iSeries AD - WDSc 5.0:
State Of The Union

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IBM Toronto Laboratory
Feb 2003

WDS for iSeries

- New World
- New Servers
- New Tools

ITSO iSeries Technical Forum
SP08

Disclaimer

Acknowledgement:

- This presentation is a collaborative effort of the IBM Toronto AS/400 Application Development presentation team, including work done by:
  - George Farr, Phil Coulthard, Claus Weiss, and Don Yantzi

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iSeries AD Strategy

Build Community!

Build Excitement!

iSeries AD

- New Packaging
- New Technology
- New Tools
- New UI

New Packaging: V5R1

V5R1: 5722-WDS

V4R5: 5769-WDS

WebSphere Development Studio

RPG

C

COBOL

C++

ADTS

Free Upgrade with SS!

Host

Client

WebSphere Development Tools

VAJava

CODE/400

WebSphere Studio

VARPG

WebFacing

WDT

(*UNLIMITED LICENSES*)

Can buy separately as a Workstation PID

CODE/400

Next Generation of ADTS:

- **CODE Editor**
  - Language aware editing for RPG, COBOL, CL, C, C++, DDS, Java, VARPG
  - Program Verifiers for RPG, COBOL, DDS
    - Quaranteed clean compile, first time
  - Language Reference manuals online, F1 enabled
- **CODE Remote Compile**
  - Remote Compile with Error Feedback
  - GUI Compile Options Dialogs
- **CODE Designer**
  - WYSIWYG design of DSPFs, PRTFs, PFs
- **CODE Distributed Debugger**
  - Remotely debug RPG, COBOL, CL, C, C++, Java
- **CODE Project Organizer**
  - Random filtered access to QSYS and local files

new SEU

new PDM option 14

new SDA, RLU

new STRDBG

new PDM

VisualAge RPG

✓ VARPG: Client and GUI RPG!

- **VARPG Compiler and Runtime**
  - In synch with V4R4 RPG IV (V5R1 to come)
  - Compile and run on Windows or
  - Compile and run as Java (run anywhere!)
- **VARPG Debugger**
- **VARPG GUI Builder**
  - Visually layout Graphical User Interface
  - Program event logic ... in RPG
- **CODE Editor**
  - Shared with CODE/400
- **Non-Visual projects supported too**
  - Possible to write %100 portable business logic in RPG!

RPG on Windows!

RPG with GUI!

Portable RPG!

Convert VARPG to Java!

New Packaging

Build Community!

- ✓ Common tools for entire community
- ✓ BPs/ISVs can pre-req. No stack price $

Build Excitement!

- ✓ Best-of-breed tools for modern apps
- ✓ WebFacing: RPG->Web in minutes !
- ✓ Massive enhancements to compilers

Some History ... June 2002!

New Technology

#1. Integrated Development Environment

RPG / COBOL + Java / Web + Web Facing

= Next Release of WDT

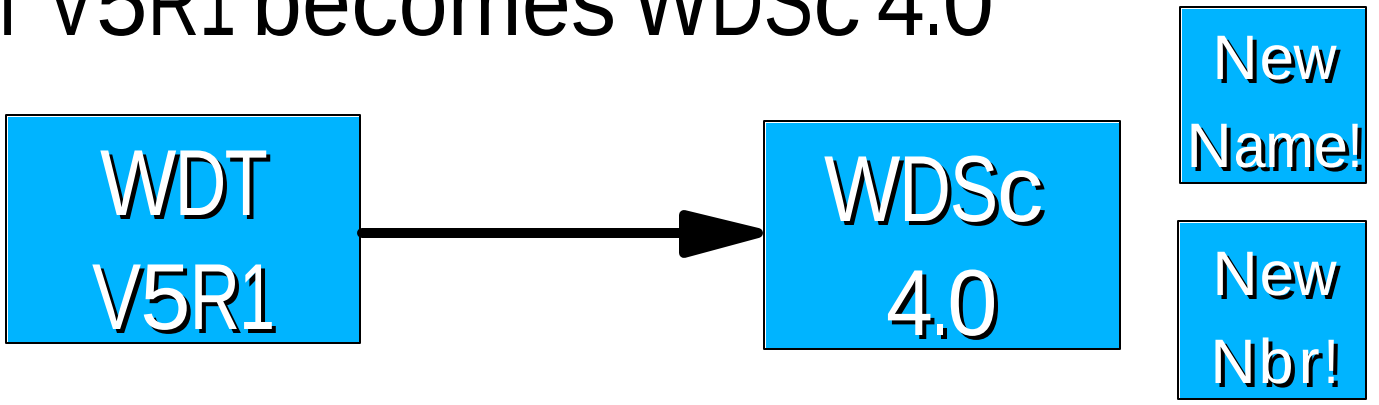
New Tools

#2. New Tools for New Technology

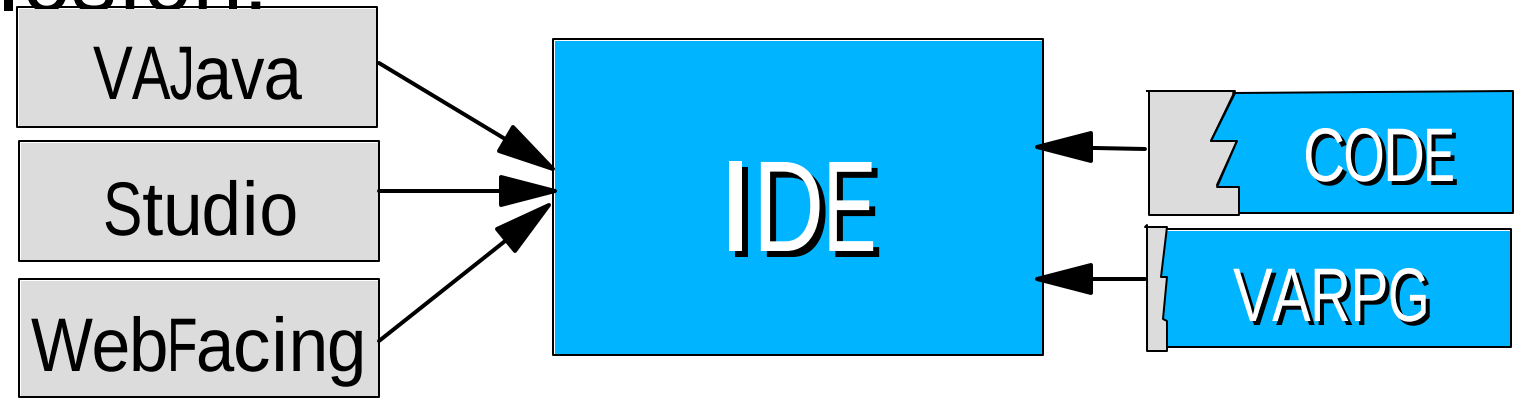
+ XML + Web Services + DBA

Some History…June 2002!

WDT V5R1 becomes WDSc 4.0

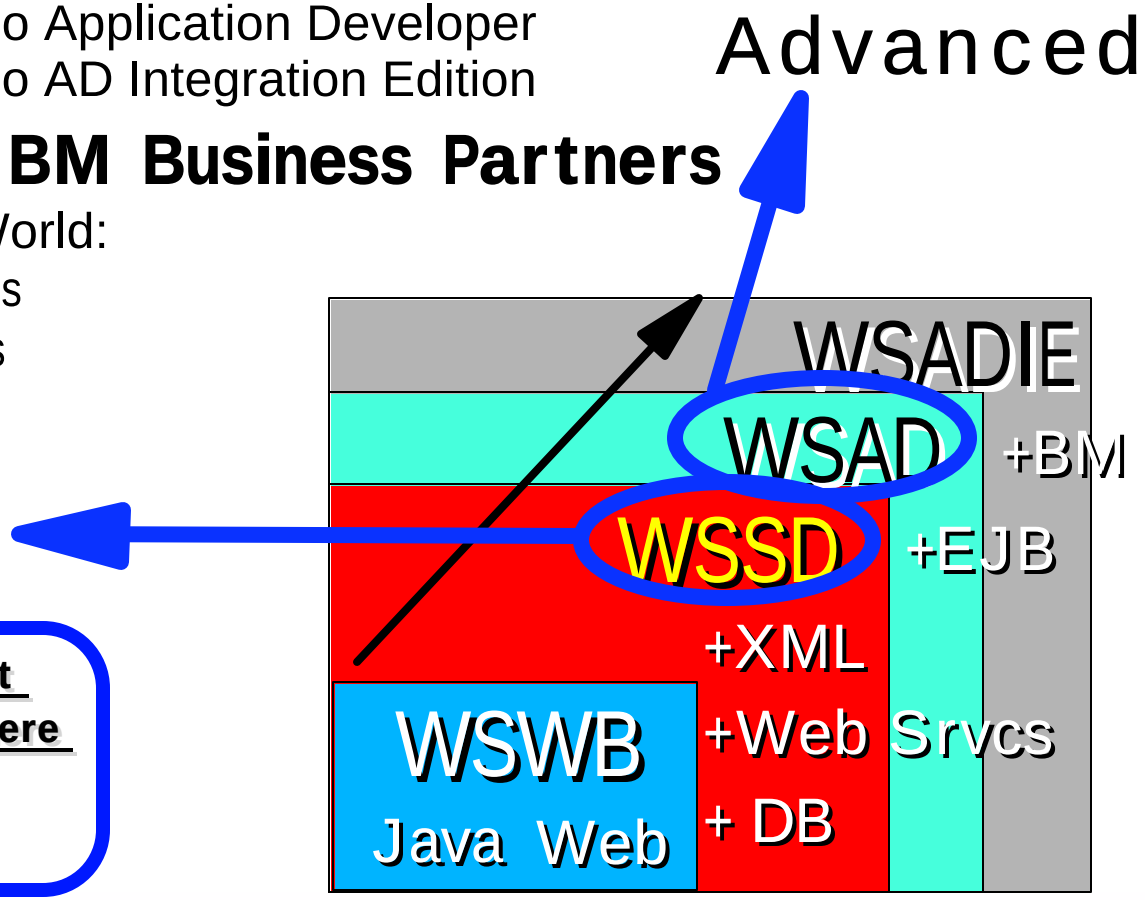


WDSc was the first phase of tool implosion!



WS Workbench

- WebSphere Studio Workbench is:
  - **Superset of eclipse. Not for sale**
  - **Basis of all IBM AD products. Eg:**
    - WebSphere Studio Site Developer
    - WebSphere Studio Application Developer
    - WebSphere Studio AD Integration Edition
  - **Available to IBM Business Partners**
    - Via IBM PartnerWorld:
      - To build/test plugins
      - To create products



Each product is a different "configuration" of WebSphere Studio

- **Refers to product family**

WDSc Standard Version 5.0

New Technology, New Tools

- ✓ New IDE is based on WSSD

WDSc	=	WSSD	+	iSeries Tools

WebSphere Development Studio Client 5.0

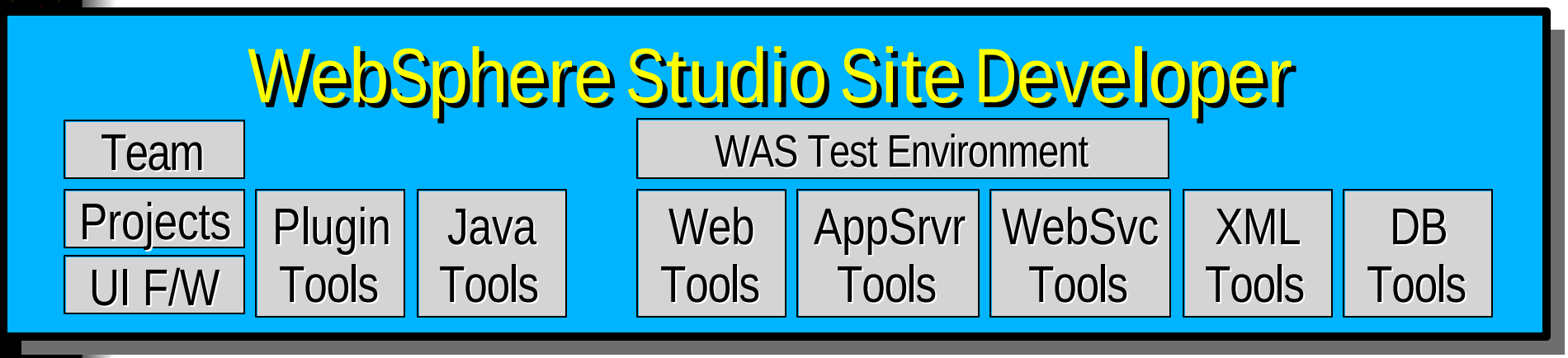
- ✓ WSSD is based on eclipse!

WSSD	=	eclipse	+	Web, XML, DB Tools

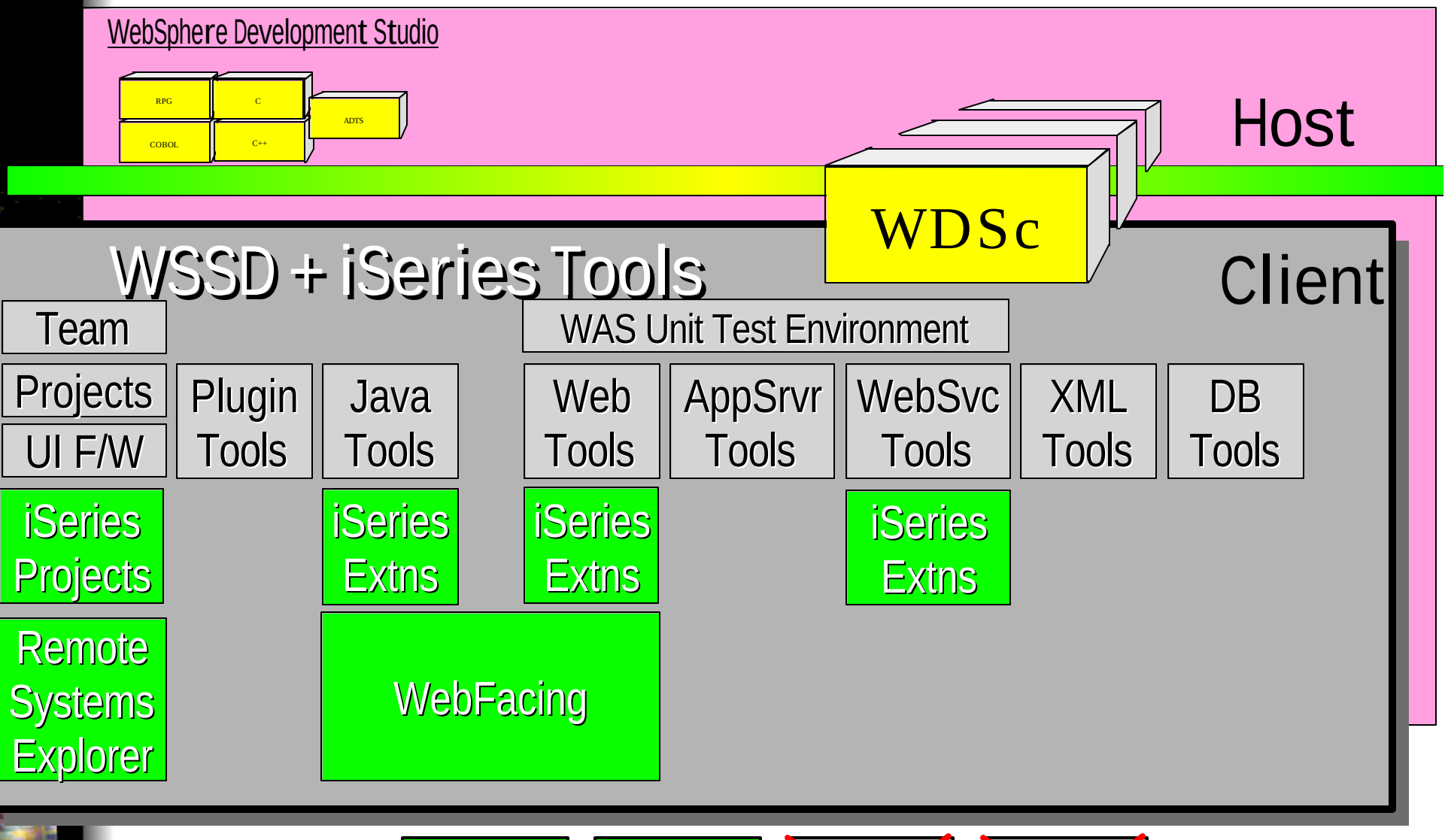
WebSphere Studio Site Developer

WebSphere Studio Site Developer

- ✓ Roughly =
  - **classic VAJava Pro**
- ✚ **classic WebSphere Studio Standard**
- ✚ **new WAS 5.0 Test Environment**
- ✚ **new tools for Servers, XML, Web Services and Database design**



WDSc 5.0 Standard!



WDSc Advanced Version 5.0

New Technology, New Tools

- ✓ New IDE is based on WSAD

WDSc = WSAD + iSeries Tools

WebSphere Development Studio Client 5.0

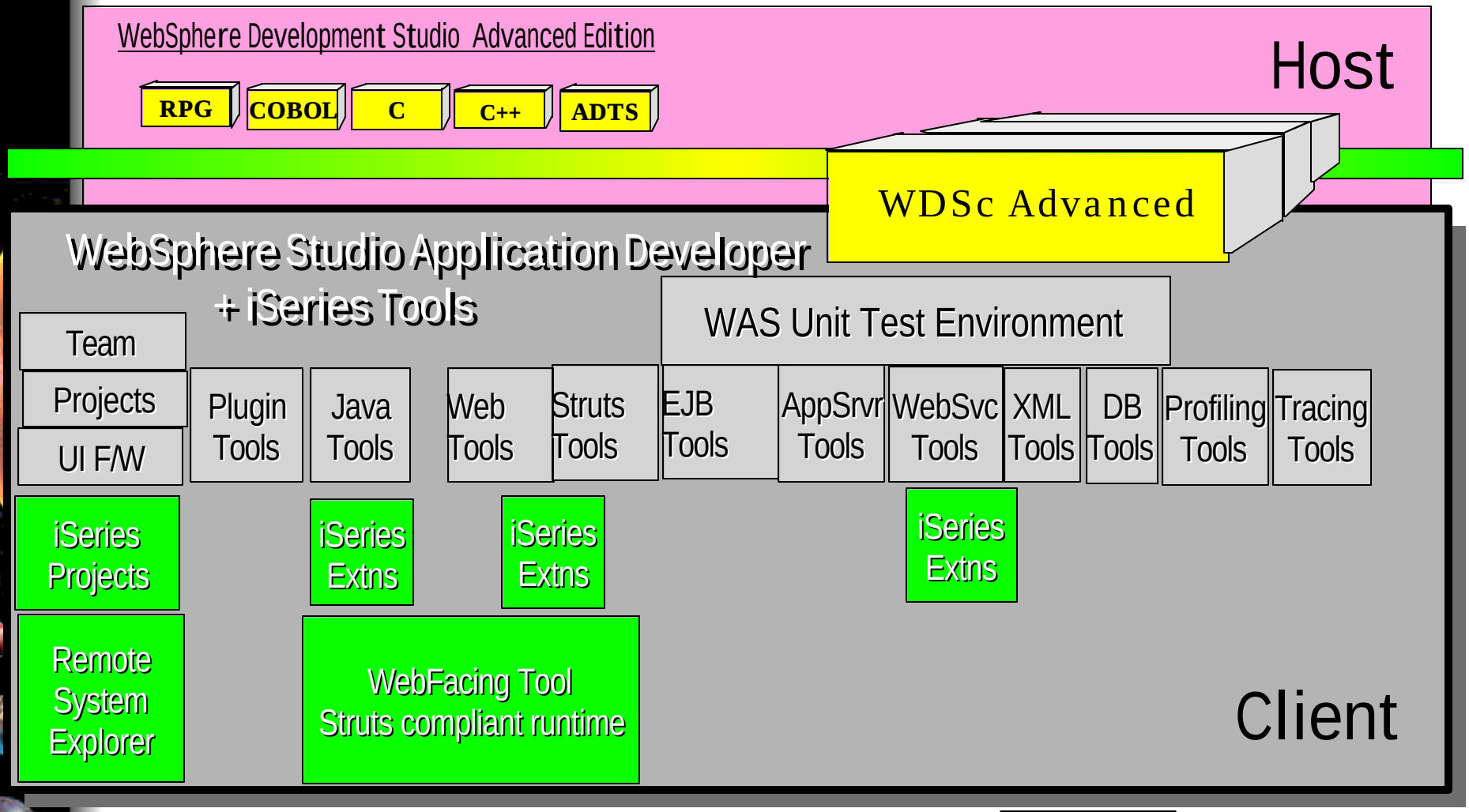
- ✓ WSAD is based on eclipse!

WSAD = eclipse + Web, XML, EJB, DB Tools

WDSc Advanced !

- ✓ Roughly =
  - **VAJava Pro & WebSphere Studio Standard**
  - **new WAS 5.0 Test Environment**
  - **new tools for Servers,**
  - **XML tools**
  - **Web Services**
  - **Database design tools**
  - **Profiling tools**
  - **tracing tools**
  - **EJB tools**
  - **Struts builder**

WDSc 5.0 Advanced!



What's new in Version 5.0

- WebFacing Tool enhancements for scalability, performance and ease of conversion
- Significantly enhanced support for iSeries file systems, projects, editing, compiling and debugging inside the Eclipse IDE
- Wizards generate robust Struts-based Web apps that can be easily extended using a new visual development environment
- Supports open standards such as J2EE, XML, SOAP, WebServices, WSDL and Struts
- Improved interfaces to integrate 3rd party tools to the new IDE
- New customizable views of tools and data to help organize your work.
- Concurrent support for WAS 3.5.6, WAS 4.0, WAS 5.0, WAS Express 5.0 and Tomcat
- Unit test environment for WAS 4.0, WAS 5.0 and WAS Express V5
- JDK 1.3, JSP 1.2, Servlet 2.3
- Web: Visually construct MVC-based Web applications
- Web services: Support for UDDI V2 and discovery via Web Service Inspection Language (WSIL)

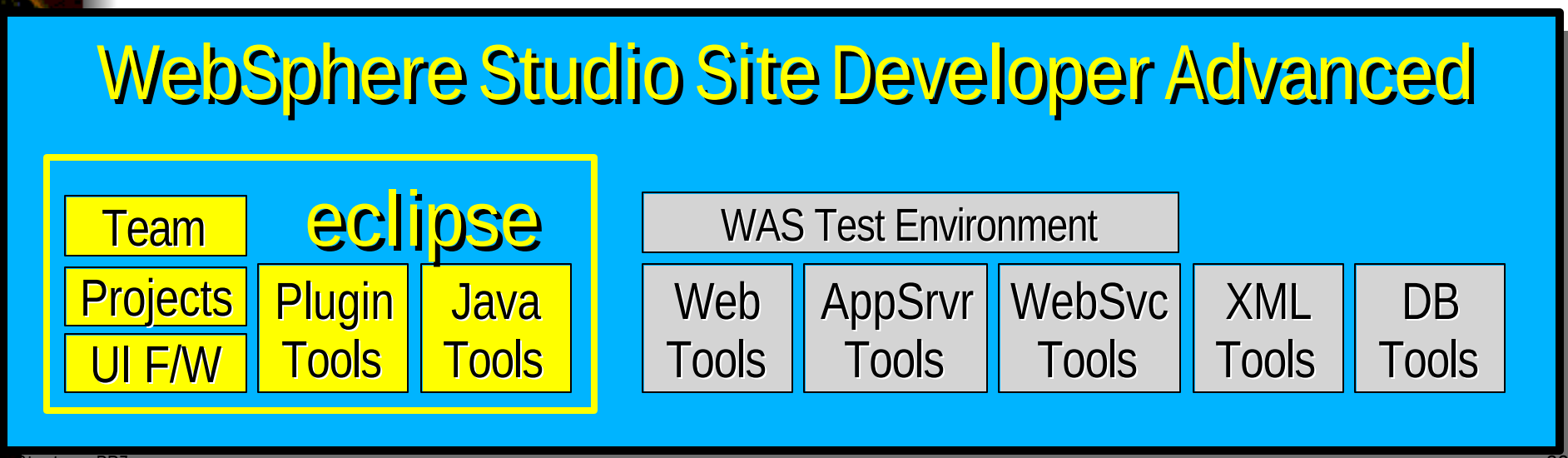
WDSc: eclipse

- eclipse ... The base!

eclipse

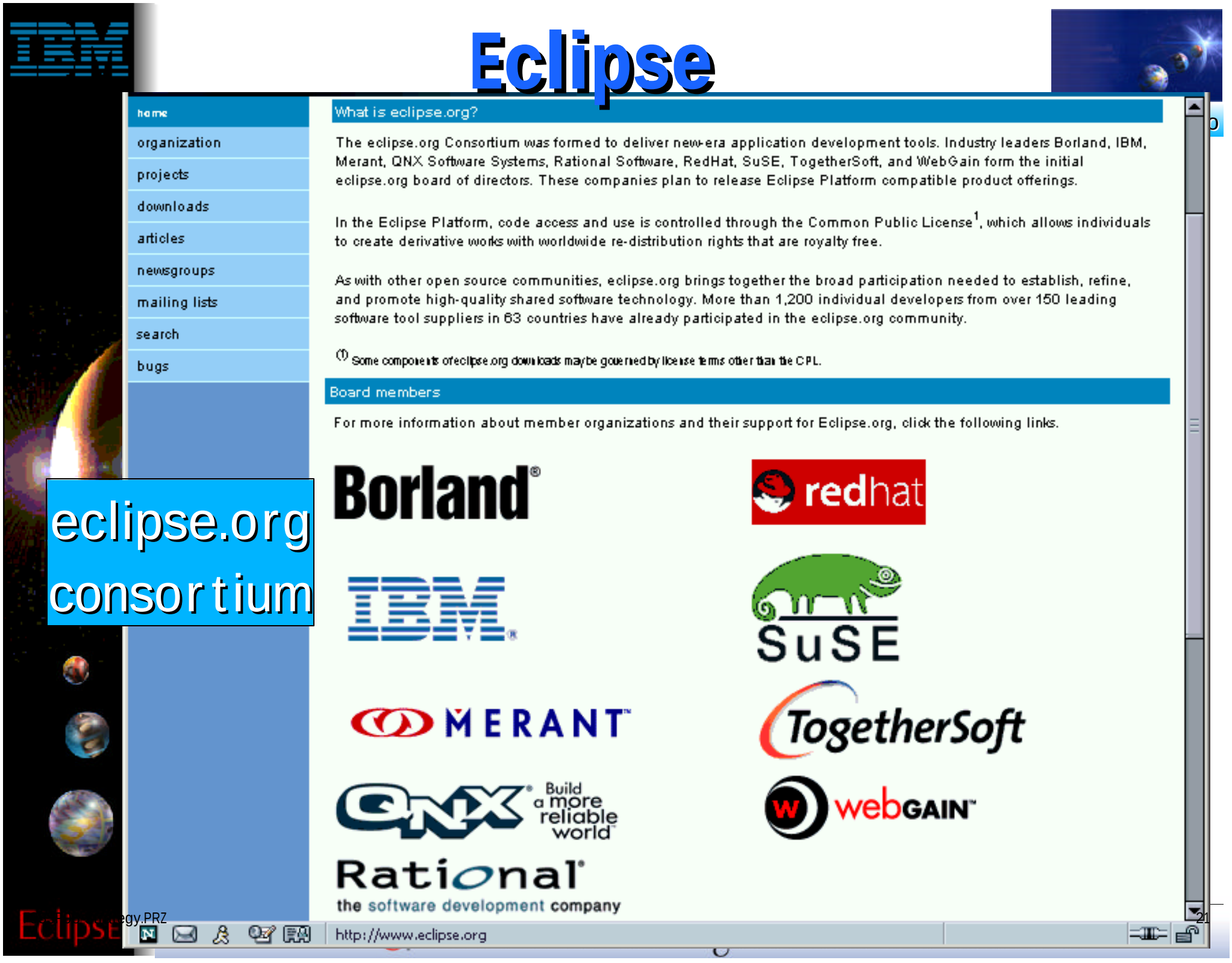
eclipse.org

- eclipse is the IDE technology engine
  - **fully open-source @ www.eclipse.org**
  - **created by IBM**
  - ***huge* interest: > 500,000 downloads**
  - **written in Java**
  - **easily extended by plugins**



IBM @server. For the next generation of e-business.

Eclipse

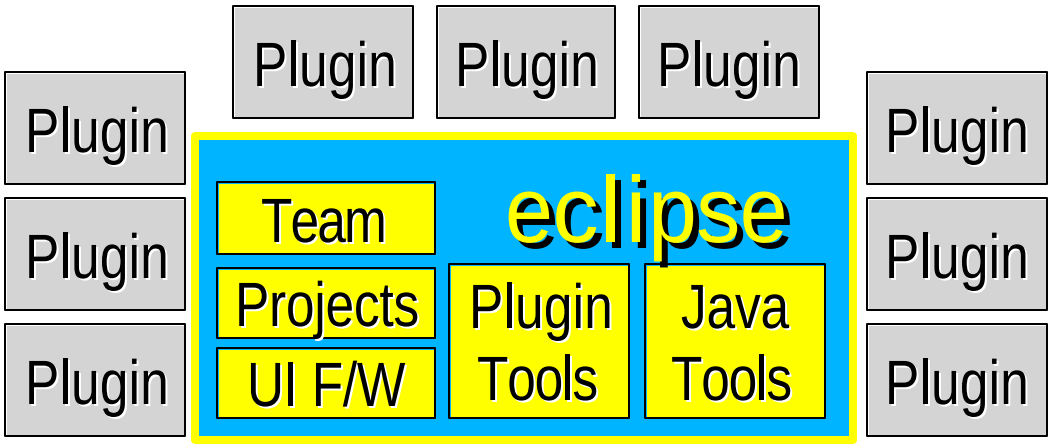


eclipse.org consortium

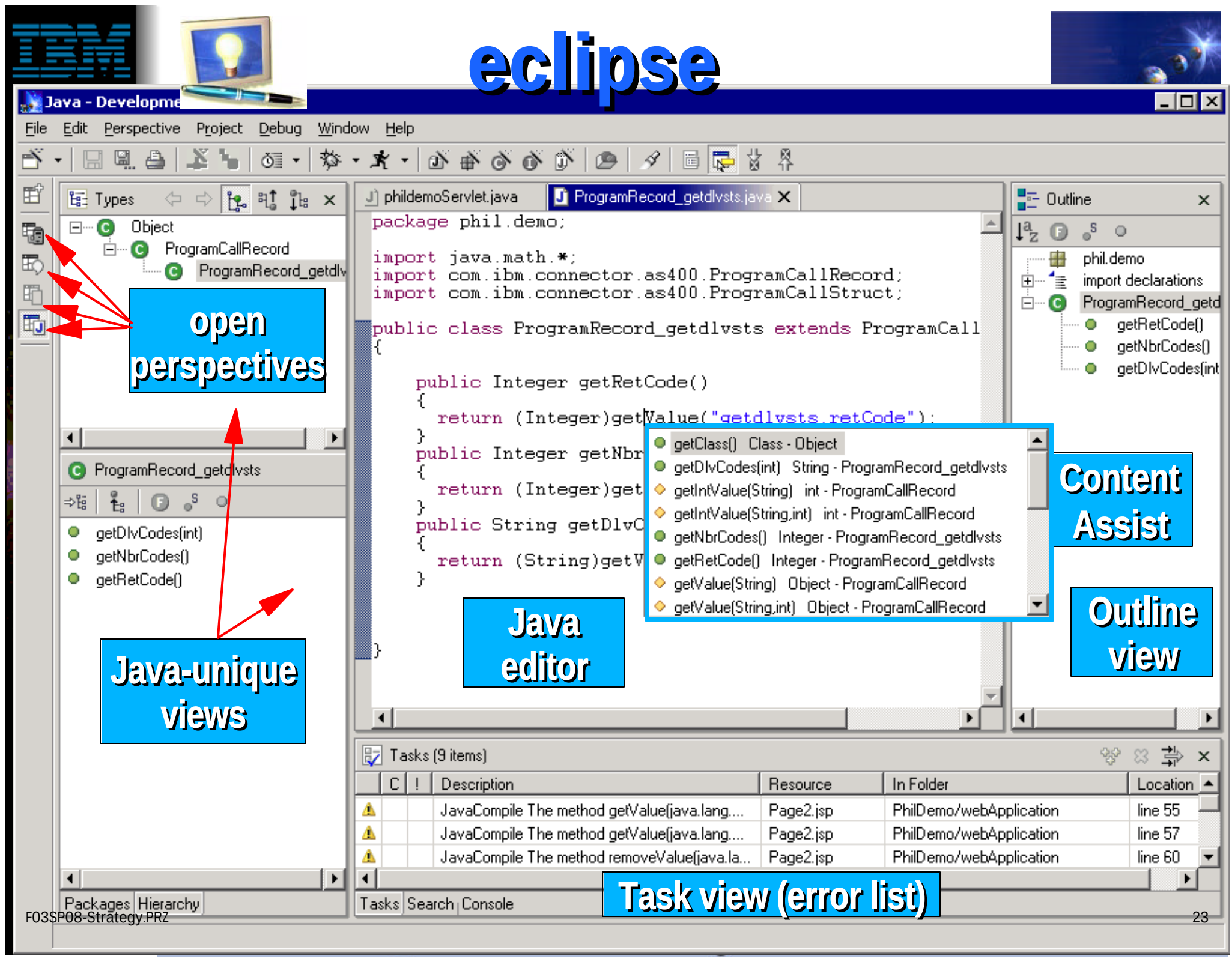
eclipse

eclipse.org

- ✓ eclipse plus plugins = product
  - **although its a great Java IDE as is!**
- ✓ eclipse will be basis of many products
  - **from IBM, BPs, ISVs, anyone!**
- ✓ eclipse is a huge opportunity
  - **for writing + selling plugins**



eclipse


Java - Developme
File Edit Perspective Project Debug Window Help
Types
Object
ProgramCallRecord
ProgramRecord_getdlv
open perspectives
ProgramRecord_getdlvsts
getDlvCodes(int)
getNbrCodes()
getRetCode()
Java-unique views
Packages Hierarchy
phildemoServlet.java
ProgramRecord_getdlvsts.java
package phil.demo;
import java.math.*;
import com.ibm.connector.as400.ProgramCallRecord;
import com.ibm.connector.as400.ProgramCallStruct;
public class ProgramRecord_getdlvsts extends ProgramCall
{
public Integer getRetCode()
{
return (Integer)getValue("getdlvsts.retCode");
}
public Integer getNbr
{
return (Integer)get
}
public String getDlvC
{
return (String)getV
}
}
getClass() Class - Object
getDlvCodes(int) String - ProgramRecord_getdlvsts
getIntValue(String) int - ProgramCallRecord
getIntValue(String,int) int - ProgramCallRecord
getNbrCodes() Integer - ProgramRecord_getdlvsts
getRetCode() Integer - ProgramRecord_getdlvsts
getValue(String) Object - ProgramCallRecord
getValue(String,int) Object - ProgramCallRecord
Content Assist
Java editor
Outline
phil.demo
import declarations
ProgramRecord_getd
getRetCode()
getNbrCodes()
getDlvCodes(int
Outline view
Tasks (9 items)
C ! Description Resource In Folder Location
JavaCompile The method getValue(java.lang.... Page2.jsp PhilDemo/webApplication line 55
JavaCompile The method getValue(java.lang.... Page2.jsp PhilDemo/webApplication line 57
JavaCompile The method removeValue(java.la... Page2.jsp PhilDemo/webApplication line 60
Tasks Search Console
Task view (error list)

WDSc: RPG/CBL Tools

- RPG and COBOL Tools

WDSc: RPG and CBL Tools

✓ Remote Systems Explorer Perspective

- **Random drill-down or filtered access to remote:**
  - QSYS Libraries, Objects and Members
  - IFS Folders and Files
  - Linux, Unix, Windows and Local Folders and Files
- **Remote command execution of**
  - QSYS Commands and QSHELL Commands
  - Linux, Unix and Windows Commands
- **Exploration of Jobs in QSYS**

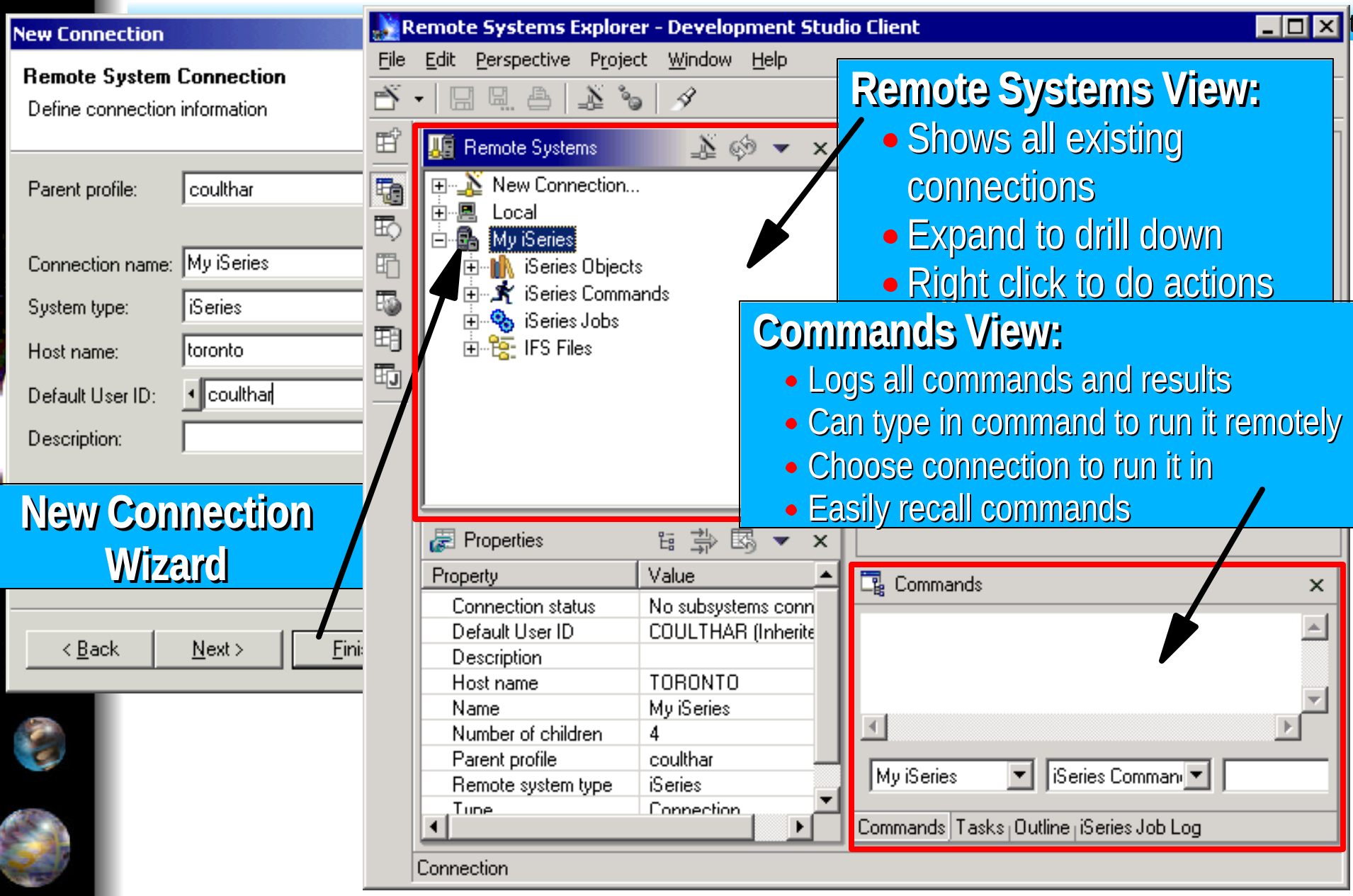
✓ iSeries Projects and Perspective

- **For structured, project-based development**
- **Local team-sharable project**
- **Holds source files, members and save files**
- **Each project associated with an iSeries and library**
  - Push action to copy local files to associated library

WDSc: RPG and CBL Tools

- ✓ Remote Systems Explorer Perspective
  - **Manages connections to remote systems**
    - ► Where you create/manage connection information
    - ► Connections subsequently used in all iSeries tools
    - ► Start by using the New Connection wizard
      - ✓ Connection appears in tree view
      - ✓ Expand it to see "subsystem" -> functional groupings

WDSc: RPG and CBL Tools



New Connection Wizard

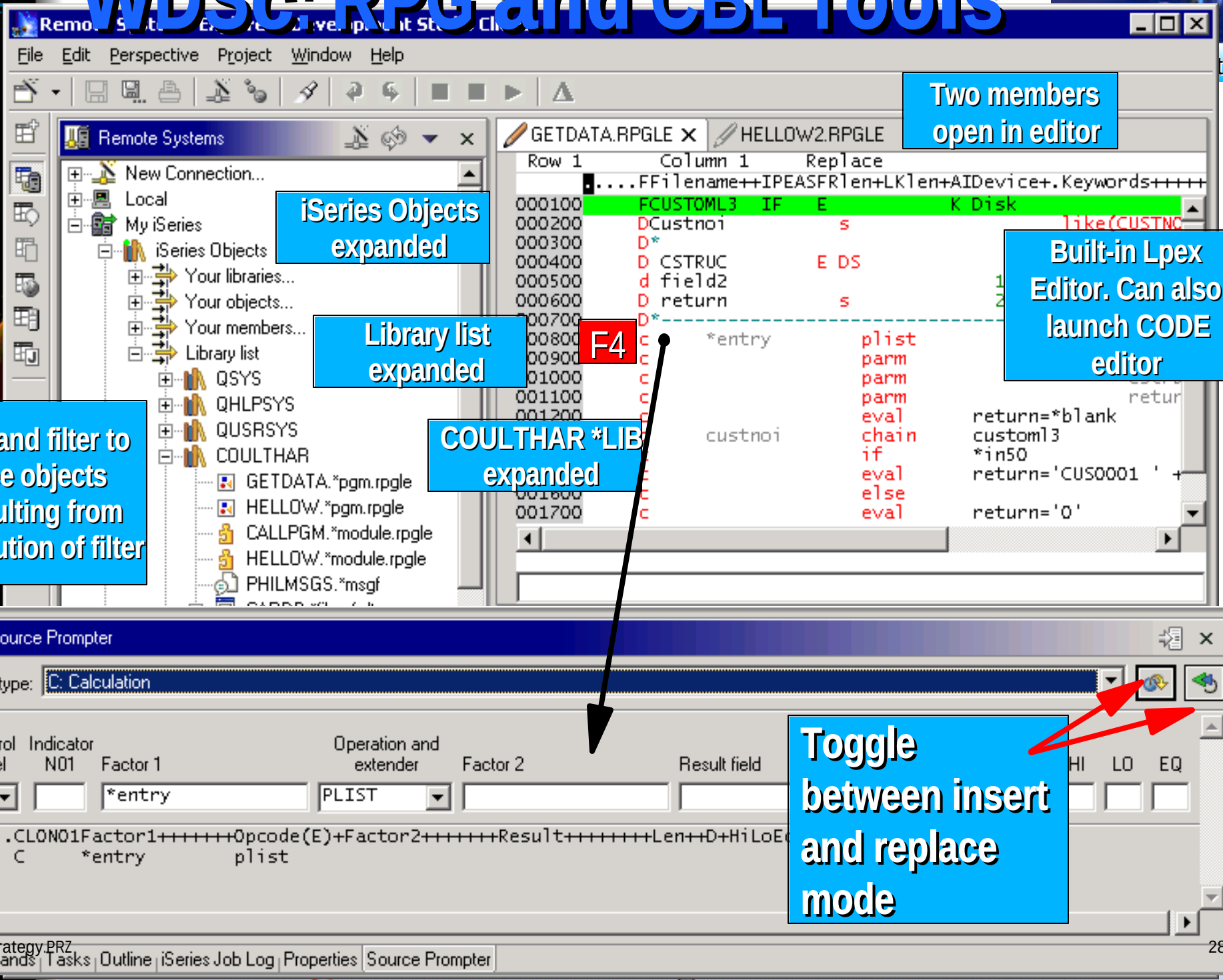
Remote Systems View:

- Shows all existing connections
- Expand to drill down
- Right click to do actions

Commands View:

- Logs all commands and results
- Can type in command to run it remotely
- Choose connection to run it in
- Easily recall commands

WDSc: RPG and CBL Tools



Two members open in editor

iSeries Objects expanded

Library list expanded

Built-in Lpex Editor. Can also launch CODE editor

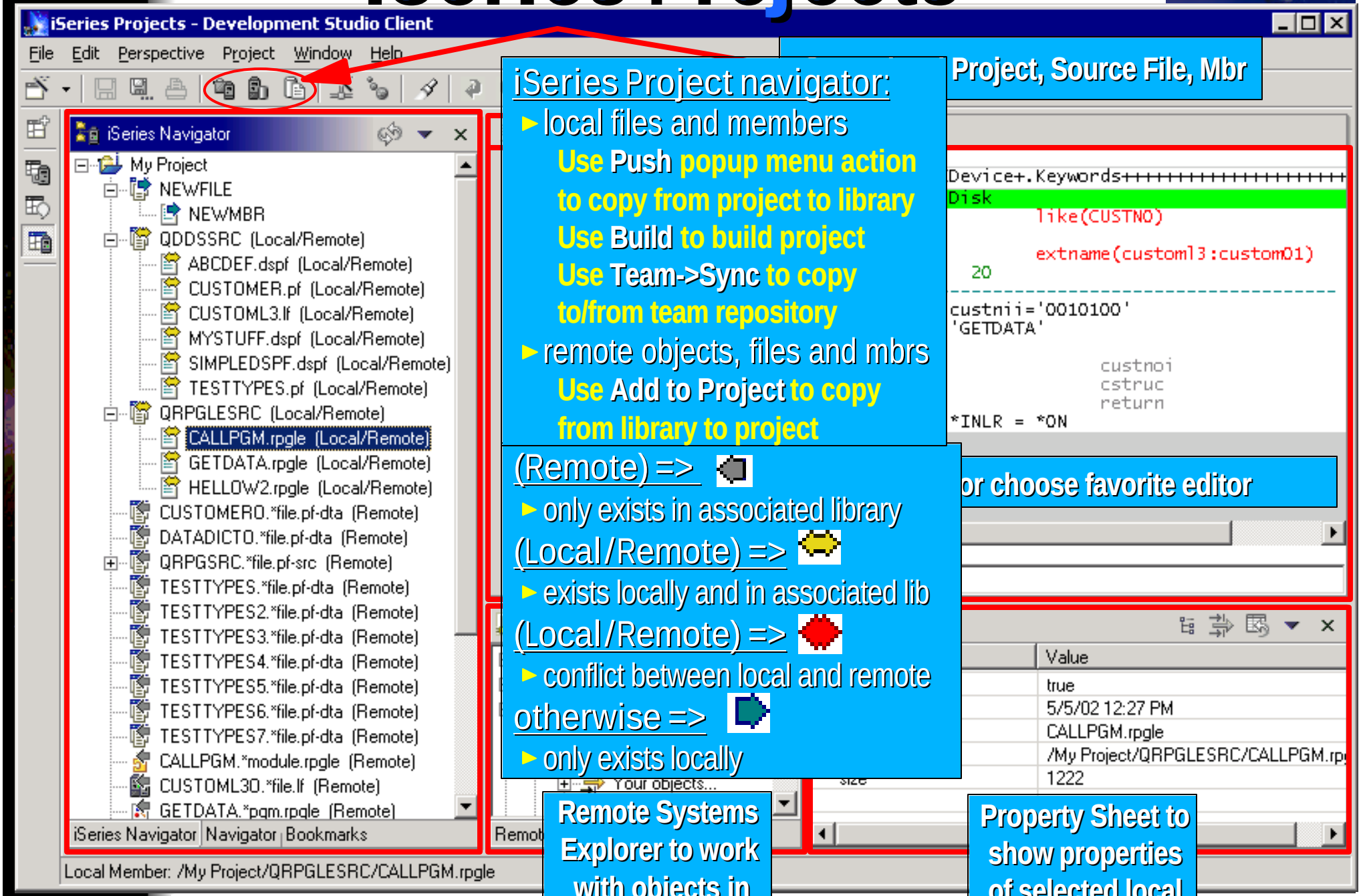
F4

Expand filter to see objects resulting from resolution of filter

COULTHAR *LIB expanded

Toggle between insert and replace mode

iSeries Projects



iSeries Project navigator:

- local files and members
  - Use Push popup menu action to copy from project to library
  - Use Build to build project
  - Use Team->Sync to copy to/from team repository
- remote objects, files and mbrs
  - Use Add to Project to copy from library to project

Project, Source File, Mbr

or choose favorite editor

(Remote) =>

- only exists in associated library

(Local/Remote) =>

- exists locally and in associated lib

(Local/Remote) =>

- conflict between local and remote

otherwise =>

- only exists locally

Remote Systems Explorer to work with objects in remote library

Property Sheet to show properties of selected local or remote object

What's new in Version 5.0

iSeries Projects...

- Conflict Detection
  - Remote source changes are shown in the iSeries project with different file icon
  - User is warned before pushing local changes to remote system if remote source has changed
- Build Styles
  - Presupplied:
    - Command
    - CL Build Style
  - Integrated error feedback
- ISV Integration Support
  - APIs for ISVs to create and manipulate iSeries projects
  - ISVs can provide:
    - Additional pages to the new iSeries project creation wizard
    - Additional build styles
- Integration with RSE
  - Create projects from the RSE
  - Add members to existing projects
  - Program verifiers
  - Remote Systems LPEX Editor

What's new in Version 5.0!

Remote System Explorer...

- Editing
  - Remote Systems LPEX Editor
    - Syntax checking
    - Context sensitive help
    - Outline view
    - Code assist
    - Indentation view
    - Program verifiers
  - Ability to use any Workbench editor on any remote source
    - Remote Systems LPEX Editor, Java editor, XML editor, SQL editor
- Debug
  - iSeries remote debugging integrated into the Workbench
- Enhanced iSeries table view
  - More PDM like user interface and actions
- Drag and Drop support
  - Ability to copy members and files between different hosts and system types!
- Disconnected development support via iSeries projects
- User defined actions
  - More functionality and substitution variables

What's new in Version 5.0!

- Remote Searching
  - Search remote members for specific text strings
- More support for accessing remote Linux, Unix and Windows systems
  - Table view
  - User defined actions
- Much, much more
  - Save passwords, message file support, environment variables, ...

WDSc: RPG/CBL Tools

- BPs, ISVs, and eclipse . . .

Great business opportunity for all!

Plug-in development . . .

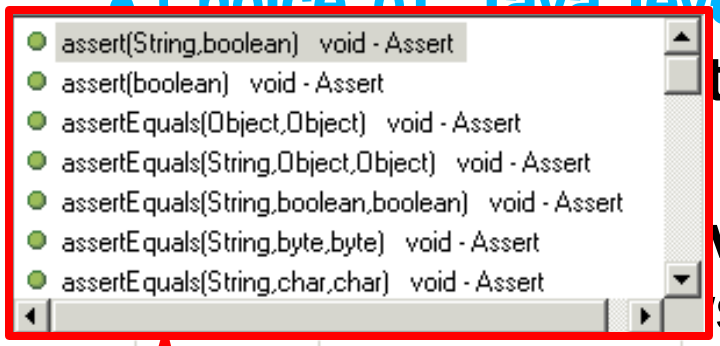
- Extending the Workbench
  - "Plugins" provide a mechanism for IBM and other software tool vendors to add functions to the Eclipse Workbench and sell them as products
    - Ability to add new functions to the Workbench
    - XML Tools, WebFacing, Remote Systems Explorer
    - Ability to extend existing functions provided by other vendors
    - iSeries extensions to Web Tools
    - SCM providing VCM adapters for source change control
- Extension points
- Business parnters can provide their own plugins for Eclipse
- Softlanding, Aldon to provide VCM adapters to integrate with their existing source change systems... Other are working on it too.
- We have provided extension points in our code (RSE) for business partners to extend what we are doing
- Huge opportunity for BP

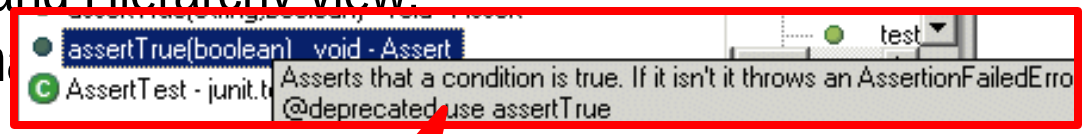
WDSc: Java Tools

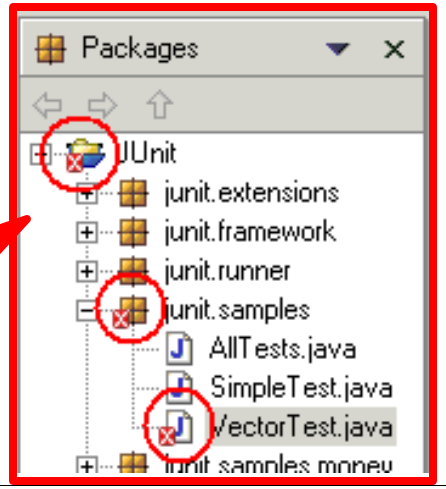
- Java Development Tools (JDT)

WDSc: Java Tools

- ✓ Java Development Tools (JDT):
  - **Choice of Java level**
    - **t-in and offered as default**
    - **va development**
    - **s**
      - ✓ Package view and Hierarchy view:
      - ✓ Outline view: m
  - **Java Editor**
    - ✓ Content Assist: Ctrl+Space bar to get list of classes or methods
    - ✓ JavaDoc shown as hover help
    - ✓ F3 to open selected class
  - **Refactoring support**
    - ✓ Rename updates all references
  - **Incremental compile**
    - ✓ When Ctrl+S pressed in editor
    - ✓ Or on demand via Build Project action







Java Tools Not There

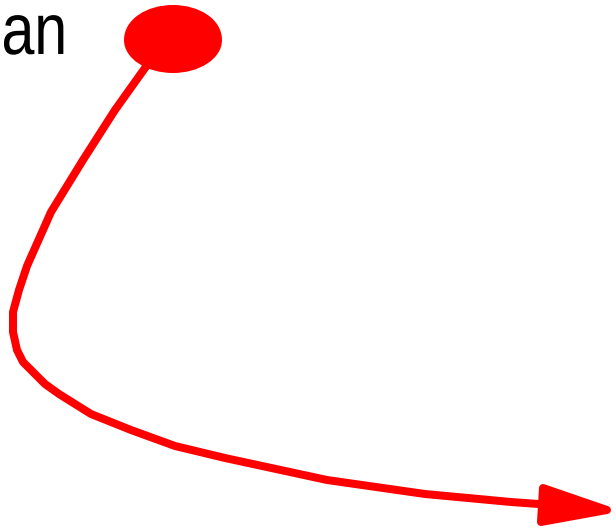
- Not all VAJava function is available yet:
  - **Visual Composition Editor... coming soon**
  - **DataBase Beans**
    - Actually, there are replacements! Just no visual metaphor
    - See com.ibm.db.beans: DBSelect, DBProcedureCall, DBModify
    - Also a Database access wizard in Web Tools
  - **SQLJ support**
  - **Stored Procedure Builder**
- For VAJava migration...
  - **www.ibm.com/software/wsdd**
    - "VisualAge for Java coexistence with WebSphere Studio Application Developer"
    - http://www7b.boulder.ibm.com/wsdd/library/techarticles/0110_searle/searle.html

Java Tools for iSeries

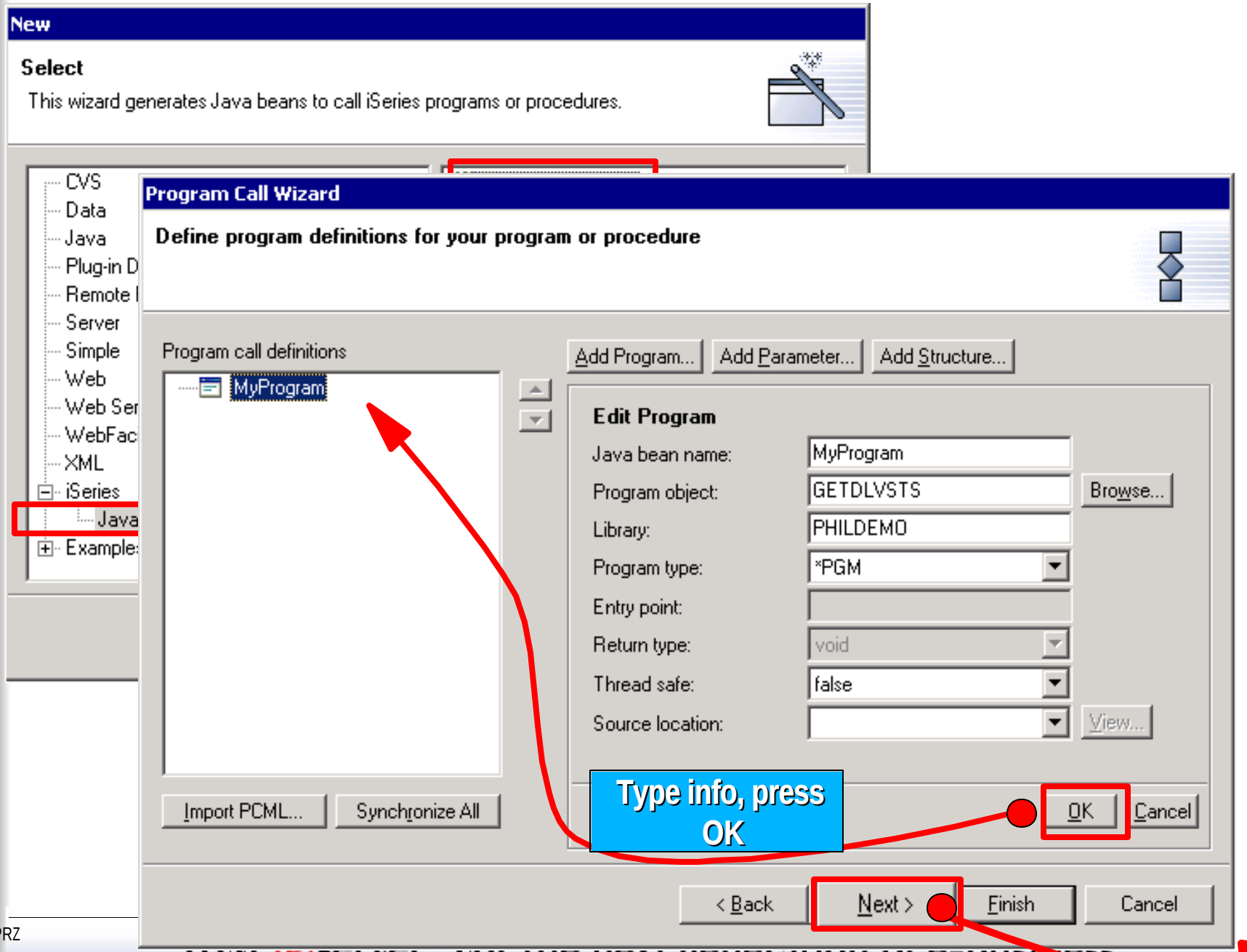
- ✓ iSeries extensions for Java
  - **Import and export from/to remote system**
  - **Remote Compile and Run**
  - **Remote Debug**
  - **Program Call wizard**
  - **Toolbox for Java built-in**
    - As an Eclipse Java project (ie: easy to add to classpath of your project!)
    - Integrated help
    - Runnable samples
  - **Supplied Java-beans**
    - Swing GUI beans (dspf-like functionality)
    - DFU beans (database access)
    - Object list beans (lib, obj, mbr, field, record lists)

Java Tools for iSeries

- ✓ Program Call Wizard
  - **Given signature of *PGM or *SRVPGM proc:**
    - Generate Java Bean to call it
  - **Steps:**
    - 1. Select Java/Web/WebFacing project
    - 2. Select package
    - 3. Use File->New->Other...
      - ✓ ...iSeries Java Program Call Bean



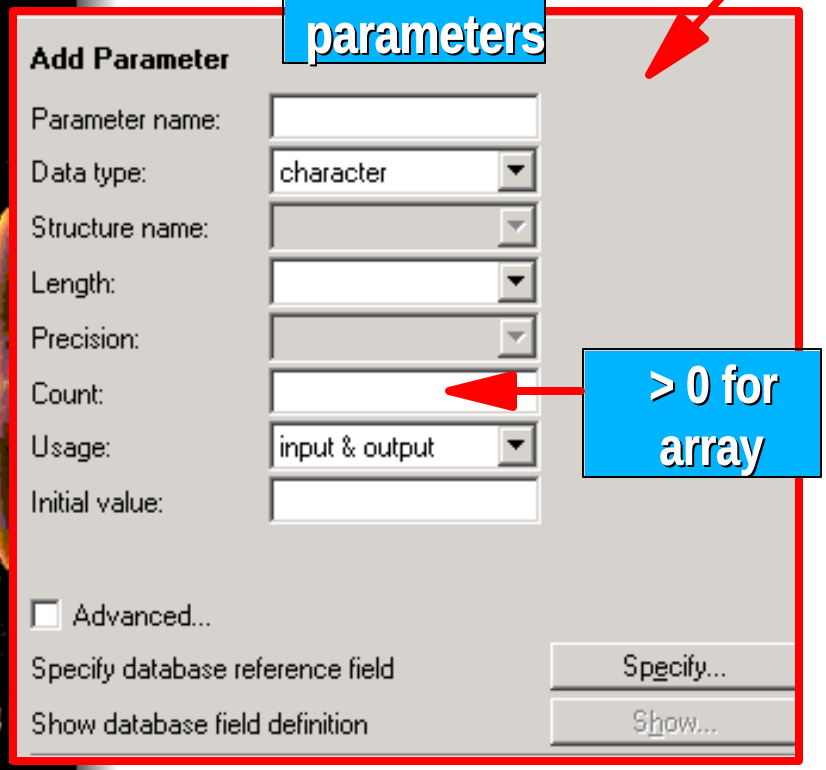
Java Tools for iSeries



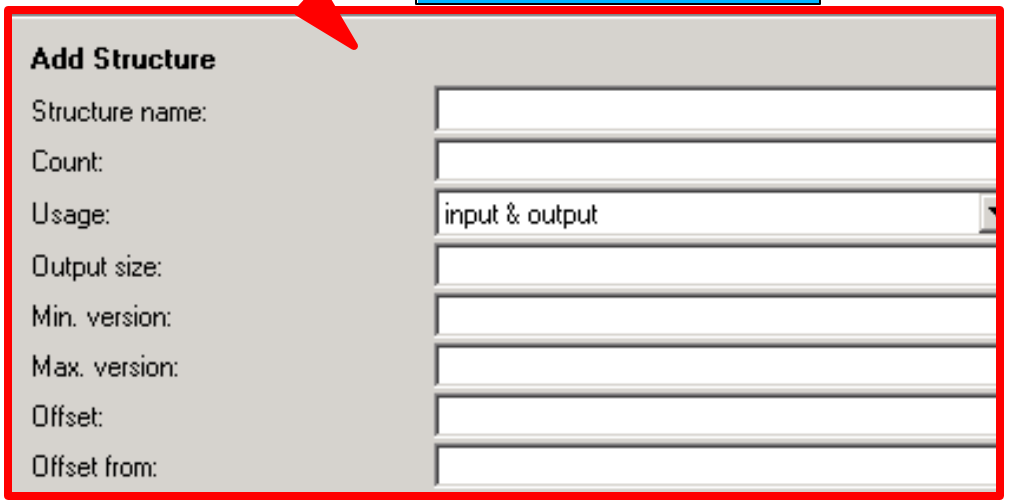
Enter Parameter Info

Define parameters

Define and name structure

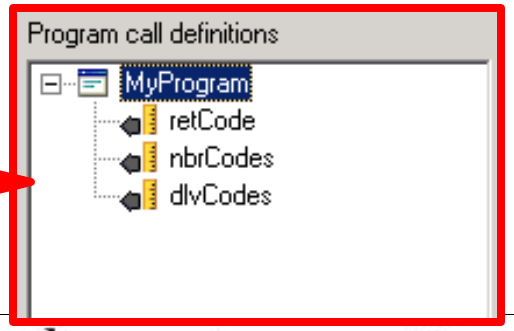


> 0 for array

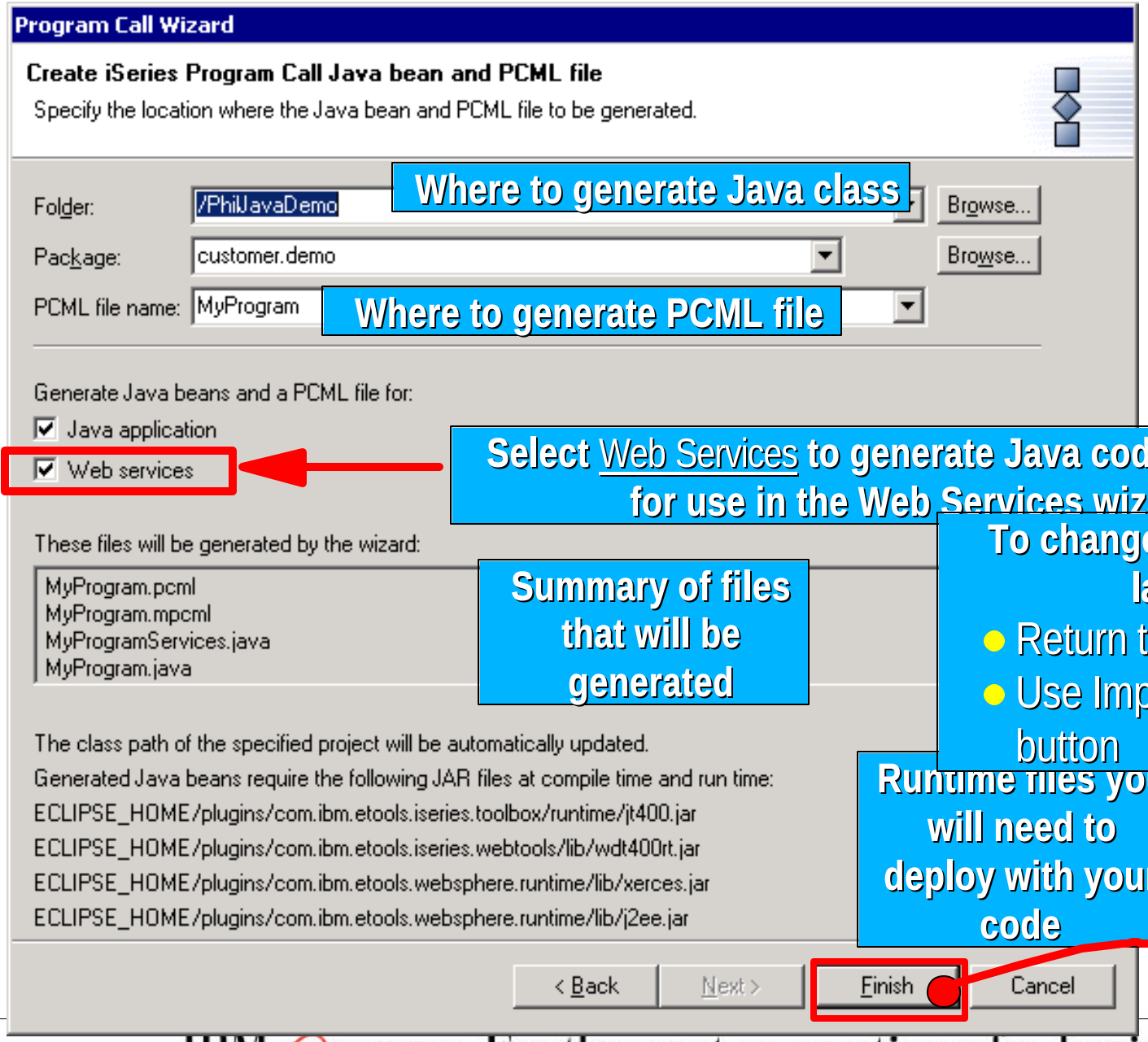


Be sure to press OK for each parameter / structure

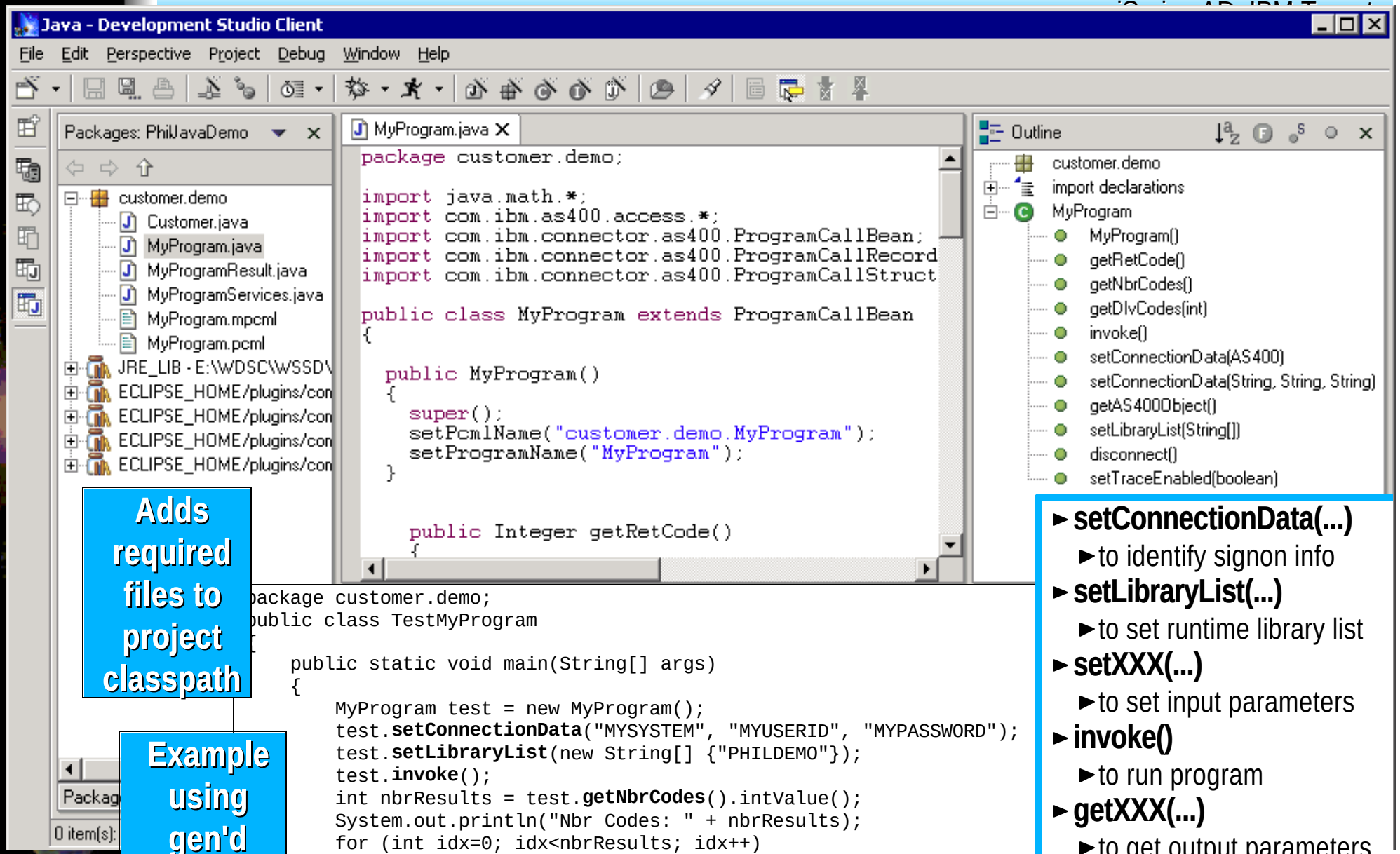
Builds up parameter list



Final Page


Program Call Wizard
Create iSeries Program Call Java bean and PCML file
Specify the location where the Java bean and PCML file to be generated.
Where to generate Java class
Folder:
/PhilJavaDemo
Browse...
Package:
customer.demo
Browse...
PCML file name:
MyProgram
Where to generate PCML file
Generate Java beans and a PCML file for:
Java application
Web services
Select Web Services to generate Java code optimized for use in the Web Services wizard
These files will be generated by the wizard:
MyProgram.pcml
MyProgram.mpcml
MyProgramServices.java
MyProgram.java
Summary of files that will be generated
To change parameters later:
Return to wizard
Use Import PCML... button
The class path of the specified project will be automatically updated.
Generated Java beans require the following JAR files at compile time and run time:
ECLIPSE_HOME/plugins/com.ibm.etools.iseries.toolbox/runtime/jt400.jar
ECLIPSE_HOME/plugins/com.ibm.etools.iseries.webtools/lib/wdt400rt.jar
ECLIPSE_HOME/plugins/com.ibm.etools.websphere.runtime/lib/xerces.jar
ECLIPSE_HOME/plugins/com.ibm.etools.websphere.runtime/lib/j2ee.jar
Runtime files you will need to deploy with your code
< Back
Next >
Finish
Cancel

Generated Java Bean



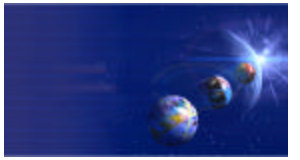
Adds required files to project classpath

Example using gen'd bean

```
package customer.demo;
public class TestMyProgram
{
    public static void main(String[] args)
    {
        MyProgram test = new MyProgram();
        test.setConnectionData("MYSYSTEM", "MYUSERID", "MYPASSWORD");
        test.setLibraryList(new String[] {"PHILDEMO"});
        test.invoke();
        int nbrResults = test.getNbrCodes().intValue();
        System.out.println("Nbr Codes: " + nbrResults);
        for (int idx=0; idx<nbrResults; idx++)
        {
           System.out.println(" code " + idx + ": " +
                              test.getDlvCodes(idx).trim());
        }
    }
```

- **setConnectionData(...)**
  - to identify signon info
- **setLibraryList(...)**
  - to set runtime library list
- **setXXX(...)**
  - to set input parameters
- **invoke()**
  - to run program
- **getXXX(...)**
  - to get output parameters

WDSc: Web Tools



- Web Tools

WDSc: WSSDa Web Tools

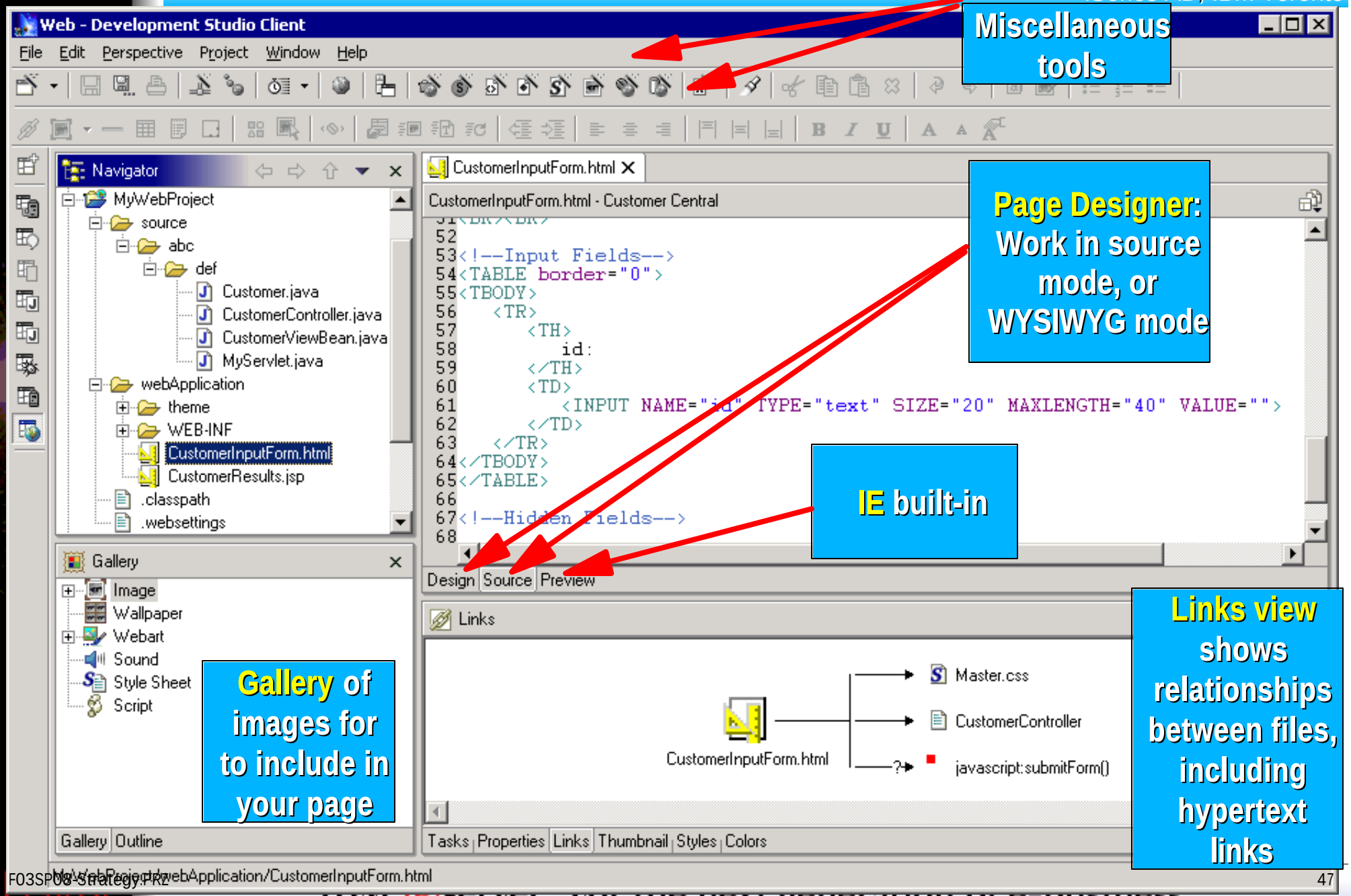
✓ Web projects

- **J2EE-defined folder structure for Web Apps**
- **Superset of Java projects (inherits Java Tools)**
- **Automatic creation/maintainence of web.xml file**
- **Editor support**
  - Create/Edit/Validate/Debug JSP and HTML files
  - Images and animation
  - Cascading Syle Sheets (CSS)
- **Import/Export from/to a variety of sources**
  - HTTP/FTP/WAR/EAR
- **Link viewing and management**
  - Converting links, flagging broken links, and fixing up links as linked resources are moved or renamed

WDSc: WSSDa Web Wizards

- ✓ Java Bean Web Pages Wizard
  - **Input: Java Bean**
  - **Output:**
    - Input JSP page prompting for input properties
    - Output JSP page displaying output properties
    - Servlet that ties them together
- ✓ Database Web Pages Wizard
  - **Input: SQL Query Statement (sub-wizard)**
  - **Output:**
    - Input JSP page prompting for input parameters
    - Output JSP page displaying output data
    - Servlet that ties them together

Web Perspective

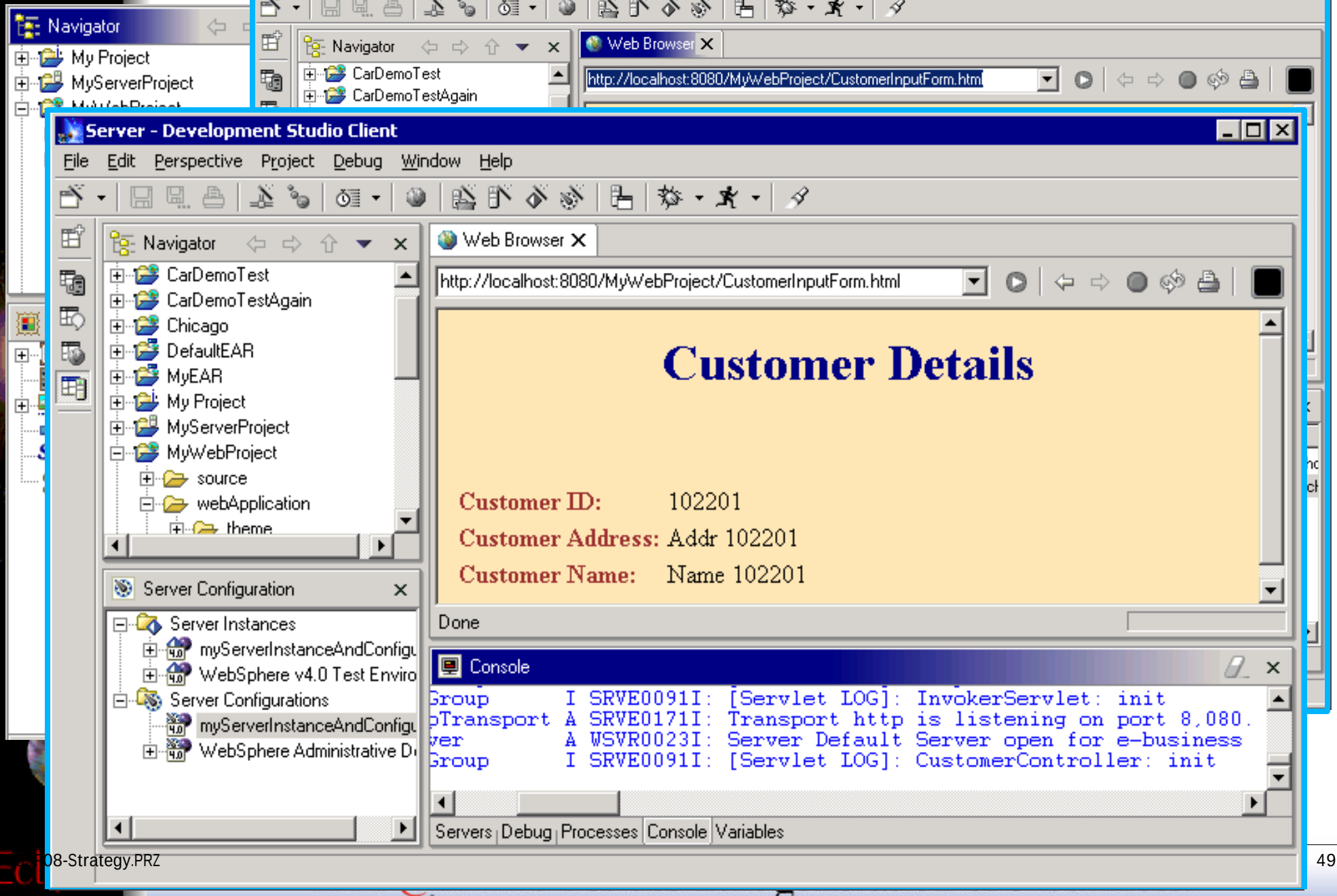


IBM @server. For the next generation of e-business.

WDSc: Run On Server

- ✓ Run On Server
  - **Now this is VERY COOL!**
- ✓ When ready to test your Web app
  - **Right click on initial html or jsp file**
    - ► or whole project, which implies the index.html file
  - **Select "Run on Project"**
  - **Wait for the magic...**
- ✓ Your Web application will run!
  - **Opens Server perspective**
    - ► Publishes it to built-in copy of WAS
    - ► Starts built-in copy of WAS
    - ► Brings up a Web Browser
    - ► **Runs your application!!**
      - ✓ Tip: you can set breakpoints in your Java code!

WDSc: Run On Server



WDSc: iSeries Web Tools

- ✓ Tools optimized for iSeries developers!
  - **Web Interaction wizard**
    - **Input**: *PGM or ILE proc parameter information
    - **Output**:
      - ✓ Input JSP page prompting for input properties
      - ✓ Output JSP page displaying output properties
      - ✓ Java Bean for calling the *PGM or ILE procedure
      - ✓ Servlet that ties them together
  - **Host Information wizard**
    - Set runtime information such as library list and sign-on information, to be used by glue generated by all Web Interaction wizards for this Web project
  - **Visual Custom Tags (Web GUI Widgets)**
    - Web GUI Widgets that support DSPF-like attributes such as error checking by datatype, and edit-code and edit-word

iSeries Web Interaction Wizard

Web Interact

Spec

Use

Web Interaction Wizard

Design the Input Form

Specify the page properties and the input parameters that the generated Web page will expose to the user for input.

Navigator

- MyWebProject
  - source
    - abc
      - def
        - Customer.java
        - CustomerBalanceServlet.java
        - CustomerController.java
        - CustomerViewBean.java
        - MyServlet.java
        - ProgramRecord_CustomerBalance.java
  - webApplication
    - theme
    - WEB-INF
      - CustomerBalanceInput.jsp
      - CustomerBalanceResults.jsp
      - CustomerInputForm.html
      - CustomerResults.jsp
      - MyWebProject.pcml
      - setdebug.jsp
      - wdt400br.js
    - .classpath

Gallery

- Image
- Wallpaper
- Webart
- Sound

*CustomerBalanceInput.jsp

CustomerBalanceInput.jsp - Customer Central *

TD | Standard

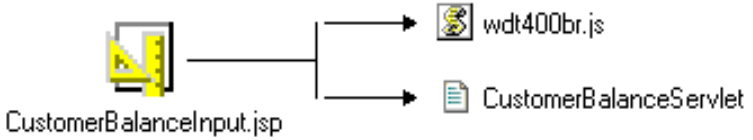
Customer Central

id:

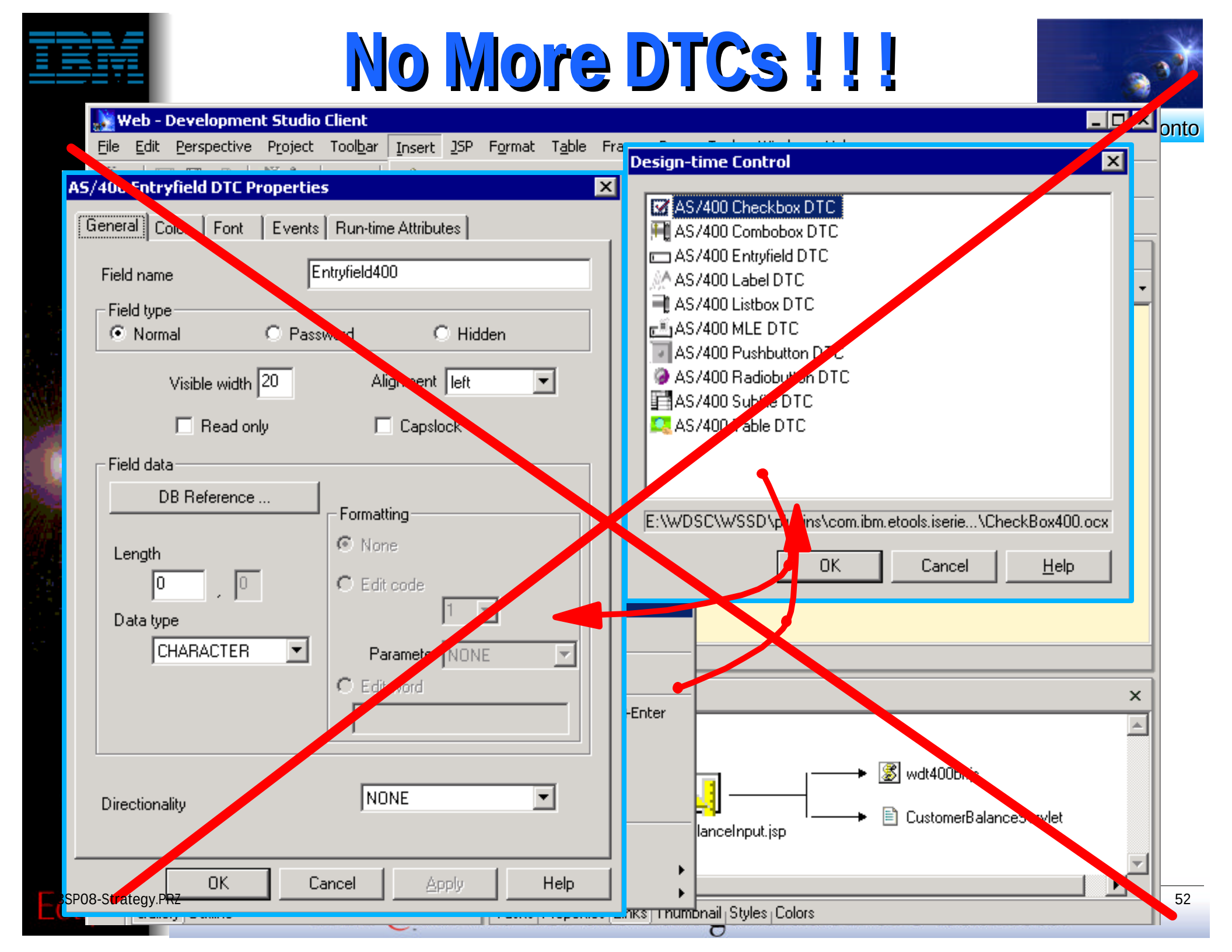
Submit | Reset

Design | Source | Preview

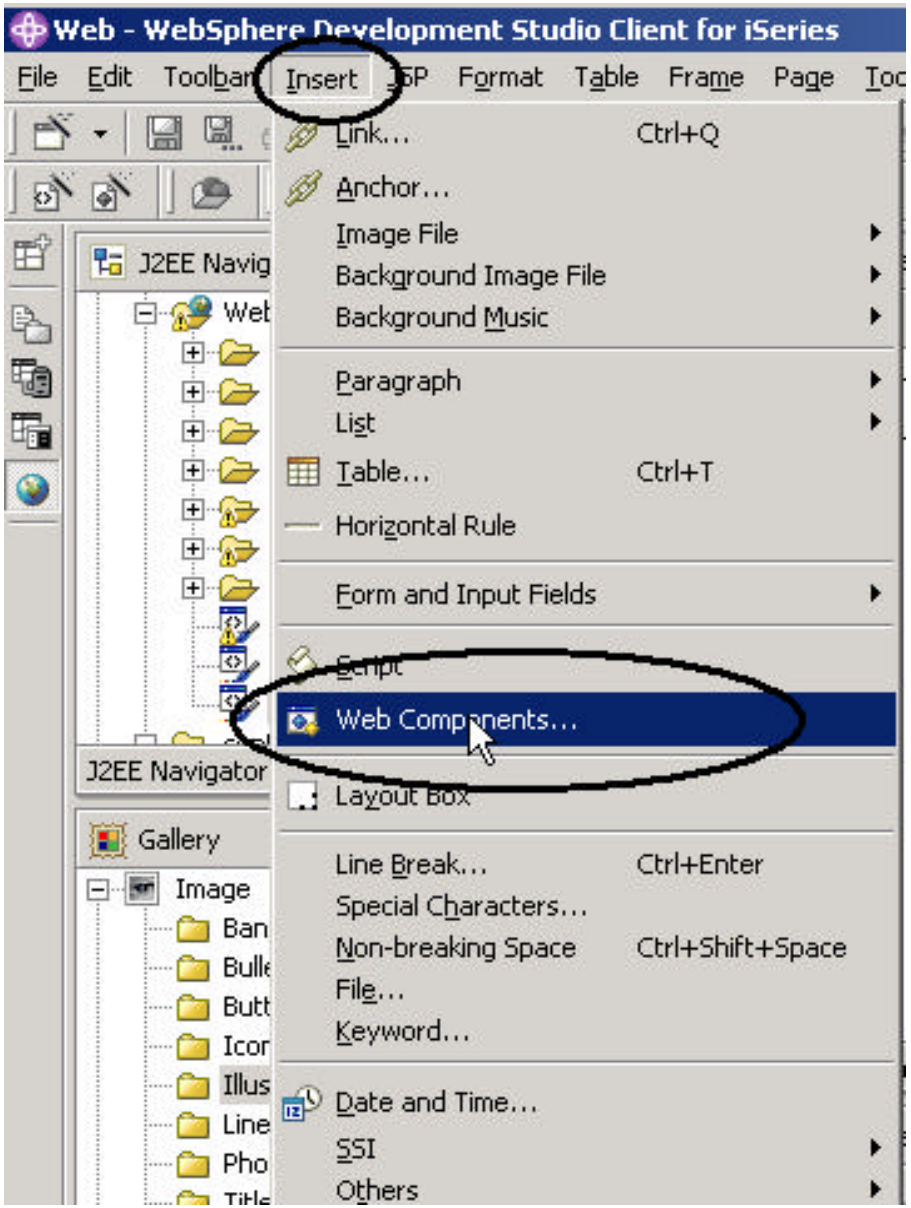
Links



No More DTCs ! ! !

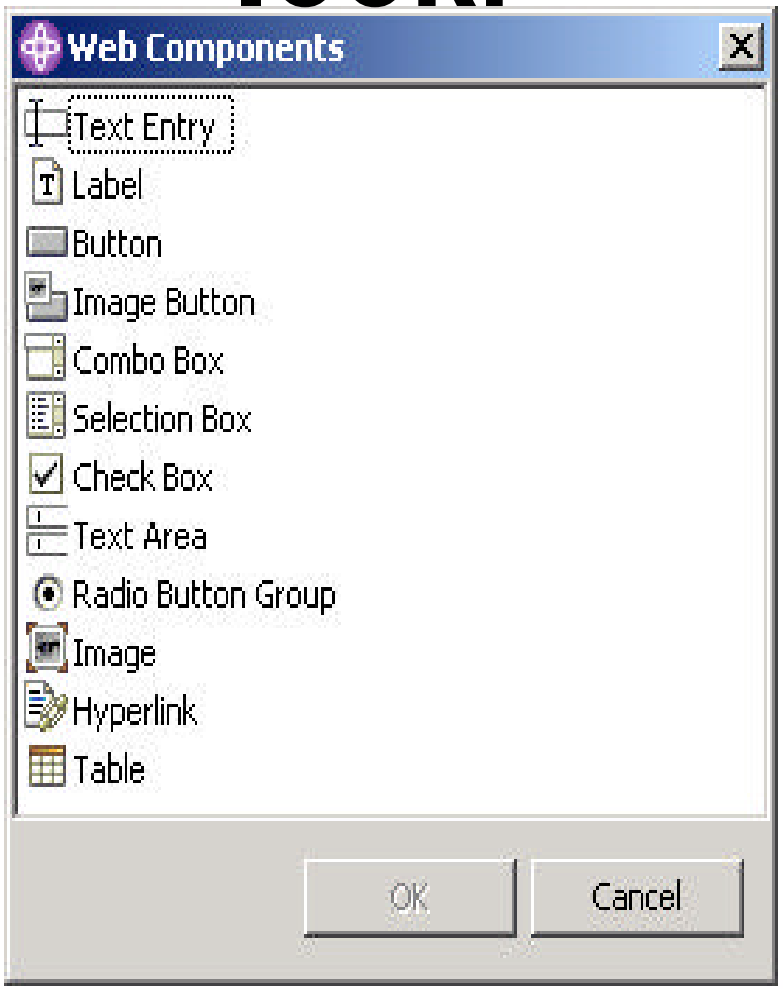

Web - Development Studio Client
File Edit Perspective Project Toolbar Insert JSP Format Table
Design-time Control
AS/400 Checkbox DTC
AS/400 Combobox DTC
AS/400 Entryfield DTC
AS/400 Label DTC
AS/400 Listbox DTC
AS/400 MLE DTC
AS/400 Pushbutton DTC
AS/400 Radiobutton DTC
AS/400 Subfile DTC
AS/400 Table DTC
E:\WDSC\WSSD\plugins\com.ibm.etools.iserie...\CheckBox400.ocx
OK
Cancel
Help
Entryfield DTC Properties
General
Font
Events
Run-time Attributes
Field name
Entryfield400
Field type
Normal
Hidden
Visible width
20
left
Read only
Capslock
Field data
DB Reference ...
Formatting
None
Edit code
Length
0
Data type
CHARACTER
NONE
Directionality
NONE
OK
Cancel
Apply
Help
wdt400
CustomerBalanceServlet
lanceInput.jsp
Thumbnail
Styles
Colors

VTCs ... No more DTCs



VTCs ... No more DTCs

Same selection . . . Better look!



Web Wizard Struts based ...

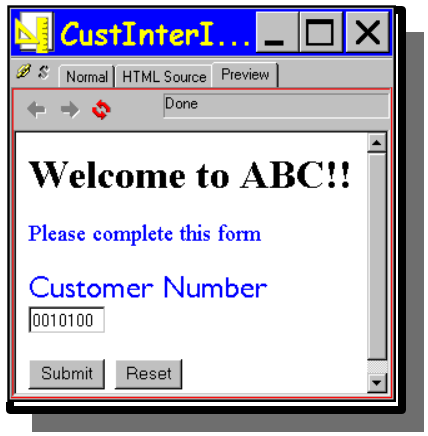
M.V.C

View

Model

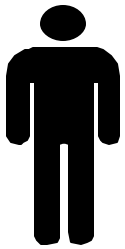
Controller

Struts Framework



JSPs & HTML

Logic!



Traffic Controller

WDSc: Web Services Tools

- Web Services Tools
- XML Tools
- Database Tools

WDSc: Web Service Tools

- ✓ Consume/Construct Web services:
  - **Discover**
    - Browse UDDI registry to locate existing services
    - Generate Java Bean Proxy for existing services
  - **Create/Transform**
    - Create new Web services from Java Beans, databases
      - ✓ Including Java Beans output from iSeries ProgramCall wizard
  - **Deploy**
    - Deploy Web service to WebSphere or Tomcat for testing
  - **Test**
    - Built-in test client allows for immediate testing of local/remote Web services
  - **Publish**
    - Publish Web services to UDDI registry

WDSc: XML Tools

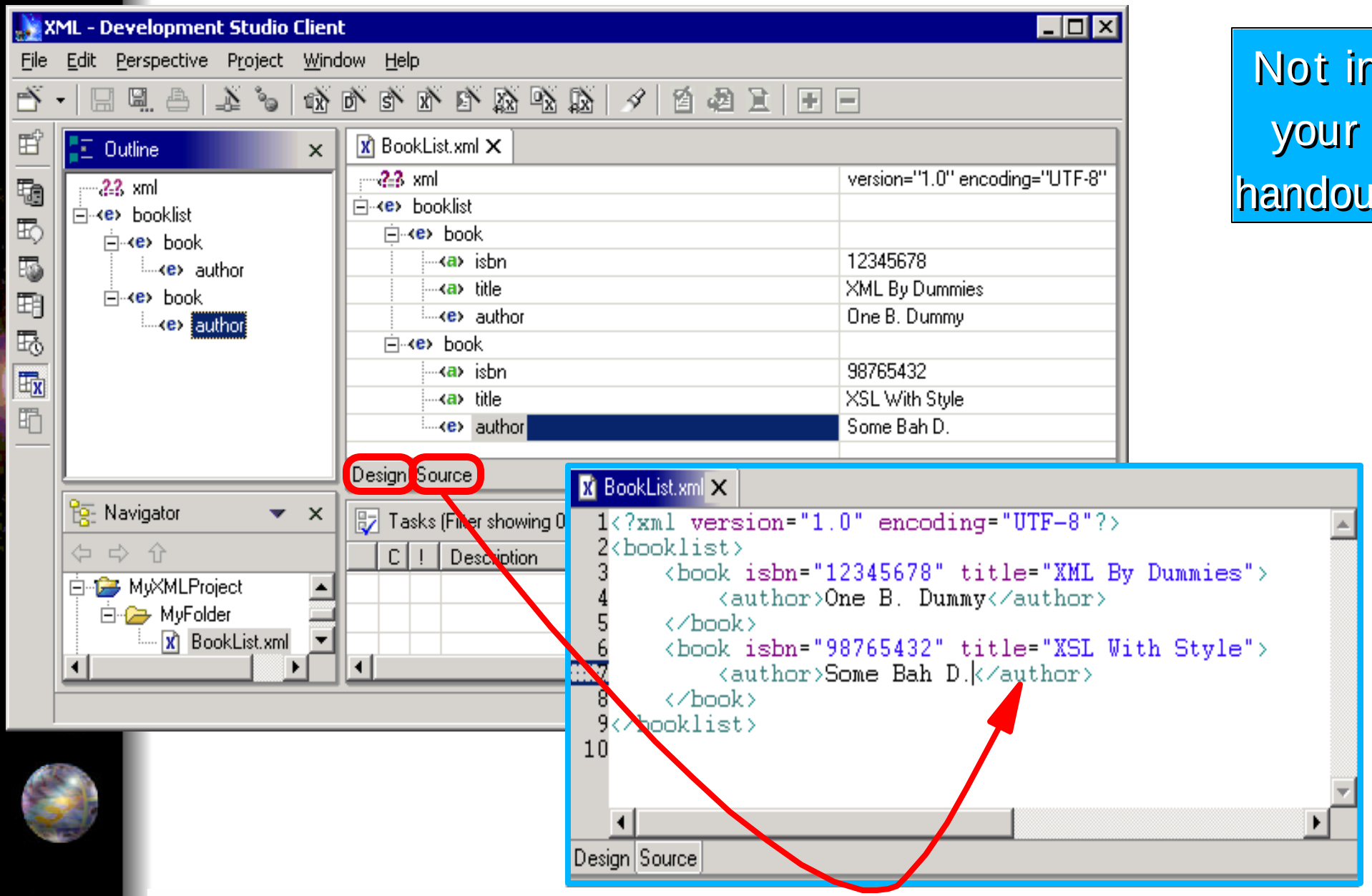
✓ XML Perspective and XML Tools

- **XML Editor**
  - ►For creating and viewing XML files
- **DTD Editor**
  - ►For creating/viewing Document Type Definitions
- **XML Schema Editor**
  - ►For creating, viewing and editing XML Schemas
- **XML to XML Mapping Editor**
  - ►To map one+ source XML files to a target XML file
- **XSL Trace Editor**
  - ►To visually step through an XSL transform
- **XML and SQL Query Wizard**
  - ►To create an XML file from an SQL query
- **RDB to XML Mapping Editor**
  - ►To map one+ relational tables to a target XML file

WDSc: XML Editor

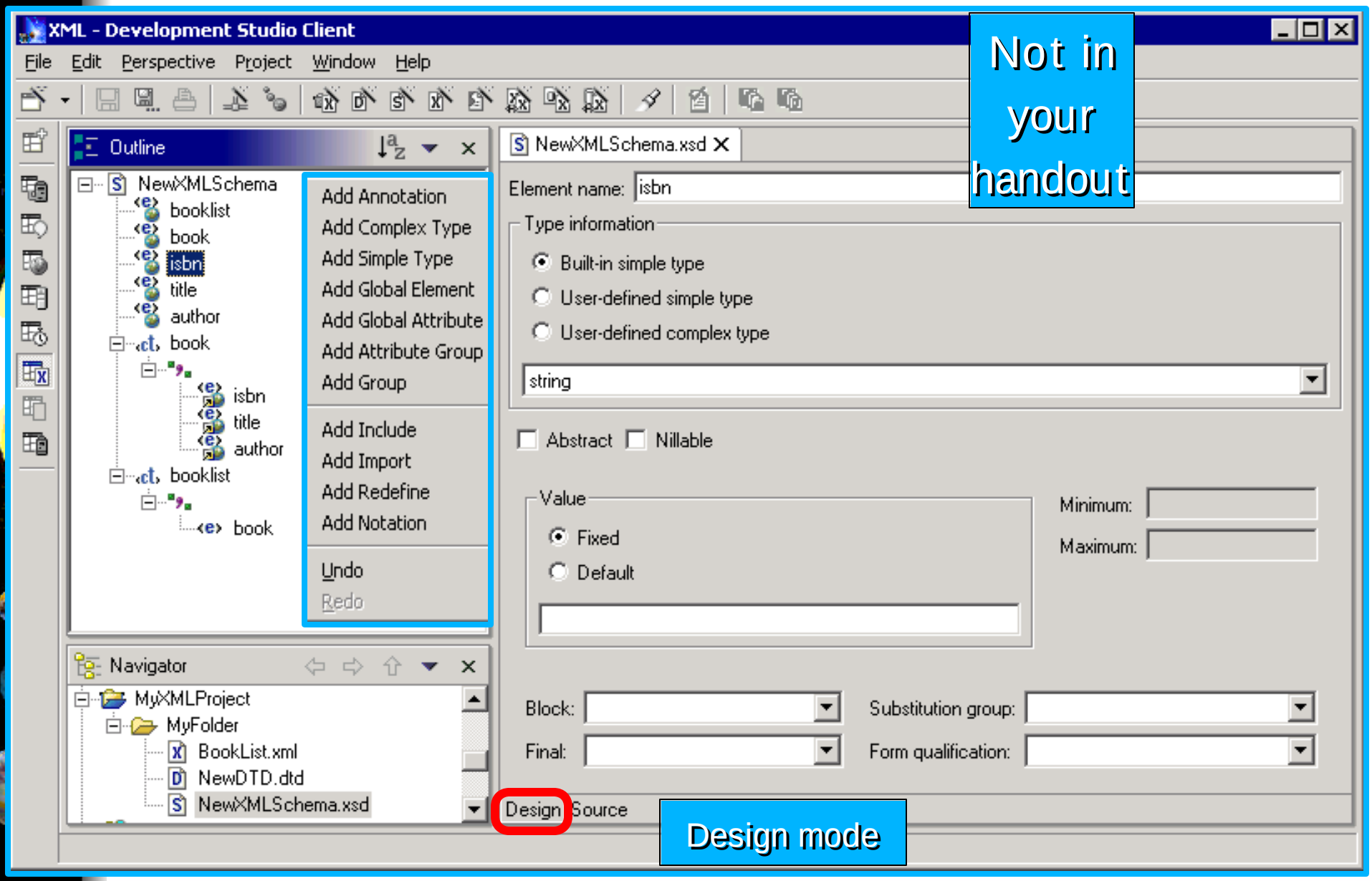
iSeries AD, IBM Toronto

Not in your handout

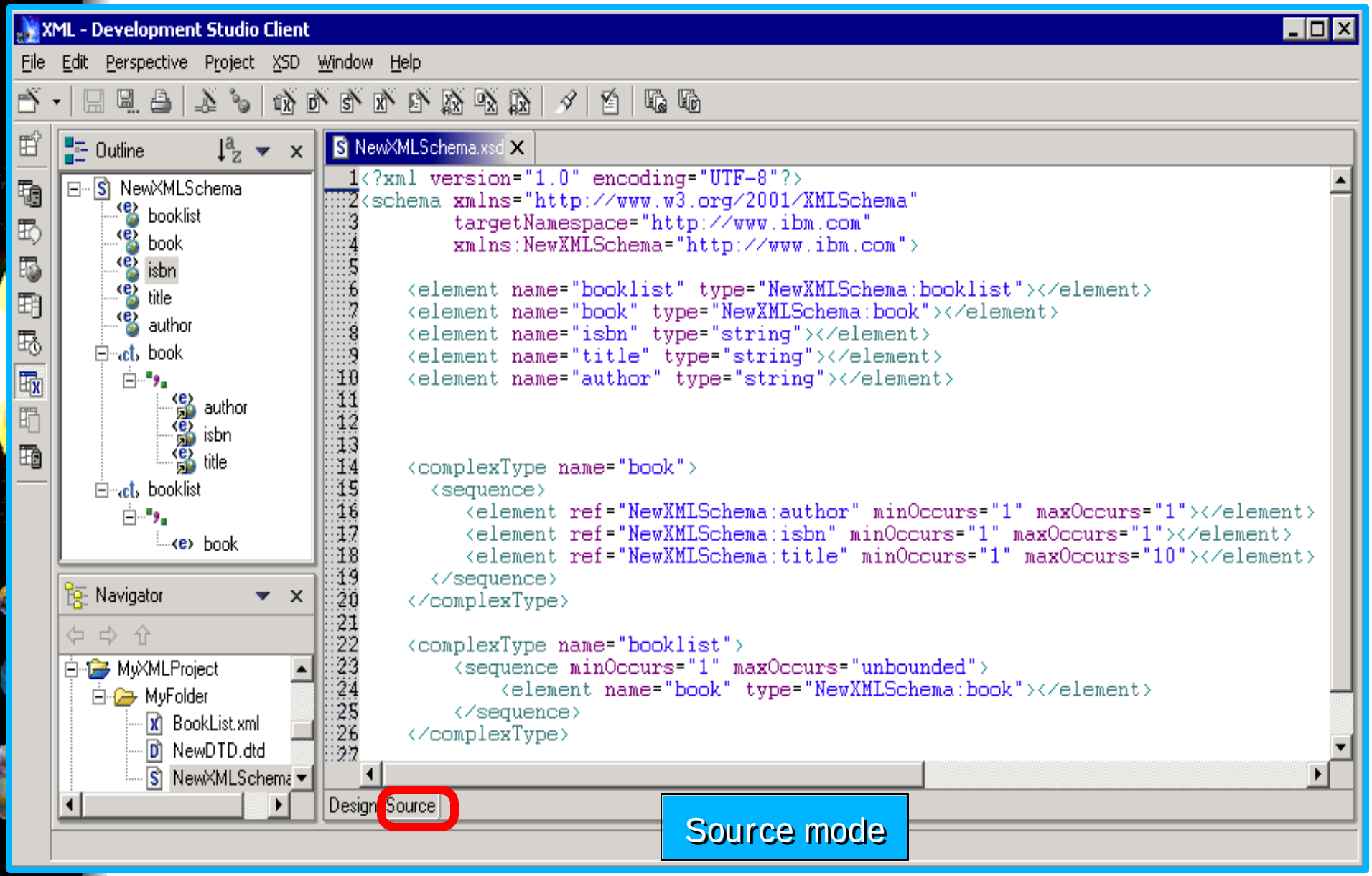


XML Schema Editor

iSeries AD, IBM Toronto



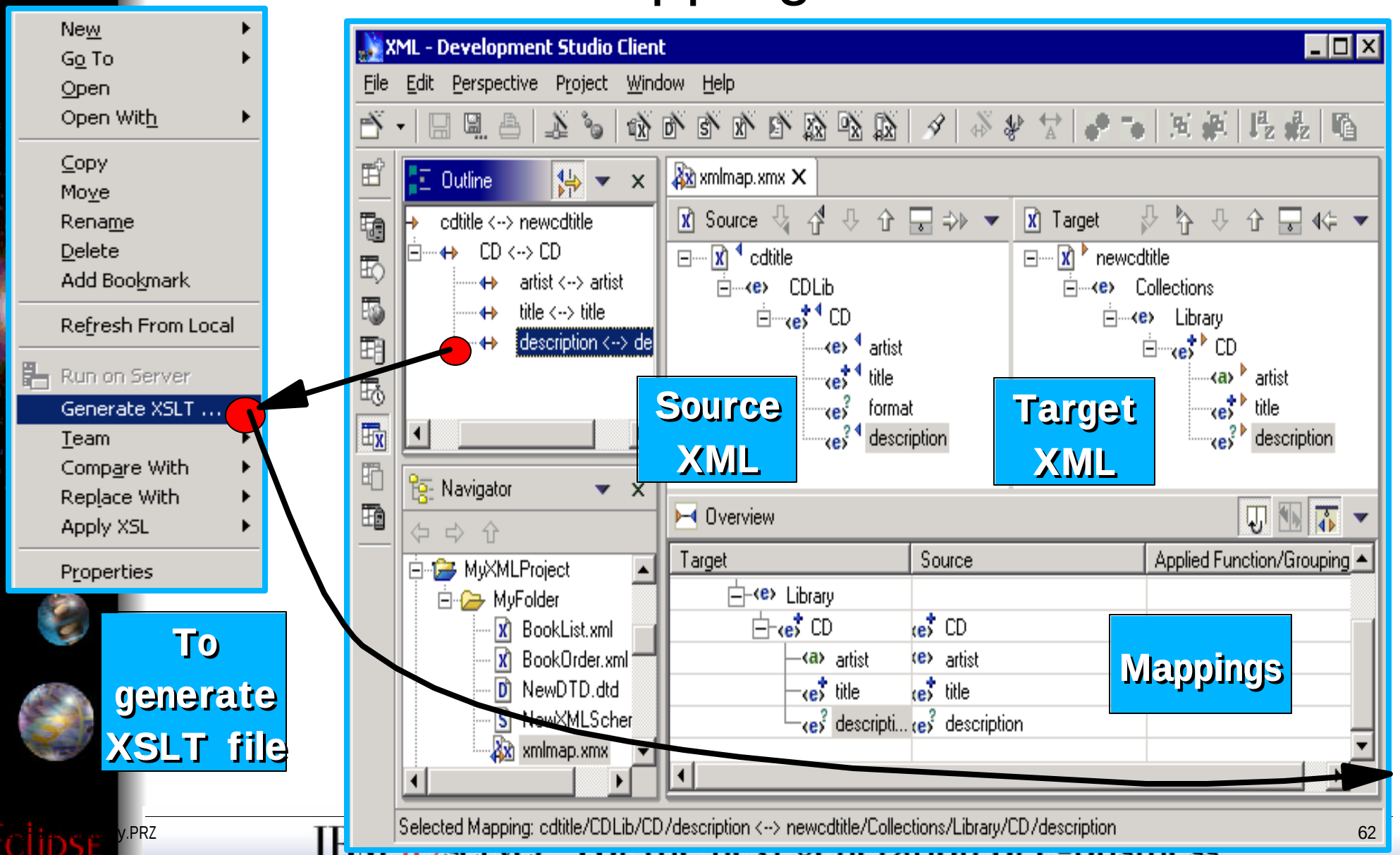
XML Schema Editor



WDSc: XML-to-XML Editor

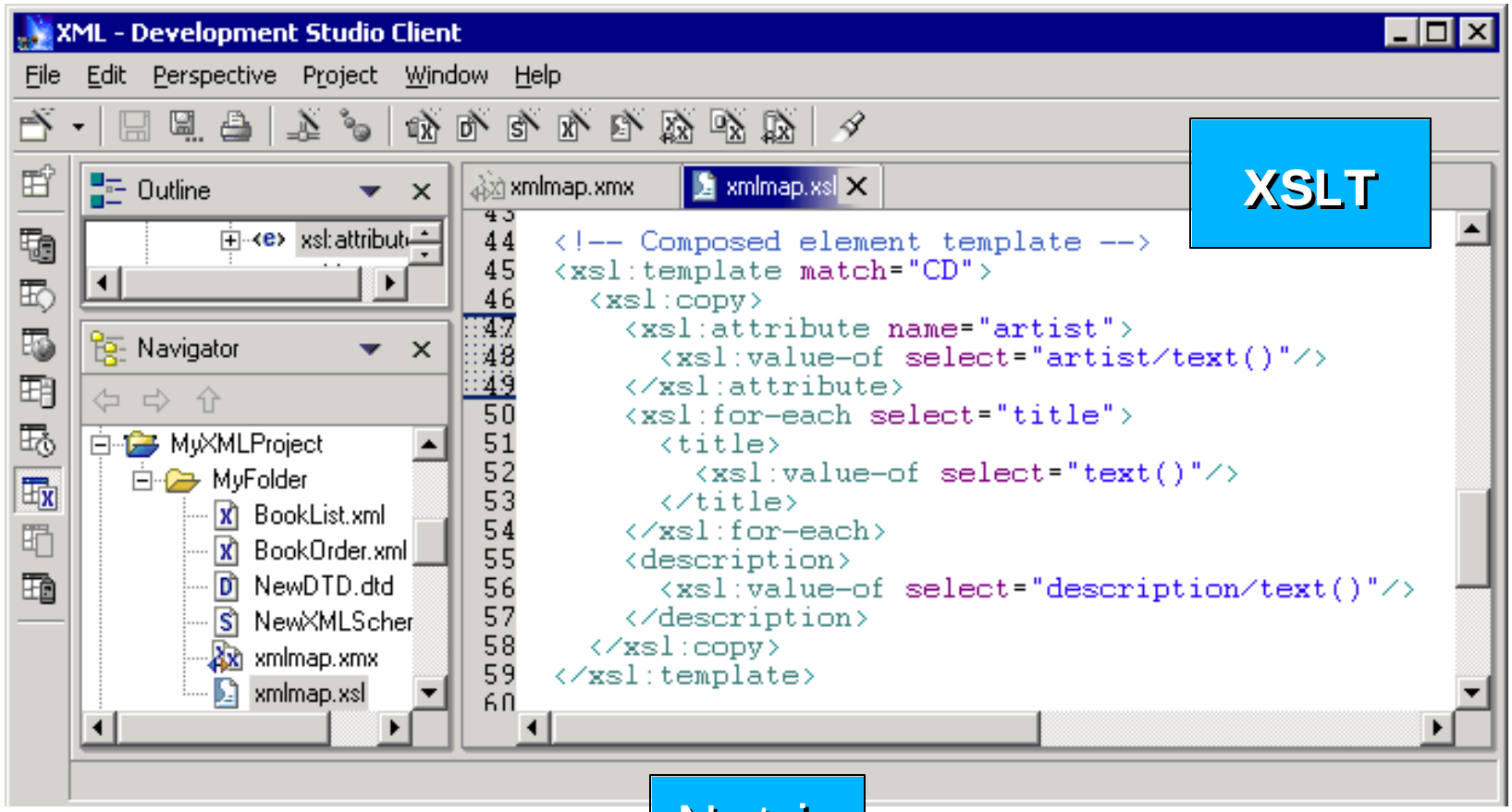
iSeries AD, IBM Toronto

✓ XML-to-XML Mapping Editor



WDSc: XML-to-XML Editor

- ✓ XML-to-XML Mapping Editor



Not in your handout

WDSc: Database Tools

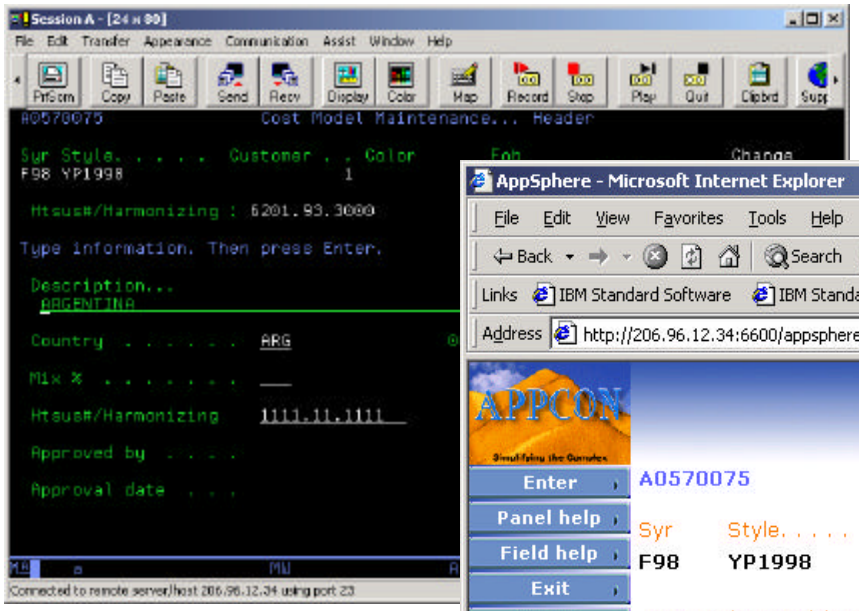
- Database Tools:
  - **Relational Schema Center**
    - Provides views geared for DBAs to
      - Create Databases
      - Create Tables/Views/Indexes/Keys
      - Generate DDL
    - Online and offline support for working with databases
      - Metadata generated as XMI
  - **SQL Query Builder**
    - Visually construct SQL statements
      - Insert, update, delete, select supported
      - Metadata generated as XMI
  - **SQL/XML mapping**

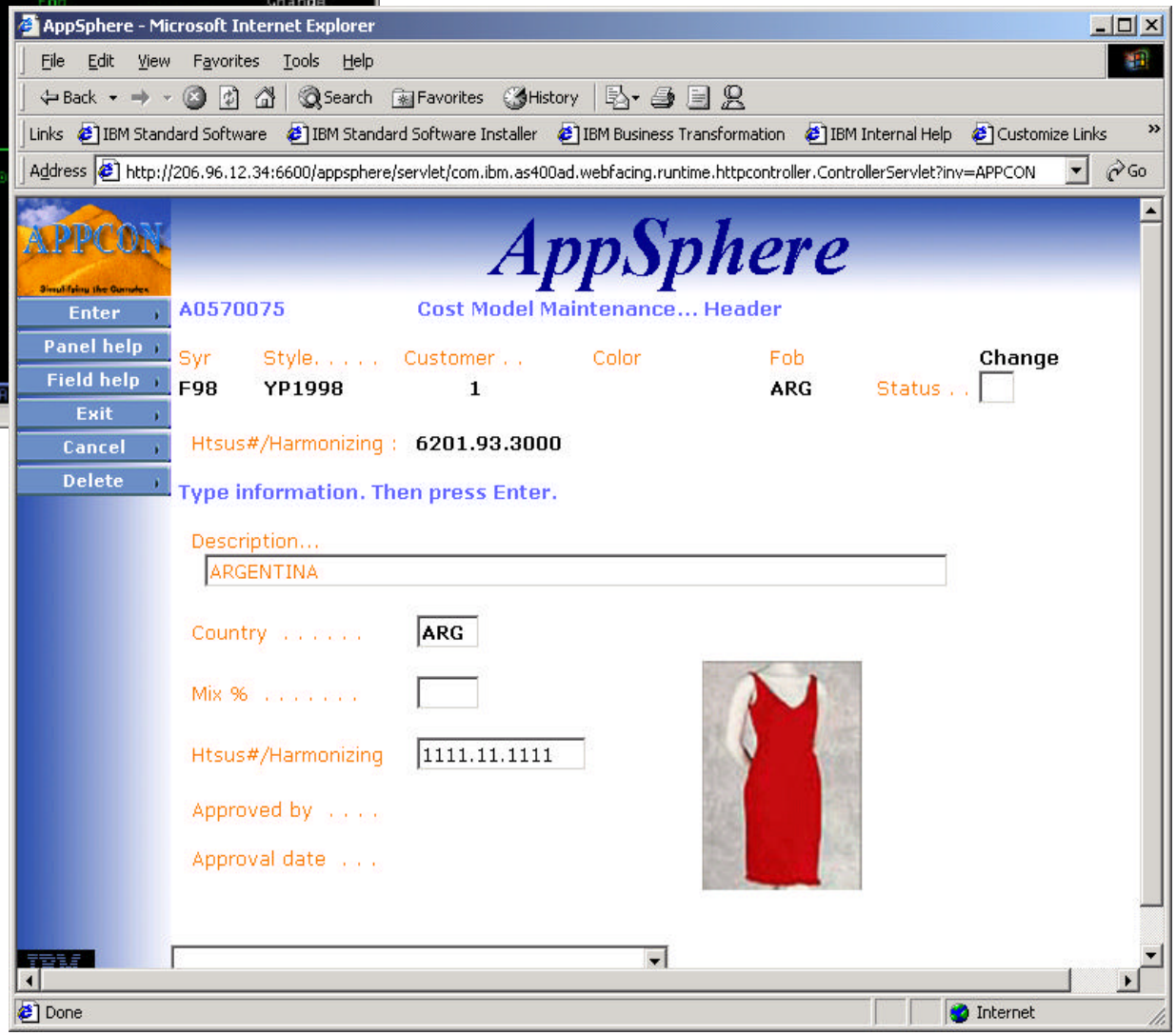
WDSc: WebFacing

- WebFacing

WebFacing: Before/after

iSeries AD, IBM Toronto





WebFacing

- ✓ What it is:
  - **Development Tool**
    - ► Converts DSPFs to Web UI
  - **Runtime Intercept**
    - ► Redirect *PGM 5250 I/O to Web UI

- ✓ What is not:
  - **5250 datastream converter!**
    - ► No 5250 datastream ever created
    - ► *PGM raw data buffers fed directly to Web UI
    - ► Conversion hit at development time, not runtime
- ✓ Why:
  - **For BPs/ISVs to quickly convert to Web**
    - ► No limitation to customization of output
    - ► No-cost runtime, ubiquitous tool

...WebFacing

✓ WebFacing and Eclipse

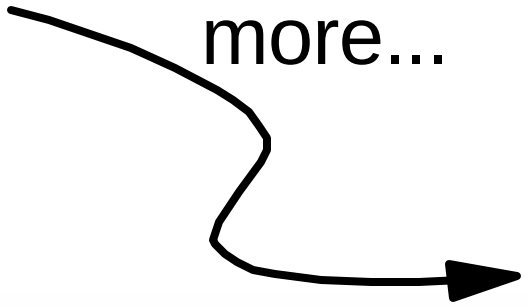
- **V5R1:**
  - first IBM tool based on Eclipse!
  - "first edition" status
- **V4.0 WDSc:**
  - "First edition" status is over!
  - Inherits and leverages all Web and Java tooling
  - Leverages built-in WebSphere Test Environment
  - Optimized for 4.0 of WAS
  - Many functional and performance enhancements
- **V5.0 WDSc:**
  - "Second edition"
  - More later . . .

WebFacing Phase 2...

- ✓ Major focus on client-side performance
  - **More efficient HTML and JavaScript**
    - ► Faster download and rendering time
- ✓ Major focus on client-side styling
  - **Web-site style and application-area style**
    - ► Easier to imbed WebFaced app in corporate style
    - ► Much better IBM-supplied styles for both
    - ► Better use of cascading style sheet
      - ✓ Much easier to do application-wide tailoring

Not in your handout

The end of "First Edition" status. WebFacing is rockin' now!



WebFacing Phase 2...

Some enhancements require Service Pack 1

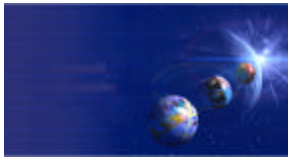
- ✓ Major focus on function
  - **All *common* keywords supported**
  - **Support for UIM help panels for F1 support**
  - **Support for function keys (being pressed)**
  - **Option to tie-in corporate logon page with single or repeated signon**
- ✓ Major focus on co-existence
  - **Support for**
    - IBM WebSphere Edge Server and Work Load Management
    - Policy Directory (front ending WAS clusters)
  - **Co-existence with other Web modules in same Web session**

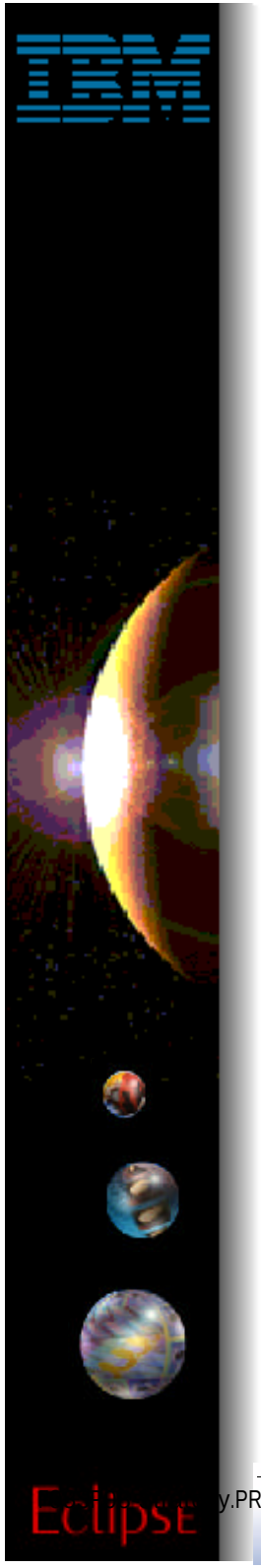
Not in your handout

What's new in WebFacing 5.0 ?

- Ability to generate Struts based WebFacing applications
- Support Function keys displayed in DDS Window
- Conversion is faster based on the new RSE communication layer
- Automatic configuration for setting the WebFacing Web Application to use the unicode UTF8 encoding scheme for multi-lingual support
- Support for WRKSPLF
- Ability to override or add function keys ot support additional actions not defined in the RPG or COBOL application
- Enable DDS Conversion for supporting user written JSP Custom Tags
- New Styles view in the WebFacing perspective in the IDE

WDSc: WebFacing

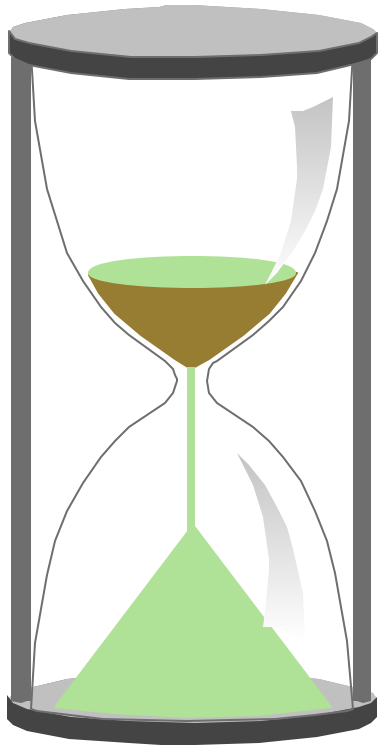




- What about RPG?

RPG IV . . .

- 31 digit support
- Allow Char. Parms for built-ins
- IFS Source File Support
- Lib qualified access to data areas
- PCML generation
- Short form operators
- I/O enhancements



Give me your vote . . .

Total number of ballots: 176

Number of spoiled ballots: 1

Sorted by item number

item#	votes	%%%	cost	description
1	6	3%	$10	H-spec keyword EXTDEFS to use the internal format of ext fields.
2	52	29%	$30	RANGE and VALUES keywords.
3	15	8%	$25	SORTA arr1 {: arr2 ...} WITH key_arr1 {: key_arr2 ...}
4	25	14%	$ 5	Extender on SORTA to reverse the order of sorting.
5	53	30%	$ 5	DEBUG(*RETVAL) to allow debugging of procedure return valu
6	24	13%	$ 5	OPTIONS(*VARTYPE) to bypass type match of procedure parms
7	91	51%	$10	New BIFs %TESTD, %TESTT, and %TESTZ.
8	35	19%	$50	Allow dynamic resizing of arrays and multi-occurrence DS.
9	33	18%	$ 5	Format change on a LIKE define for numerics.
10	24	13%	$10	New keyword, RECPREFIX, to prefix record-format names.
11	11	6%	$10	DIM(*FIT) with overlay field.
12	27	15%	$50	Multiple-dimension arrays (expressions only).
13	5	2%	$40	SPECIAL files to handle all I/O opcodes, including keyed c
14	29	16%	$ 5	%OFFSET builtin function returns offset of subfield.
15	20	11%	$20	Multiple array element initialization.
16	28	15%	$10	Keyword EXTDESC, like EXTFILE, but used at compile time
17	12	6%	$20	Dynamic specification of basing variable, ie "p->var".
18	21	11%	$20	Option *ZEROFILL on %EDITC to include leading zeros.
19	12	6%	$20	Option to edit negative numbers using parentheses.
20	18	10%	$10	ALIAS name support for externally described data structure

Possible items for V5R3 . . .

- ***The selected items are:***
  - → Allow dynamic resizing of arrays and multi-occurrence DS.
  - → Conversion of date/time/tstamp to numeric using %INT, %DEC.
  - → Second parameter on %TRIMx - char to trim.
  - → Option to pass trimmed string as parameter.

- ***If time permits, high priority:***
  - → Allow EXTPGM to be coded without a parameter.
  - → LEAVE-WHEN & ITER-WHEN: single-statement conditional leave or it
  - → DEBUG(*RETVAL) to allow debugging of procedure return values

- ***If time permits, lower priority:***
  - → Procedure name overloading based on parm types.
  - → EVALC move corresponding from one data structure to another.

WDSc Summary

- Summary of WDSc

Why WDSc ?

- iSeries to become a premier e-business server
- Deliver AD tool set to support the rapid expansion of e-business applications for iSeries
  - Web-enable existing 5250 applications
  - Build new e-business applications
  - Port existing e-business applications from other servers
- Integrate all of the iSeries application development tools, IBM and non-IBM to a common IDE
- Optimize and simplify J2EE application development
- One comprehensive intergrated iSeries host product

Why WDSc ?

- **Consolidates all of the key iSeries AD tools into one pervasive, attractively-priced product**
  - over 75 K copies of WDS shipped since 05/2001
- **Leverages Eclipse to deliver an integration platform for all iSeries tools, both IBM and 3rd party**
- **iSeries extentions to make it easy to leverage and extend iSeries programs for Web, Web-services and Java development.**
- **WebFacing Tool is the easiest, quickest and most cost effective way to create a Web interface to 5250 apps**
- **WebSphere Development Studio Advanced Edition extends the WDS value proposition for creating sophisticated J2EE applications**

Our Strategy . . .

- Continue to consolidate the iSeries AD tools to the Eclipse IDE
  - Consistant IDE for traditional and e-business development tools
    - Ease of learning, ease of use
    - Both IBM and 3rd party tools
- Leverage the advancement in the WebSphere Studio / Eclipse tools to deliver value to the iSeries development community
- Continue to enhance our tools to make it easier for iSeries developers to move to an e-business footing
  - leveraging and extending iSeries legacy assets to create complex Web services solutions and portal solutions
- Leverage Eclipse plug-ins to deliver value to all of the other development tools
  - Remote Systems Explorer delivers system access to all development tools that are ecilpse enabled

Integrations and ISVs!

- **All of the IBM iSeries application development tools are consolidated in WebSphere Development Studio for iSeries**
- **Continue to leverage other WebSphere tools for use for iSeries development**
  - Host Access Transformation Server (HATS)
  - WebSphere Application Monitor
  - WebSphere Workload Simulator
- **Key iSeries tools vendors (ISVs) are integrating to WebSphere Development Studio for iSeries**
  - Source control management tool vendors
    - **Aldon**
    - **MKS**
    - **SoftLanding**
  - Impact analysis - AbStract Probe
  - Lansa
- **Working with iSeries partners to deliver:**
  - New Web-enabled iSeries solutions
  - Web-enabling services to partners and customers
  - e-learning for our e-business development tools

New Technology, Tools

Build Community!

- Single IDE for the whole family!
  - iSeries and non-iSeries
  - Traditional RPG+COBOL
  - Modern e-business
  - Young and young-challenged

Build Excitement!

- Build/re-purpose awesome apps!
- Use awesome tools!

Standards

✓ Industry Standards Supported

- **By WSSDa, WSAD and WDSc:**
  - EJB 1.1
  - Servlet 2.2
  - JSP 1.1
  - JRE 1.3
  - Web Services Definition Language (WSDL) 1.1
  - Apache SOAP 2.1
  - XML DTD 1.0 10/2000 Revision
  - XML Namespaces 1/99 Version
  - XML Schema 5/2001 Version
  - HTML 4.01 (other levels should work)
  - CSS2 (PageDesigner displays a subset)

QUOTES

- Quotes

QUOTES

- ASC Inc
  - Chris Wilson, Director, Programming/Operation Tools
    - ✓"Eclipse is perhaps the single best idea we've seen out of IBM in years. By leveraging it's experience with Java, IBM has created a plugin shell that has a real chance of replacing Microsoft's Visual Studio as the standard IDE in the industry. Despite its youth, Eclipse is the most powerful Java IDE we have ever encountered."
    - ✓"WDSC combines an outstanding industry standard version control in CVS with tools like our ABSTRACT impact analysis to finally create a true graphical development environment for the iSeries platform."
- LANSA Inc
  - Bill Benjamin, Vice President, Business Development
    - ✓"The goal of Eclipse to provide a seamless interface where developers can leverage tools from multiple vendors is a great idea and is something that will add value to our customers. Eclipse is a great way to make it easy for iSeries customers to integrate WebSphere and leading development tools like LANSA".

QUOTES

- SoftLanding Systems
  - Mark Phippard, Director of Development
    - ✓"Finally, an IDE done right! SoftLanding is very excited about the new Eclipse-family of IDE's, including WDSc. We believe that these IDE's represent a major step forward for our customers and all iSeries customers and business partners. We are excited about the technology and are firmly committed to contributing plug-ins for our TurnOver change management product and to provide the best possible support for all Eclipse-based development."
- Republic Indemnity of America
  - Bob Cancilla, IT Director. Also runs www.ignite400.org
    - ✓"I have never been so impressed with a product as I am with what I am seeing in here. This is one of the most totally incredible products I have ever seen in 30 years in the business."

QUOTES

- Mid-Comp International
  - Robert A. Hare, WebSphere Team Development Manager
    - "It is very important in the development of our web enablement projects to have all developers working from a common work bench. Using the WDSc allows all areas of development to come together from RPG maintenance and modifications to java code generation. The WebFacing tools and wizards that generate Java allow legacy programmers to be far more efficient helping bring the WebApplication to the client faster."
- Aldon Computer Group
  - Dan Magid, Vice President
    - "Aldon Computer Group is pleased to be working in partnership with IBM to integrate Aldon Affiniti with the Eclipse open source workbench. Aldon Affiniti's integration with Eclipse provides an easy way for developers to combine the powerful, unified multi-platform change management system of Aldon Affiniti with the wide range of developer tools available through Eclipse."

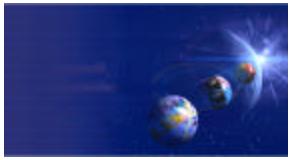
Not in your handout

More Information

✓ Information Sources

1. **www.ibm.com/software/ad/wds400**
   - As of June 4th
2. **www.eclipse.org**
   - Eclipse and information about eclipse
3. **www.ignite400.org**
   - Introduction to eclipse article
4. **eServer iSeries magazine, July issue**
   - 3 articles on WDSc
5. **www.ibm.com/websphere/developer**
   - WebSphere Developer Domain
   - Many articles on eclipse and WSWB and WebSphere Studio configurations

Ordering WDSc



Not in your handout

- ✓ If you don't have WDS / WDT:
  1. **Have iSeries serial #? Order 5722-WDS**
  2. **No iSeries? Buy WDT client PID.**
- ✓ If you have WDS and WDT:
  1. **Order refresh feature of 5722-WDS:**
     - 2655
     - Announced in June 4th RFA 36640
- ✓ If you have WDT client PID:
  1. **You will get WDSc 4.0 automatically**
     - Handled by Passport Advantage