

# High-level 3D programming on Mac OS X using Coin and Sc2I

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SYSTEMS IN MOTION

# Sc21?



- 🔍 a soft, silvery-white metal
- 🔍 atomic number: 21
- 🔍 relativ atomic mass: 44.96

# Sc21



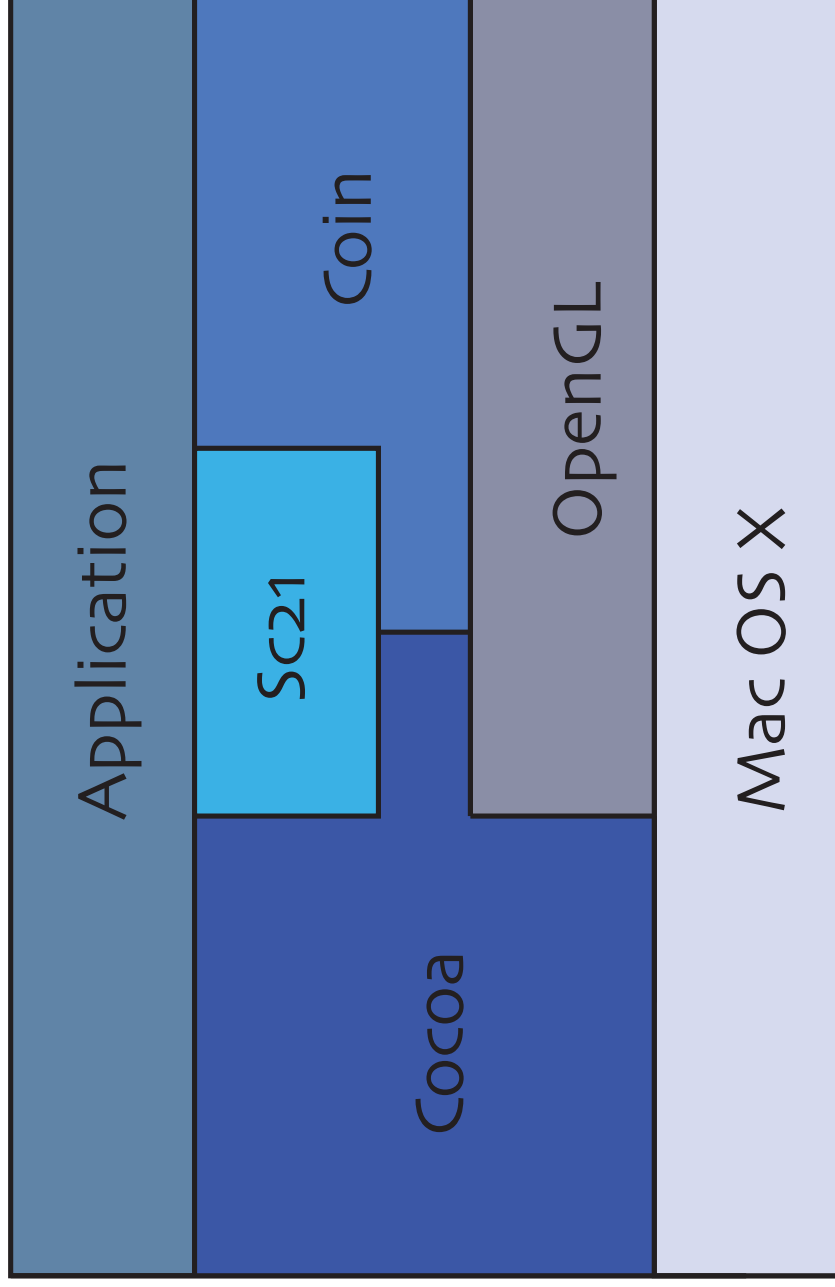
- a Mac OS X framework
- Objective-C++
- integration of Coin with Cocoa

# Coin



- another Mac OS X framework
- C++
- a high-level 3D graphics library






# Coin/Sc21 State Of The Union



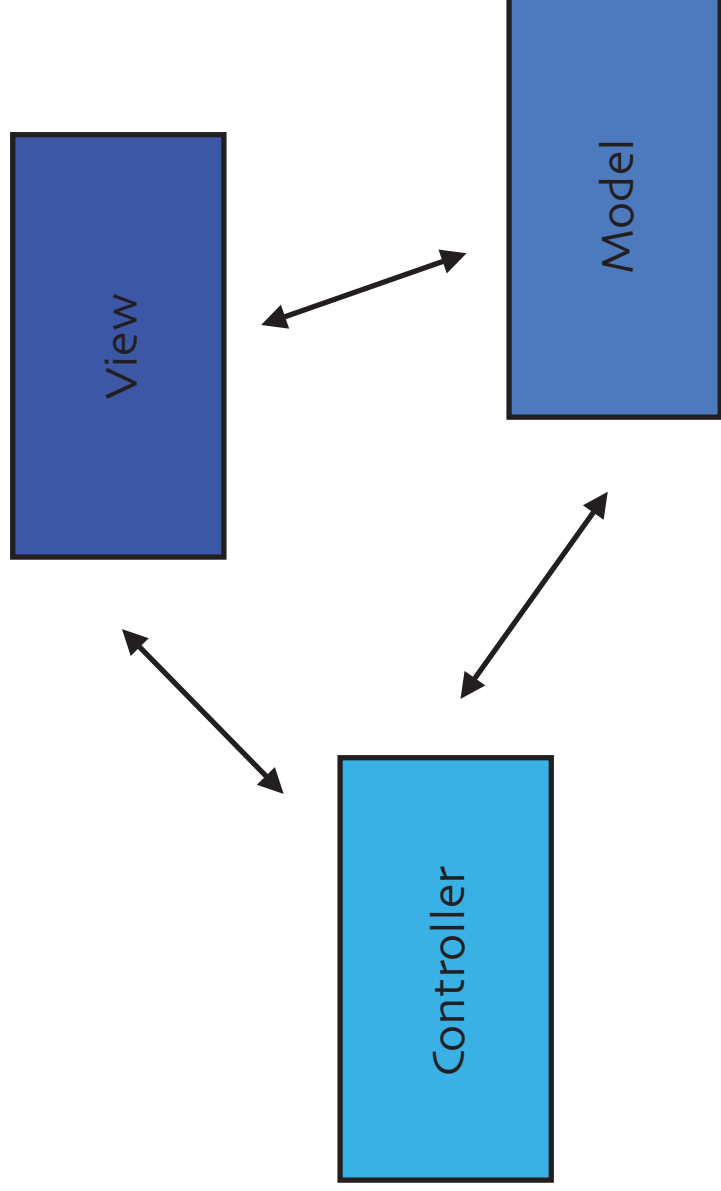
# Cocoa in 2 Minutes :)

- Cocoa is one of the two basic frameworks on Mac OS X (together with Carbon)
- The language of Cocoa is Objective-C
  - Extension to C
  - very strongly run-time based
  - reflection, message-passing
  - what OO was meant to be :)

# Cocoa in 2 Minutes :)

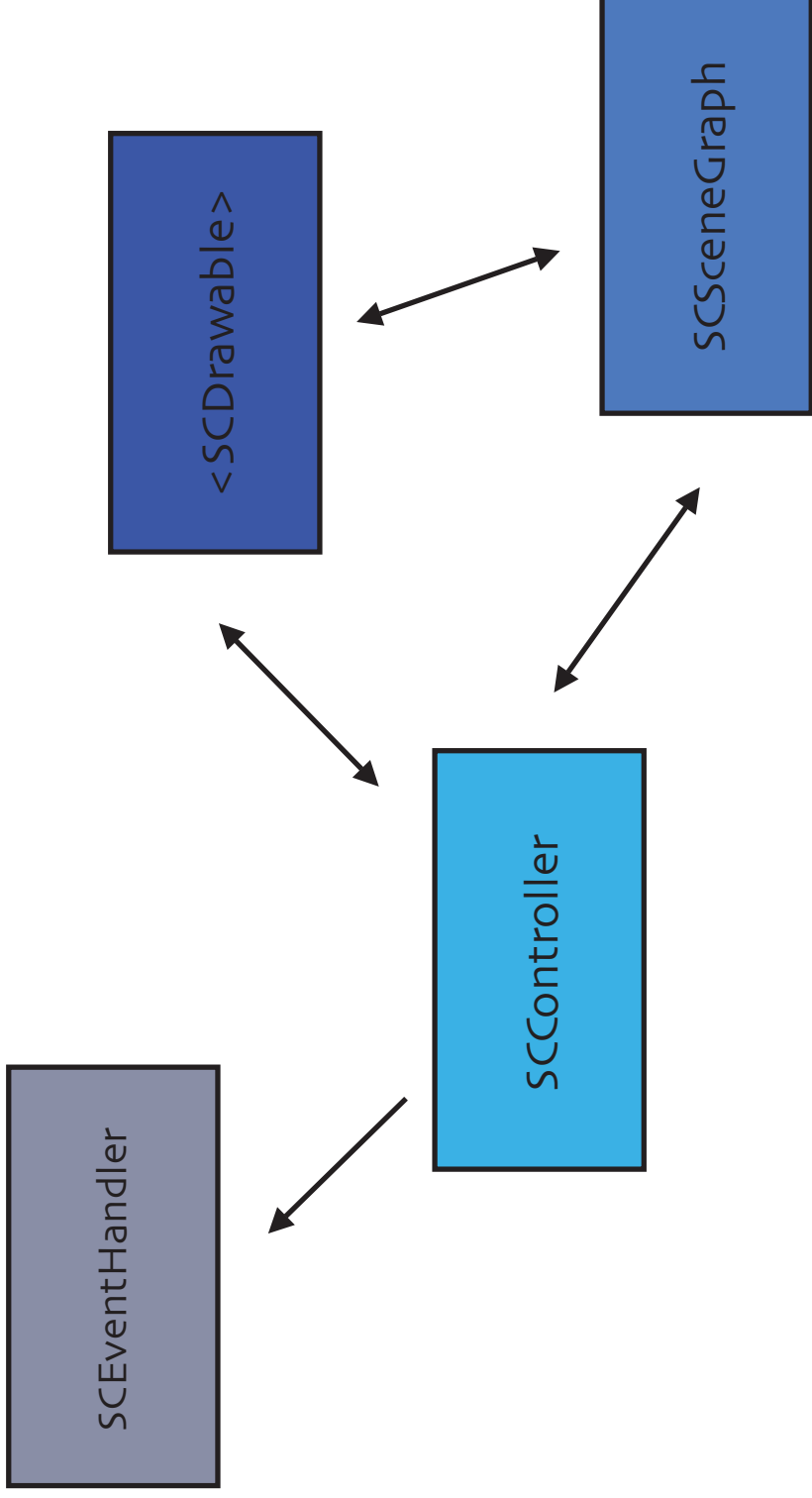
-  NIB files
-  serialized objects
-  graphical tool to build user interfaces:  
Interface Builder
-  Foundation.framework
-  AppKit.framework

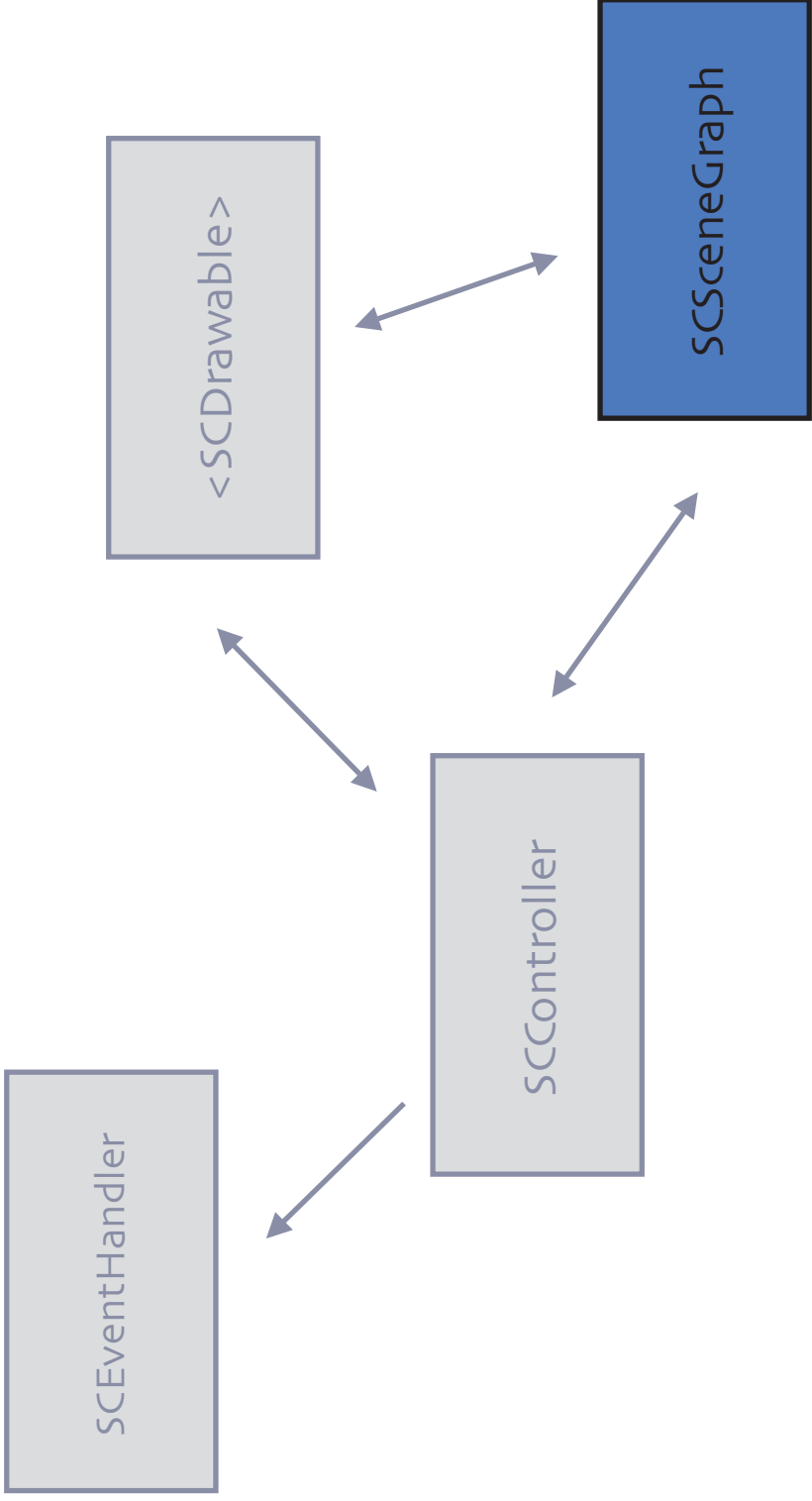
# Sc2I Overview





# Sc2I Overview

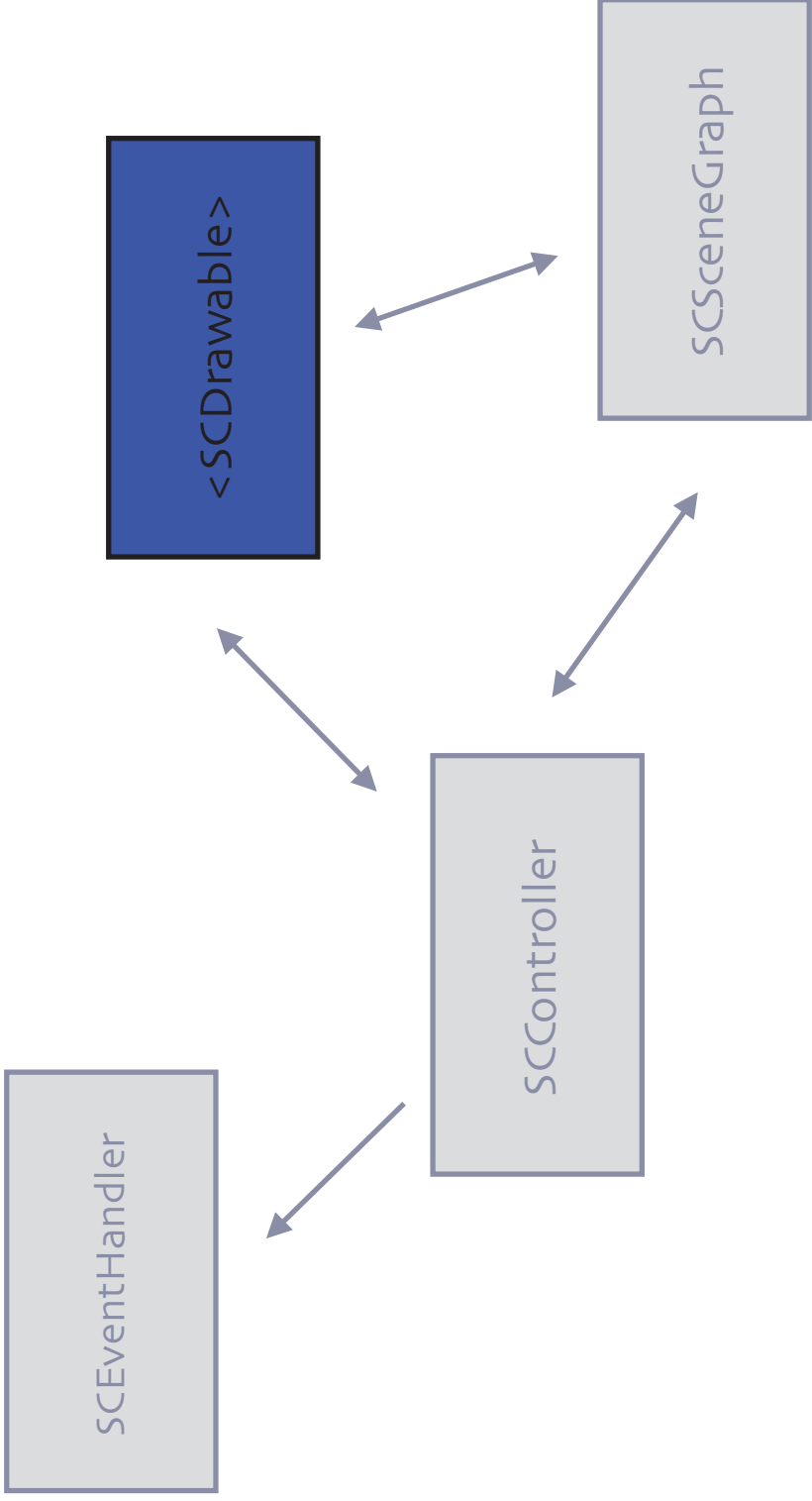




# SCSceneGraph



- Abstraction for the Coin scenegraph
- File I/O
- Superscenegraph creation
- checkbox in IB palette
- delegate for more control



# SCDrawable



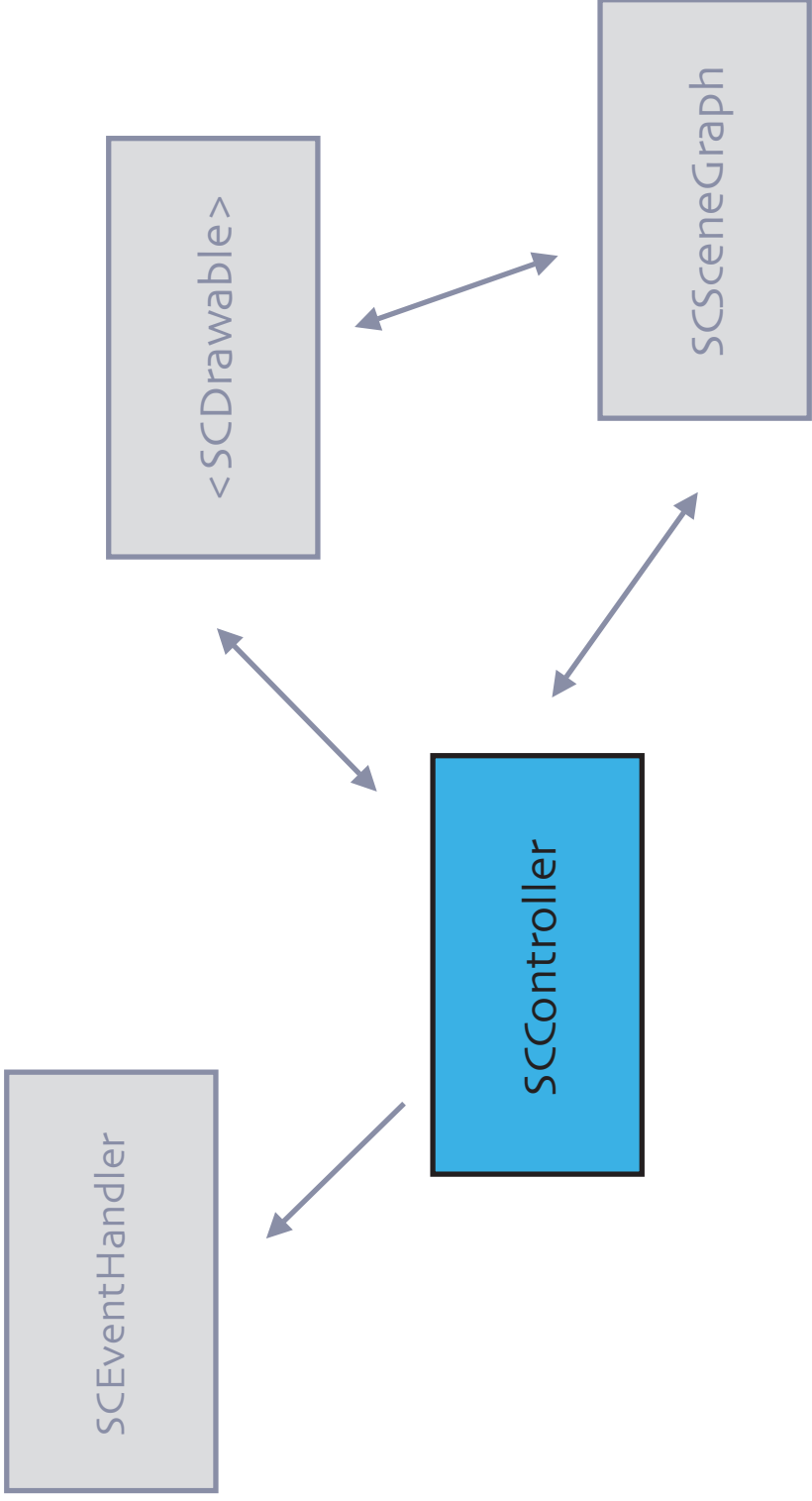
formal protocol

```
@protocol SCDrawable <NSObject>  
- (void)display;  
- (NSRect)frame;  
@end
```

# SCDrawable



- SCView class
- implements <SCDrawable>
- behaves like NSView
- events forwarded to SCController::handleEvent
- Fullscreen rendering?
- just implement the protocol!

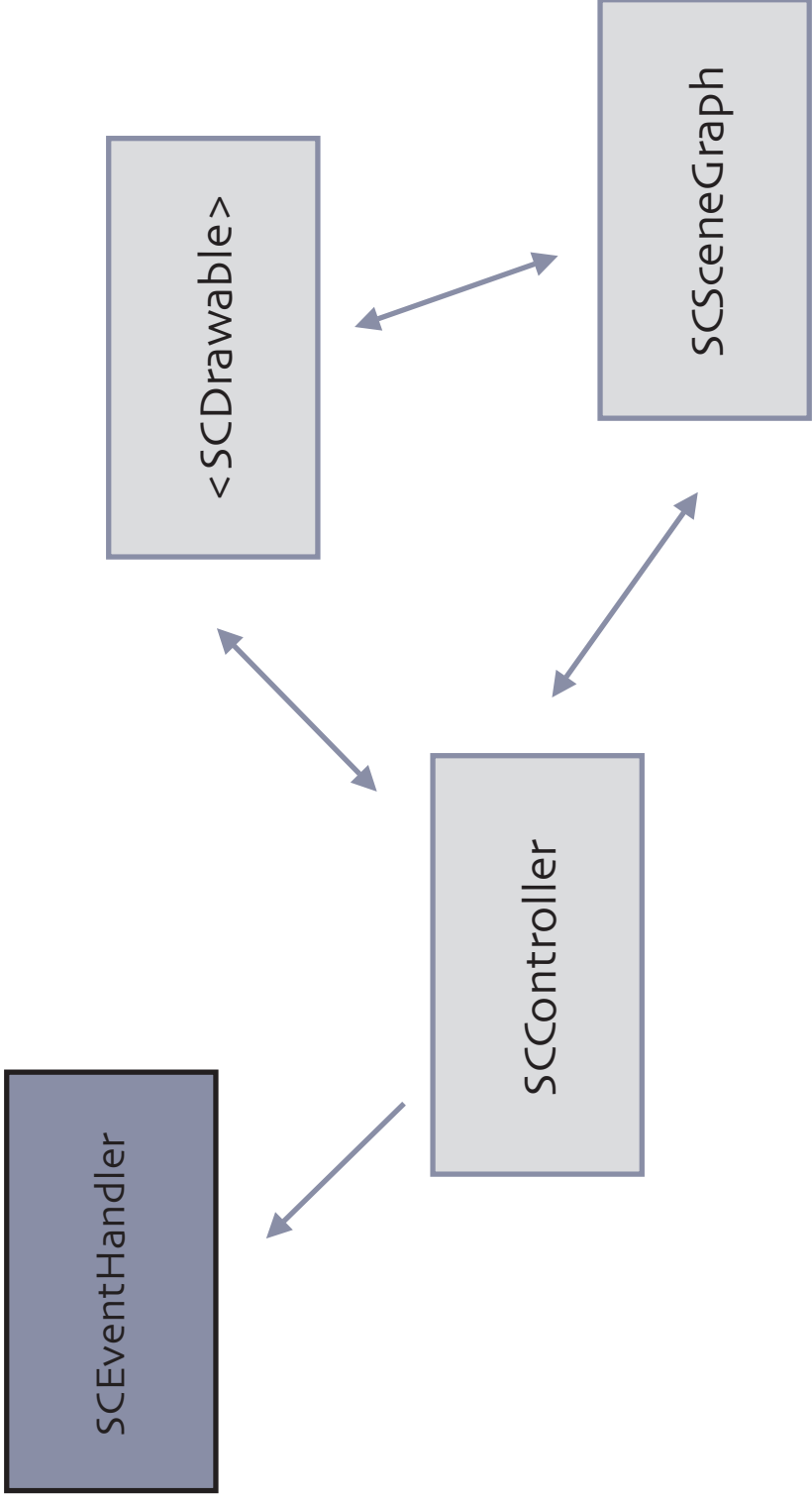


# SCController



- Coin rendering
  - draws into its SCDrawable
- Event handling
  - SCView sends events to handleEvent:
  - SCController passes them on to its SEventHandler





# SCEventHandler



- Will handle NSEvents occurring in our SCView
- Chain of event handlers
- Built-in event handlers:
  - SCExaminerHandler
  - SCCoinHandler

# SCEventHandler



- Superclass for event handlers
- Two important methods:
  - (BOOL)controller:(SCController \*)controller  
handleEvent:(NSEvent \*)event;
  - (void)controller:(SCController \*)update;

Demo

# Licensing

- Part of Coin3D (Coin, Sc21, SoGUI libs)
- GPL for Free Software development
- PEL (Professional Edition License) for all other uses
  - developer license (no run-time fees, royalties, &c.)
  - full source code available
  - \$ 2K / developer and year
- Inquiries to <[sales@sim.no](mailto:sales@sim.no)>

# [Sc21 release]

- 📌 You now know all there is to know about Sc21 :)
- 📌 Give it a spin!
- 📌 <http://www.coin3d.org/mac/Sc21>
- 📌 public beta of Sc21
- 📌 sample code
- 📌 documentation



# Where to go from here...



**Coin/Mac and Sc21 website**

<http://www.coin3d.org/mac/>



**API documentation**

<http://doc.coin3d.org/Sc21>



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