

# Smalltalk

The Language, a Free IDE and a Web Framework

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# The Language

- Dynamically typed
- Everything is an object: even integers and classes
- Everything is consistent: no exception
- Highly portable: uses a Virtual Machine
- Garbage collector
- Closures (blocks)
- Smalltalk is a living system
  - classes can be modified and their instances are dynamically updated
  - programs are neither started nor stopped: they just run

# Syntax

- **15 minutes** to learn it!
- Principle of least astonishment
- Very limited number of keywords
  - self, super, true, false, nil, thisContext
  - 52 in Java, 38 in Ruby, 76 in C#
- Message sending

```
adam := Person new.  
eve := Person new.  
adam gender.  
adam age = eve age.  
adam playWith: eve.  
adam say: 'Hello' to: eve.
```

# Syntax

- No constructors
  - Only methods which return new instances

```
Person class>>name: aString  
  |person|  
  person := self new.  
  person name: aString.  
  ^ person
```

```
eve := Person name: 'Eve'.
```

# Syntax

- No control flow instructions (if, while, ...)

```
(eve receivedMail) ifTrue: [eve regrets]
```

```
trees select: [:tree | tree isAppleTree]
```

```
[tree isMissingAnApple] whileFalse.
```

- Class creation

```
Object
```

```
  subclass: #Person
```

```
  instanceVariableNames: 'name gender'
```

```
  classVariableNames: ''
```

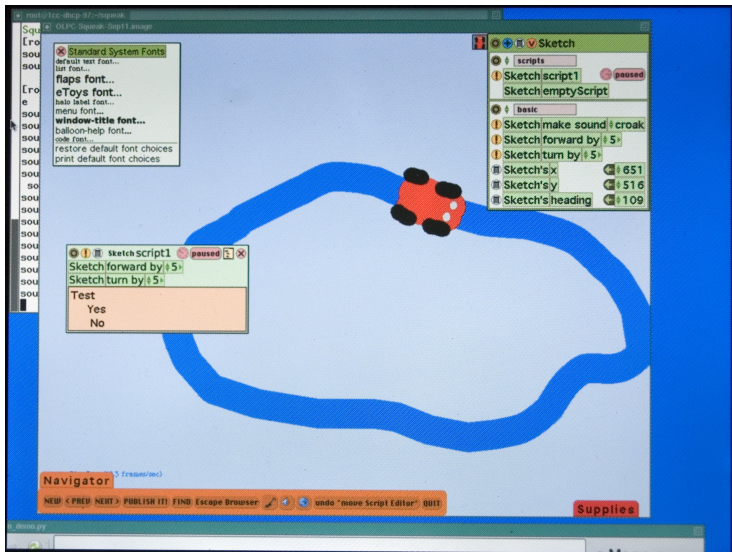
```
  poolDictionaries: ''
```

```
  category: 'PhoneBook'
```

# Squeak

- Open-source free Smalltalk implementation
- Integrated Development Environment
- Modification of Squeak inside Squeak itself
- No source file: image-based development
- Virtual Machine implemented in Smalltalk and translated to C
- Last stable version: December 2006 (3.9)

## EToys



# Croquet





# OLPC



# Seaside

Seaside Sushi Store : Fill your cart

http://localhost:8080/seaside/examples/store/Aji?\_k=e

Démarrage Dernières nouvelles post to del.icio.us

WASore [R|S]

**sushiNet**  
fresh, raw fish delivered to your door

WASoreFillCart [R|S]

**Search:**

[Browse](#)  
[Checkout](#)

WASoreItemView [R|S]

**Aji**

**Horse Mackerel**

This fish is pink-grey and shiny. When it's fresh, the flesh is almost transparent. The texture is slippery and easy on the tongue—it should melt in your mouth. Aji is often eaten with soy sauce containing onion, ginger and garlic.

**\$2.50**

Ajouter Done

WASoreCartView [R|S]

**Your cart:**

(4) Akami	\$6.00
(4) Tekkamaki	\$9.00
(3) Kappa	\$4.50
(3) Maki	
<b>Total</b>	<b>\$19.50</b>

New Session Configure Toggle Halos Profiler Memory Terminate XHTML 35/34 ms

# Books

## Smalltalk

- “Smalltalk with Style” by Edward Klimas, Suzanne Skublics and David A. Thomas (free)
- “Smalltalk by Example: the Developer’s Guide” by Alex Sharp (free)

## Squeak

- “Squeak by Example” by a lot of authors (September 2007 - free)
- “Squeak” by Xavier Briffault and Stéphane Ducasse (french)
- “Powerful Ideas in the Classroom” by BJ Allen-Conn and Kim Rose (english, french)

# Conclusion

## Conclusion

- Smalltalk is a very simple object-oriented language
- Squeak is a portable full-featured IDE for Smalltalk
- Seaside is one of the most powerful web framework

## Important URLs

- <http://www.squeak.org/> (en)
- <http://wiki.squeak.org/> (en)
- <http://stephane.ducasse.free.fr/Books.html> (en)
- <http://community.offset.org/wiki/Squeak> (fr)