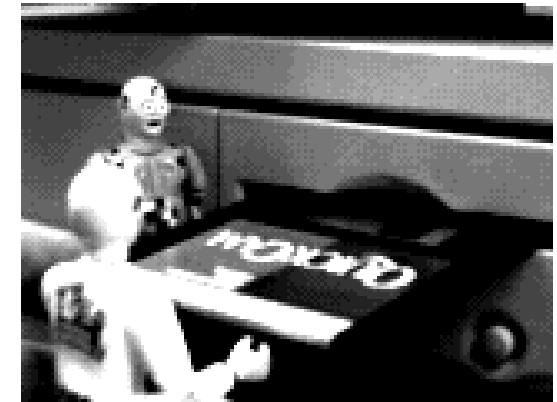


# Functional Testing Overview from IBM Rational: What's New, What's Cool?

*Neil Williams*  
*Technical Consultant, Automated Software Quality*  
*nwilliams@uk.ibm.com*



IBM Rational Software Development Conference UK 2007



▶ What keeps me **Rational**?



# Agenda

- **The Current State of Manual Testing**
  - ▶ Challenges of Manual Testing
  - ▶ Rational Manual Tester
- Functional Testing Today
- What's new, what's cool?



# What is Manual Testing?

- ▶ Using human labor to validate the business use cases and fitness for use of an application, system or device
- ▶ Includes labor to plan, design, execute and evaluate the status of the application or device under test
- ▶ Experience/research indicates that 75-80% of the testing done today is performed manually



# Why Teams use Manual Testing?

Recruitment of subject-matter experts and end-

use



Strict regulatory or process requirements aren't met with automation tools



Poor or non-existent test automation-ready interfaces



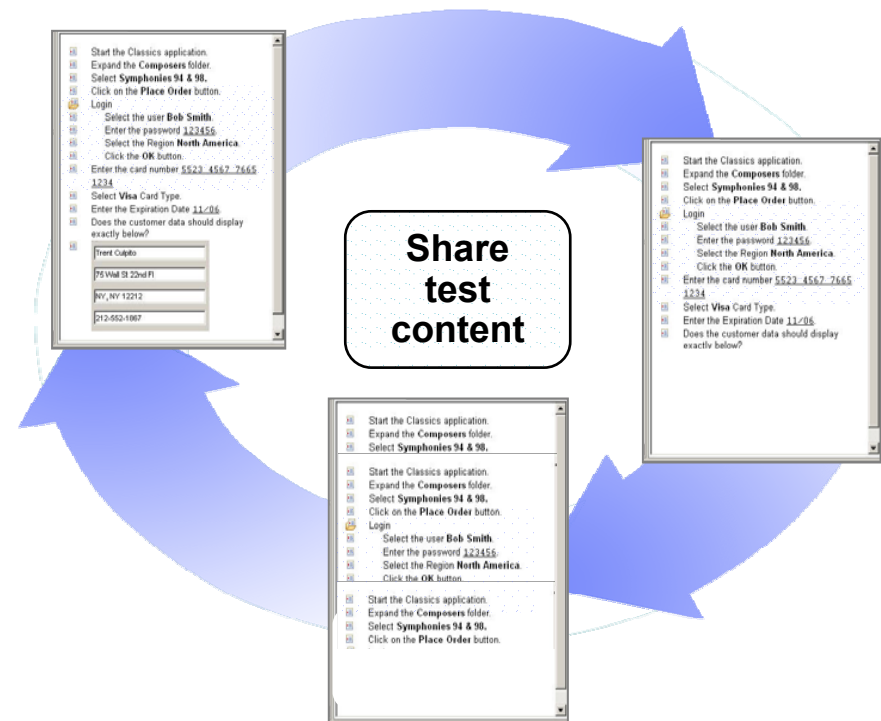
# Challenge 1: Labor Intensive

## Challenge

- ▶ Creating and maintaining manual tests is labor intensive and difficult with tools such as Microsoft Word or Excel.

## Resolution

- ▶ Implement a solution that promotes the best practice of modular tests which can share common content
- ▶ Leverage existing Word or Excel test documents to quick-start test development



## Challenge 2: Unreliable

- **Challenge**

- ▶ Human error often skews tests results

- **Resolution**

- ▶ Assist testers with the tasks most prone to error – data entry and data verification
- ▶ Build manual tests that are clear, concise and easy for the tester to follow



The image shows a blurred spreadsheet with several rows of data. The values are positive numbers, likely representing currency or percentages. The visible values are:

	+2.000
	+5.000
	+1.500
	+1.125
	+1.062



# Challenge 3: Resistant to Change

## ■ Challenge

- ▶ Each project has diverse processes, tester skill sets and types of applications and devices under test

## ■ Resolution

- ▶ Provide a solution that testers of all skills levels can leverage
- ▶ Customize the tool to fit each project's process metrics and values
- ▶ Leverage a solution that is independent of the software or hardware under test

For all skill levels

For any process

For any target of

test



# Agenda

- **The Current State of Manual Testing**
  - ▶ Challenges of Manual Testing
  - ▶ Rational Manual Tester
- Functional Testing
- What's new, what's cool?





# Transform Manual Testing with IBM Rational Manual Tester

## *From ad-hoc testing to controlled and efficient testing*

- Support analysts, subject-matter experts and professional testers
- Develop detailed, easy to follow manual tests
- Minimize test maintenance and ensure test consistency
- Reduce human error during data entry and data verification
- Support diverse usage models and processes
- Built on open source Eclipse architectural framework and TPTP (Test and Performance Tools Platform)

**Analysts**



**Technical &  
non-  
technical  
Testers**

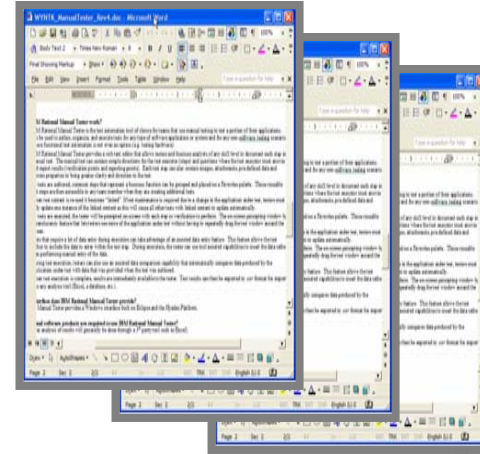


# Leverage Existing Test Documents

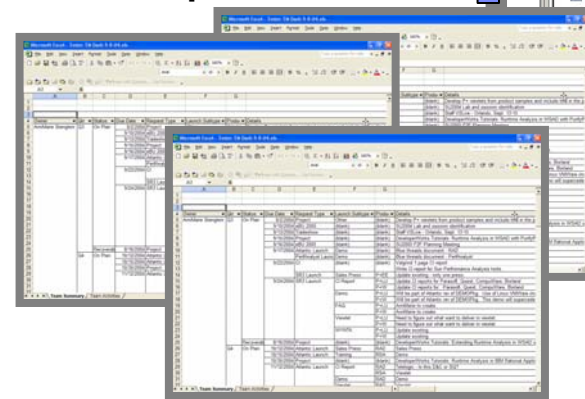
## *Import from Word or Excel*

- ▶ Jump-start adoption of Rational Manual Tester by leveraging existing assets
- ▶ Bulk import manual tests documented in Word or Excel

### Microsoft Word documents



### Microsoft Excel spreadsheets



### Rational Manual Tester test

Start the Classics application.  
 Expand the **Composers** folder.  
 Select **Symphonies 94 & 98**.  
 Click on the **Place Order** button.  
 Login  
     Select the user **Bob Smith**.  
     Enter the password 123456.  
     Select the Region **North America**.  
     Click the **OK** button.  
 Enter the card number 5523 4567 7665 1234  
 Select **Visa Card Type**.  
 Enter the Expiration Date 11/06.  
 Does the customer data should display exactly below?

Trent Culpito
75 Wall St 22nd Fl
NY, NY 12212
212-552-1867



# Create Robust, Easy to Follow Tests

## *Rich text editor*

- ▶ Provides a rich text editing to document clear, easy to understand tests
- ▶ Allows embedding of images or attach files to add clarity and detail
- ▶ Uses granular and broad verification points to capture both detailed observations and higher level test results

## Manual Test document

OrderCD.rmt

- Start the Classics application.
- Expand the **Composers** folder.
- Select **Symphonies 94 & 98**.
- Click on the **Place Order** button.
- Login
  - Select the user **Bob Smith**.
  - Enter the password 123456.
  - Select the Region **North America**.
  - Click the **OK** button.
- Enter the card number 5523 4567 7665 1234
- Select **Visa** Card Type.
- Expiration Date 11/06.
- Does the right data appear?
 

Trent Culpito
75 Wall St 22nd Fl
NY, NY 12212
212-552-1867

# Assisted Data Entry and Data Verification

## *Reduces human error*

- ▶ Store critical data used during the test as part of the test instructions

### Test execution window

The screenshot shows the 'Manual Test - IBM Rational' application window. The 'Execution' pane on the left lists several test steps. The step 'Is the right symphony in the field?' is currently selected and highlighted in blue. To the right of the execution pane is a 'Result' field containing a dropdown menu with the word 'pass' selected. On the far right, a 'Properties' window is open, displaying a table with two columns: 'Property' and 'Value'. The table contains several rows, with the 'Paste Data' property highlighted in black, showing the value '1234 5678 4567 2386'.

Property	Value
Attachments	
Compare ...	
Description ...	Place the cursor in ...
Execution ...	
Execution ...	
Name	Enter the credit car
Paste Data	1234 5678 4567 2386
Type	Step

# Assisted Data Entry and Data Verification

## *Reduces human error*

- ▶ Store critical data used during the test as part of the test instructions
- ▶ Automate data entry during test execution to speed entry and reduce errors

### Test execution window

The screenshot shows the 'Manual Test - IBM Rational' application window. The 'Execution' pane on the left lists several test steps, with the last one highlighted: 'Place the cursor in the Credit Card # field and type Ctrl V to paste in the card number'. The 'Result' pane shows a 'pass' status. The 'Properties' table on the right contains the following data:

Property	Value
Attachments	
Compare ...	
Description	Place the cursor in ...
Execution ...	
Execution ...	
Name	Enter the credit ca...
Paste Data	1234 5678 4567 2386
Type	Step

### Application under test

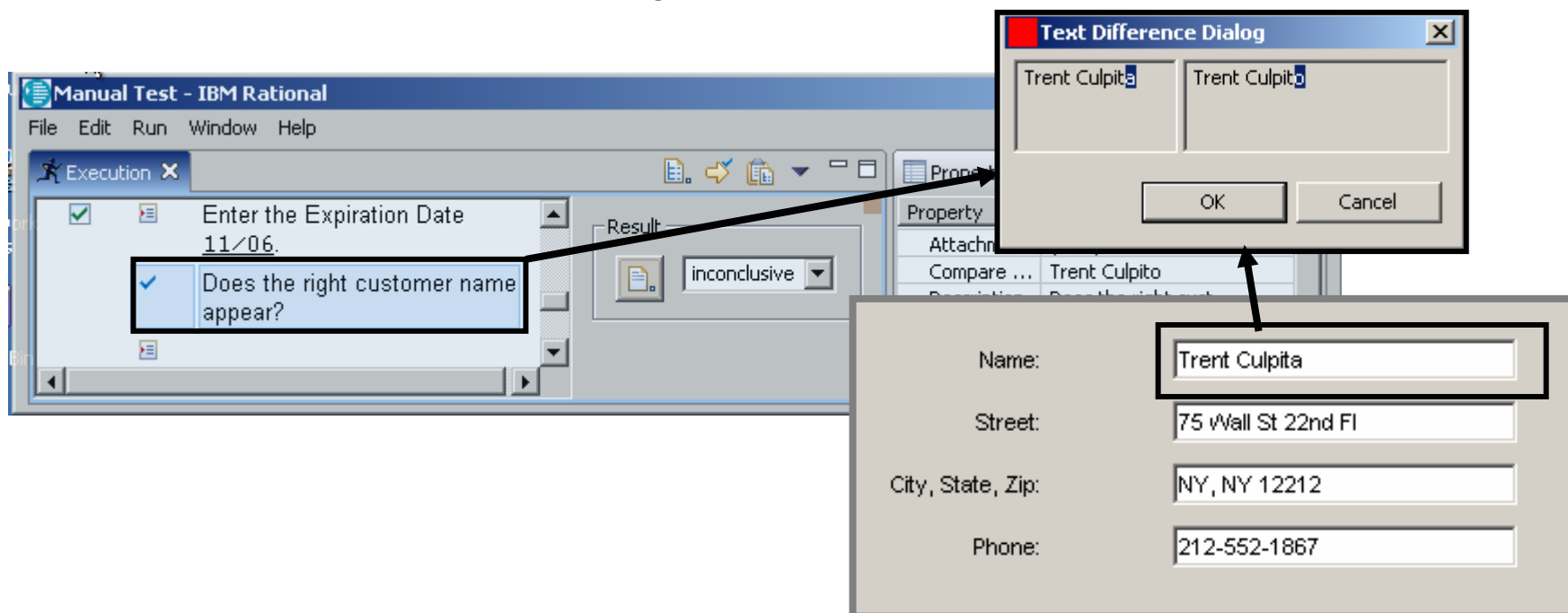
The screenshot shows a web application form. A blue arrow points from the 'Paste Data' property in the test window to the credit card number input field. The form contains the following fields:

- Card number: 1234 5678 4567 2386
- Card type: Visa
- Expiration Date: [empty]
- Name: Trent Culpito
- Street: 75 Wall St 22nd Fl
- City, State, Zip: NY, NY 12212
- Phone: 212-552-1867

# Assisted Data Entry and Data Verification

## *Reduces human error*

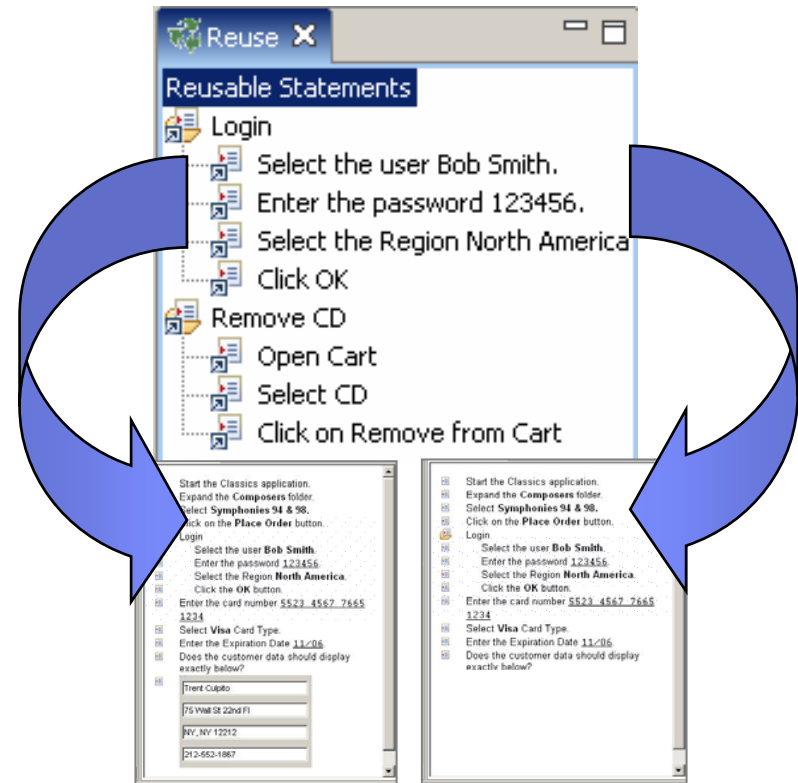
- ▶ Store critical data used during the test as part of the test instructions
- ▶ Automate data entry during test execution to speed entry and reduce errors
- ▶ Automate data validation during test execution to ensure accurate results



# Enables Shared Content Across Multiple Tests

*Reduces test maintenance and ensure consistency*

- ▶ Create commonly used test statements once
- ▶ Reuse statements across multiple tests through simple drag and drop
- ▶ Maintenance of shared content is efficient with single-point updating of shared content
- ▶ Ensures consistency and reduces test maintenance



# On-Screen Prompted Test Execution

## *Immediate and accurate results collection*

- ▶ On-screen prompting of test steps
- ▶ Immediately record test results and attach images or files for clarity
- ▶ Tool will assist with data entry and data verification
- ▶ Results recorded in permanent log

The screenshot shows the 'Manual Test - IBM Rational' application window. The main area displays a list of test steps under the 'Execution' tab. The steps are:

- Click OK button
- Place cursor in second Item field and highlight the symphony and press Ctrl C then the Compare Data button
- Is the right symphony in the field? (marked with a checkmark and 'pass')
- Complete the order process
- Place the cursor in the Credit Card # field and type Ctrl V to paste in the card number
- Enter an expiration date greater than 1/2006

To the right of the steps is a 'Result' field containing a document icon and the text 'pass'. Below the steps is a 'Properties' table:

Property	Value
Attachments	
Compare ...	
Description	Place the cursor in ...
Execution ...	
Execution ...	
Name	Enter the credit car...
Paste Data	1234 5678 4567 2386
Type	Step



# Summarizing Key Features in Manual Tester

- **Advances manual testing**
  - ▶ Rich text editor for test authoring
  - ▶ Test step reuse palette
  - ▶ Test script import from Microsoft Word or Excel
  
- **Satisfies diverse needs**
  - ▶ Supports usage by distributed teams
  - ▶ Generates spreadsheet-ready results data
  - ▶ Multiple validation points
  - ▶ Custom data fields
  
- **Simplifies through assistance**
  - ▶ Assisted data entry and data verification during test execution

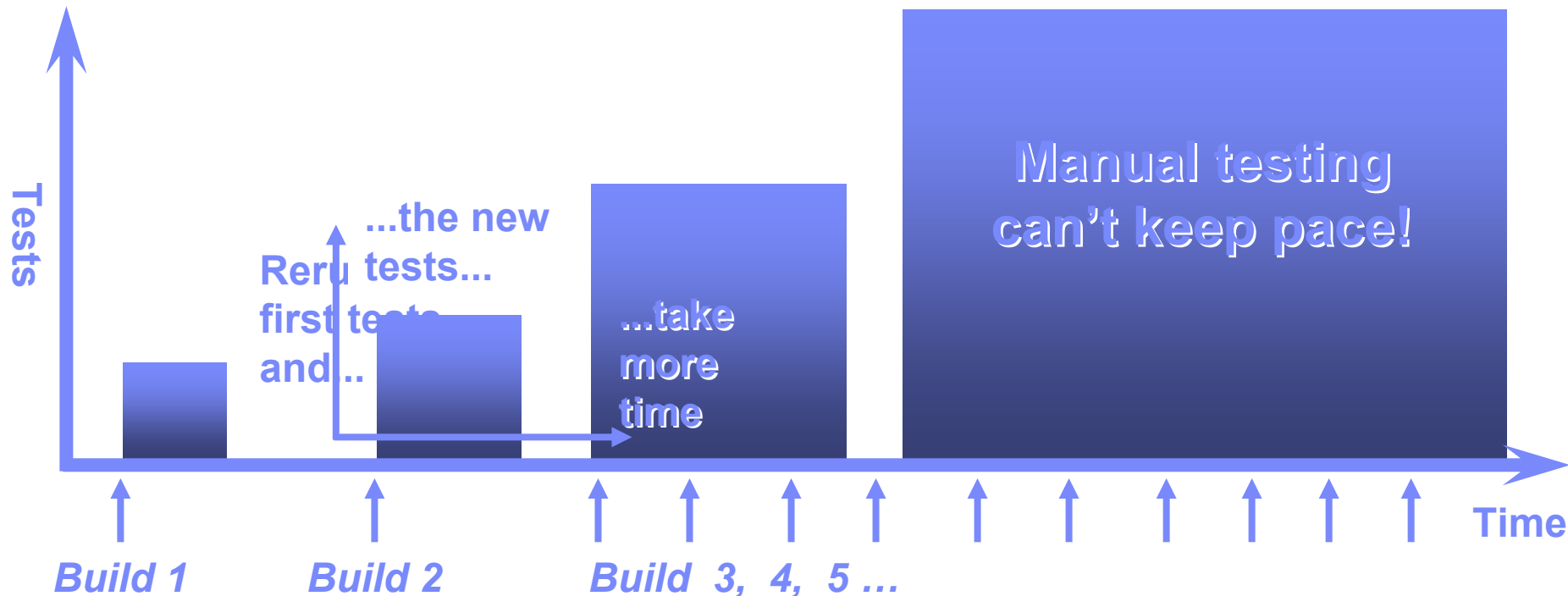


# Agenda

- The Current State of Manual Testing
- **Functional Testing**
  - ▶ Challenges of Functional Testing
  - ▶ Rational Functional Tester
- What's new, what's cool?



# Challenge of Manual Testing with Short Test Cycles



- Manual testing alone can't keep pace with the rapid development of applications
  - ▶ Quality will be sacrificed to keep on schedule
- Automation will help reduce costs



# Challenge 1: Controlling the cost of Automation

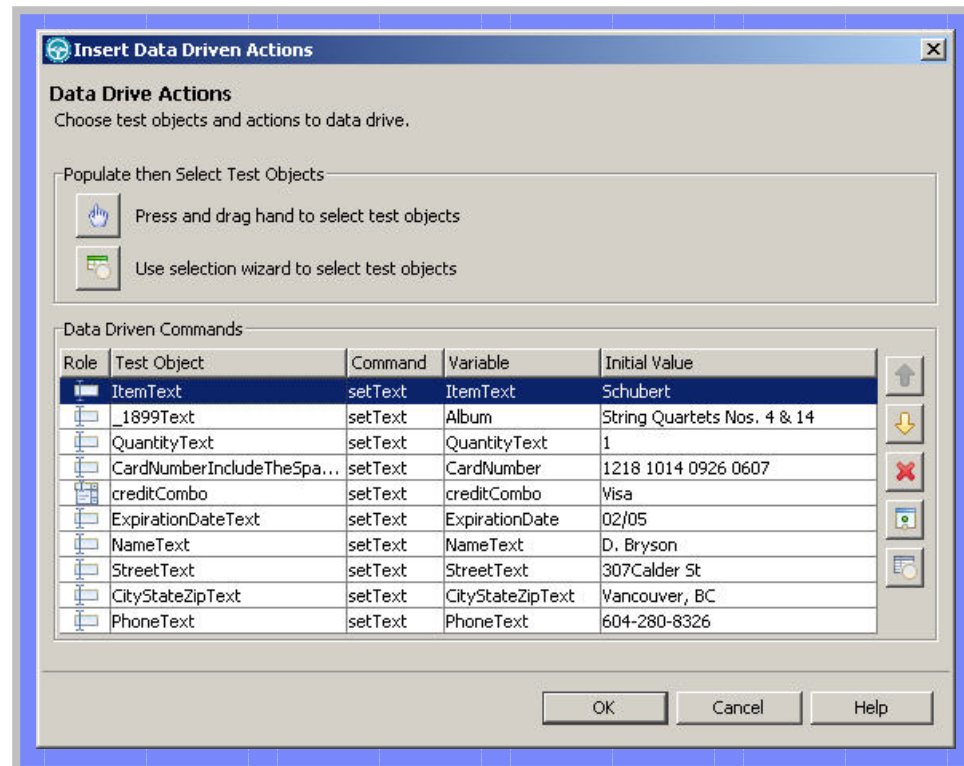


## Challenge

- ▶ Overcome the complexity of test automation to ensure teams spend more time on high value quality assessment rather than on low return test maintenance.

## Resolution

- ▶ Provide technologies to enable novice testers to craft complex tests with no programming
  - Data driven wizard
  - Dynamic data verification
- ▶ Reduce script maintenance
  - Wizard driven global updates to centralized object map



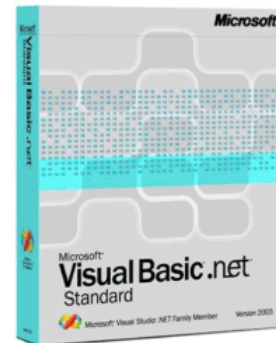
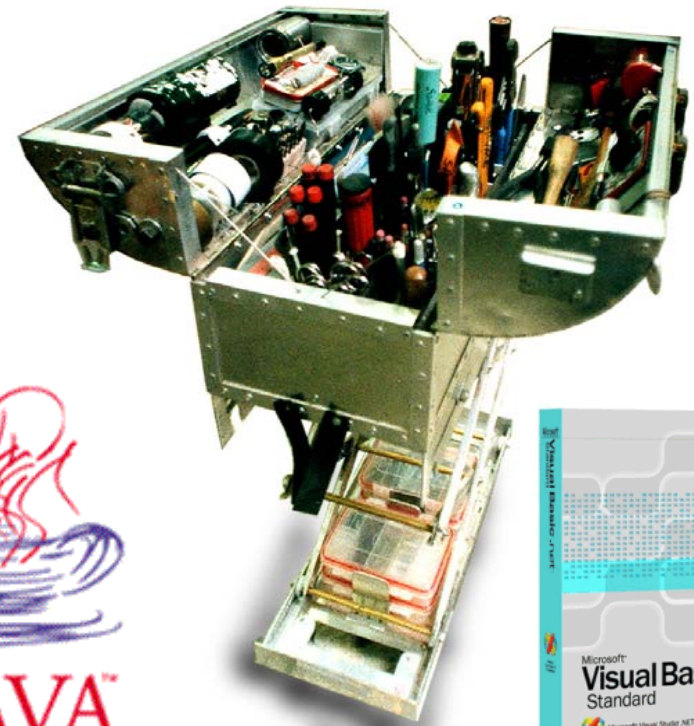
## Challenge 2: Tools Lack Flexibility

### ■ Challenge

- ▶ Fulfill both standard test needs as well as expert requirements to ensure usage limited only by the imagination of the project team.

### ■ Resolution

- ▶ Provide two test script development languages
  - Java
  - Visual Basic .NET
- ▶ Give professional testers the flexibility to overcome testing challenges in the language of their choice



## Challenge 3: Test Team Integration

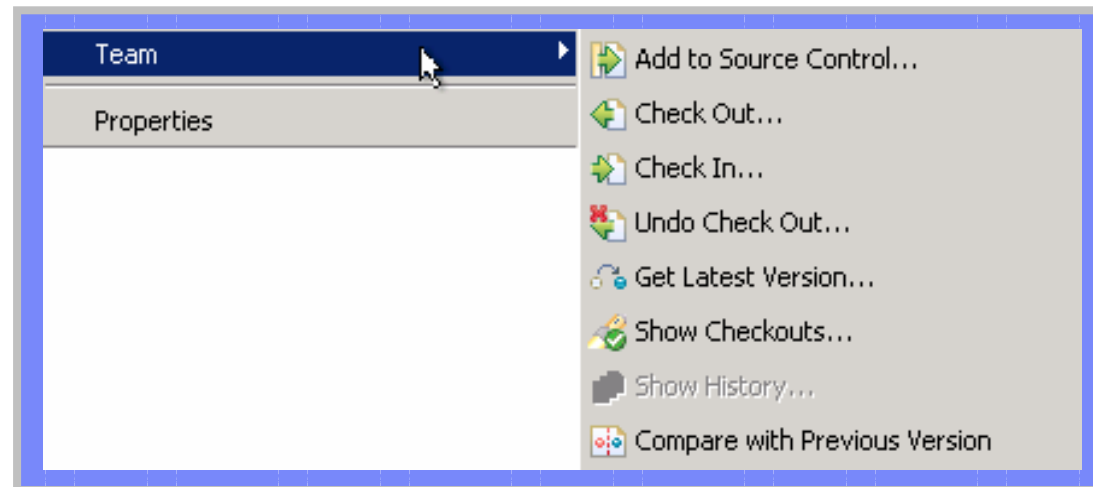
### ■ Challenge

- ▶ Accommodate the requirements of both dedicated, independent QA teams as well as integrated project teams to ensure high operational integrity.



### ■ Resolution

- ▶ Provide version control support in the box with ClearCase LT
- ▶ Provide integrations for standard version control features
  - Check In/Out
  - Compare with Previous Versions
  - Show change history



# Agenda

- The Current State of Manual Testing
- **Functional Testing**
  - ▶ Challenges of Functional Testing
  - ▶ [Rational Functional Tester](#)
- What's new, what's cool?



# Functional Testing with IBM Rational Functional Tester

*Test automation for the novice and the professional*



- **IBM Rational Functional Tester**
  - ▶ Automated regression testing for Web, J2EE, .Net, Terminal, Siebel SAP and mySAP applications
- **Key Benefits**
  - ▶ Minimize test maintenance with scripts resilient to application changes
  - ▶ Wizard enhanced automation to speed test creation for the new user
  - ▶ Powerful scripting language and IDE for the professional tester
  - ▶ Supports Team oriented parallel development





# What is Automated Testing?

- Using automation tools to record actions taken against an application.
- Test scripts are derived from these recordings which are then used for subsequent test execution.



Record

Enhance

Execute



# Effective Test Automation

*Creating an automated test is a three steps process*



## Record

- Script Recording
  - ▶ Capture user interactions with the system under test

# Effective Test Automation

*Creating an automated test is a three steps process*



## Record

## Enhance

- Script Recording
  - ▶ Capture user interactions with the system under test
- Script Enhancing
  - ▶ Modify scripts for situation specific challenges

# Effective Test Automation

*Creating an automated test is a three steps process*



## Record

## Enhance

## Execute

- Script Recording
  - ▶ Capture user interactions with the system under test
- Script Enhancing
  - ▶ Modify scripts for situation specific challenges
- Script Execution
  - ▶ Ensure reliable playback for local or remote execution



# Effective Test Automation

## *Recording Scripts*

- Create a Test Script that captures system-user interaction
  - ▶ Test scripts are recorded on the fly as user navigates application
  - ▶ Verification points are inserted to validate system response
- Key considerations when recording scripts
  - ▶ Broad environment support
  - ▶ Create data driven tests without coding
  - ▶ Static data and properties verification
  - ▶ Dynamic data validation without coding
  - ▶ What can't or shouldn't be automated?



# Recording Scripts

## *Environment Support*

- IBM Rational Functional Tester supports the following environments
  - ▶ Web
  - ▶ Java
  - ▶ Any VS.NET application running under the .NET Framework
  - ▶ Siebel Applications
  - ▶ SAP applications
  - ▶ Infragistics controls (available soon)
  
- Terminal Emulation
  - ▶ Add-on support for 3270/5250 terminal-based applications



# Recording Scripts

## Data Driven Testing

### ■ Data Driven Testing

- ▶ Separates test data from test script
- ▶ Enables a single script to run multiple tests by using multiple data sets

### ■ Wizard driven process

- ▶ No programming involved
- ▶ Import data from external sources

Place an Order

Item: Schubert Sub-Total: \$18.99

String Quartets Nos. 4 & 14 Related Items: \$0.00

Quantity: 1 S&H: \$1.00

**Total: \$19.99**

Card Number (include the spaces): 1218 1014 0926 0607

Card Type: Visa Expiration Date: 02/05

Name: D. Bryson

Street: 307 Calder St

City, State, Zip: Vancouver, BC

Related Item

Insert Data Driven Actions

**Data Drive Actions**  
Choose test objects and actions to data drive.

Populate then Select Test Objects

- Press and drag hand to select test objects
- Use selection wizard to select test objects

Data Driven Commands

Role	Test Object	Command	Variable	Initial Value
ItemText	ItemText	setText	ItemText	Schubert
_1899Text	_1899Text	setText	Album	String Quartets Nos. 4 & 14
QuantityText	QuantityText	setText	QuantityText	1
CardNumberIncludeTheSpa...	CardNumberIncludeTheSpa...	setText	CardNumber	1218 1014 0926 0607
creditCombo	creditCombo	setText	creditCombo	Visa
ExpirationDateText	ExpirationDateText	setText	ExpirationDate	02/05
NameText	NameText	setText	NameText	D. Bryson
StreetText	StreetText	setText	StreetText	307 Calder St
CityStateZipText	CityStateZipText	setText	CityStateZipText	Vancouver, BC
PhoneText	PhoneText	setText	PhoneText	604-280-8326

OK Cancel Help



# Recording Scripts

## Verification Points

Software
Trials and betas
Support
Training and certification
Library
Events
News



Functional Tester  
Sees Data

Property	Value
.bounds	Rect[84,100,787,809]
.class	Html.HtmlDocument
.cookie	IBMSurveyTest=isEnabled
.offsetHeight	809
.offsetWidth	787
.text	IBM Rational Software Home
.title	IBM Rational Software
.url	Href(http://www.ibm.com/software/rational/)

You See...

Functional Tester  
Sees Properties

### ■ Automated Validation

- ▶ Functional Tester captures data and properties that can be invisible to users
- ▶ During script execution, current results are compared to stored baselines
- ▶ Discrepancies are flagged and reported to user in an HTML based test log





# Recording Scripts

## Validating Dynamic Data

The screenshot shows the ClassicsCD.com website with a confirmation message: "CD Order Placed" and "Your order has been placed. For future reference, your order ID is 230 for shopping at ClassicsCD.com!". Navigation links include "Catalog Go", "Shopping Cart Go", "Cashier Go", and "Order Status Go".

A diagram illustrates the validation process. A blue box contains the text "Order ID changes with each order placed". Green arrows point from this box to a series of green boxes, each containing "###", representing a pattern that matches any three-digit order ID. A green box on the right contains the text "Test Passes when comparing pattern baseline to dynamic data".

### Dynamic Data/Content Matching

- ▶ Use pattern matching technique to verify dynamic data and create robust tests
- ▶ E.g. Instead of validating "Order ID 230", validate "Order ID ###" or Order ID 2##, etc.
- ▶ This allows for a wide variety of acceptable responses as well as restrictions on acceptable responses when validating the application's behavior



# Effective Test Automation

## *Enhancing Scripts*

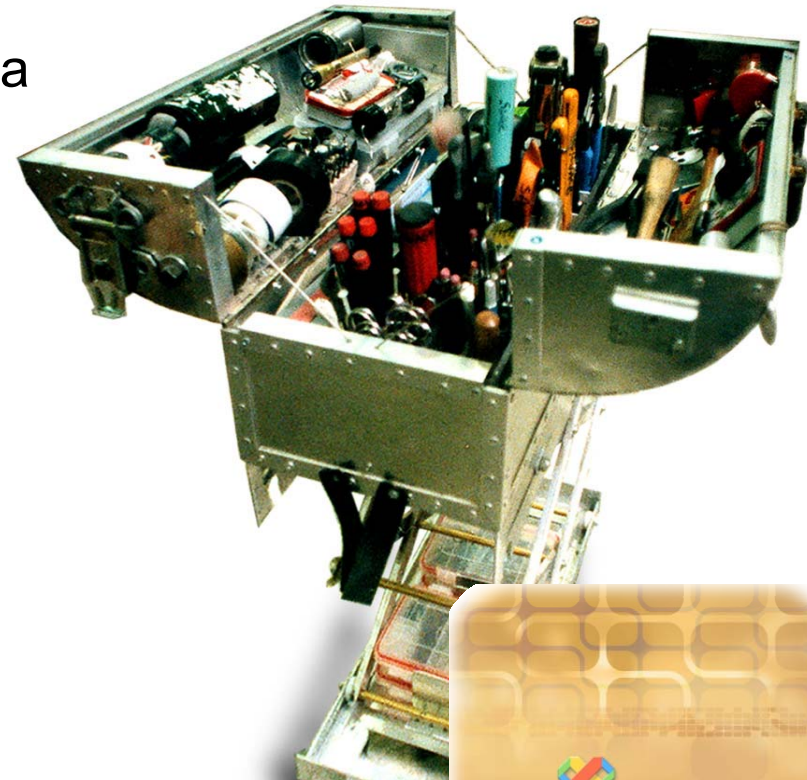
- Enhancing Scripts with basic coding extends their value and reach
  - ▶ VB.net or Java code is added to perform a variety of functions
  - ▶ Typical Modifications: Conditional branching, datapooling, refactoring
- Key considerations when enhancing scripts
  - ▶ Flexible coding language
  - ▶ Powerful, professional debugger
  - ▶ Object map editing flexibility
  - ▶ Version control of scripts



# Enhancing Scripts

## *Flexible Coding Language*

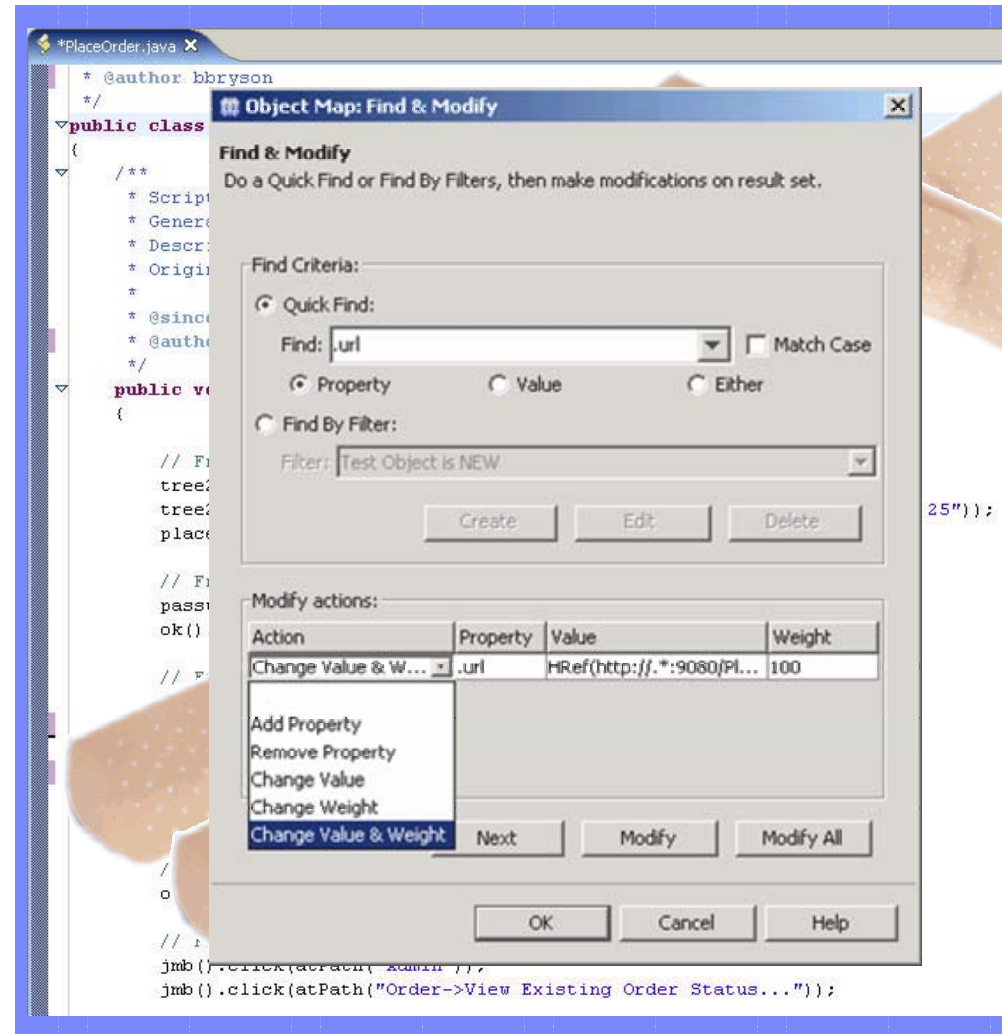
- IBM Rational Functional Tester uses Java or VB.net for scripting
  - ▶ Standard language syntax
    - Not a custom version of Java or VB.net
  - ▶ Augments language commands with test specific functions
    - Click, Verify, Select, etc...
- Flexible power to enhance scripts
  - ▶ Programmatic access to all GUI objects
  - ▶ Datapool facility enables data driven tests
  - ▶ Leverage existing code and resources from a variety of sources
    - Books, Internet, developerWorks, etc...



# Enhancing Scripts

## *Object map editing flexibility*

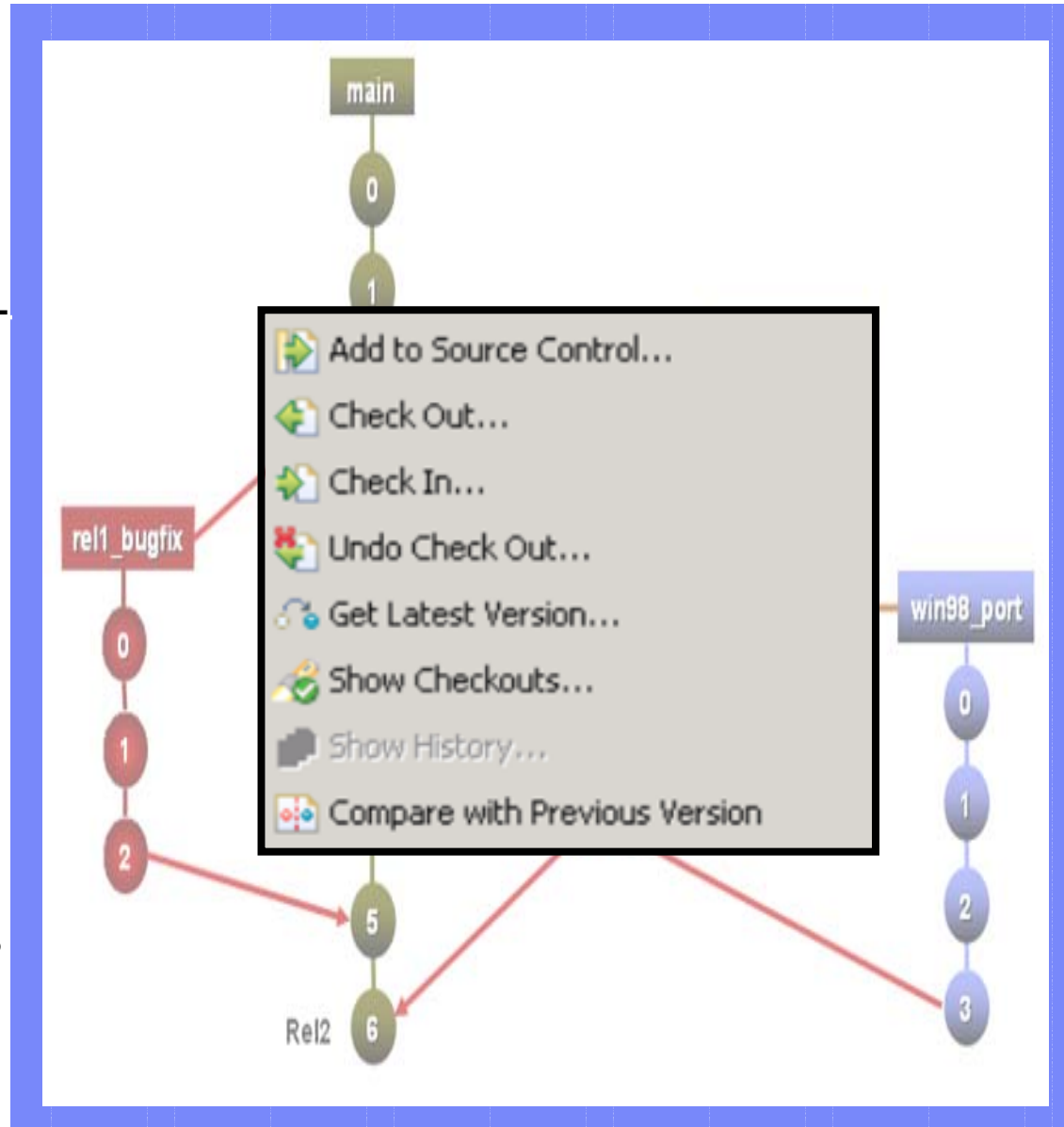
- Script Maintenance can outpace script development as the volume of tests grows
- Functional Tester includes an Object Map update tool which enables batch updates to a centralized object map
  - ▶ Reduces time spent fixing individual scripts
  - ▶ Frees up more time for script development



# Enhancing Scripts

## *Version Control of Scripts*

- Functional Tester includes ClearCase LT for test script version control
- ClearCase LT enables parallel script development
  - ▶ Work simultaneously on multiple releases
  - ▶ Coordinated workflows across the team
  - ▶ Secure, versioned software test assets



# Effective Test Automation

## *Executing Tests*

- Scripts are executed, discrepancies are noted
  - ▶ Scripts are executed and test logs created
  - ▶ Test logs are highlight differences between actual and expected results
  
- Key considerations when executing scripts
  - ▶ Reliable playback with ScriptAssure



# Reduce Test Script Maintenance

*Reliable Playback with Script Assure*

## Version 1.0

## Version 2.0

Account # / Log In ID


Click here to save your s

Customer Log On


**No User Intervention Required With ScriptAssure™**

Property	Value
.class	Html
.classIndex	0
.id	button1
.name	userLogin
.type	submit
.value	Log in

Value
Html.INPUT
x 0
button1
userLogin
submit
Log On



# Agenda

- The Current State of Manual Testing
- **Functional Testing**
  - ▶ Challenges of Functional Testing
  - ▶ Rational Functional Tester
- What's new, what's cool?





# What are our customers telling us?

- **I need help automating my manual tests**
- **Our tools are too complex**
- **Our tools are not extensible**
- **Additional control & domain support**



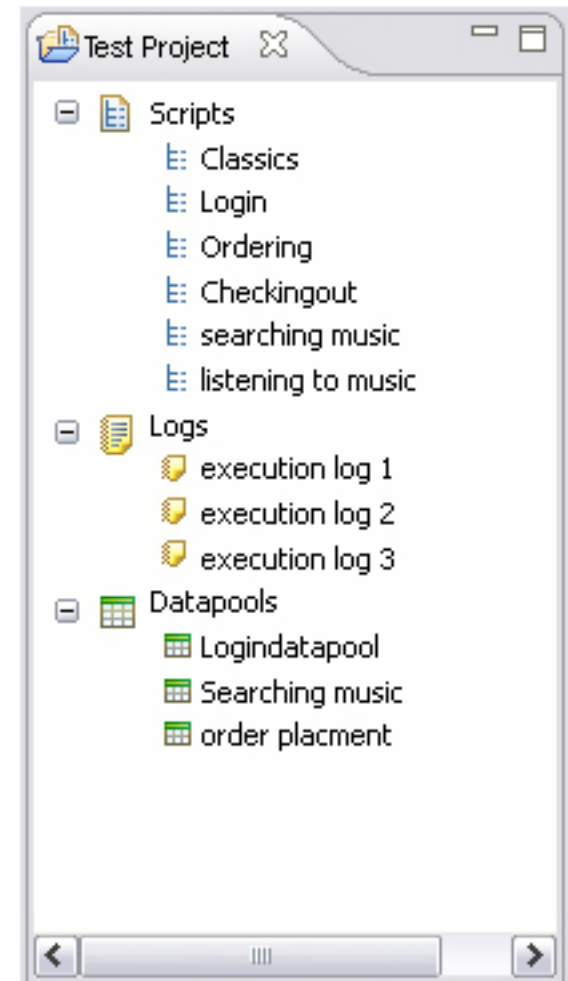
# What's new in RMT 7.0.1?

- **Improvements to the editor**
  - ▶ Improved control of fonts and styles
  - ▶ Spell check and auto-complete (tentative)
- **Project based development**
  - ▶ RMT inheriting the project concept similar to other desktop products
- **Datapool support for RMT**
  - ▶ Datapool can be shared between RMT and RFT
- **Automation of manual statements**
  - ▶ Keyword testing integration with RFT



# RMT Updates

- Projects
  - ▶ The project will be a logical grouping of Manual and Functional test scripts
  - ▶ Users that desire the keyword capabilities will be required to utilize the new project concepts



# RMT Updates

## ▪ Datapools

- ▶ Users will be able to associate a datapool to a manual test script in RMT
- ▶ RMT scripts will be able to associate variables (datapool rows) to a script and upon execution the datapool is traversed.
- ▶ Parameterized Data easily visualized in the RMT Scripts

	Password::Co...	UserName::String
0	Mark	Victory
1	Frank	McGrath
2		

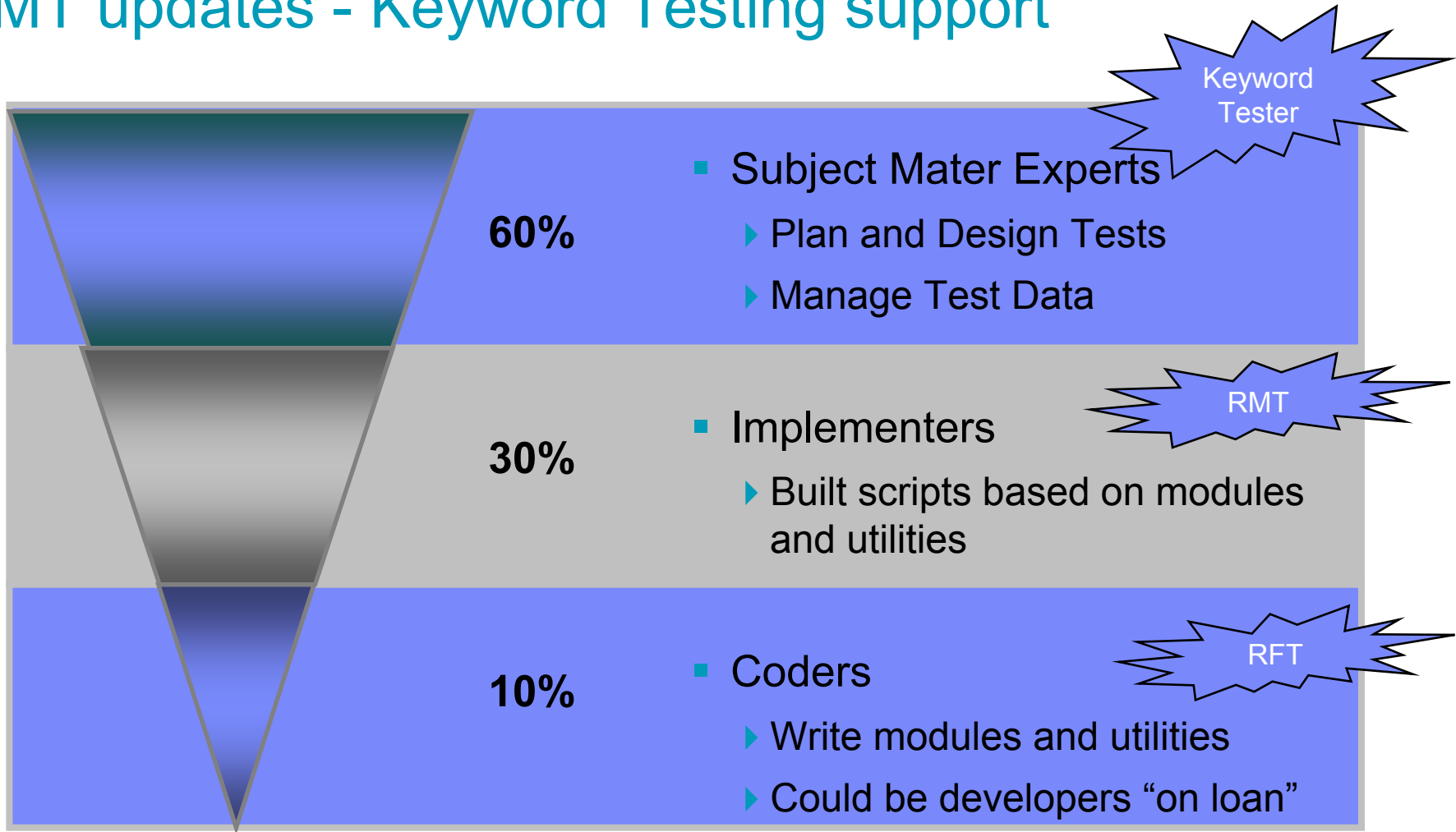
The screenshot shows a test script editor window titled 'Classics.rmt' with a 'Login' tab. The script contains the following steps:

- Start the Classics Java application.
- Did the ClassicsCD window open?
- Expand the Bach folder.
- Under Bach click Violin Concertos.
- Click the Place Order button.
- Did the Member Logon dialog box open?
- Log In As Existing Customer.
  - Make sure Existing Customer is selected.
  - Make sure *Full Name* appears in the Full Name list.
  - In the Password field Lorem
  - Click OK.
- Was the order placed Lorem
- In the Card Number field Lorem Order dialog box type *Card Number*
- In the Expiration Date field Lorem *on Date*
- Click the Place Order button
- Was the Message Box Lorem states your order has been received?
- Click OK to close the message box.

A context menu is open over the 'Log In As Existing Customer' step, showing the option 'Associate Datapool'.



# RMT updates - Keyword Testing support

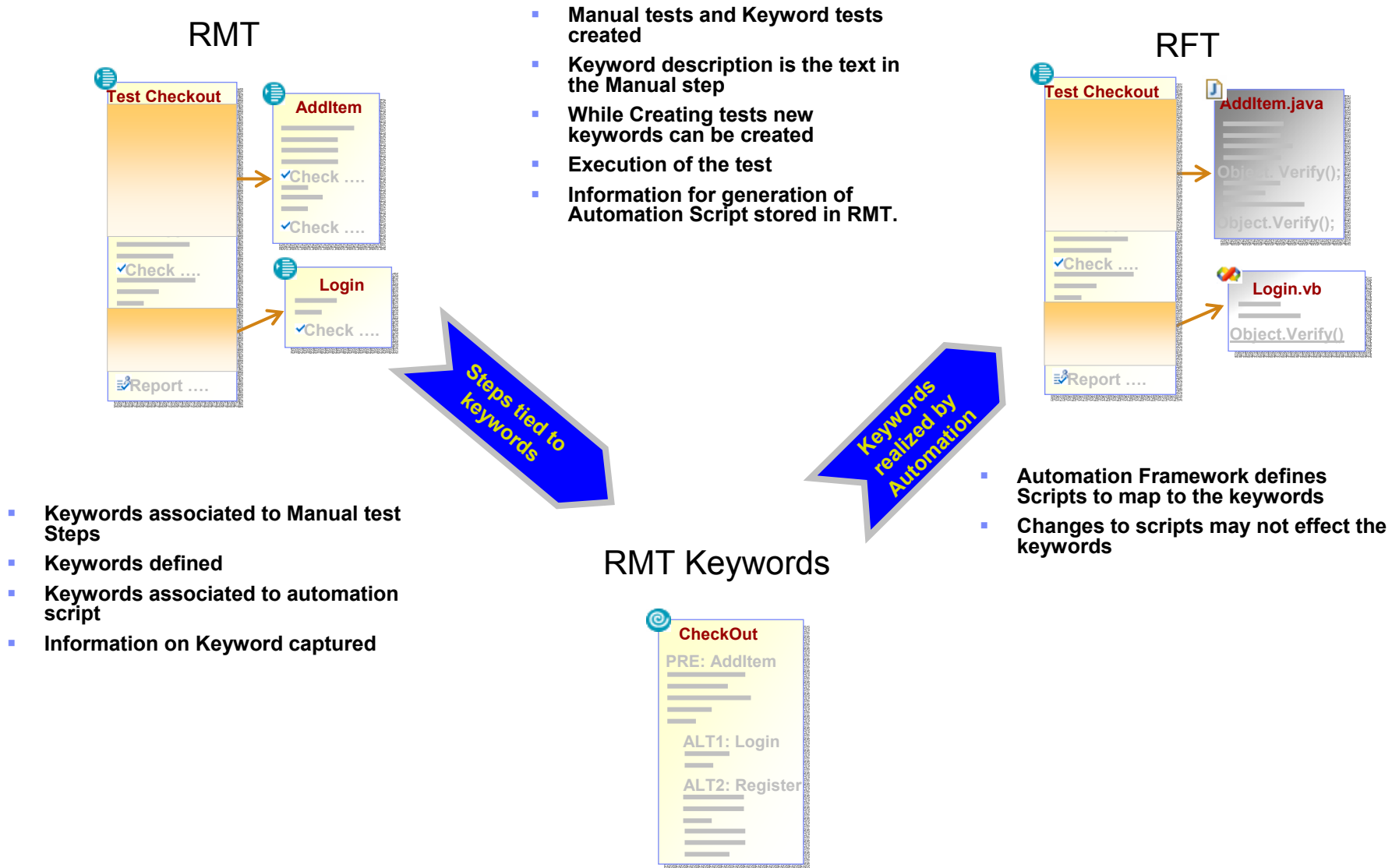


## Objectives for the Keyword tester support

- Ease of Use
- Keyword testing must enable testing earlier in the lifecycle.
- Keywords shall make manual testing faster and easier
  - ▶ Keywords can be used to construct manual test
  - ▶ Keywords are reusable components
- Keywords shall make test automation faster and easier
- Keywords should be defined by any user type
  - ▶ Keywords should be able to be defined and used at any time.
  - ▶ Keywords can be queried
- Leverage existing Technologies
  - ▶ Rational Manual Tester and Rational Functional Tester



# Three Pieces to the Solution



- Manual tests and Keyword tests created
- Keyword description is the text in the Manual step
- While Creating tests new keywords can be created
- Execution of the test
- Information for generation of Automation Script stored in RMT.

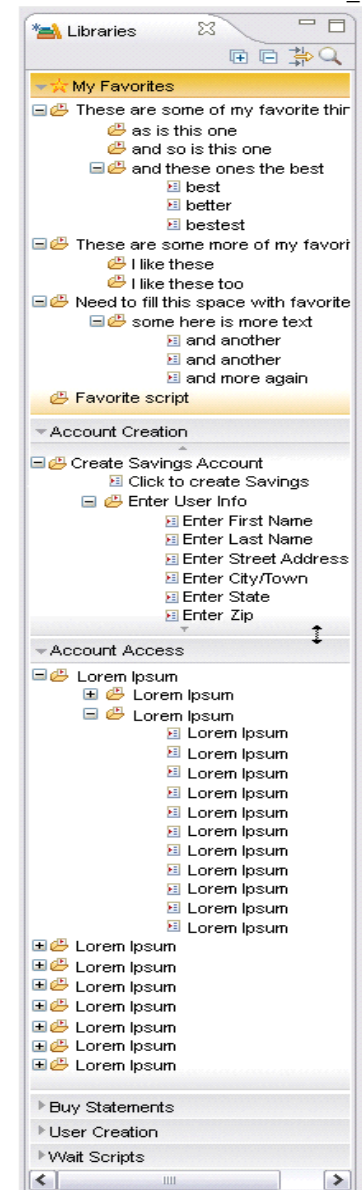
- Keywords associated to Manual test Steps
- Keywords defined
- Keywords associated to automation script
- Information on Keyword captured

- Automation Framework defines Scripts to map to the keywords
- Changes to scripts may not effect the keywords



# RMT Updates

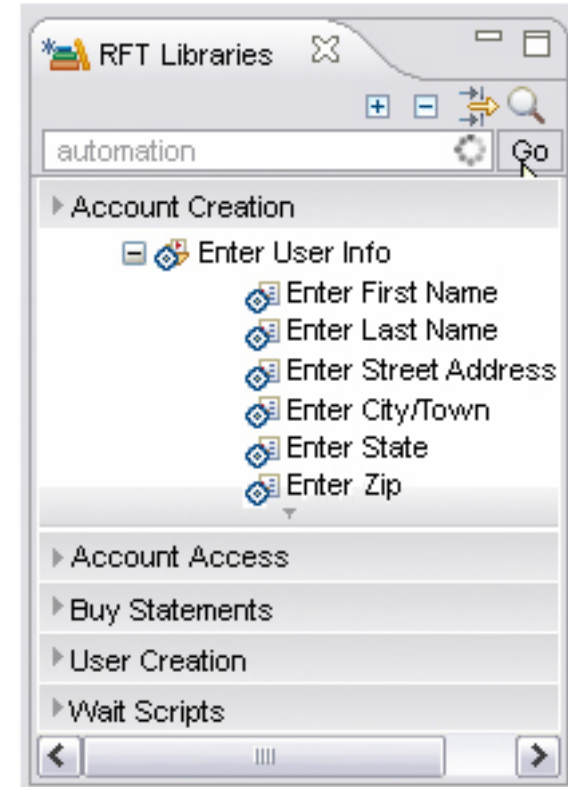
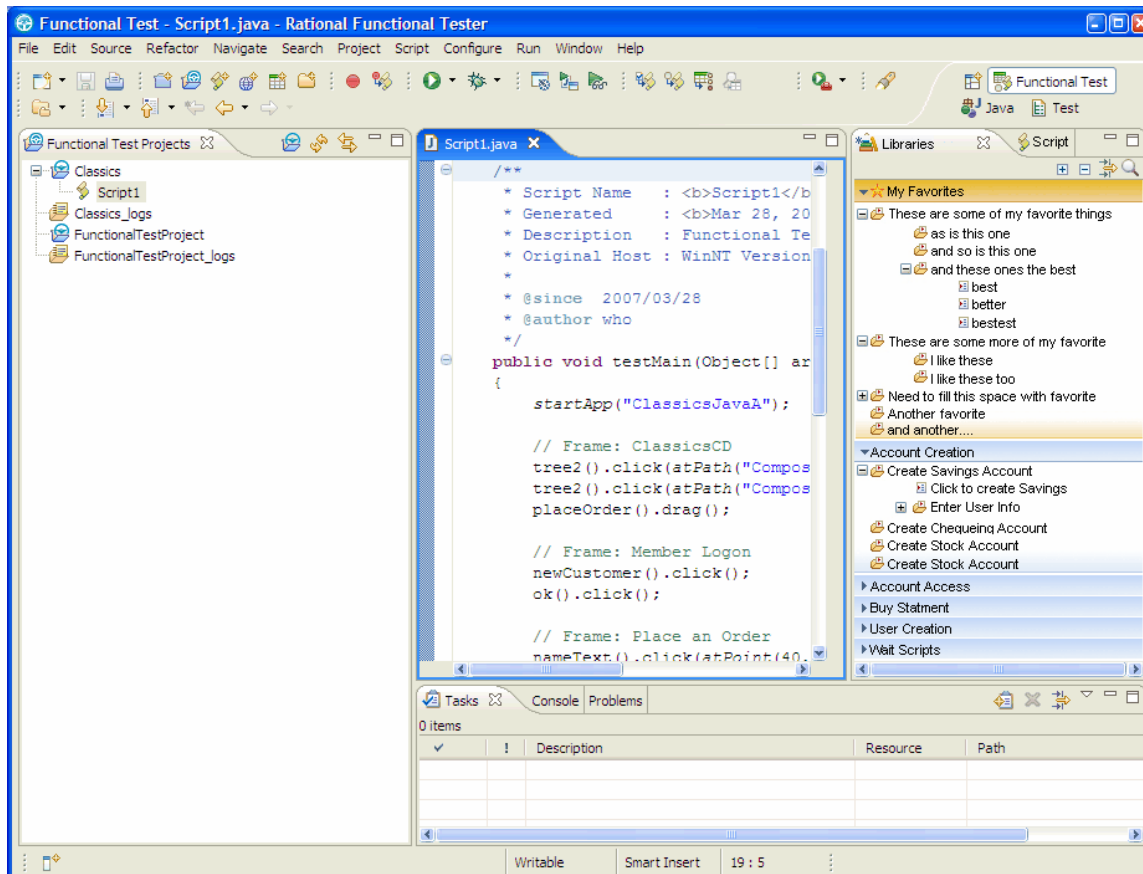
- Keywords as a type of reusable statements
  - ▶ Keyword is any RMT statement type
  - ▶ A statement can be reused across RMT scripts
- Statement Libraries
  - ▶ Reuse statements will be maintained in Libraries
  - ▶ Libraries are shared
  - ▶ Project can contain 1..m libraries
  - ▶ Used as a way to logically organize reuse statements





# RFT Updates

- Keyword Libraries Accessible in RFT
  - ▶ Able to create keywords
  - ▶ Associate Automation scripts to keywords

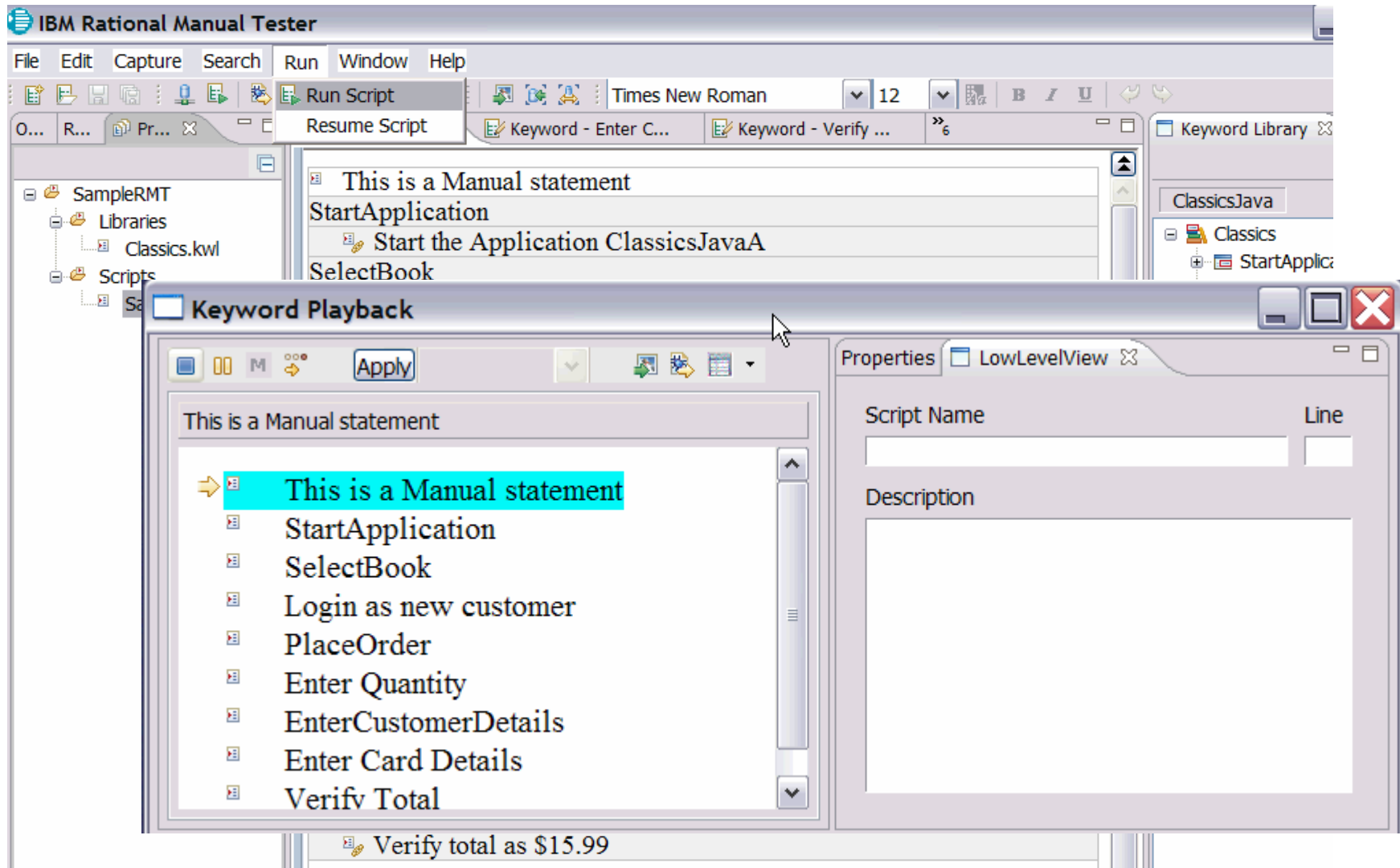


# RFT Updates

- Keyword Libraries Accessible in RFT
  - ▶ Able to create keywords
  - ▶ Associate Automation scripts to keywords



# Execution of keyword-enabled tests...



# What's is new in RFT?

- **7.0.0.1 (Jan 2007)**
  - ▶ IE 7.0 support, Firefox 2.0 support
  
- **7.0.0.2 (April 2007)**
  - ▶ Object Map Properties support
  - ▶ Object library support
  - ▶ .Net v2.0 controls
  - ▶ Vista support
  - ▶ Firefox 2.0 support for Linux
  - ▶ Ajax support
  - ▶ Eclipse 3.2 controls
  - ▶ Usability improvements
  - ▶ Improved Windows platform support - activeX, MFC



# What's coming?

## ■ 7.0.1

- ▶ Keyword Tester (Eclipse IDE)
- ▶ Proxy SDK (Java/Win domains)
- ▶ Infragistics control support
- ▶ Adobe controls - Flash, Flex (IE browser)
- ▶ Object library UI
- ▶ CCRC support – checkin/checkout
- ▶ Image verification/comparison feature
- ▶ XML logging
- ▶ Full Accessibility
- ▶ SAP certification



## Proxy SDK

RFT customers have been requesting a capability to:

- Enable Modifying or Enhancing a RFT supported controls
  - ▶ Add new data/properties verification test
  - ▶ Change the recording behavior
  - ▶ Modify the recognition properties – Object Library could do this as well!
  - ▶ Adding new "sub-item"
  - ▶ Add new methods to a supported control
  
- Enable Adding support for an unsupported control
  
- Enable Adding support for new Domain



## Proxy SDK is the answer

- API (Build / Runtime files) for proxy writing are already being shipped
- Documentation on “How to do?”
- Cleaning up of Internal APIs
- Deployable Sample proxy projects with control samples
  - ▶ with various difficulty levels of proxy writing challenges
- Lab exercises and Tutorials



## Developer Prerequisites for writing proxies

- Programming knowledge with Java or .NET (C#)
- Knowledge of the Control being supported
- Understanding of RFT Framework
- Understanding of existing Proxies and their Hierarchy
- Understanding of existing TestObjects and their Hierarchy





## Flex/Flash control support – example of writing a new proxy

- Increasingly Internet applications are becoming Rich
  - ▶ Expressiveness
  - ▶ Rich media integration
  - ▶ Performance/Responsiveness
  - ▶ Real time
- Web 2.0 technologies like AJAX are being used to develop Rich internet applications
- Adobe's Flex Development Environment is another platform which is being used to develop Rich internet applications
- Flex is one of the fastest growing platform for developing Rich internet applications

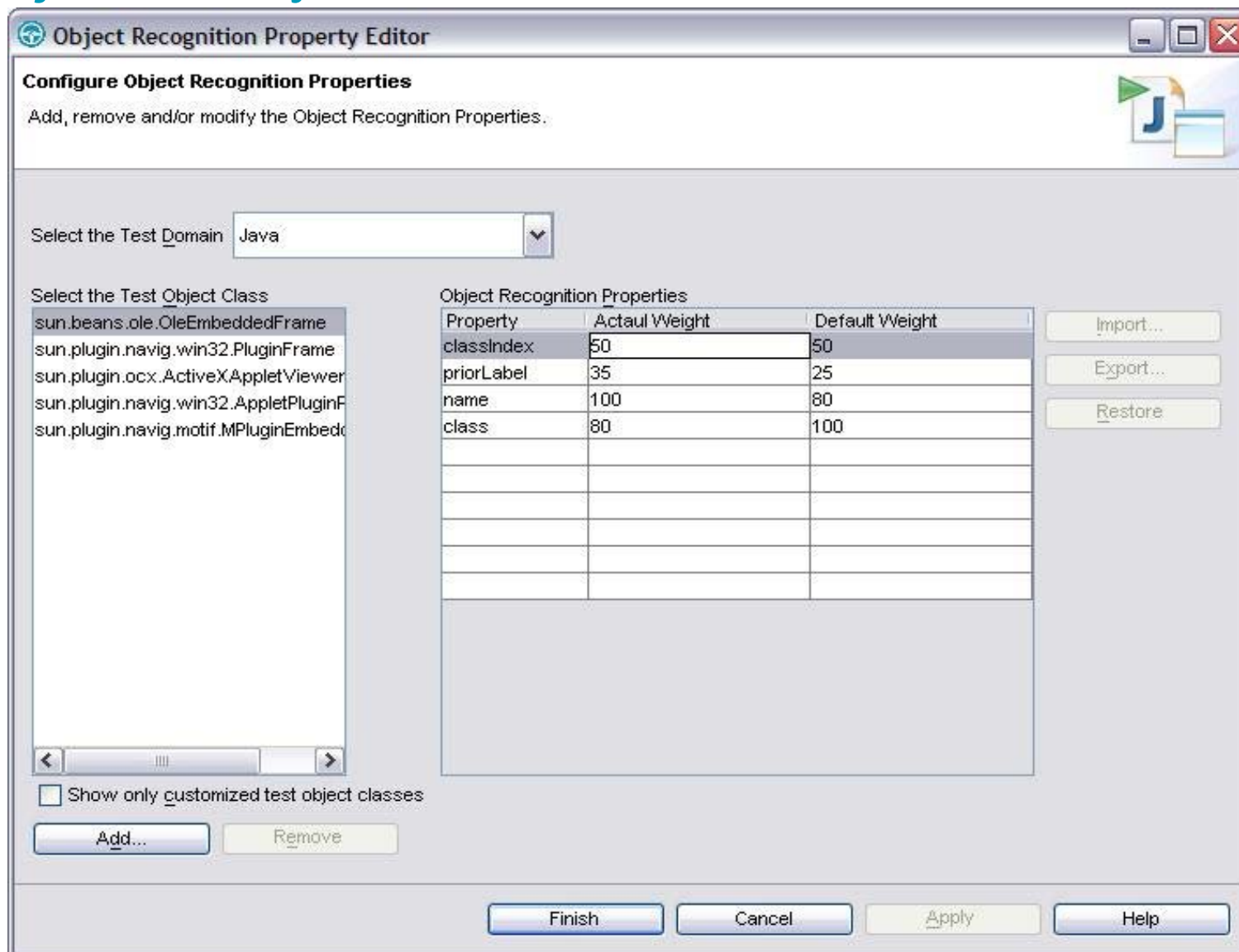


## Object library support

- Allows customers to customize object recognition properties for a class of objects
  - ▶ RFT proxy code defines the default recognition properties to be used by the recorder
  - ▶ This feature provides flexibility to change the recognition properties for that particular object.
  
- Example:
  - ▶ For “button”, **text** is a default property. But user can decide to use **name** instead. The RFT recorder will use the new property as the recognition property for any kind of button going forward
  
- Provides for more flexibility to users – improves robustness and reliability of scripts.
  
- In 7.0.0.2, customization done thru a configuration file. In 7.0.1, a UI is provided to make this easy



# Object library UI in 7.0.1



## Other key features in 7.0.1 release

- XML Logging
  - ▶ RFT provides already HTML & TPTP output logs today.
  - ▶ Now users can easily parse RFT logs
  - ▶ They can also extend to have the logs in the syntax they wish
  
- Image Comparator
  - ▶ Verification of images and text of images
  - ▶ Verification of controls that RFT doesn't support



# Questions





# Thank You

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