Progress Corticon Business Rules for Progress OpenEdge

Workshop

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PROGRESS EXCHANGE 2013
DISCOVER. DEVELOP. DELIVER.

Corticon Business Rules for OpenEdge Workshop

Your Hosts

- Chris Hogan
- Marv Stone
- Keith Brzozowsky
- David Atkins

Today's Goals

- Understand Corticon Business Rules
- Build an example Decision Service
- Integrate with an existing OpenEdge application
- Have Fun!

Agenda

Discuss Corticon & Business Rules	**15**	minutes
Corticon Studio Demonstration	**25**	minutes
Workshop Lab Overview	**5**	minutes
Lab Exercises	**120**	minutes
Wrap Up	**15**	minutes

About Corticon

Corticon enables organizations to make better, faster decisions by automating business rules

DECISIONS

SHOULD CREDIT BE EXTENDED?

Do not provide credit to delinquent accounts

HOW TO PLAN A SHIPMENT?

Hazardous materials must be shipped in double hull tankers

RULES

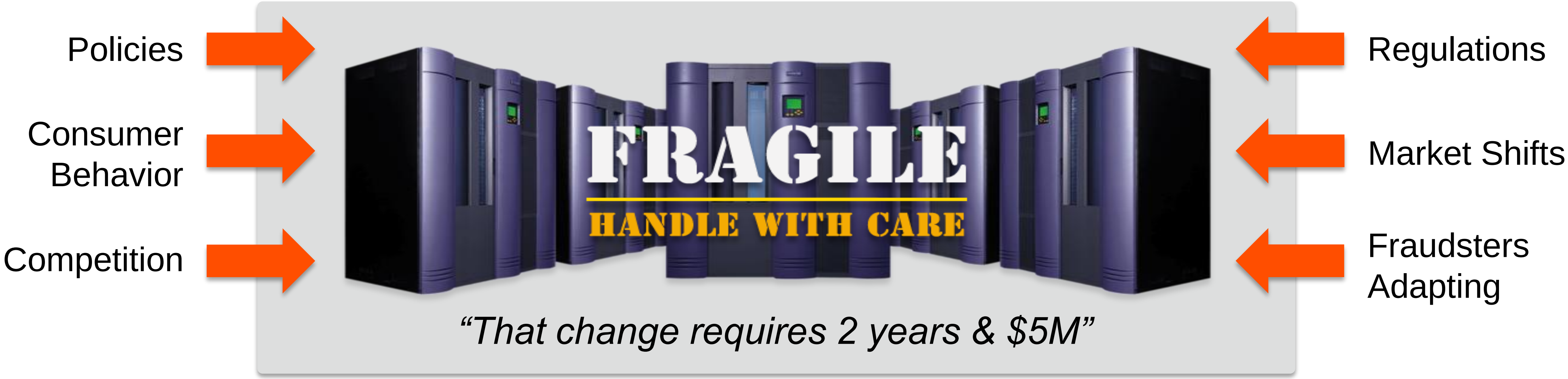
DECISIONS IN SECONDS, PREVENT LOSSES, INCREASE CUSTOMER SATISFACTION

AVOID DISASTROUS OIL SPILL, REDUCE COSTS

Automating Business Rules – The Problem

Traditional approach is programming-based

- Simple rules difficult to automate, sophisticated ones impossible
- Single change can impact hundreds of rules/processes



Policies

Consumer Behavior

Competition

Regulations

Market Shifts

Fraudsters Adapting

“That change requires 2 years & $5M”

There Is a Better Way…

Corticon Difference

Model-Driven
Rule Management

Guaranteed
Rule Integrity

Performance &
Scalability

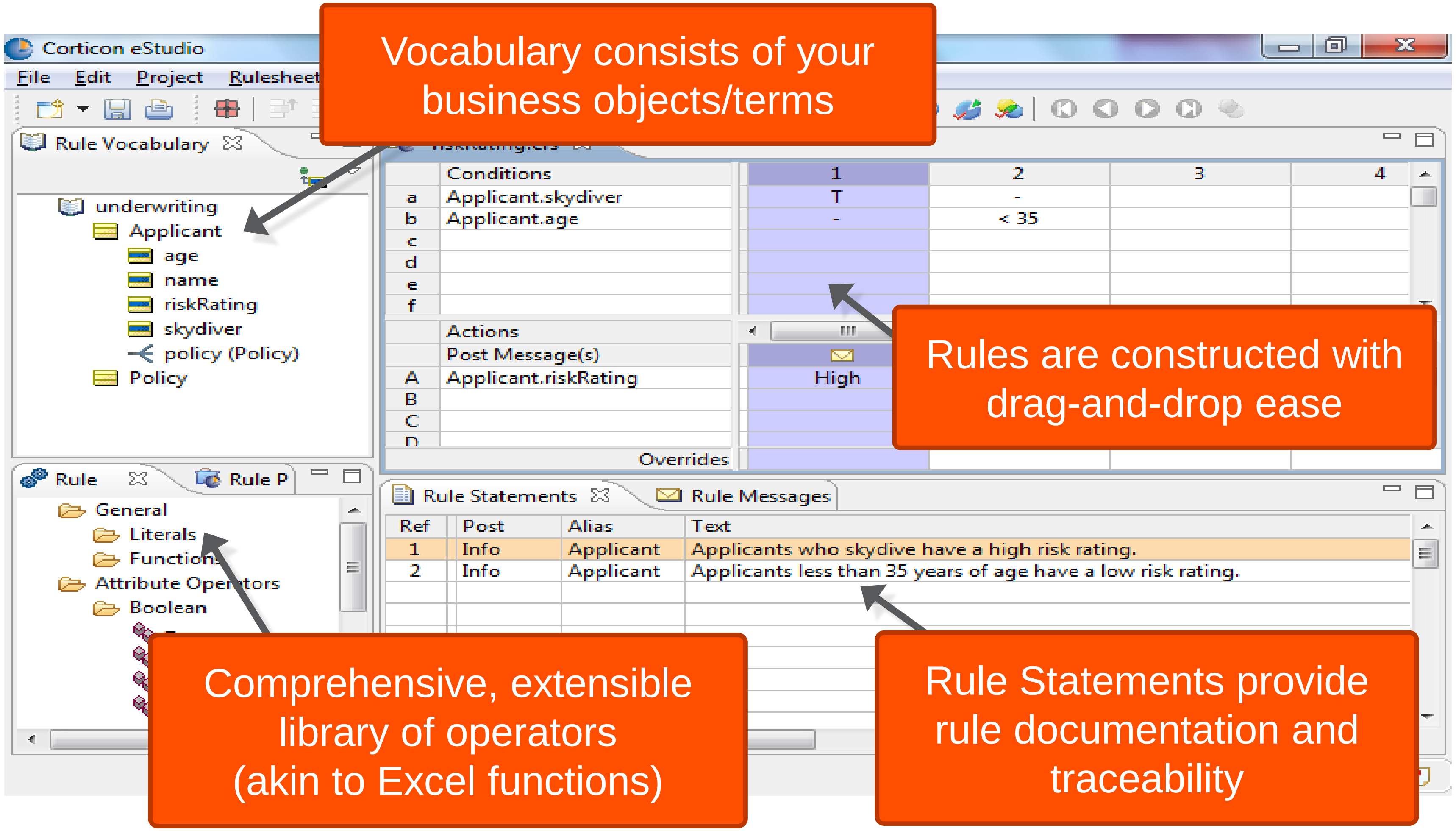
Model-Driven Rules Development

Out-of-the-box ready for use by

- Business Analysts
- IT Professionals

Patented Excel-like modeling tool

- No programming
- Business friendly
- One-click deployment



	Conditions	1	2	3	4
a	Applicant.skydiver	T	-		
b	Applicant.age	-	< 35		
c					
d					
e					
f					
	Actions				
	Post Message(s)	✉			
A	Applicant.riskRating	High			
B					
C					
D					
	Overrides				

Ref	Post	Alias	Text
1	Info	Applicant	Applicants who skydive have a high risk rating.
2	Info	Applicant	Applicants less than 35 years of age have a low risk rating.

Vocabulary consists of your business objects/terms

Rules are constructed with drag-and-drop ease

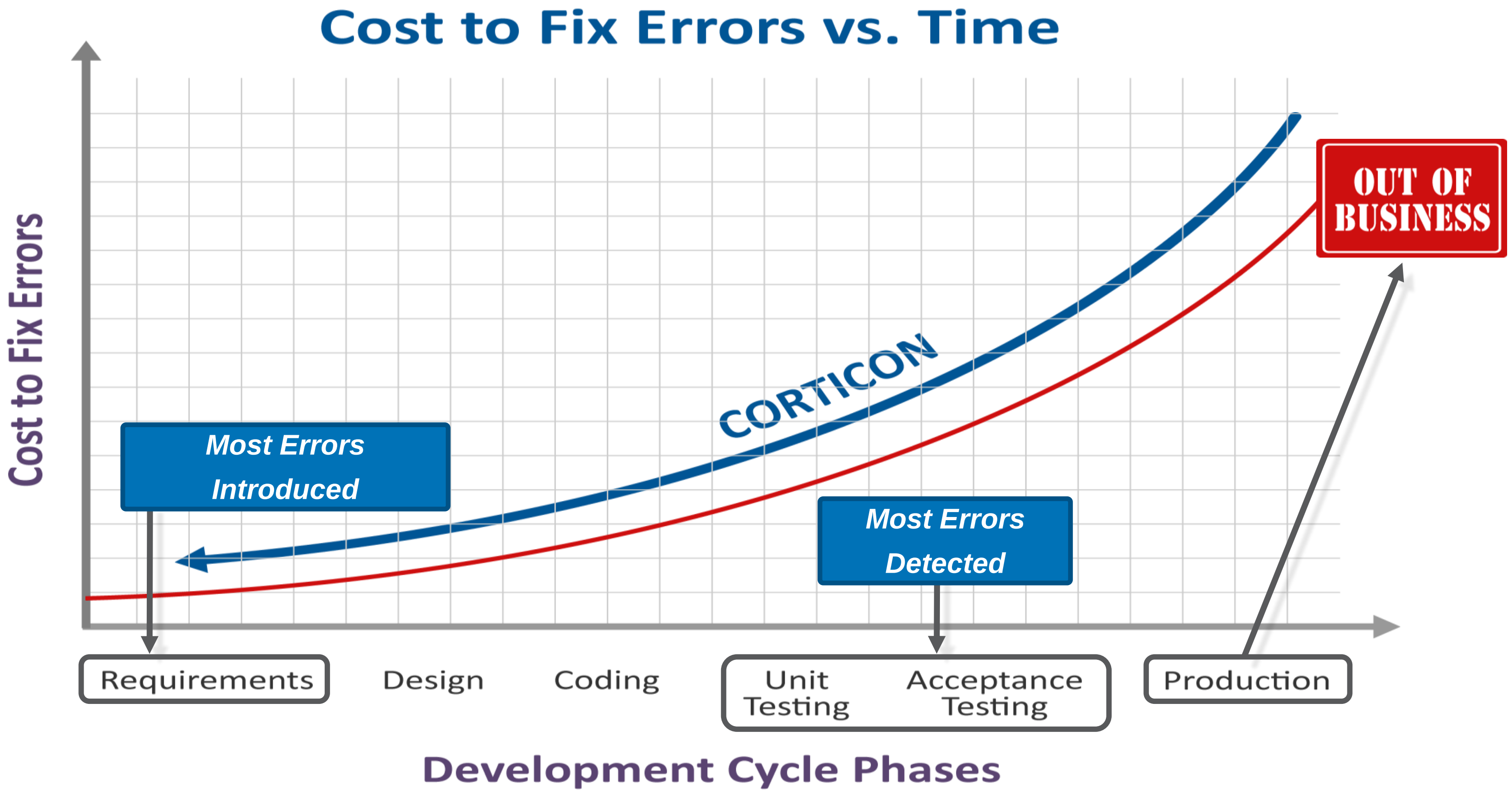
Comprehensive, extensible library of operators (akin to Excel functions)

Rule Statements provide rule documentation and traceability

Proven with the most sophisticated business problems

Guaranteed Rules Integrity

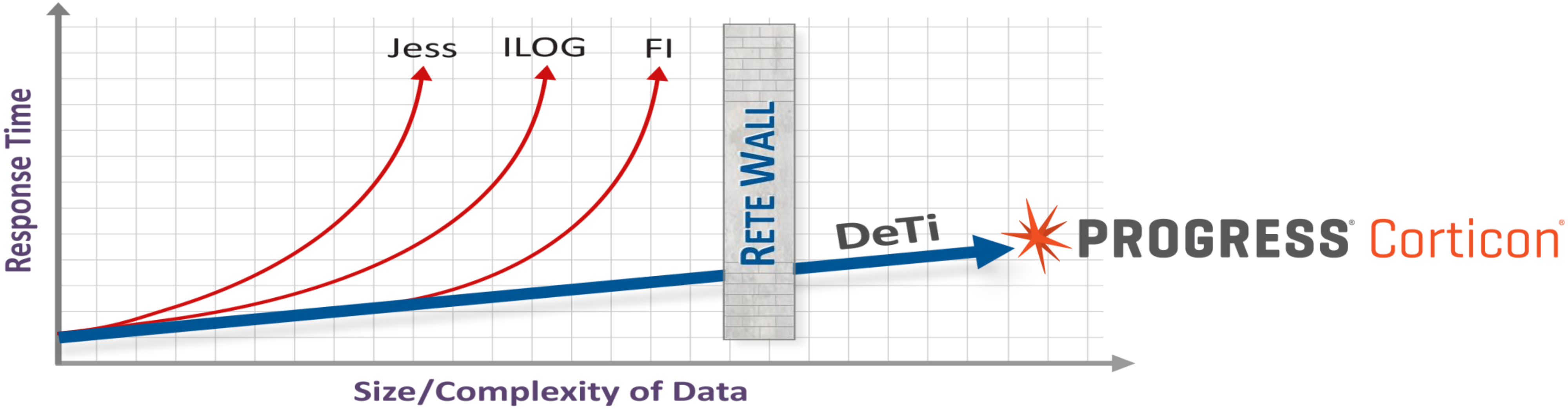
The right decisions at the right time – *guaranteed*



Performance & Scalability

- Traditional pattern matching algorithm is Rete
  - Scales well with increasing number of rules
  - Degrades exponentially with increasing complexity of data – the “Rete Wall”

- Corticon’s patented DeTI (Design Time) algorithm
  - Scales linearly with number of rules and complexity of data



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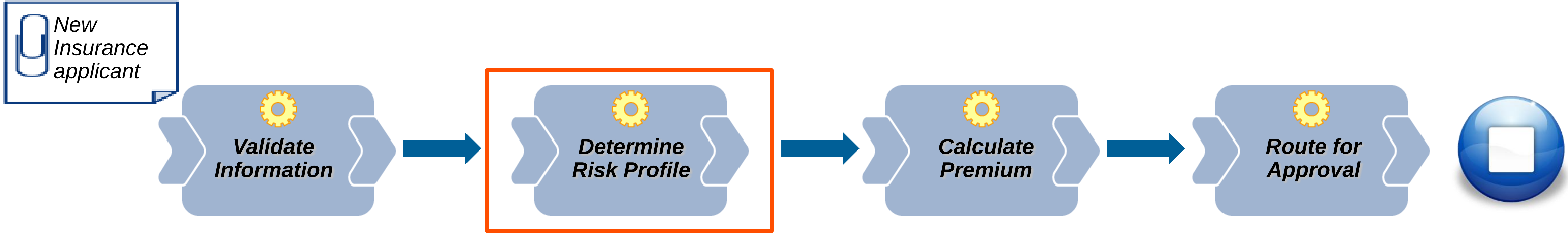
- Discuss Corticon & Business Rules
- Corticon Studio Demonstration
- Workshop Scenarios
- Lab Exercises
- Wrap Up

Demonstration



What is the applicant's risk profile?

1. Identify the Business Decision
Ask: What decision is being made?

2. Identify the Business Rules
Ask: How do you make the decision?

3. Model the Business Rules
Use: Corticon Studio

SAMPLE RULES

- Applicants who skydive have a High Risk rating
- Applicants under 35 have a Low Risk rating

PROGRESS® Corticon®

OpenEdge Coding:
35 Lines of Code for 4 Business Rules

```
DEFINE INPUT PARAMETER isSkyDiver  AS LOGICAL NO-UNDO.
DEFINE INPUT PARAMETER applicantAge AS INTEGER NO-UNDO.
DEFINE INPUT PARAMETER parmCurrency AS CHARACTER NO-UNDO.
DEFINE INPUT PARAMETER parmAge    AS INTEGER NO-UNDO.
DEFINE INPUT PARAMETER parmIncome  AS INTEGER NO-UNDO.
DEFINE OUTPUT PARAMETER ruleStatement AS CHARACTER NO-UNDO.

DEFINE VARIABLE riskRating  AS CHARACTER NO-UNDO.
DEFINE VARIABLE totalPremium AS DECIMAL  NO-UNDO.

IF isSkyDiver THEN
DO:
  ruleStatement = "Warning" + CHR(1) + "Applicants who skydive have a high risk rating regardless age." .
  riskRating  = "High".
  totalPremium = 150.
  ruleStatement = ruleStatement + CHR(3) + "Info" + CHR(1) + "Applicants who are " + riskRating + " risk pay a premium of " + parmCurrency + STRING(totalPremium) + "." .
  RETURN.
END.
ELSE
DO:
  IF applicantAge < parmAge THEN
  DO:
    ruleStatement = "Info" + CHR(1) + "Applicants less than " + STRING(parmAge) + " years of age have a low risk rating." .
    riskRating  = "Low" .
    totalPremium = 50.
    ruleStatement = ruleStatement + CHR(3) + "Info" + CHR(1) + "Applicants who are " + riskRating + " risk pay a premium of " + parmCurrency + STRING(totalPremium) + "." .
    RETURN.
  END.
  ELSE
  DO:
    ruleStatement = "Info" + CHR(1) + "Applicants who are " + STRING(parmAge) + " year or older and don't skydive are medium risk." .
    riskRating  = "Medium" .
    totalPremium = 100.
    ruleStatement = ruleStatement + CHR(3) + "Info" + CHR(1) + "Applicants who are " + riskRating + " risk pay a premium of " + parmCurrency +
                                  STRING(totalPremium) + "." .
    RETURN.
  END.
END.
```

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- Workshop Lab Overview
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Workshop Lab Overview

Exercise 1: Model Corticon Decision Service	60 Minutes
Exercise 2: Integrate Decision with OpenEdge	40 Minutes
Exercise 3: Update Decision Service	20 Minutes

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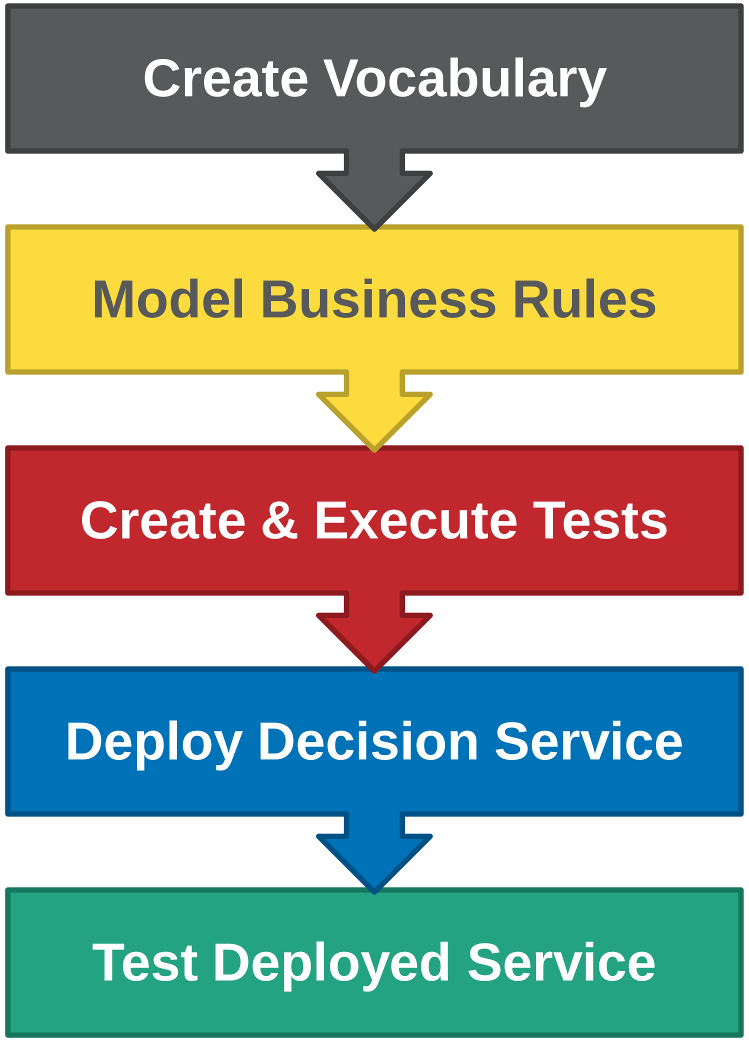
Exercise 1: Model Corticon Decision Service



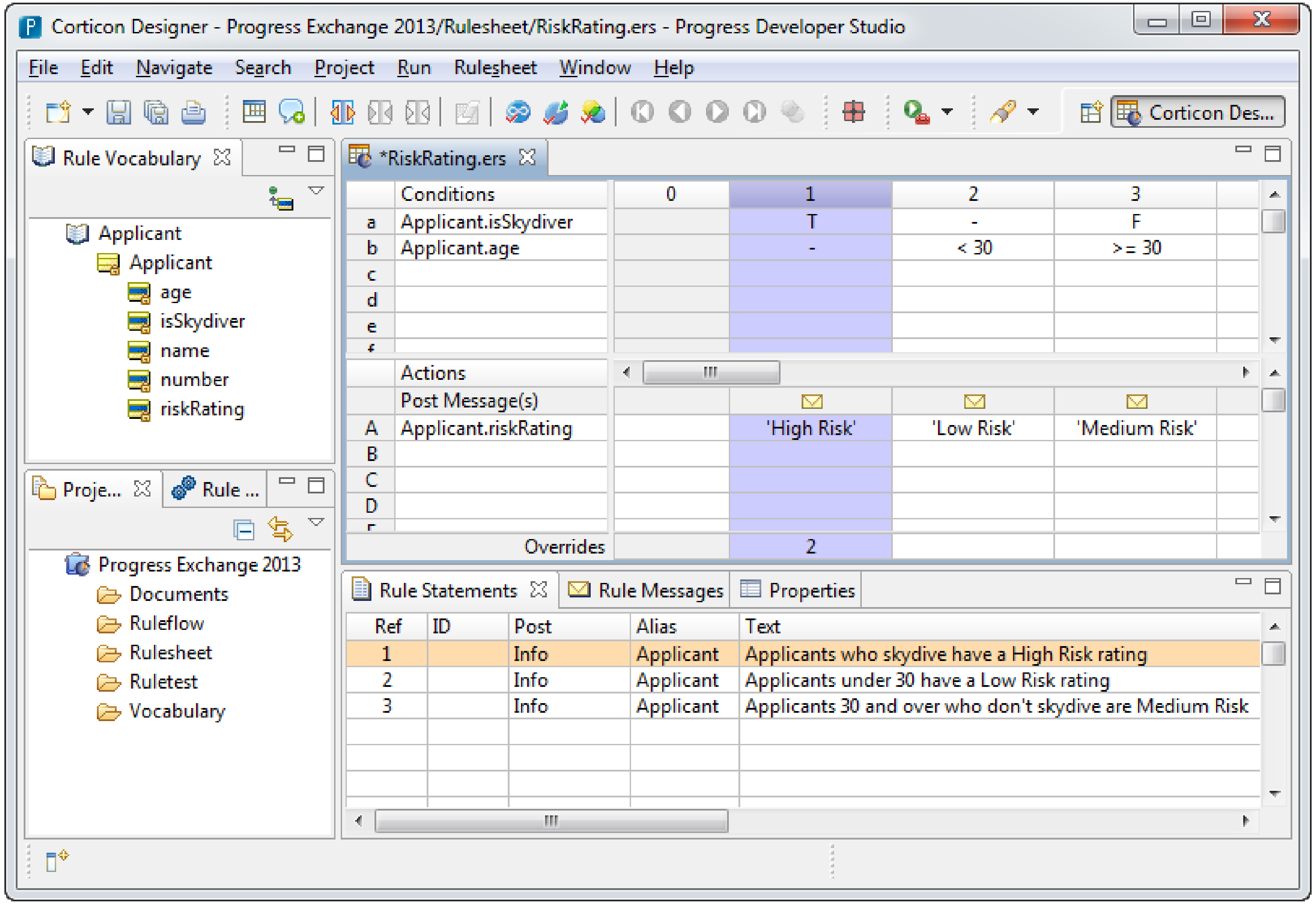
Create Vocabulary

Model Business Rules

Create & Execute Tests

Deploy Decision Service

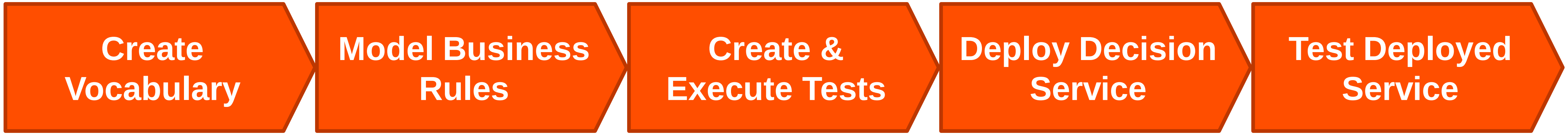
Test Deployed Service



	Conditions	0	1	2	3
a	Applicant.isSkydiver		T	-	F
b	Applicant.age		-	< 30	>= 30
c					
d					
e					
	Actions				
	Post Message(s)				
A	Applicant.riskRating		'High Risk'	'Low Risk'	'Medium Risk'
B					
C					
D					
	Overrides		2		

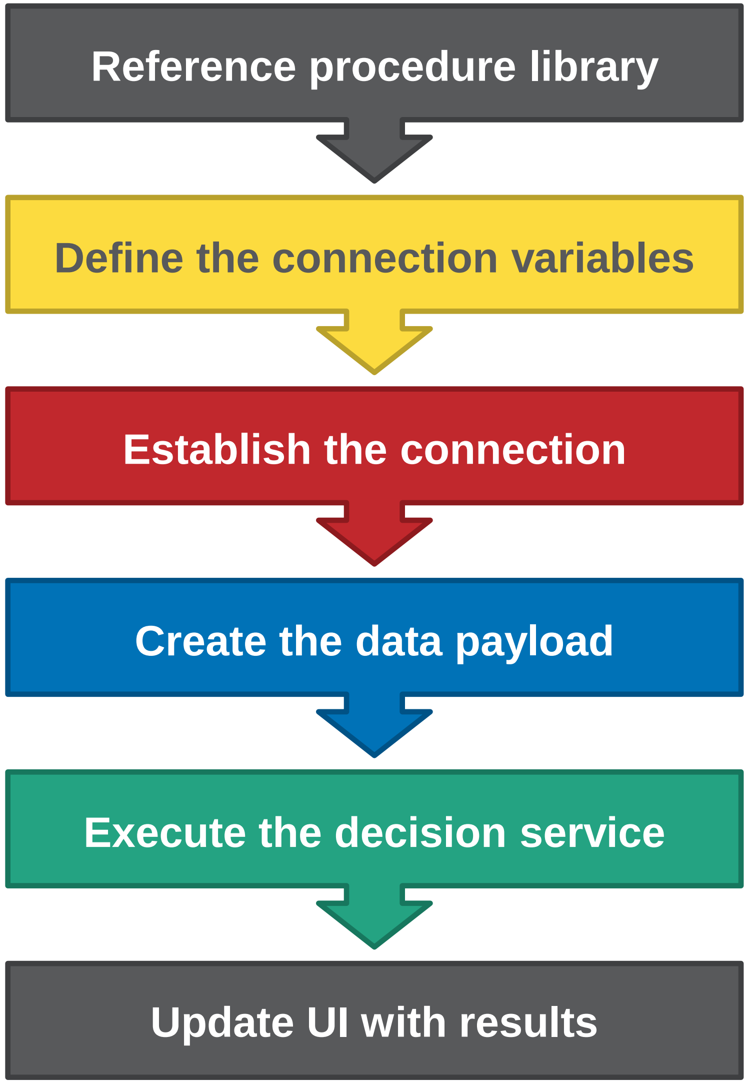
Ref	ID	Post	Alias	Text
1		Info	Applicant	Applicants who skydive have a High Risk rating
2		Info	Applicant	Applicants under 30 have a Low Risk rating
3		Info	Applicant	Applicants 30 and over who don't skydive are Medium Risk

Review Exercise 1: Model Corticon Decision Service



Create Vocabulary	Model Business Rules	Create & Execute Tests	Deploy Decision Service	Test Deployed Service
The business friendly terms that rules are written against	No coding, drag & drop, complete validation of business logic	Real data to see real decision outcomes	Quickly publish decision to one or more Corticon Servers	Allows for quick and easy SOAP service testing right from within Corticon Studio

Exercise 2: Integrate Decision with OpenEdge (40 Minutes)



Reference procedure library

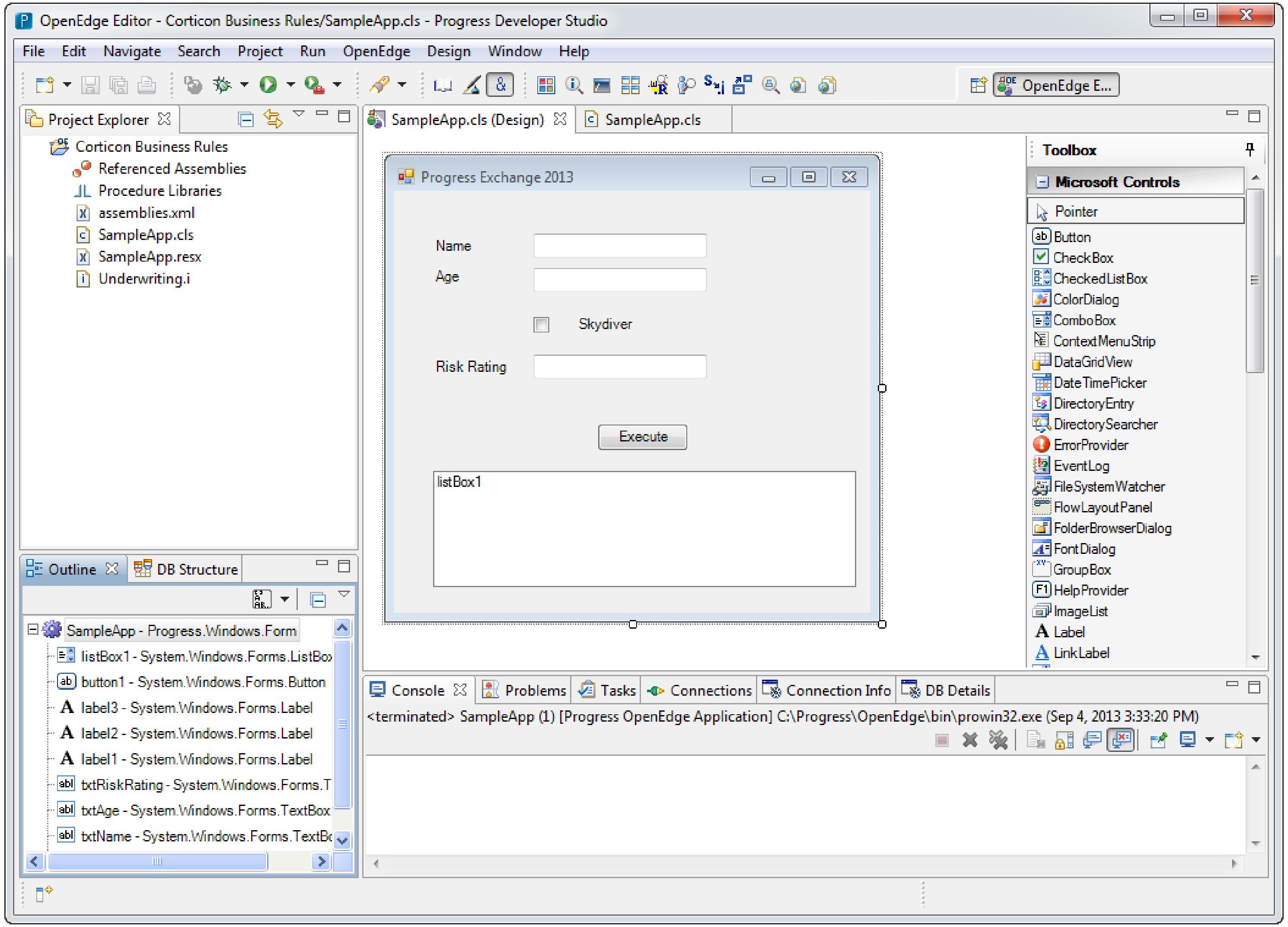
Define the connection variables

Establish the connection

Create the data payload

Execute the decision service

Update UI with results



OpenEdge Editor - Corticon Business Rules/SampleApp.cls - Progress Developer Studio

Corticon Business Rules
- Referenced Assemblies
- Procedure Libraries
- assemblies.xml
- SampleApp.cls
- SampleApp.resx
- Underwriting.i

Progress Exchange 2013

Name

Age

□ Skydiver

Risk Rating

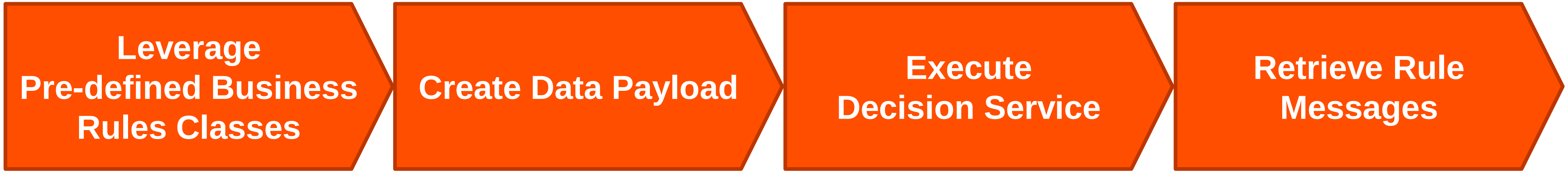
Execute

listBox1

SampleApp - Progress.Windows.Form
- listBox1 - System.Windows.Forms.ListBox
- button1 - System.Windows.Forms.Button
- label3 - System.Windows.Forms.Label
- label2 - System.Windows.Forms.Label
- label1 - System.Windows.Forms.Label
- txtRiskRating - System.Windows.Forms.T
- txtAge - System.Windows.Forms.TextBox
- txtName - System.Windows.Forms.TextBo

```
<terminated> SampleApp (1) [Progress OpenEdge Application] C:\Progress\OpenEdge\bin\prowin32.exe (Sep 4, 2013 3:33:20 PM)
```

Review Exercise 2: Integrate Decision with OpenEdge



Leverage Pre-defined Business Rules Classes

- Simplifies connection and execution
- Hides complexity of creating SOAP messages

Create Data Payload

- Utilize existing temp-tables and data sets
- No need to create auxiliary data in your OpenEdge application

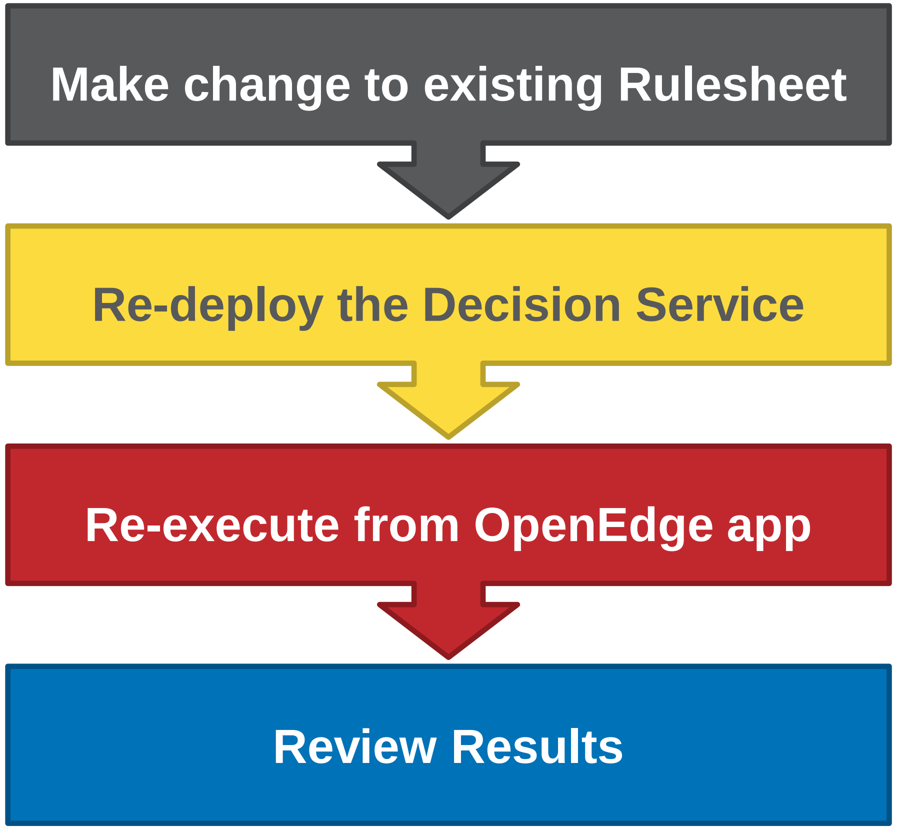
Execute Decision Service

- 1 line of ABL to execute against a remote decision service

Retrieve Rule Messages

- Built in function to retrieve all rule messages
- Full explanation as to how and why a decision was made

Exercise 3: Update Decision Service (20 Minutes)

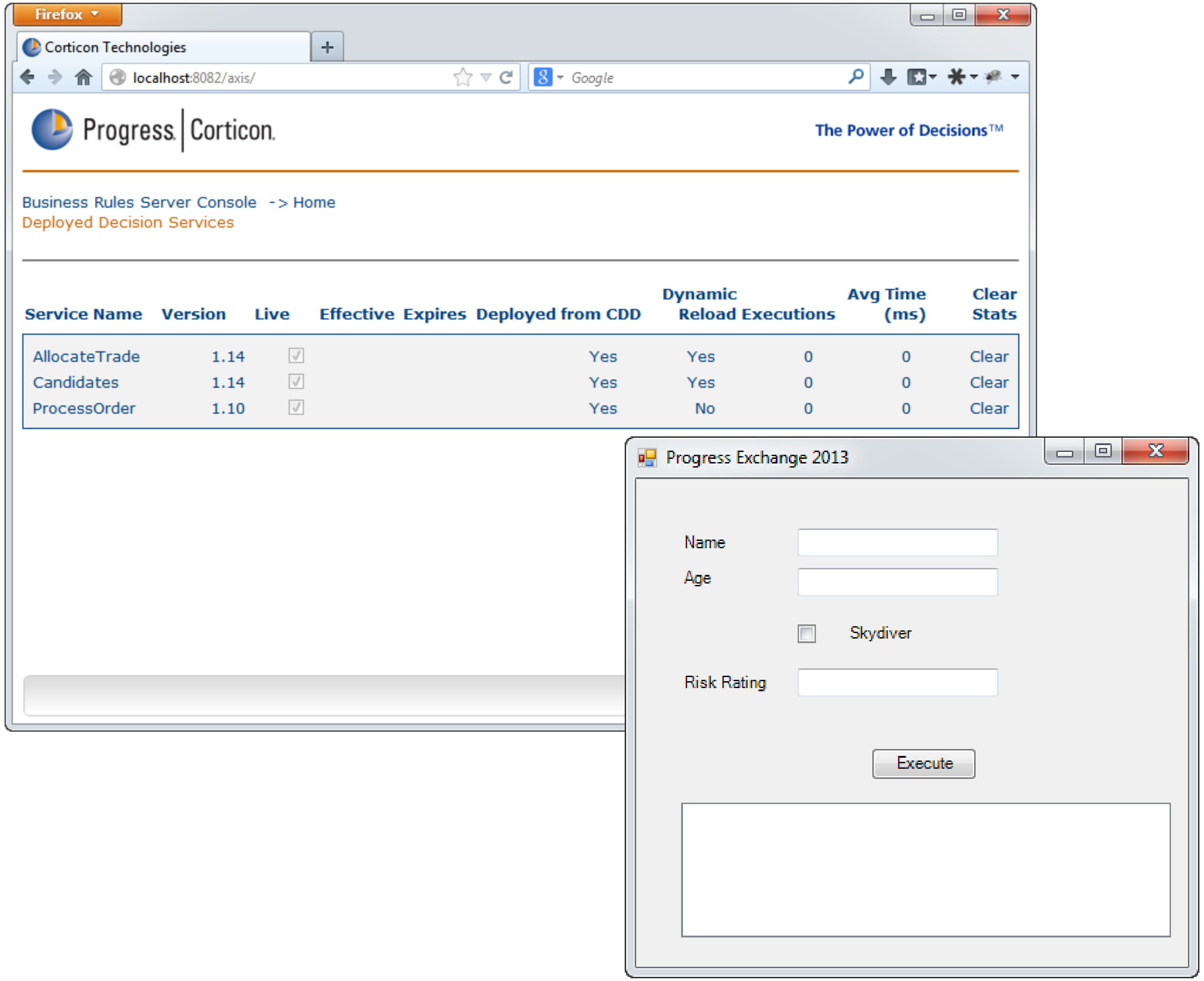


Make change to existing Rulesheet

Re-deploy the Decision Service

Re-execute from OpenEdge app

Review Results



Business Rules Server Console -> Home
Deployed Decision Services

Service Name	Version	Live	Effective	Expires	Deployed from CDD	Dynamic Reload	Executions	Avg Time (ms)	Clear Stats
AllocateTrade	1.14	☑			Yes	Yes	0	0	Clear
Candidates	1.14	☑			Yes	Yes	0	0	Clear
ProcessOrder	1.10	☑			Yes	No	0	0	Clear

Name

Age

□ Skydiver

Risk Rating

Review Exercise 3: Update Decision Service

Change in place decision logic

- Updates to application logic are governed by rule models
- No need to update ABL code to update apps

Hot deploy decision service

- No need to cycle server

Monitor results

- Corticon Server console shows executions for all versions
- Can review execution counts, times, and monitored attribute values

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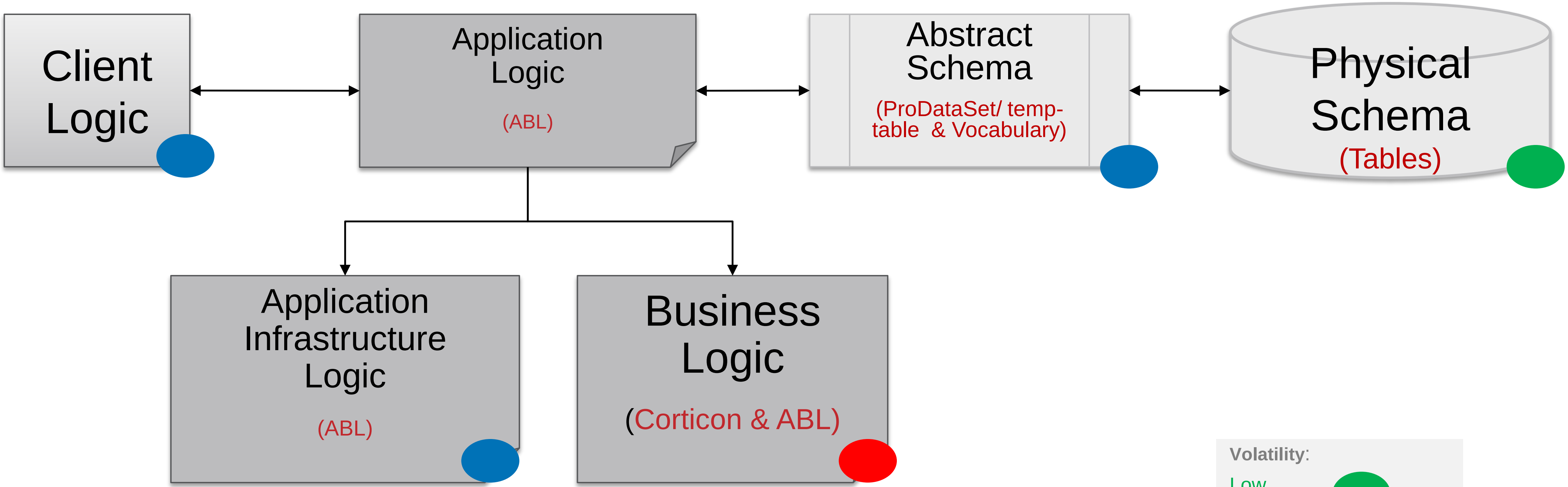
Why Use Corticon?

- Puts volatile decision logic **in hands of business** (domain experts instead of just IT)
- Allows decisions to be managed in a **separate tier** with a more agile lifecycle – separation of system and business logic
- **Accelerates** logic development time and **reduces** maintenance time
- Improves ease of use through **good visual tooling**
  - Build vocabularies and rules declaratively through a model driven approach
- Improves application **quality**
  - Gaps & overlap analysis – prevent technical inconsistencies
  - Use case testing on the fly

OpenEdge Application Architecture

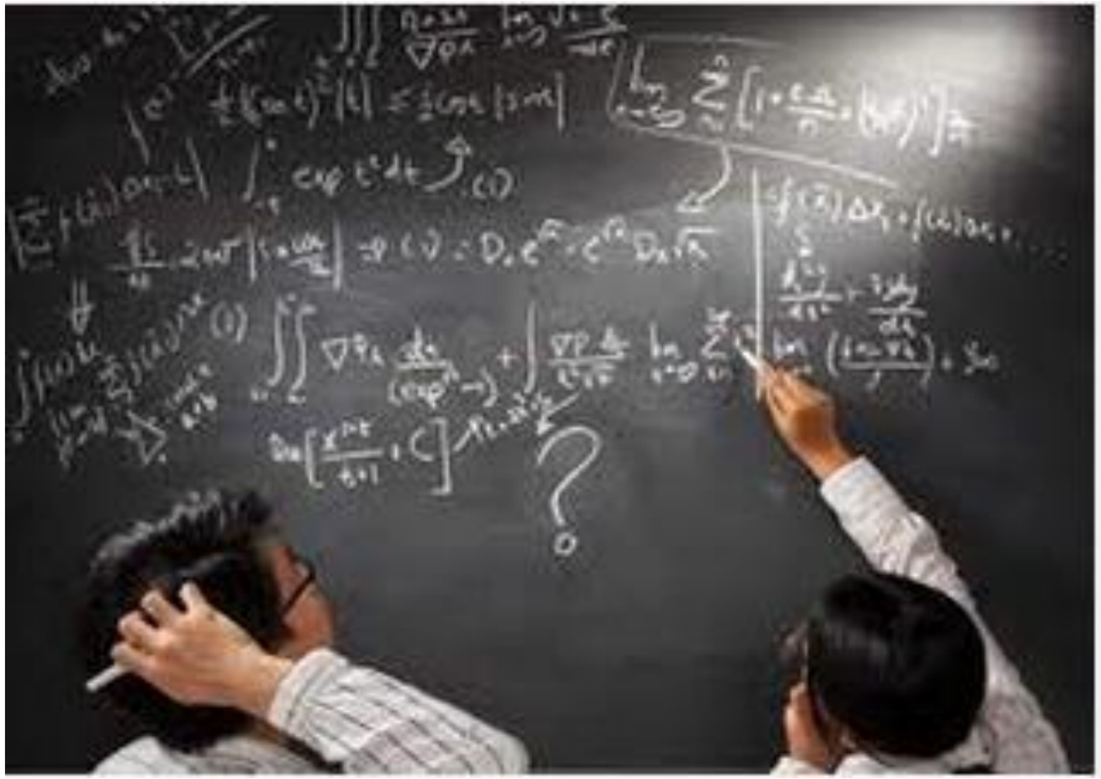


Volatility:

Low	🟢
Med	🔵
High	🔴

Choosing Between ABL and Corticon

- Is the business logic the result of relatively complex decisions?
- Is the business logic customized by the client?
- Are changes frequently required to the application's business logic?
- Is quality / integrity of logic critical?



The more "yes" answers, the better the fit for Corticon!

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