



IBM Thomas J. Watson Research Center

Unleash the Power of Flex Builder

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Yes, this is a talk about tools

- Eclipse - the core of Flex Builder
- Flex Builder and Eclipse
- Eclipse tricks for Flex Builder users
- Refactoring in Flex Builder
- Flex Builder with other Eclipse tools

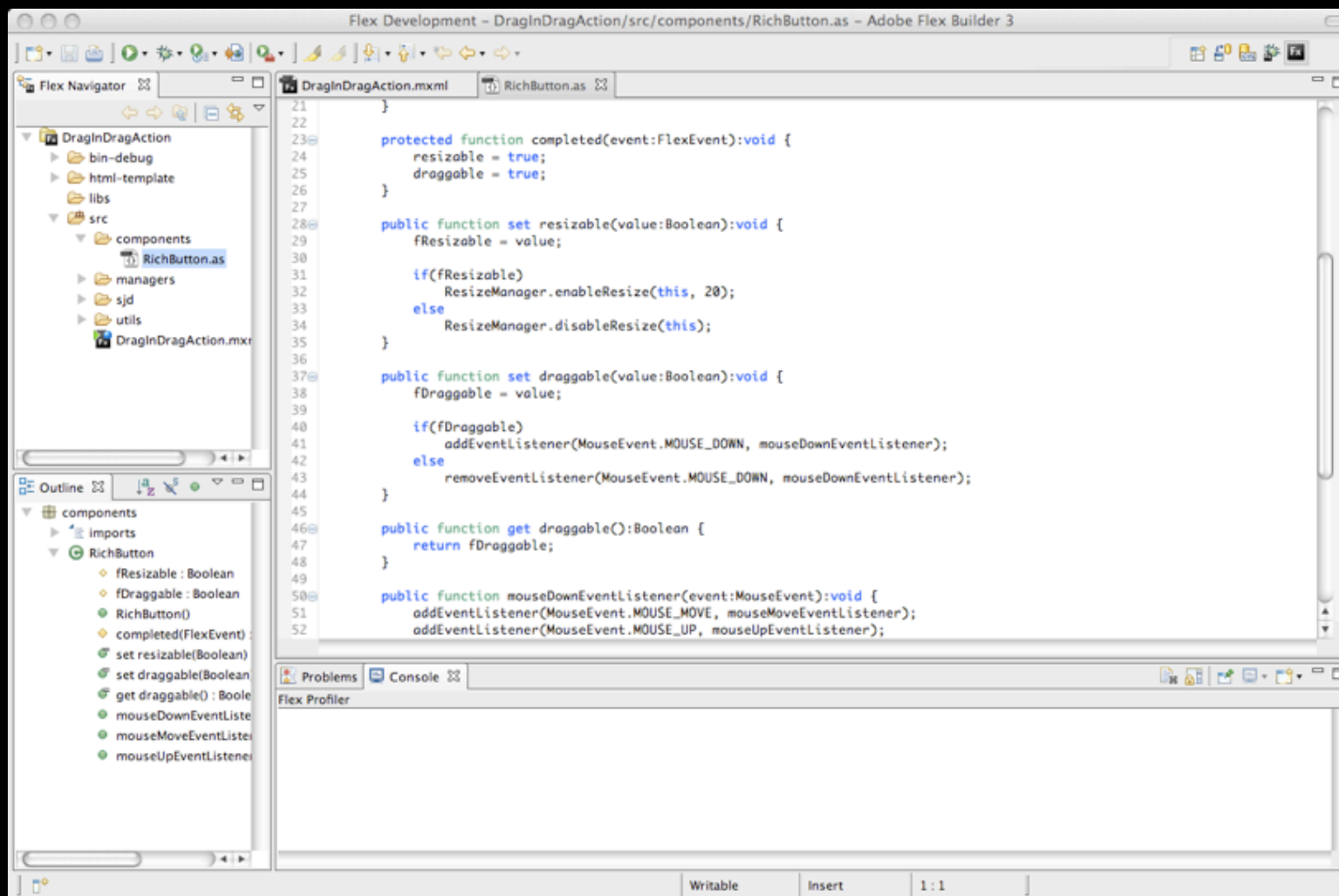
Who am I?

- 26+ Years of Software Engineering in industry
 - Working on a wide variety of applications, systems, frameworks and environments
 - Also was an instructor at Rochester Institute of Technology
- Currently a Senior Software Engineer @ the Thomas J. Watson Research Laboratory
 - Current Interest
 - Tools for business users
 - Agile development
 - Human-Computer Interaction
 - User-Centered Design

What do you know about Eclipse?

eclipse

Eclipse - the core of Flex Builder



Eclipse

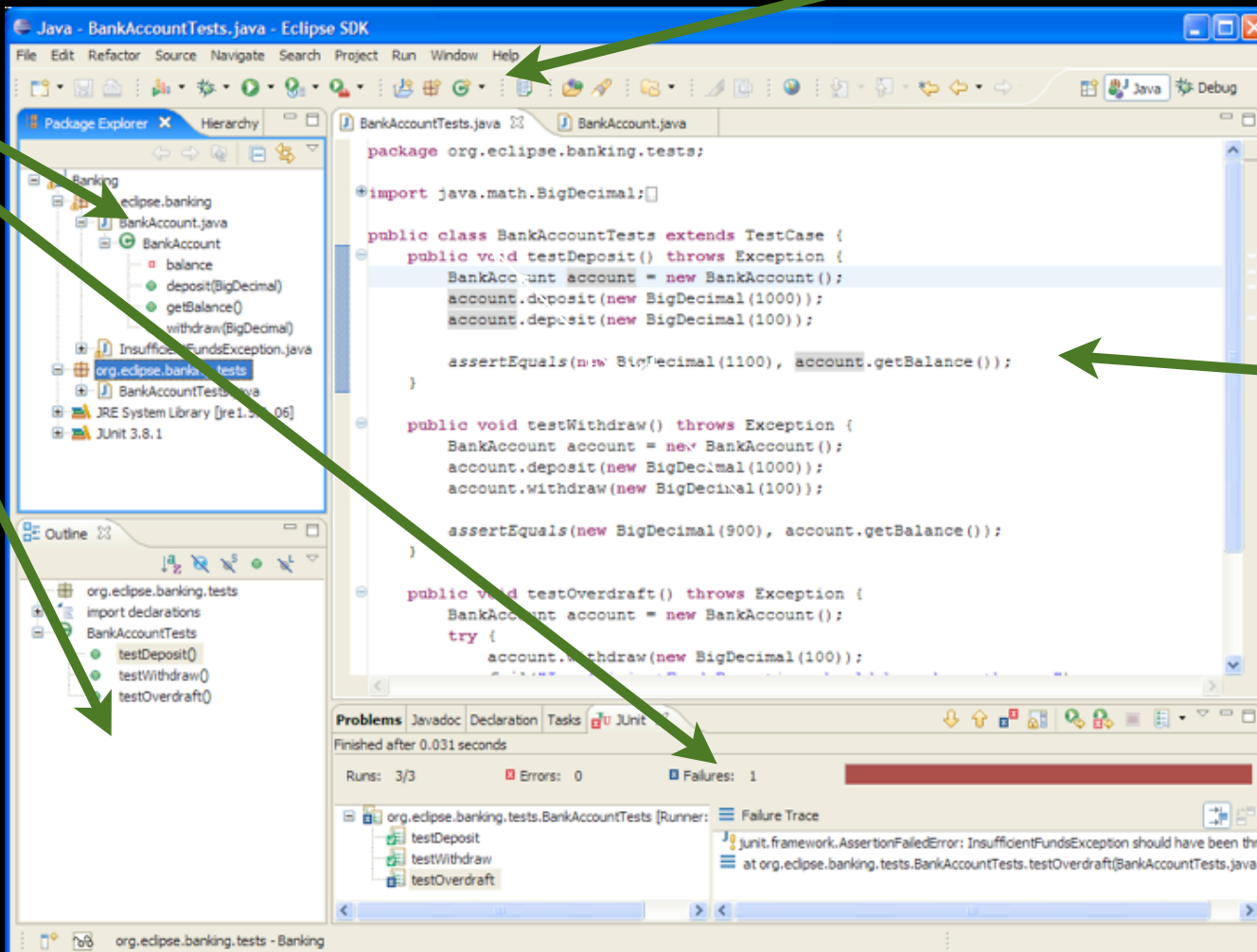
- Open-source IDE
 - Originally developed by IBM, but now managed by the Eclipse Foundation
 - Has expanded to also support rich client applications
- Adopted by a variety of industry-leading corporations
 - IBM, Adobe, Oracle, Borland, Nokia, MySQL, CA, Intel, etc.
- Windows, Linux, and Macintosh Support
- Support for many different development environments/targets
 - Java
 - Web
 - C/C++
 - Embedded Systems
- Rich plugin ecosystem

<http://eclipse.org> - the main site for the Eclipse Foundation

The Eclipse workspace

Toolbars and Menus

View Areas



Editor Area

The parts of the Eclipse environment

- Visual components
 - Views
 - Editors
 - Menus
 - Toolbars
 - Misc. (pop-ups, wizards, etc.)
- The Eclipse API exposes **extension points** to allow you to build visual (and non-visual) add-ons
- 3 Types of extensions
 - Plugins
 - the basic extensions
 - Fragments
 - Small enhancements to a plugin
 - Features
 - A package including some number of plugins and fragments

If you don't like how it works, change it

If you're missing a function, find it or write it

DEMO: Plugin Development (Eclipse)

Flex Builder and Eclipse

The screenshot displays the Adobe Flex Builder 3 IDE in a debugging state. The main window is titled "Flex Debugging - DragInDragAction/src/components/RichButton.as - Adobe Flex Builder 3".

- Flex Navigator (Left):** Shows the project structure for "DragInDragAction [192.168.1.219]". The "src" folder is expanded, showing subfolders like "behaviors", "components", "layouts", "managers", "skins", and "utils". A file "RichButton.css" is selected under "skins".
- Debug Console (Top):** Shows the execution context: "DragInDragAction [Flex Application]". The "Main Thread (Suspended)" is active, with the call stack showing "components:RichButton/mouseUpEventListener" and "components:Decorator/mouseUpEventListener".
- Breakpoints/Expressions (Right):** A list of breakpoints is shown, with a checked breakpoint at "RichButton.as [line: 205]".
- Code Editor (Center):** Displays the source code for "RichButton.as". The following code is visible:


```

198     if(event.target == this) {
199         flastX += x;
200         flastY += y;
201     }
202 }
203
204 public function mouseUpEventListener(event:MouseEvent):void {
205     removeEventListener(MouseEvent.MOUSE_MOVE, mouseMoveEventListener);
206     removeEventListener(MouseEvent.MOUSE_UP, mouseUpEventListener);
207
208     mouseMoveEventListener(event);
209
210     stopDrag();
211 }
212
213 protected function layoutDecorator(name:String):void {
214     var decorator:Decorator = fDecorators.get(name) as Decorator;
215     if(null == decorator)
216         return;
217
218     var par:DisplayObjectContainer = decorator.parent;
219     var layout:DecoratorLayout = fLayout.getSlot(name);
220

```
- Console (Bottom):** Shows the output of the application:


```

DragInDragAction [Flex Application] file:/Users/tvf/Documents/flex3dev/play/DragInDragAction/bin-debug/DragInDragAction.html
[SWF] Users:tvf:Documents:flex3dev:play:DragInDragAction:bin-debug:DragInDragAction.swf - 669,192 bytes after decompression
Mouse in:-1-

```

2 Ways to install Flex Builder

- **Stand-alone**, with its own copy of Eclipse
 - The way most people install it
- **Plugins added to an existing Eclipse installation**
 - Most Eclipse installations include the Java Development Toolkit and the Plugin Development Toolkit, which are **not** included in the standard Flex Builder install
 - You need this configuration if you want to extend the Flex Builder environment
 - There are many other 3rd party plugins and tools that assume this configuration

Reference: *LFFS - 11: Flex Builder Part 1 - Two Ways To Install*
<http://www.insideria.com/2008/06/lffs-11-flex-builder-part-1-tw.html>

DEMO: Workspace tricks (Flex Builder)

- Switching between two workspaces
- Floating a view
- Deleting a view
- Creating a second editor next to the first
- Resetting the workspace

Refactoring

- What is refactoring?
 - Changing the structure of your code
 - Renaming
 - Moving
- Why do you want to refactor code?
 - Repartition into different projects to each maintenance and increase code reuse
 - Trying out different ideas in code
- Flex Builder helps with the refactoring process, but...
 - ...it's not as thorough as Java refactoring is
 - Various scenarios where you need to “help” the refactoring process
 - The Good News: Flex Builder helps you find the changes

Reference: *Flex Builder Refactoring “Gotchas”*

<http://techetchings.wordpress.com/2008/08/27/flex-builder-refactoring-gotchas/>

DEMO: Refactoring

- 3 projects
 - 1 application
 - 2 libraries
- Renaming code in a library
- Moving code from one package/folder to another
 - Fixing build path
 - Fixing package reference in the file
- *Beware of changes to .flexLibProperties!*

Source Control Integration

- **You are using source control, aren't you?**
- CVS and Subversion - the two most commonly used source control systems
 - CVS support included in both standard Eclipse and Flex Builder “out of the box”
 - Subversion support Available via 3rd-party plugin
 - E.g., SubEclipse at <http://subclipse.tigris.org/>

Flex Builder and other 3rd Party Eclipse tools

- Aptana - mixed Flex/Web application development
- Rational Team Concert/Jazz - an integrated agile collaborative development environment
- Others (e.g., PHPEclipse, MyEclipse, etc.)

These are just a few examples to illustrate what being part of the Eclipse ecosystem brings to the Flex development world.

Aptana and Flex Builder Demo

- An Eclipse-based tool tool to develop Ajax applications
- Jaxer - a server that runs JavaScript
 - Idea - write code that can run on either client or server
- Demo
 - using Aptana + Flex Builder to debug an application that uses the Flex ExternalInterface to communicate between Flex and JavaScript parts of app

Aptana web site: <http://aptana.com/>

Demo code based on code from:

<http://blog.paranoidferret.com/index.php/2007/07/19/flex-javascript-tutorial-simple-interaction/>



Flex and Rational Team Concert/Jazz

```

public function adjustEndPoint(box:UIComponent, topBox:UIComponent, leftBox:UIComponent) : void {
    if(null == box || null == topBox || box is Magnet)
        return;

    trace("Adjust EndPoint");

    var localX:int = box.x;
    var localY:int = box.y;
    var farX:int = localX + box.width;
    var farY:int = localY + box.height;

    var num:int;

    var useFar:Boolean = false;

    // Check if top works. If not, check bottom.
    if(topBox == box) {
        num = findXIntersection(localX, farY, farX);
        useFar = true;
    }
    else {
        num = findXIntersection(localX, localY, farX);
    }

    if(num >= localX && num <= farX) {
        fEndPoint.x = num;
        fEndPoint.y = (useFar ? farY : localY);
        fEndPoint.direction = (useFar ? DirectionDescriptor.BOTTOM : DirectionDescriptor.TOP);
        return;
    }

    if(leftBox == box) {
        num = findYIntersection(farX, localY, farX, farY);
        useFar = true;
    }
    else {

```

Id	Status	P	S	Summary	Owned By	Created By
1285	New			Attaching a magnet to another magnet can cause strange re	Tom Frauenhofer	Tom Frauenhofer
1253	New			Labels on lines/connectors	Tom Frauenhofer	Tom Frauenhofer
1252	New			Persistence in BABAL	Tom Frauenhofer	Tom Frauenhofer
1168	New			Context menu in BABAL	Tom Frauenhofer	Michael Desmond
1167	New			What to show in BABAL	Tom Frauenhofer	Michael Desmond



Rational Team Concert/Jazz

- Jazz is IBM Rational's new technology platform for collaborative software delivery
 - Built by many of the same people who initially developed Eclipse
 - Focus is on Agile development process
- Rational Team Concert is the first set of offerings built on Jazz technology.
- Jazz Features
 - Source Control
 - Work Items
 - Build
 - Reports
 - Development planning and process management
 - Integrated instant messaging (Jabber and Sametime)

More details on jazz at: <http://jazz.net>



Flex and Rational Team Concert

- Richer tools for collaborative development
 - Work items as a discussion forum via commenting
 - Heavy use of RSS feeds for tracking status changes
 - Traceability from Initial work item through to code versions and back
 - Parent/child relationship
- Change sets
 - Collections of files that implement a change
 - Associated with one or more work items
- Work Items + Change Sets gives you additional flexibility
 - Associate your current work with a Work Item
 - Which associates it with the current work set
 - You can suspend the current change set/work item
 - E.g., “Hot defect”

Where to find Resources Resources?

■ Eclipse Resources

- Main eclipse site: <http://eclipse.org>
- Eclipse Plugin Central: <http://www.eclipseplugincentral.com/>
- Eclipse Plugins: <http://www.eclipse-plugins.info/eclipse/index.jsp>
- Source Forge: <http://sourceforge.net>
- *The Java Developers Guide to Eclipse* (Book)

■ Flex Builder Resources

- Farata Systems Flex-specific plugins: <http://flexblog.faratasystems.com/?p=148>
- IDE Factory: <http://www.idefactory.com/> (Formerly called “The Cairngorm Plugin”)
 - Additional plugins focused on improving Flex Developer productivity
- Mike Morearty’s blog - <http://www.morearty.com>
 - Has a 2-part series on writing plugins that extend Flex Builder (a little out of date but still good)
 - Part 1: <http://www.morearty.com/blog/2006/05/31/writing-your-own-plugins-for-the-flex-builder-debugger-part-1-where-to-start/>
 - Part 2: <http://www.morearty.com/blog/2006/06/07/writing-your-own-plugins-for-the-flex-builder-debugger-part-2-a-fully-functional-sample/>

Thank You!

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