



VA Smalltalk Update

John O'Keefe
Principal Smalltalk Architect
Instantiations, Inc.

Recent Events

- Completed first year as pure Smalltalk company
 - # of users and revenues continue to grow
- Growing Engineering staff
 - 4 engineers joined since ESUG 2010
 - Using contractors for additional capacity

Recent Events

Continued

- University Outreach
 - Hasso Plattner Institute Bachelor Project
 - GTK+ Bindings for Linux
 - Interested in more
- User Outreach
 - Conference participation
 - ESUG, Smalltalk Solutions, Smalltalks
 - VA Smalltalk Forum -> VA Smalltalk Google Group
 - Aggregated on [**Smalltalk**] <http://forum.world.st>
 - Previous forum content still available (static)
- New "Videos and Podcasts" pages on website

Previous Releases

- V8.0 (May 2009)
 - Seaside, Tabbed Browsers, Documentation delivery system
- V8.0.1 (November 2009)
 - Seaside update, 'cdecl' calling convention
- V8.0.2 (May 2010)
 - Seaside update, GLORP
- V8.0.3 (February 2011)
 - Seaside update, GUI improvements, added documentation

VA Smalltalk V8.5

August 2011

- Development Tools
 - Code Assist (code completion)
- Infrastructure
 - Logging Framework
 - Preference Settings Framework
 - Deprecation Exception
- Graphics and Windowing
 - Rebar Control
 - TIFF CCITT T.4 bi-level encoding
- Web Interface
 - Grease 1.0.5+ / Seaside 3.0.5+
 - HTTP Chunked Transfer Encoding

Development Tools

Code Assist

- **Problem:** Developers can create many more classes and methods than we can hold names for in our minds
- **Solution:** Use the computer's calculating capabilities to predict names as they are being entered in the code editor

Development Tools

Code Assist

- General and extensible content assist framework
 - Customizable popup list displays actionable suggestions
 - Layout management functions control popup placement
 - APIs and Extension Points allow for customization
- Numerous Configuration Options
 - Enable and configure auto-popup of completion suggestions
 - Visibility settings (i.e. Show only Public method suggestions)
 - <Tab> or <Enter> to accept completion suggestions
 - Automatic completion if single available suggestion

Development Tools

Code Assist

- Context-Sensitive Auto-Completion
 - Supported in Browsers, Workspaces and Debuggers
 - Suggestions for Methods, Symbols/Atoms, and Variables
 - Uses parse tree analysis and type reconstruction to provide most relevant suggestions
- Smart Suggestion Sorting
 - *Variable Suggestions*: Locals before pseudo variables before pool variables
 - *Method Suggestions*: Public before Private
 - *Class Suggestions*: Classes that extend SubApplication after other classes

Development Tools

Code Assist

- Suggestion descriptions provide additional details
 - *Methods*: Class in which the method is defined or common superclass
 - *Scoped Pool Variables*: Value of the pool variable
 - *Unscoped Pool Variables*: Pool Dictionary in which it is defined
- Suggestions offered for ambiguous receivers
 - *OrderedCollection new add: #(1 2) be<Activate CA>*
 - Does the user want to complete *before:* for the receiver: *#(1 2)*?
 - Does the user want to complete *add:before:* for the receiver: *OrderedCollection new*?
 - Only the user knows; both suggestions are offered

Development Tools

Code Assist

- Parentheses auto-inserted for method completions
- Method override suggestions
 - Requesting Code Assistance at the top of a code browser will offer methods available to be overridden
 - Arguments are automatically inserted upon completion of an overridden method

Demo

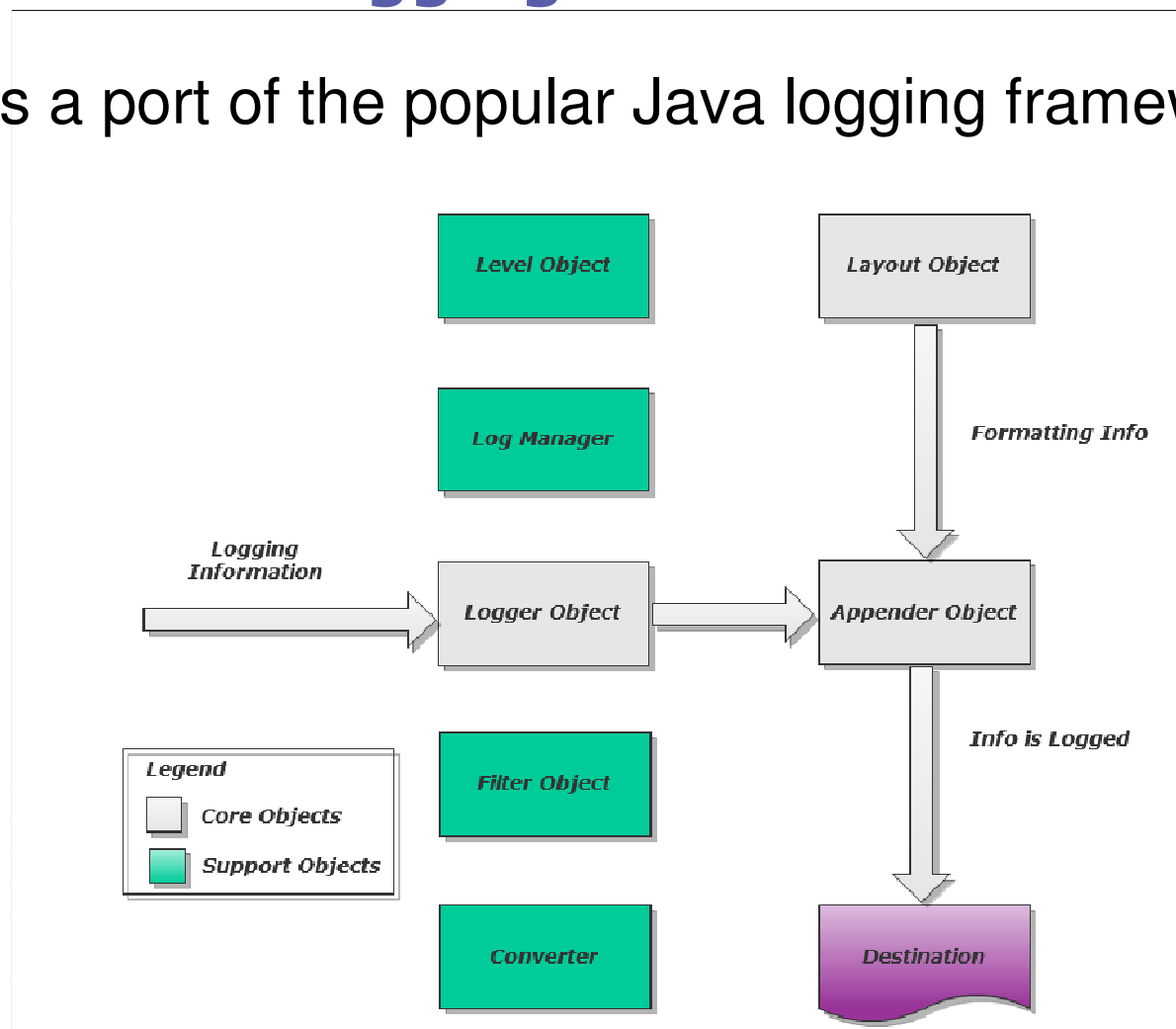
Infrastructure

Logging Framework

- **Problem:** The product currently contains many one-off logging solutions, but no centralized facility useable by product developers and customers.
- **Solution:** Provide a Logging Framework to standardize the definition, use, and output formats of logging.

Infrastructure Logging Framework

Log4s is a port of the popular Java logging framework *log4j*



Infrastructure Logging Framework

- Example of application logging requirement
 - A banking company is required to keep monthly logs of all foreign transactions and weekly logs of all foreign transactions greater than \$10000

Infrastructure Logging Framework

- Example of application logging solution

- Make .ini file entries

```
[log4s]
```

```
createLogger=('vast')
```

```
dailyRollingFileAppender=(ForeignTxns, root,  
c:\logs\foreignTxns.log, false, info,  
EsPatternLayout, '%d [%c] %o', true, topOfMonth)
```

```
dailyRollingFileAppender=(BigForeignTxns, vast,  
c:\logs\bigForeignTxns.log, false, warn,  
EsPatternLayout, '%d %c %o', true, topOfWeek)
```

The pattern of `%d %c %o` will log the time, the logger name, and the transaction object.

Infrastructure

Logging Framework

- Define *Transaction* >> *printLog4s*

```
^ String streamContent: [ :stream |
    stream nextPutAll: self payee; space; nextPutAll:
self amount printString ]
```

- The application code might look like this:

```
logIfNeeded: aTransaction
```

```
aTransaction isForeign ifTrue: [
    EsLogManager
    info: 'Foreign txn'
    object: aTransaction. "goes to root logger"
aTransaction amount > 10000 ifTrue: [
    EsLogManager
    loggerNamed: 'vast'
    warn: 'Large Foreign txn'
    object: aTransaction ] ].
```

Infrastructure Logging Framework

- Result

- `foreignTxns.log` will have output like this:
'28 Aug 2011 08:15:07,000 [root] Mark Twain 13.67'
- `bigForeignTxns.log` will have output like this:
'28 Aug 2011 08:15:07,000 vast Fred Smith 23645.23'

Infrastructure

Preference Settings Framework

- **Problem:** Existing customization preference settings are not well-managed or well-documented. In some cases, they are completely hidden.
- **Solution:** Provide a Preference Settings Framework to standardize the management and documentation of preferences.

Infrastructure

Preference Settings Framework

- Preferences are held in `.ini` file
 - Major groupings are stanzas -- generally named the same as the application they relate to
 - *keyword=value* entries hold the settings
 - Values are typed
 - Simple: boolean, decimal, directory, file, fraction, integer, multiLineString, number, point, string
 - Complex: array, range

Infrastructure

Preference Settings Framework

- Preference settings are managed by subclasses of Application
- Preference settings are read from the `.ini` file
- The user implements 3 methods to provide preference settings for an application
 - *validSettings*
 - *currentSettings*
 - *setCurrentSettings*

Infrastructure

Preference Settings Framework

- *validSettings*
 - Provides valid element types for keywords within stanzas
 - Example

```
validSettings
^ LookupTable new
  at: self symbol asString
  put: (LookupTable with: 'fplevel' ->(0 inclusiveTo:
9) elementType: self integerType));
  at: 'VAST 5.0 Compatibility'
  put: (LookupTable with: 'installPath' -> self
directoryType);
yourself
```

Infrastructure

Preference Settings Framework

- *currentSettings*
 - Provides current and default setting values for keywords within stanzas
 - Example

```
currentSettings
^ LookupTable new
  at: self symbol asString
  put: (LookupTable with: 'bitmapPath' -> (Array
with: CgScreen bitmapPath with: #()));
  yourself
```

Infrastructure

Preference Settings Framework

- *setCurrentSettings*
 - Transfers setting values to their 'used' location for the application
 - Example

```
setCurrentSettings
| addr |
addr := self settingFor: 'ServerAddress'.
addr isEmpty ifTrue: [ addr := nil ].
EmLibrary
    defaultName: (self settingFor: 'DefaultName');
    serverAddress: addr;
    openReadOnly: (self settingFor: 'OpenReadOnly')
```

Infrastructure Deprecation Exception

- **Problem:** Frameworks evolve and some API methods are destined to be removed in favor of replacement methods, but customers may have code dependencies.
- **Solution:** Mark methods as deprecated and gather usage information

Infrastructure Deprecation Exception

- Technique
 - Categorize method as 'Deprecated'
 - Replace method content with:

```
self
  deprecated: 'explanation string'
  in: 'version string'.
  ^ ...invocation of alternate implementation...
```

- Example

```
asDecimal
  ^ self
  deprecated: 'Replaced by #asScaledDecimal'
  in: 'V8.5';
  asScaledDecimal
```

Infrastructure

Deprecation Exception

- *Deprecation* is subclass of *Warning*
- Default handling based on preference
 - *Logging*: write message to in-memory log
 - *Showing*: write message to Transcript (TranscriptTTY in runtime)
 - *Raising*: open MessagePrompter allowing continue or terminate
- Documentation provides sample code to dump in-memory log

Graphics and Windowing

Rebar Control

- **Problem:** Windows customers want Toolbars with adjustable content.
- **Solution:** Add support for Rebar control

Graphics and Windowing

Rebar Control

- Specialized container for widgets
- Holds bands
 - Bands may be moved and resized
 - Band may hold
 - Gripper (for resizing)
 - Child widget
 - Label
 - Bitmap



Graphics and Windowing

TIFF CCITT T.4 bi-level encoding

- **Problem:** Customers are receiving FAX documents encoded as CCITT T.4 that they can't process
- **Solution:** Add support for CCITT T.4 bi-level encoding (read and write) to existing TIFF support

Web Interface

Seaside 3.0.5+ / Grease 1.0.5+

- **Problem:** Seaside and Grease development has progressed since VA Smalltalk V8.0.3
- **Solution:** Port Seaside 3.0.5 and Grease 1.0.5 (both with updates through 8/9/2011 – exact level identified in configuration maps)

Web Interface

HTTP Chunked Transfer Encoding

- **Problem:** Customers need to maintain persistent connections for HTTP with dynamically generated content (size not known when connection established).
- **Solution:** Add support for HTTP Chunked Transfer Encoding. Chunked HTTPRequests and HTTPResponses (including web services) can be processed.

Support

- 60+ bug fixes and minor enhancements

Looking to the Future

Future Releases

- Release schedule is about twice a year
 - Next release is planned for end of Q1/2012
 - Current information available in Product Roadmap
 - <http://www.instantiations.com/products/roadmap.html>
- Content based on requirements from:
 - Direct customer interactions
 - Forums
 - Support cases
 - Internals

Priority Technologies

- Internationalization
- Web interface
- Middleware
- GUI Look and Feel
- Development Tools
- Security
- Performance and Scalability
- Platforms
- External Interfaces
- Other

Future Releases

Candidate Items

- Internationalization
 - Full Unicode/UTF-8 (including VM)
- Web interface
 - Seaside 3.x
 - Continuation support
 - SST Servlet multipart forms
 - Web services tooling improvements
 - Web services debugging tools/doc
 - Validating XML parser

Future Releases

Candidate Items

- GUI Look and Feel
 - GTK+ 2.x on Linux
 - Windows Common Controls additions
 - Icon/image support additions
 - Backport widgets from add-ons
- Development Tools
 - Improved Changes Browser & Merge Tool
 - Code Assist additions
 - Monticello importer

Future Releases

Candidate Items

- Infrastructure
 - Settings Dialogs to complement Settings Framework
 - Consolidate most settings using Settings Framework
 - Logging Framework improvements
 - Windows Services control moved to Smalltalk
- Middleware
 - DB2 Stored Procedures improvements
 - GLORP infrastructure improvements
 - GLORP Programmer's Reference
 - Active Records built on GLORP
 - TCP/IP V6

Future Releases

Candidate Items

- Security
 - “Basic” security framework (consolidate existing OpenSSL wrappers)
 - “Full” security framework -- OpenSSL 1.0 wrappers
- Performance and Scalability
 - Incremental garbage collection
 - 64-bit Smalltalk
 - Class library performance hotspots
 - Integrate KES/Stats tool for object monitoring

Future Releases

Candidate Items

- External Interfaces
 - JNIPort
 - .NET/C# Other
- Installation
 - Single installer for Client and Manager
 - Seamless with Windows UAC (User Account Control)
 - Install/Repair/Uninstall (no manual Registry edit)
 - Silent installer for Unix
- Class Libraries
 - Collection hashing policies
 - Collection sorting policies

How Do You Get VA Smalltalk?

- Download evaluation copy
 - <http://www.instantiations.com/products/vasmalltalk/download.html>
- Buy development licenses
 - <http://www.instantiations.com/products/purchase.html>
- Download development build
 - Announced in VA Smalltalk Google Group
- Be a committer on an Open Source project
 - <http://www.instantiations.com/company/open-source.html>
- Work for an educational institution
 - <http://www.instantiations.com/products/academic-license-program.html>

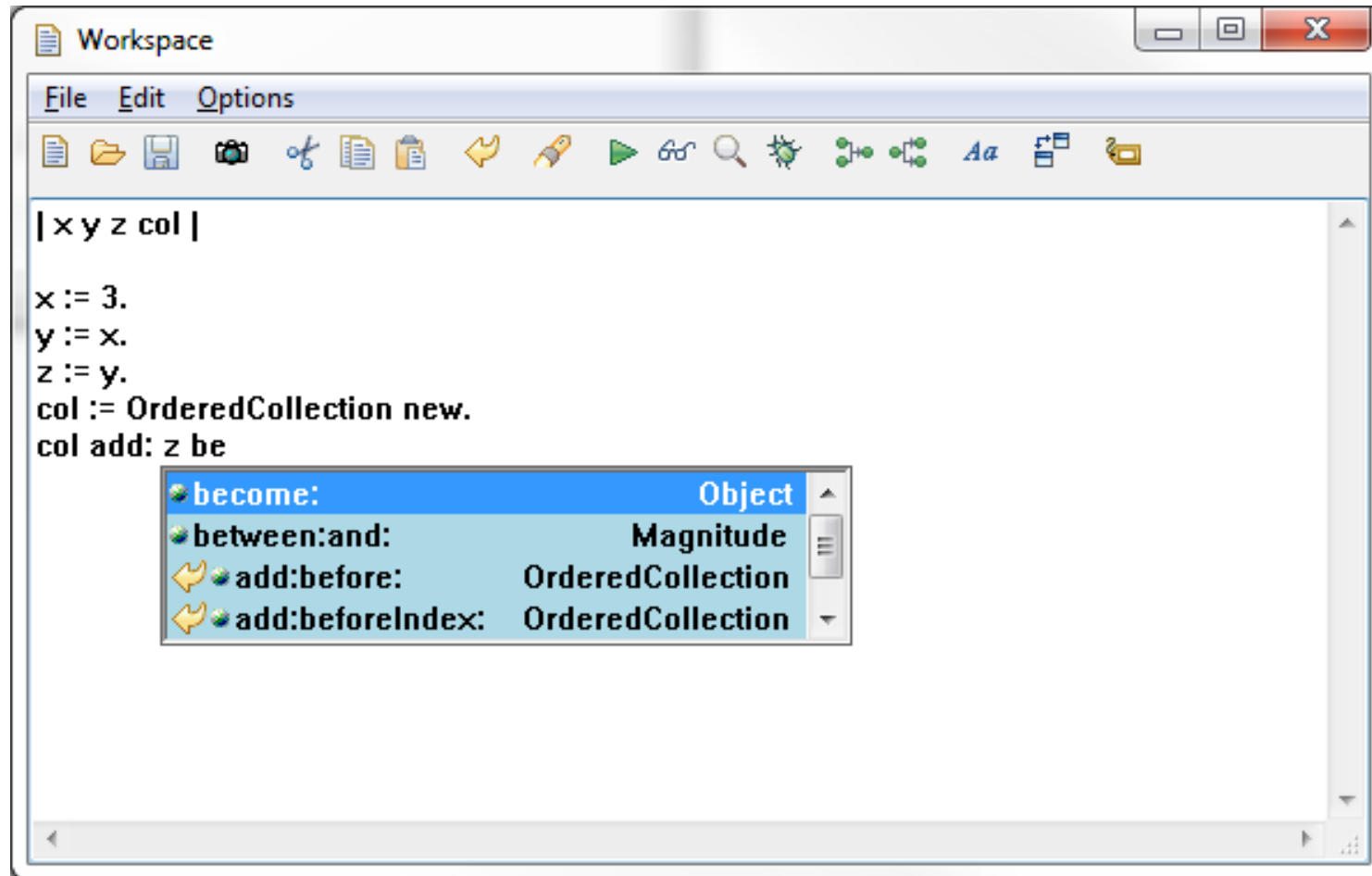
Contact us

- General information
 - info@instantiations.com
- Sales
 - sales@instantiations.com
- Support
 - support@instantiations.com
- Me
 - john_okeefe@instantiations.com

Backup

Development Tools

Code Assist



Development Tools

Code Assist

Public Private Default: Kernel Instance Class

Class Definition Method Source Method Comment Method Notes

asBag

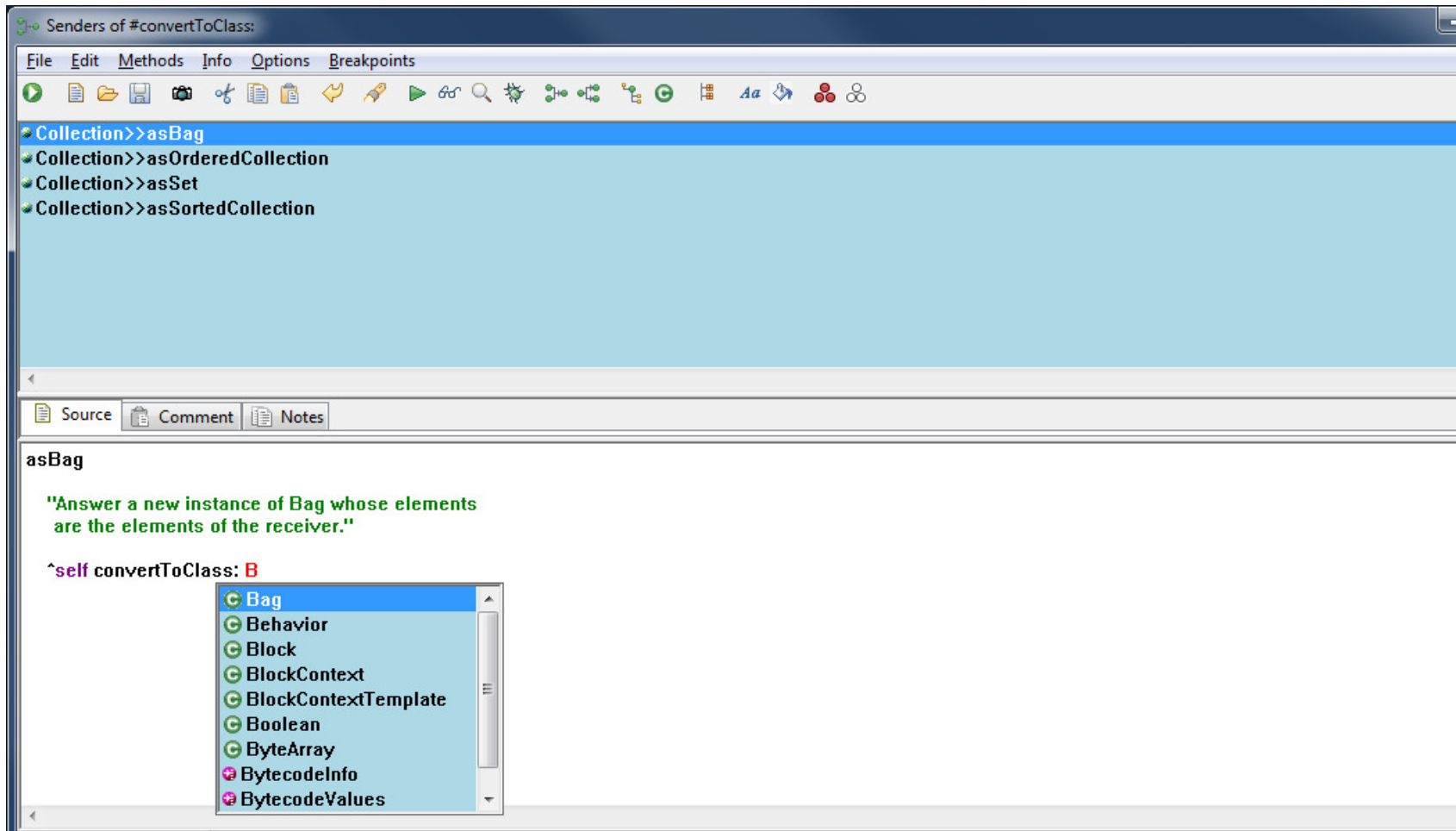
"Answer a new instance of Bag whose elements are the elements of the receiver."

`^self convertToClass: |Bag`

- self
- super
- nil
- false
- true
- Dependents
- ExAll SystemExceptions
- ExCLDTErrors SystemExceptions
- ExCLDTIndexOutOfRange SystemExceptions
- ExCLDTInvalidArgument SystemExceptions
- ExCLDTInvalidClass SystemExceptions
- ExCLDTInvalidSize SystemExceptions
- ExCLDTKeyNotFound SystemExceptions
- ExCLDTObjectNotFound SystemExceptions
- ExCLDTRecursiveStoreOnError SystemExceptions

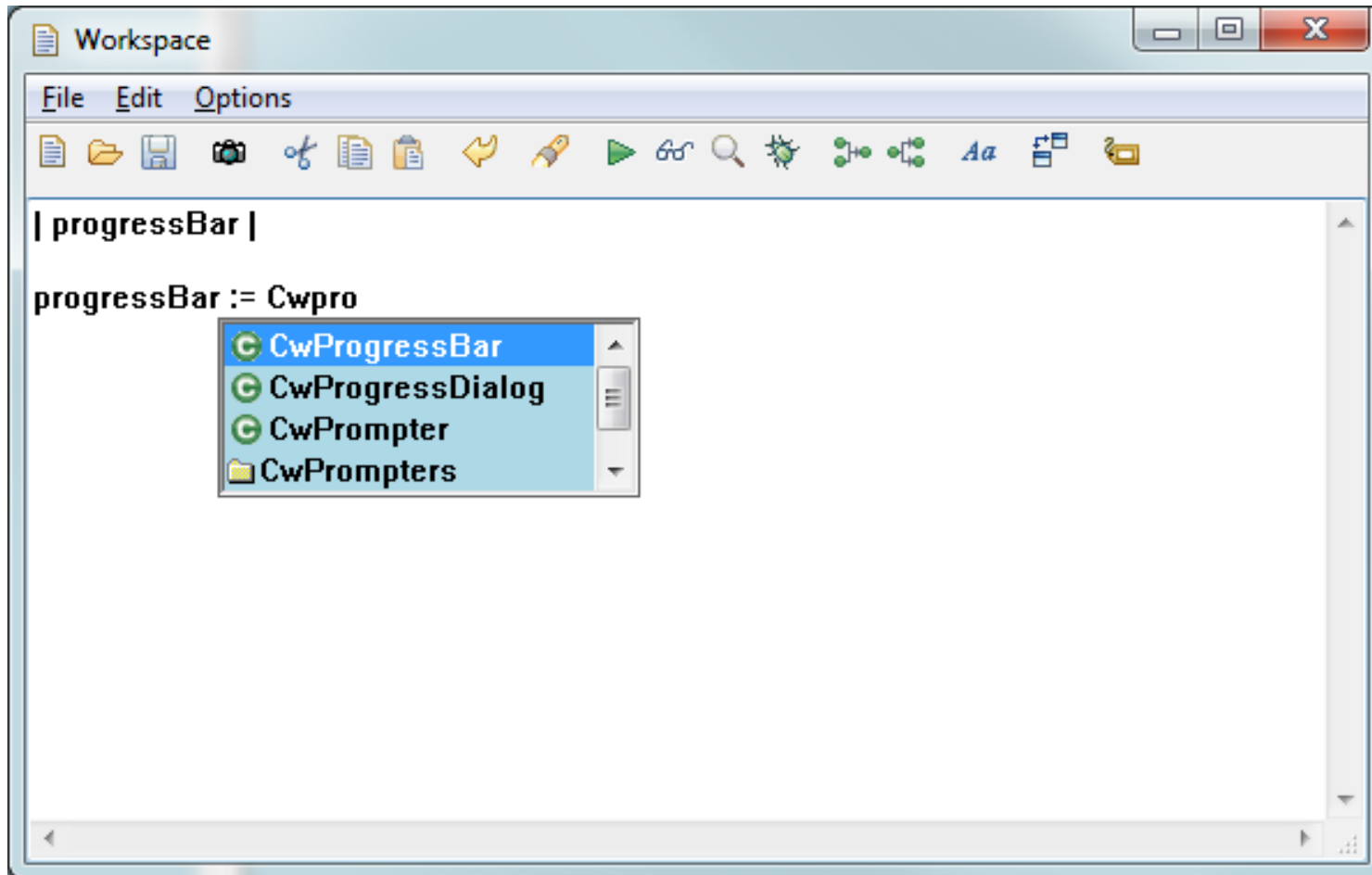
Development Tools

Code Assist



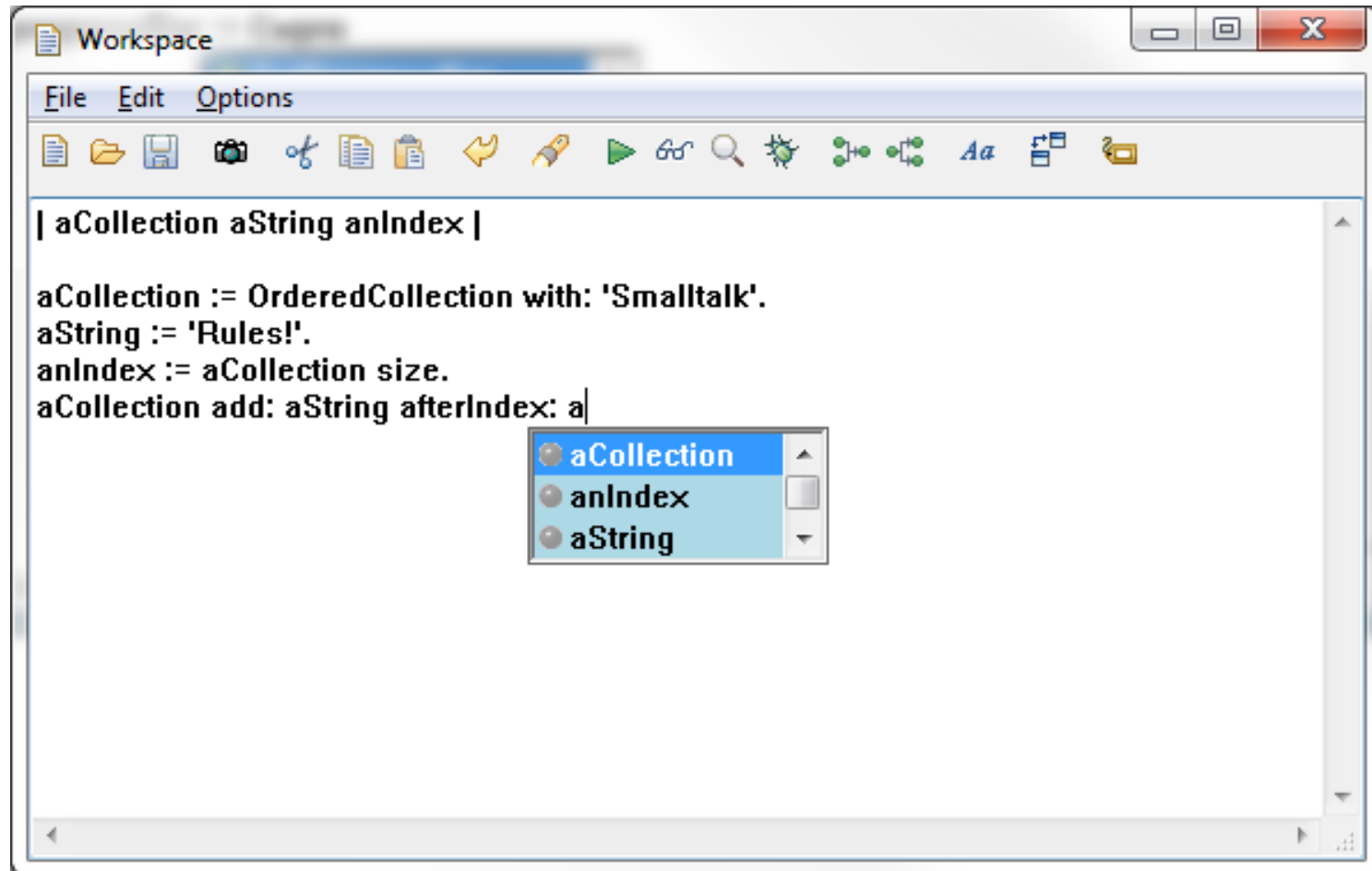
Development Tools

Code Assist



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Development Tools

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