ÉTOILÉ STATUS UPDATE

FOSDEM 2012

http://www.etoileos.com

What is it?

- Étoilé is a user environment designed from the ground up around the things people do with computers: create, collaborate, and learn.

Goals

- Composite Document
- Collaboration
- Persistence & Versioning
- Clean, consistent and plastic UI
- Fast and Easy Development

Release Status

- 0.4.1 released in March 2009
  - not supported anymore
- 0.4.2 released now
  - EtoileFoundation released this week
  - new LanguageKit release soon
  - more to come

What’s new since last year?

Theming News

- Slow progresses…
- Resurrected Nesedah theme
  - still very much work-in-progress
- Menu theming support in GNUstep

GNUstep runtime

libobjc2 (GNUstep)

- Version 1.6 released in November
- Inspired by the Étoilé ObjC runtime
- Based on the new Apple runtime API
- Compatible with the old GNU runtime API

ObjC 2 Features

- Full ObjC 2 Support with Clang (partial with GCC 4.6)
  - Non-fragile Instance Variables
  - Properties
  - Fast Enumeration and Proxy
  - Blocks
  - etc.

New Features

- ARC and Boehm GC support
- Associated References
- Prototype support
- Blocks as methods

More Features

- Improved LLVM optimizations
- Small Objects hidden in pointers
- Property Type Encoding access
- Unified Exception Model for ObjC++
- More efficient low-memory profile

ObjC2JS

ObjC to JS

- Compiles C and Objective-C to JavaScript
- Walk the Clang AST to output JS
- Supports C pointer manipulation
  - based on AddressOf objects
  - pointer arithmetic just works…
  - *char *str = "bla"; char **ptr = &(str++);*

What is supported?

- array, structure, enum, union
  - using WebGL ArrayBuffer objects
- heap and stack allocation
- static variables
- arithmetic overflow
- classes, objects and messages

Peculiarities

- Automatic Array bounds checking
- Garbage collected memory
- Integer-to-pointer casts are supported
  - Dereferencing such a pointer causes a run-time error
- Pointer-to-integer casts are supported

Future Work

- Basic Foundation classes NSArray, NSString etc. implemented in JavaScript
- Basic Graphics classes NSView, NSBezierPath etc. based on the Canvas
- A event loop based on ETWebApp
- Click a button to turn a Étoilé application into a web app!

SourceCodeKit

SourceCodeKit

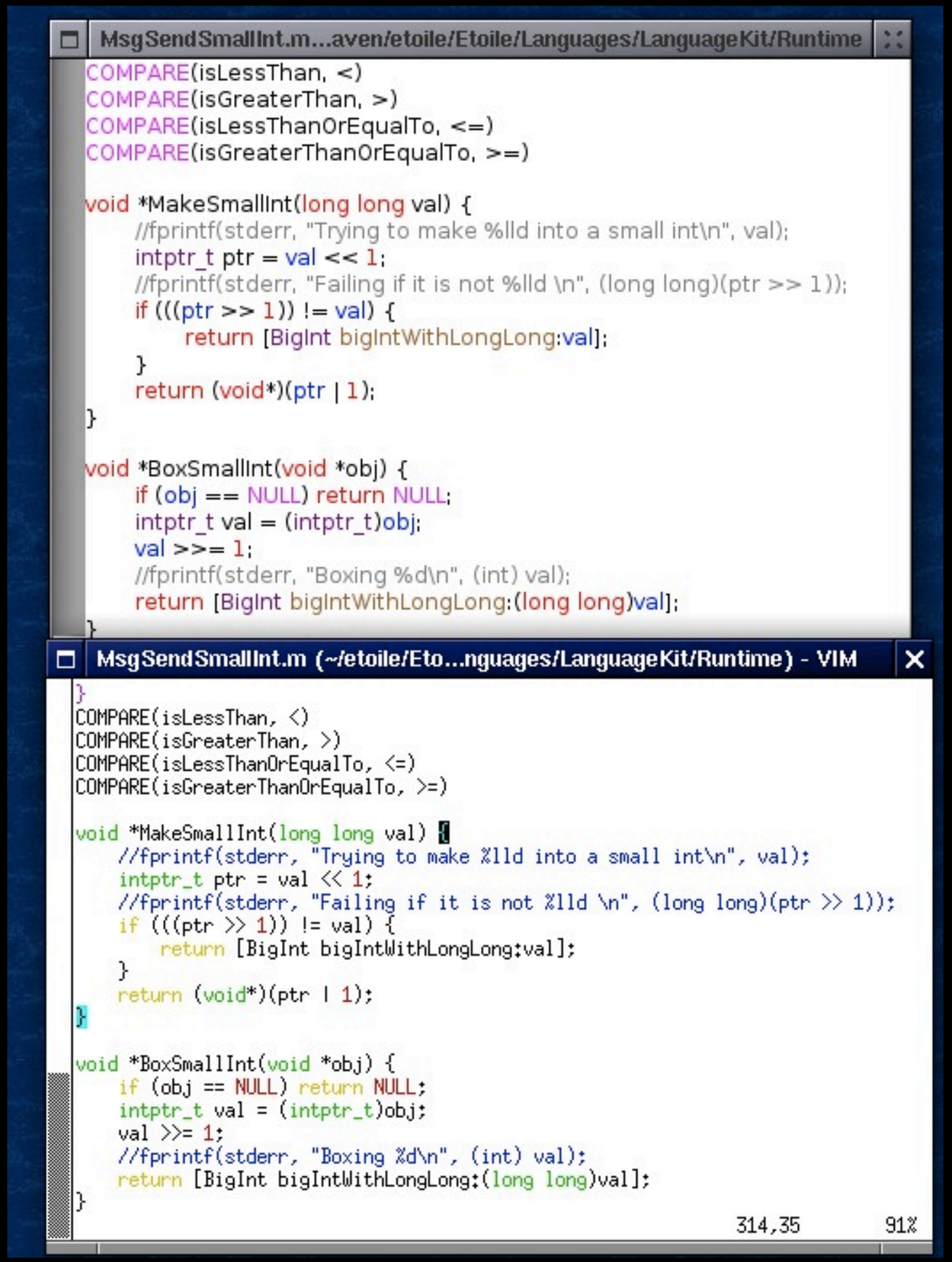
- Clang-driven
  - Code Indexing
  - Syntax Highlighting
  - Code completion
- Now ARC compatible
- CodeMonkey will probably use it

Syntax Highlighting

SourceCodeKit

vs

VIM



DocGenerator

What's New?

- API diagrams based on Graphviz
  - include classes, categories and protocols
- README, INSTALL and NEWS listed in the sidebar when available
  - use Discount to render them to HTML
- Global variable doc support

LanguageKit

What's new?

- Boehm-based GC and ARC support
- Calling C functions without FFI
  - In Smalltalk just do *C sqrt: 42* for *sqrt(42)*
- Small objects (strings, ints, etc.) support in libobjc2
- ObjC compatible-block

What's new?

- -dealloc to clean up objects in Smalltalk
- On the way
  - Debugging
  - AMD64 ABI

EtoileFoundation

EtoileFoundation

- Prototypes, traits
- Collection Protocols
- High-order Messaging
- FAME-inspired Metamodel
- Mirror-based Reflection
- UTI, UUID, History, Socket etc. classes

What's new?

- Reworked collection protocols
- Rewritten prototype support
  - based on libobjc2 1.6
  - -clone, -slotValueForKey: etc.
- Rewritten Trait support
  - including new collection traits

What's new?

- Rewritten UUID generation code
  - eliminate potential collisions on Linux in a tight loop
- GC and ARC compatible
- Much better API documentation

Traits

- Full trait implementation including
  - Composite trait and the Flattening Property that goes along
  - Exclusion and Aliasing operators
- Mixin-style composition as an option
- Thread-safe

Trait Example

```
NSDictionary *aliasedMethods =

    [NSDictionary dictionaryWithObjectsAndKeys: @"lost:",
@"wanderWhere:"];

[[self class] applyTraitFromClass: [BasicTrait class]
                excludedMethodNames: S(@"isOrdered")
                  aliasedMethodNames: aliasedMethods
                          allowsOverride:YES];
```

Collection Traits

- Protocols
  - ETCollection
  - ETCollectionMutation
- Traits
  - ETCollectionTrait
  - ETMutableCollectionTrait

CoreObject

What is it?

- An Object Store with advanced revision control e.g. selective undo
- We use it as a to build
  - Generic Object Manager
  - Compound Document Editor
- More in the CoreObject talk later

EtoileUI

What's New?

- New aspect repository as generic model for styling, object palettes, template pickers etc.
- Redesigned copy support around ETCopier and a new -copyWithCopier:
  - aliasing is now symetric between the source and original object graph

What's New?

- Finished automatic layout update
- Performance improvement (display, reload)
- More control over object insertion in an item tree

Pick and Drop Control

- Drop operation types can now be controlled by both source and destination
- Metadatas can be pushed on a pickboard
- More control over the precise object
  - pushed on the active pickboard
  - inserted in the drop target

CoreObject Integration

- Many changes to support persistency
  - metamodel, new UI object base class, etc.
- History Browser
- Worktable
  - an experimental Compound Document Editor

Demo

Work-in-progress

- ParserKit
  - a new PEG-based parser
  - inspired by OMeta and PetitParser
- XMPPKit
  - extensive cleaning underway

Étoilé Developers

Eric Wasylishen ⁂ CoreObject, Theming, AppKit

Christopher Armstrong ⁂ CoreObject

Niels Grewe ⁂ DBusKit

Mathieu Suen ⁂ ParserKit

Alessandro Sangiuliano ⁂ XMPPKit

David Chisnall ⁂ libobjc2, LanguageKit, SourceCodeKit

Quentin Mathé ⁂ EtoileUI, CoreObject, DocGenerator

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