Why Study Smalltalk

- Purest OO language
- Pioneered in many things
  - Graphical user interface (Window, Menu, Mouse)
  - Personal workstation
  - Push OO into success
    - I invented the term Object-Oriented, and I can tell you I did not have C++ in mind. -- Alan Kay
- Has an active community
- Could have deserved more popularity

Key Features

- Very simple syntax
- Everything is object
  - Integer like 3, true, nil
- Class is object
  - no control if, loop are objects
- Dynamically typed:
  - Variable has no type.
  - The class hierarchy is the type system.
- The language is together with its interactive runtime system
  - Runtime written in the language itself
  - Can change the system on-the-fly
  - Debug system state (image), object, class hierarchy
- All data is private (protected), all methods are public.
- No manual memory management and pointers

History

- 1967: Inspired by Simula67, the first OO language
- 1971: Started by Dynabook project (Alan Kay)
  - Hardware: GUI, pointing device, external storage, etc.
  - Later led to Alto ("laptop")
  - Software: targeted at Children
    - Became Smalltalk
    - Education

Is Dynabook realized? Kay doesn’t think so:
- Squeak
- One Laptop Per Child project (Nicholas Negroponte, Alan Kay, …) http://www.xogiving.org/

Smalltalk Today

- Squeak
  - Seaside: a dynamic web application development framework
  - Croquet: an open source platform for collaborative 3D multi-user online applications.
  - Sophie: a digital media assembly tool to create multimedia documents.
  - Scratch: a toolkit for children to write games, animated stories.
  - Cincom VisualWorks, IBM VisualAge, GNU Smalltalk, Dolphin, …
Resources

• Implementations:
  squeak (http://www.squeak.org/)
  Cincom VisualWorks

• Books, Tutorials:
  http://www.iam.unibe.ch/~ducasse/FreeBooks.html
  http://www.iam.unibe.ch/~scg/SBE/
  http://wiki.squeak.org/squeak/377

What we use in class

Squeak:
• Download at http://www.squeak.org/

• Quick Tutorial:
  A Development Example for Squeak 3.9

• A Free Book:
  Squeak by Example
  http://www.iam.unibe.ch/~scg/SBE/

Now Alan Kay Talks

• http://video.google.com/videoplay?docid=-2950949730059754521
• http://video.google.com/videoplay?docid=-9055536763288165825

More Squeak

• http://www.youtube.com/watch?v=y_3l08t5wQ