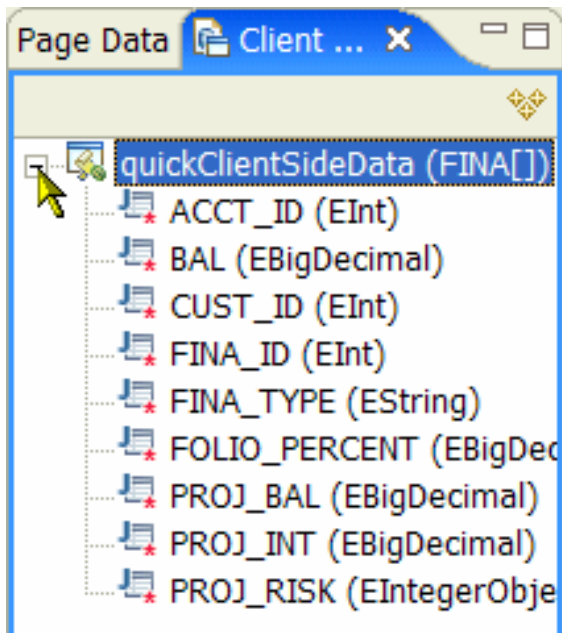
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End-2-End Scenario – Soup-2-Nuts J2EE Build Tasks

- Solution Overview – Single JSP captures all build and run scenarios
- Java Beans – Create, code, test, debug and JSF integration
- Dynamic Development – Changing code on-the-fly and debugging
- UML Visualization – Exploring application artifacts
- Performance Profiling – Analyzing performance with graphics and reports

End-2-End Page (End2EndPage.jsp and .java)

Call All

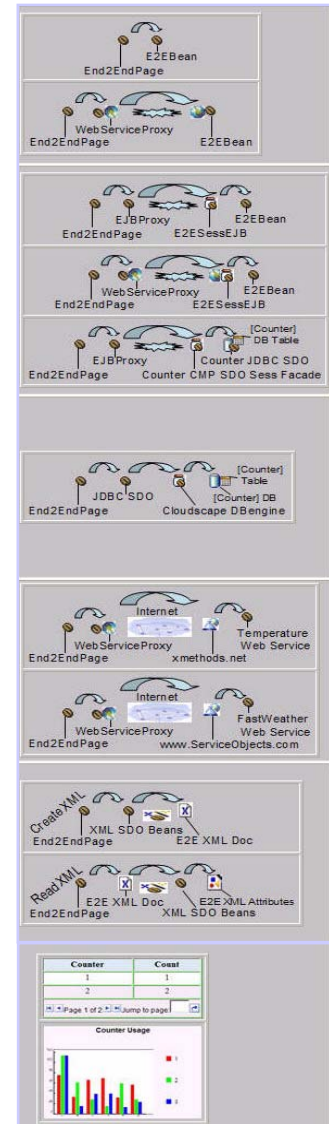
Type of Calls	Input>>Submit>>Results	Diagrams												
Web Services: o Temperature (www.xmethods.net) o FastWeather (ServiceObjects.com)	Temperature Web Service FastWeather Web Service Zip Code: 11101 Cond: Clear License Key: WS14-PBJ1-KXY3 City: Long Island City State: New York Temp°F: 28 Submit	Diagrams End2EndPage, WebServiceProxy, xmethods.net, Temperature Web Service, Internet												
XML: o Create XML Doc o Recieve XML Doc	Create XML Doc Read XML Doc Id: 123 Info: Hi XML! Submit XML: <?xml version="1.0" encoding="UTF-8"?> <E2E> Doc: <ID>123</ID> <INFO>Hi XML!</INFO> </E2E>	Diagrams End2EndPage, Create XML, XML 5.00 Beans, E2E XML Doc, Read XML, E2E XML Doc, E2E XML Beans												
JSF: Client-side data: o Table o Graphs	<table border="1"> <thead> <tr> <th>COUNTER</th> <th>COUNT</th> </tr> </thead> <tbody> <tr> <td>CounterA</td> <td>111</td> </tr> <tr> <td>CounterB</td> <td>200</td> </tr> </tbody> </table> <p>Page 1 of 2 Jump to page: []</p> <p>Counter Usage</p>	COUNTER	COUNT	CounterA	111	CounterB	200	<table border="1"> <thead> <tr> <th>Counter</th> <th>Count</th> </tr> </thead> <tbody> <tr> <td>CounterA</td> <td>111</td> </tr> <tr> <td>CounterB</td> <td>200</td> </tr> </tbody> </table> <p>Page 1 of 2 Jump to page: []</p> <p>Counter Usage</p>	Counter	Count	CounterA	111	CounterB	200
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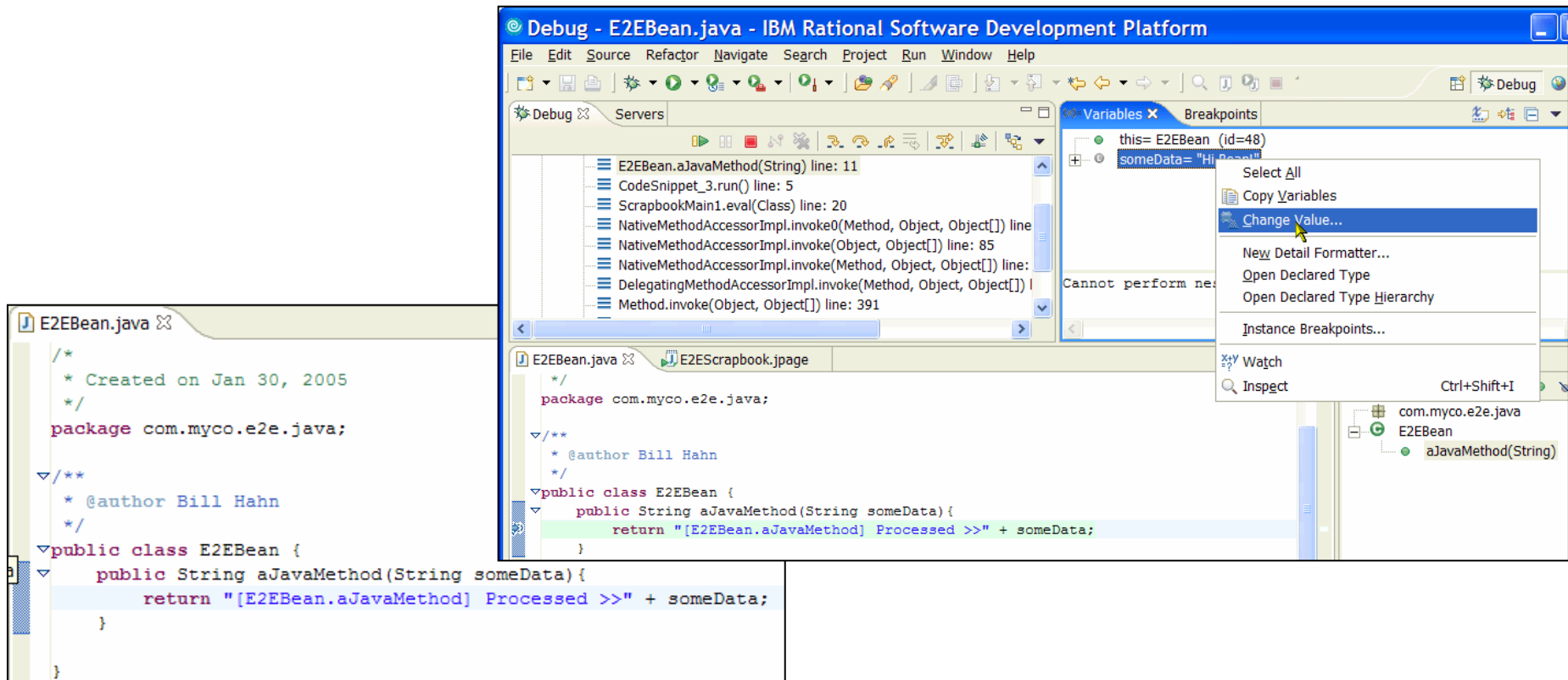
End-2-End Page (End2EndPage.jsp and .java)
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Type of Calls	Input->Submit->Results	Diagrams						
Web Services: o Temperature (www.xmethods.net) o FastWeather (ServiceObjects.com)	Temperature Web Service FastWeather Web Service Zip Code: 11101 Cond: Clear License Key: WS14-PBJ1-KCY3 City: Long Island City State: New York Submit Temp°F: 28							
XML: o Create XML Doc o Recieve XML Doc	Create XML Doc Read XML Doc Id: 123 Info: Hi XML Submit XML: <?xml version="1.0" encoding="UTF-8"?> <E2E> Doc: <ID>123</ID> <INFO>Hi XML</INFO> </E2E>							
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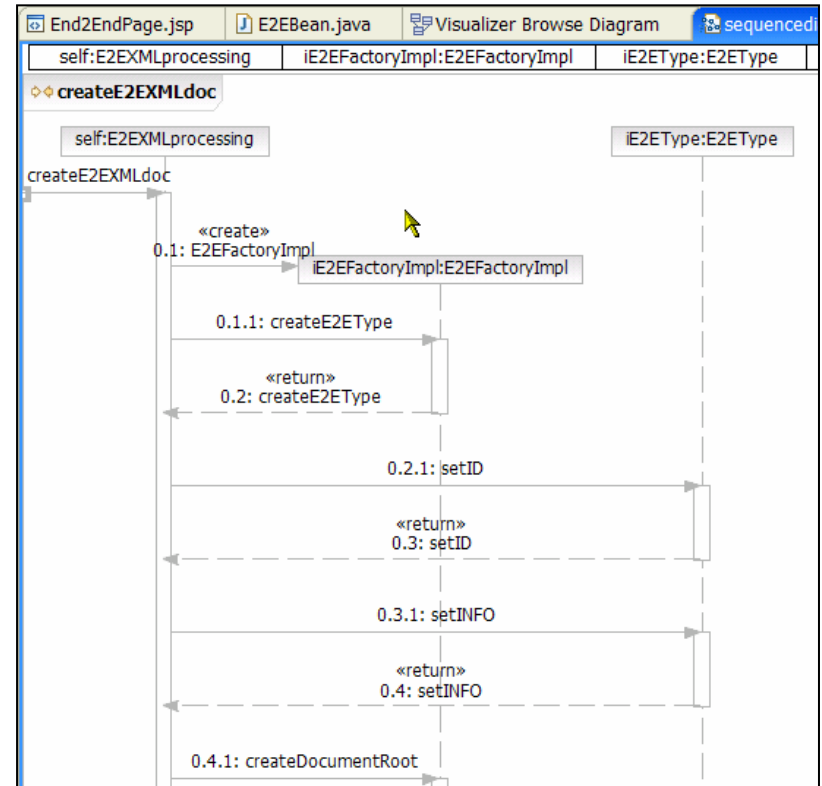
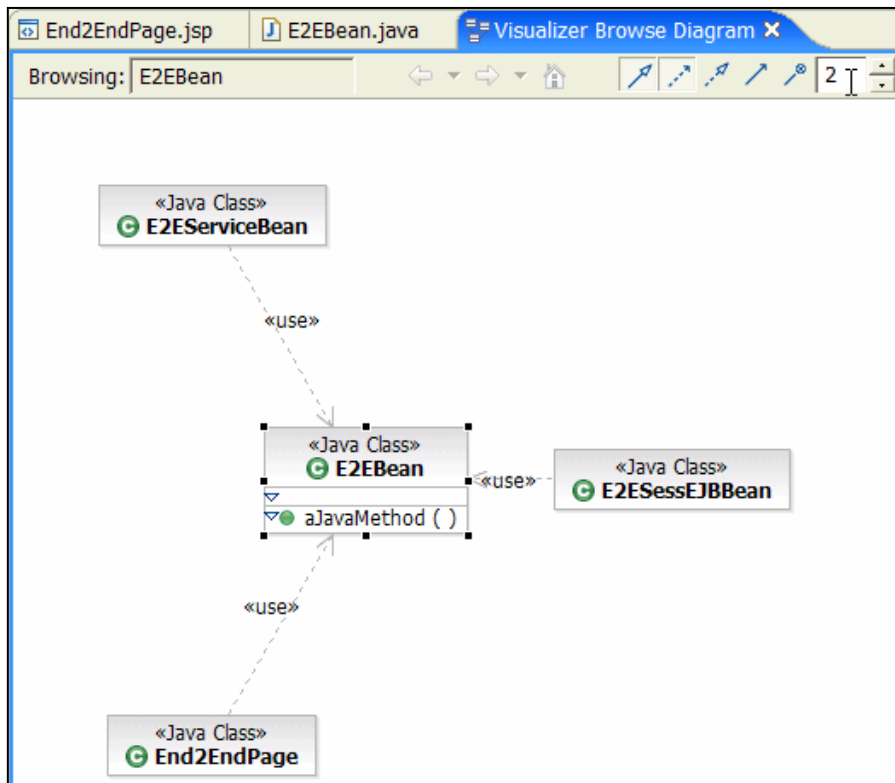
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Type of Calls	Input>>Submit>>Results	Diagrams
Java: o Java Bean o Bean Web Service	<div> <div>Java Bean Bean Web Service</div> <div> SomeData: <input type="text"/> <input type="button" value="Submit"/> </div> <div> Results: [E2EServiceBean.aWSJavaMethod] Processed >> [E2EBean.aJavaMethod] Processed >> [BP #2] </div> </div>	
EJBs: o Session EJB o EJB Web Service o CMP SDO Facade	<div> <div>Session EJB EJB Web Service CMP SDO Facade</div> <div> SomeData: <input type="text"/> <input type="button" value="Submit"/> </div> <div> Results: [E2ESessEJB.anEJBMethod] Processed >> [E2EBean.aJavaMethod] Processed >> [BP #3] </div> </div>	

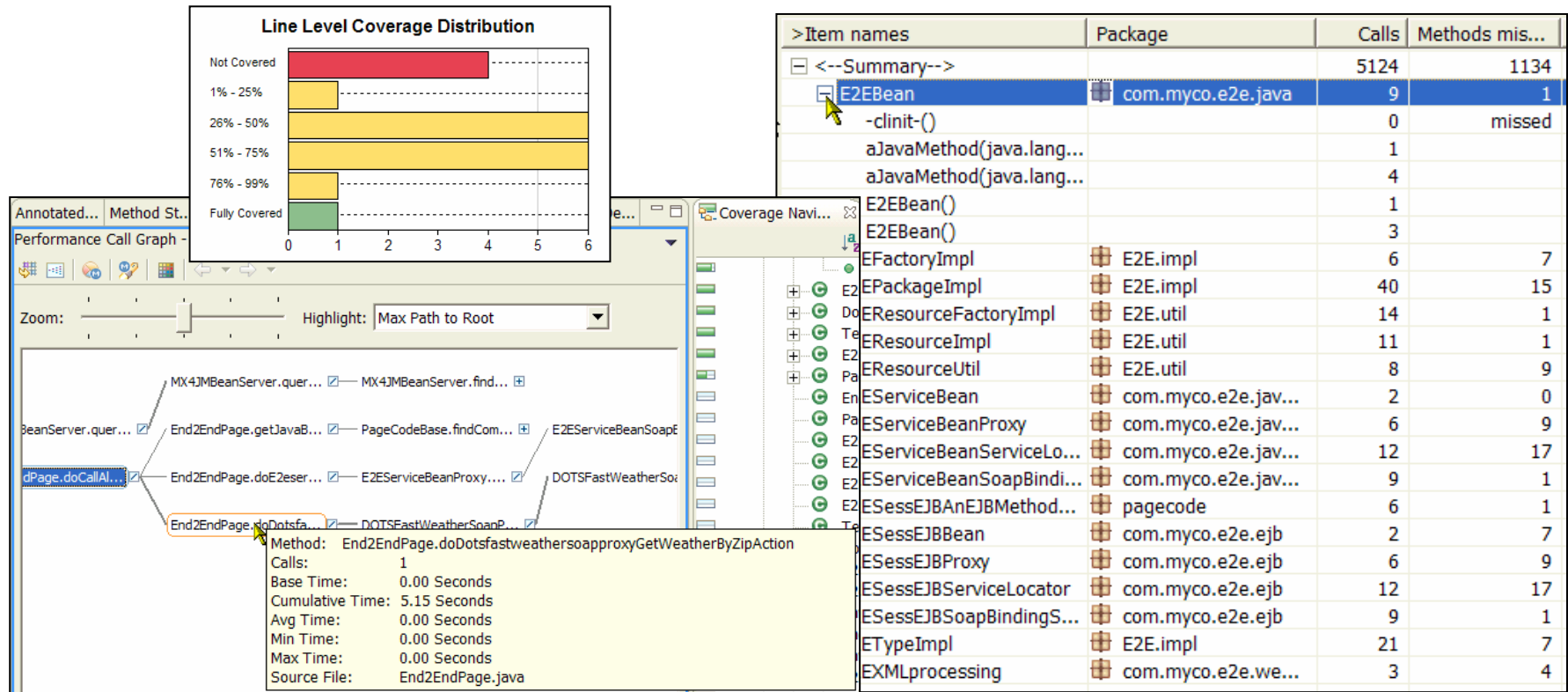
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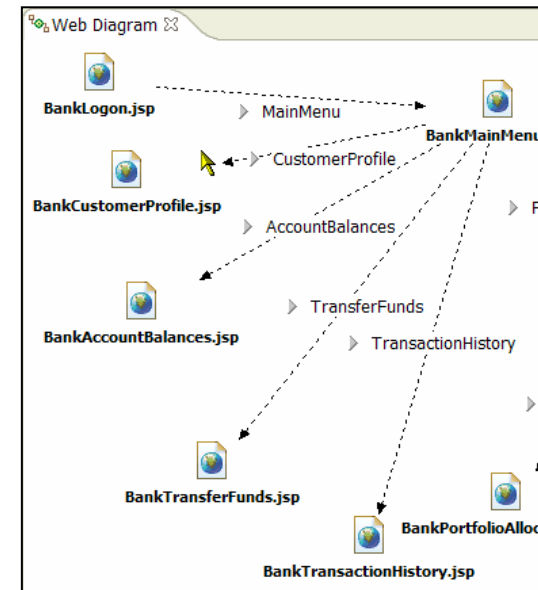
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Banking & Finance Scenario – Applying End-2-End tasks

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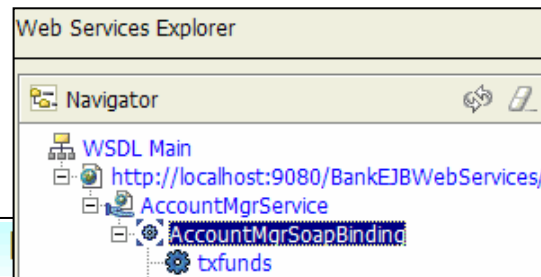
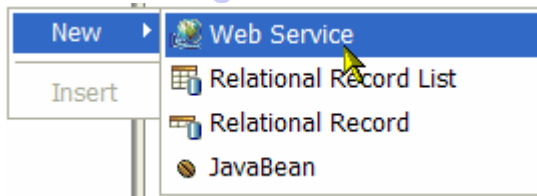
- Web Diagram, Logon and Main Menu – Logon, user profile managed bean and SDOs
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The screenshot illustrates the development of a Logon page in the IBM WebSphere IDE. The interface is divided into several panels:

- Project Navigator:** Shows the project structure for JSPWeb, including Web Site Navigation, Web Deployment Descriptor, Java Resources, WebContent, images, and CustomerAdmin.jsp.
- Web Browser:** Displays the Logon.jsp page. The page features a header with a colorful banner and the title "Logon". Below the title is a form with two input fields: "Customer ID#" and "Password". A tooltip points to the "Customer ID#" field, indicating where to bind the "customerNumber" to the control "text1".
- Page Data:** Shows the JSP scripting context, including sessionScope, applicationScope, requestScope, and param. The "customerNumber" variable is highlighted, showing its type as java.lang.String.
- Attributes:** Shows the attributes for the h:inputText component. The "Id" is set to "text1" and the "Value" is set to "#{sessionScope.customerNumber}".

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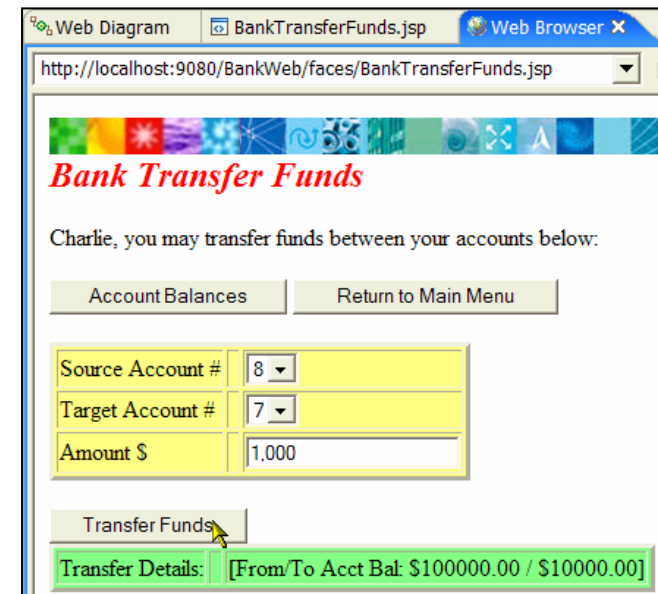


Web Service Discovery

[Web Services from a UDDI Registry](#)
Search for Web services by name or key in a public or private UDDI registry.

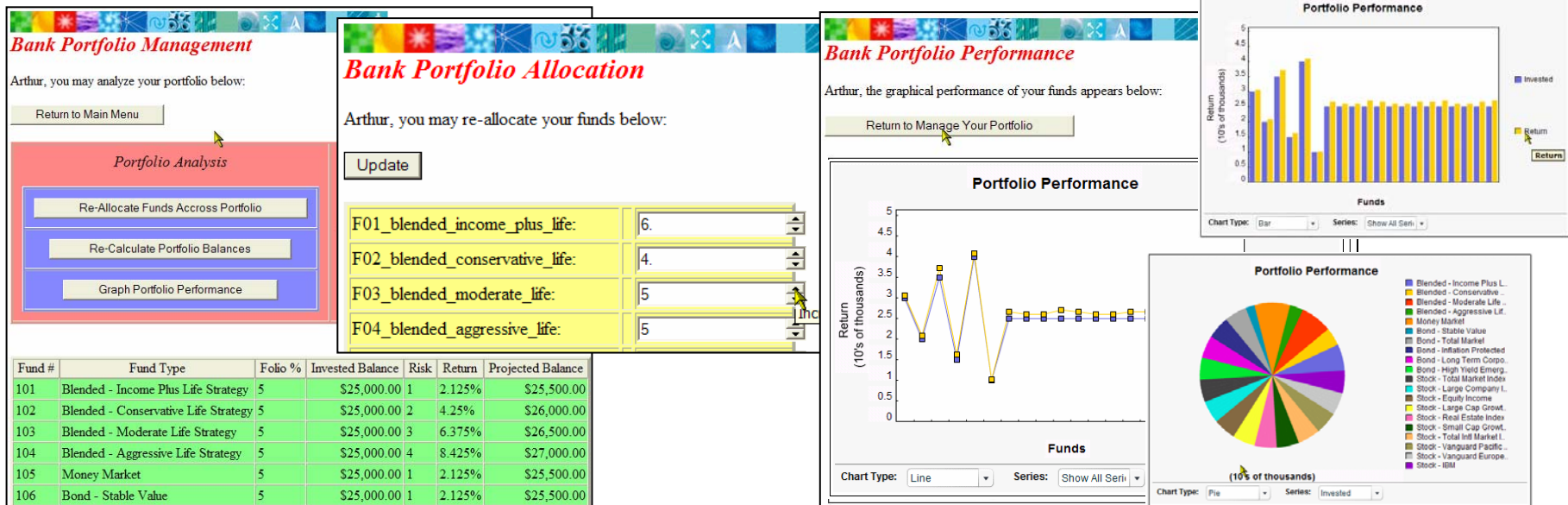
[Web Services from a known URL](#)
Search for Web services using a URL to a document.

[Web Services from your workspace](#)
Search for Web services deployed and running in my current workspace.



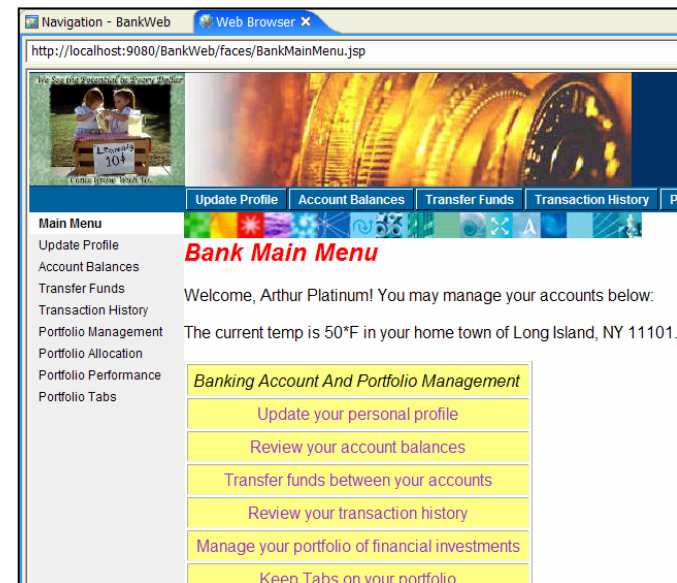
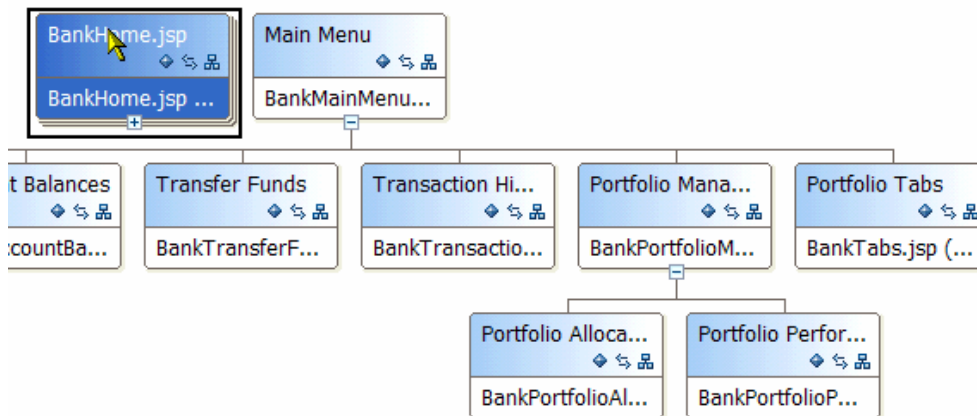
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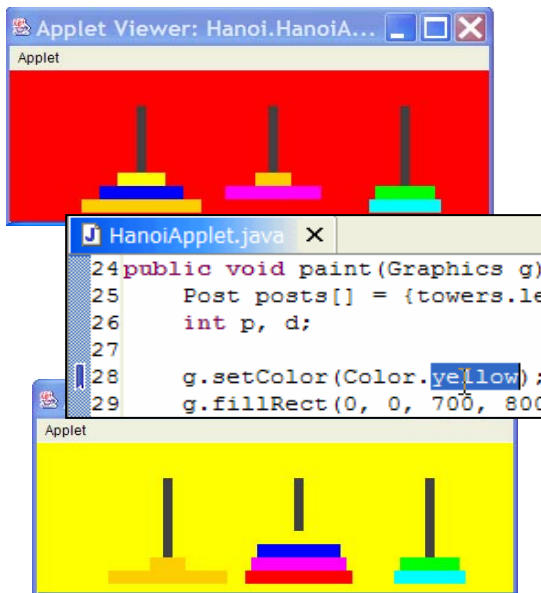
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Bank Transfer Funds

Arthur, you may transfer funds between your accounts below:

Account Balances Return to Main Menu

Source Account # Checking

Target Account # Savings

Amount \$ 1,000

Transfer Funds

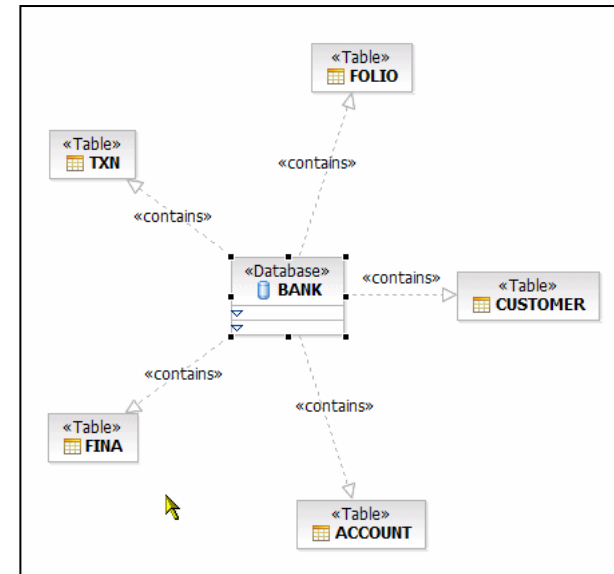
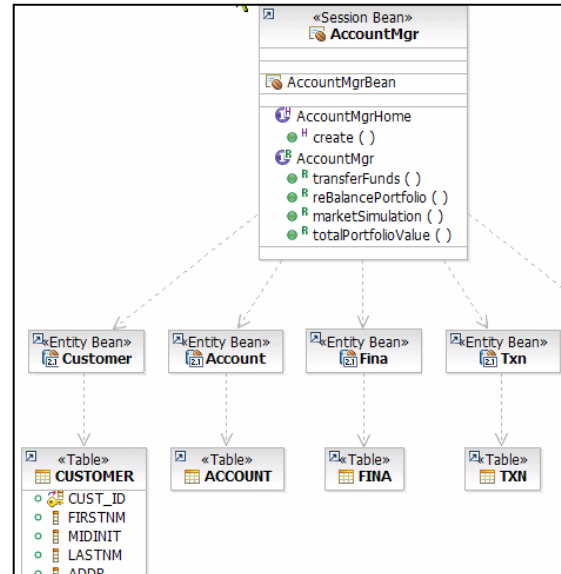
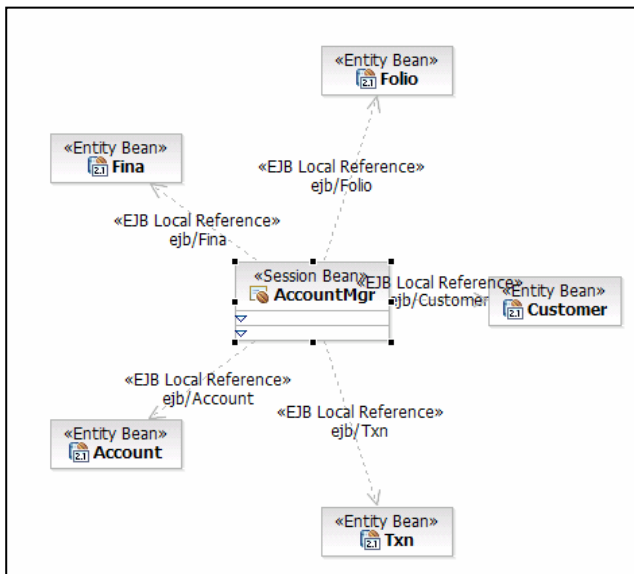
Transfer Details: [From/To Acct Bal: \$10000.00 / \$106000.00]

Transfer Funds

Transfer Details: [From/To Acct Bal: \$9000.00 / \$105000.00]

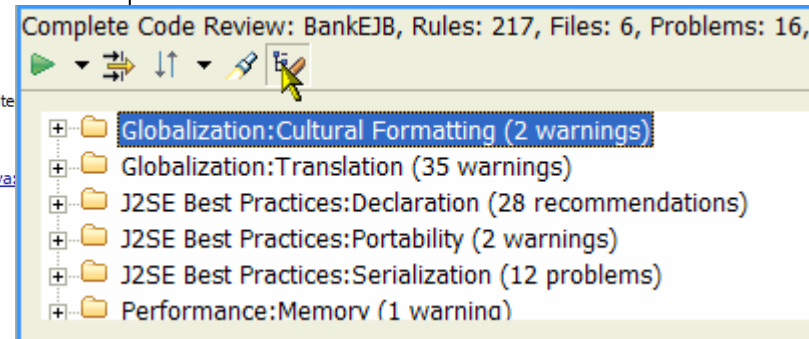
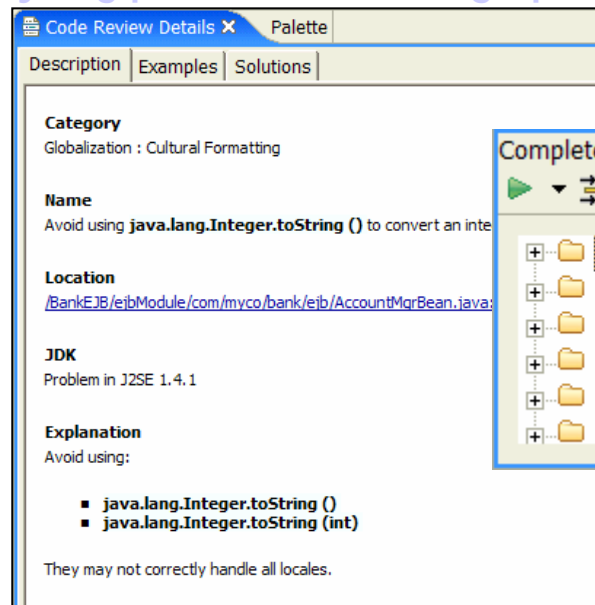
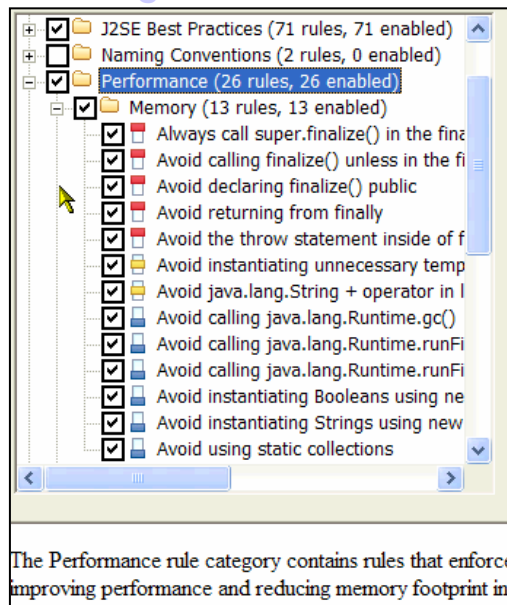
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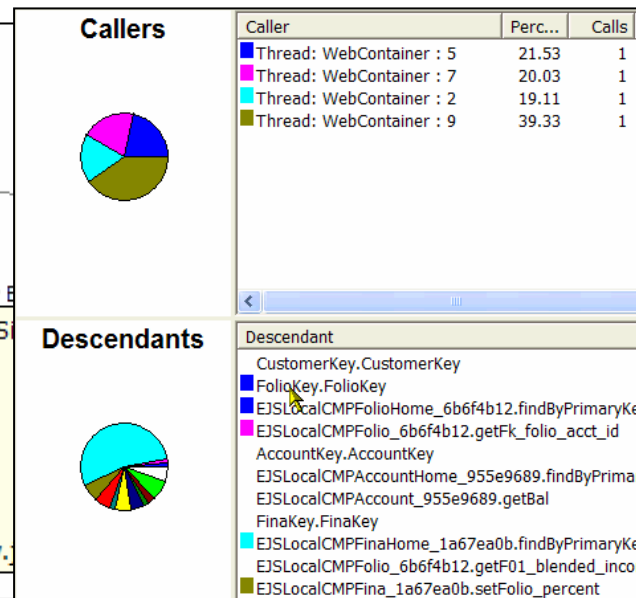
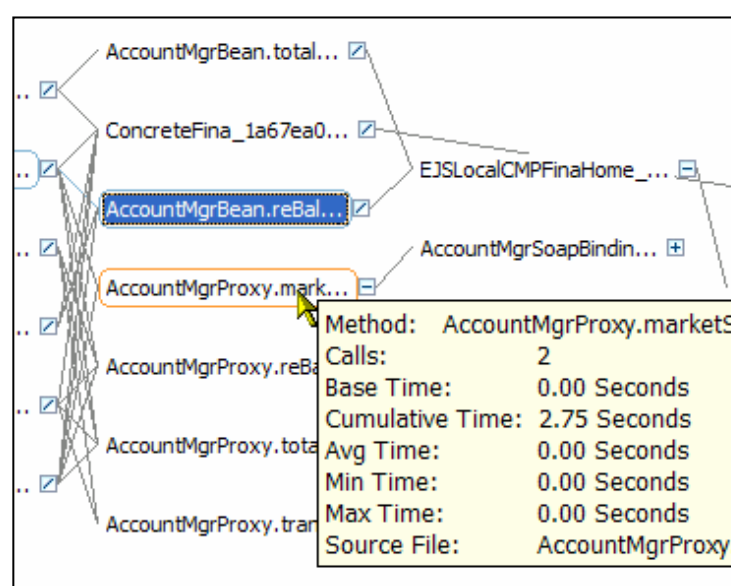
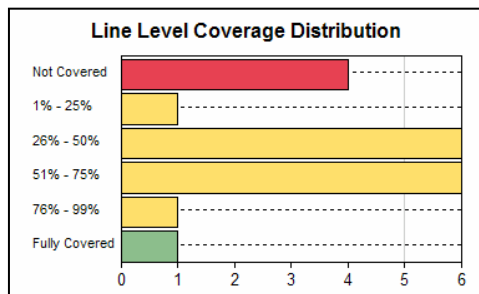
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Financial Advisor Dashboard – Portlets and Portal Design

- Tabbed Panel Portlets – Bank Customers and Portfolio Management Portlets
- Click-2-Action – Bank Customer and Portfolio SDOs and C2A inter-portlet communication
- Portfolio Summary – Display portfolio summary information using SDOs
- Bank DB CMP EJBs Mapping – Generate CMP EJBs from BANK database tables
- Account Manager Session EJB – Portfolio Management and Dashboard logic
- Portfolio Management – Asset allocation, performance graphs and market simulation
- Dashboard – SDO display of tabular and graphical dashboard
- Portal Site Design – Themes, skins, pages and portal site design



Financial Advisor Dashboard – Portlets and Portal Design

My Portal Administration Edit my profile ? Log out
New Page Edit Page Assign Permissions

Banking Finance

Financial Advisor Dashboard
Loans

BankCustomers portlet

Financial Advisor's Dashboard

Customers Portfolios Dashboard

Cust #	First Name	Last Name	City	State	Zip	Work Phone	\$ Invested	\$ Projected	% Rate of Return
1	Arthur	Platinum	Long Island	NY	11101	773-123-1111	\$500,000.00	\$527,751.15	5.55%
2	Betsy	Golden	Arlington	VA	22202	773-123-2222	\$500,000.00	\$527,568.75	5.514%
3	Charlie	Silver	Fort Lauderdale	FL	33303	773-123-3333	\$500,000.00	\$526,688.75	5.338%
4	Denise	Copper	Burghill	OH	44404	773-123-4444	\$500,000.00	\$510,625.00	2.125%

Customer Portfolios Performance

BankPortfolios portlet

Banking > Finance > Portfolio Management

Customer #

Analyze Customer Portfolio

Portfolio details for **Arthur Platinum** appear below:

Invested: \$500,000.00 Projected: \$527,751.15 Rate of return: 5.55%

Portfolio Allocation Graphics Market Simulation

Fund Acct #	Fund Name	% of Folio	\$ Invested	Risk	% Return	\$ Projected
101	Blended - Income Plus Life Strategy	5%	\$25,000.00	1	2.124%	\$25,531.00
102	Blended - Conservative Life Strategy	4%	\$20,000.00	2	4.249%	\$20,849.80
103	Blended - Moderate Life Strategy	6%	\$30,000.00	3	6.374%	\$31,912.20
104	Blended - Aggressive Life Strategy	7%	\$35,000.00	4	8.424%	\$37,948.40
105	Money Market	5%	\$25,000.00	1	2.124%	\$25,531.00
106	Bond - Stable Value	3%	\$15,000.00	1	2.125%	\$15,318.75
107	Bond - Total Market	5%	\$25,000.00	2	6.375%	\$26,593.75