

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



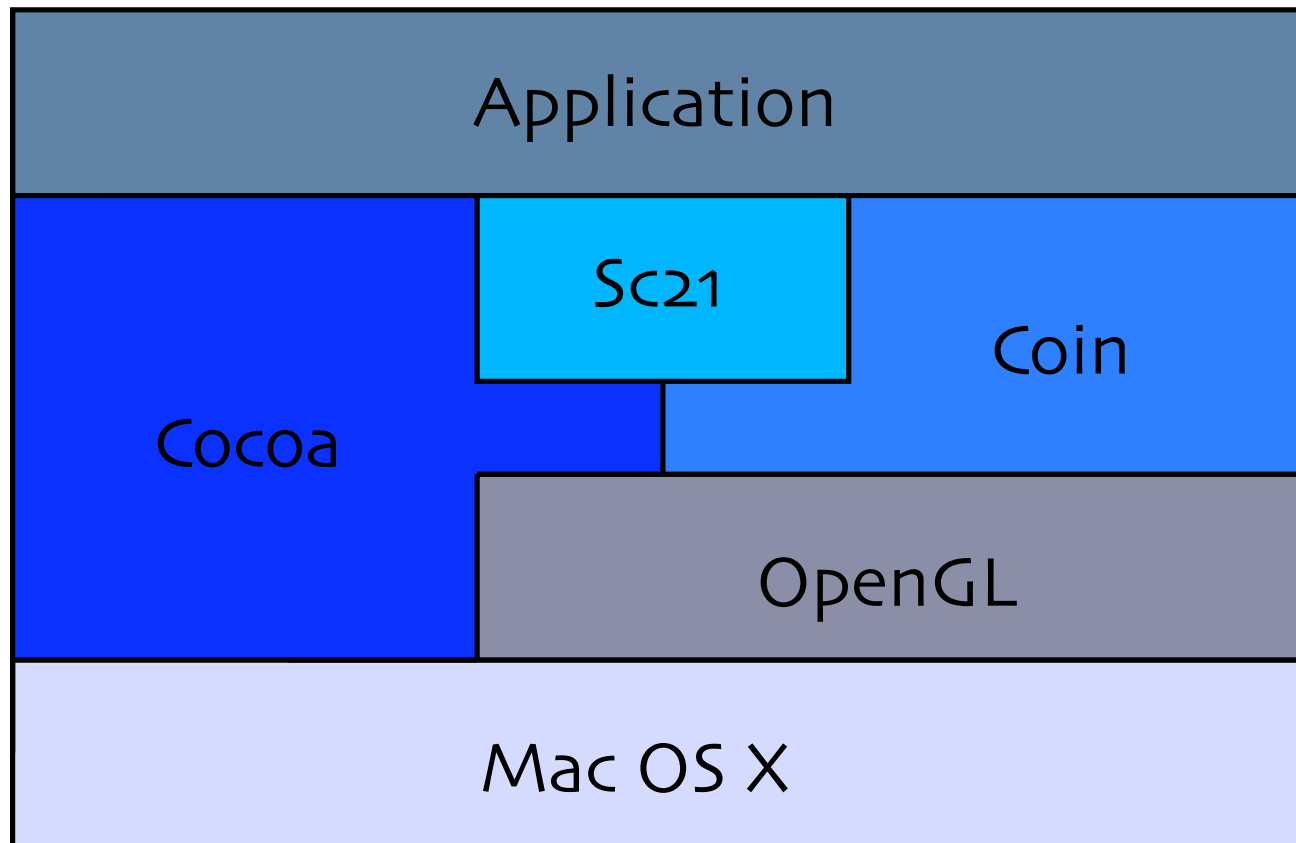
-  a Mac OS X framework
-  Objective-C++
-  integration of Coin with Cocoa

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

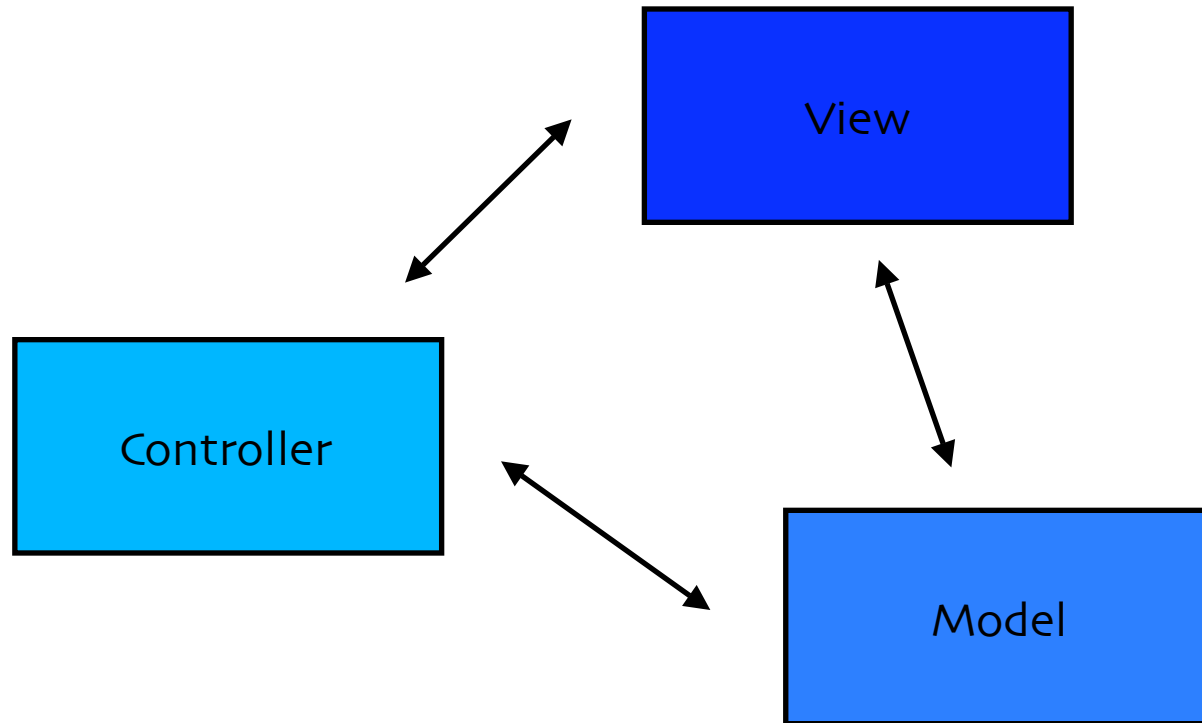


Foundation.framework

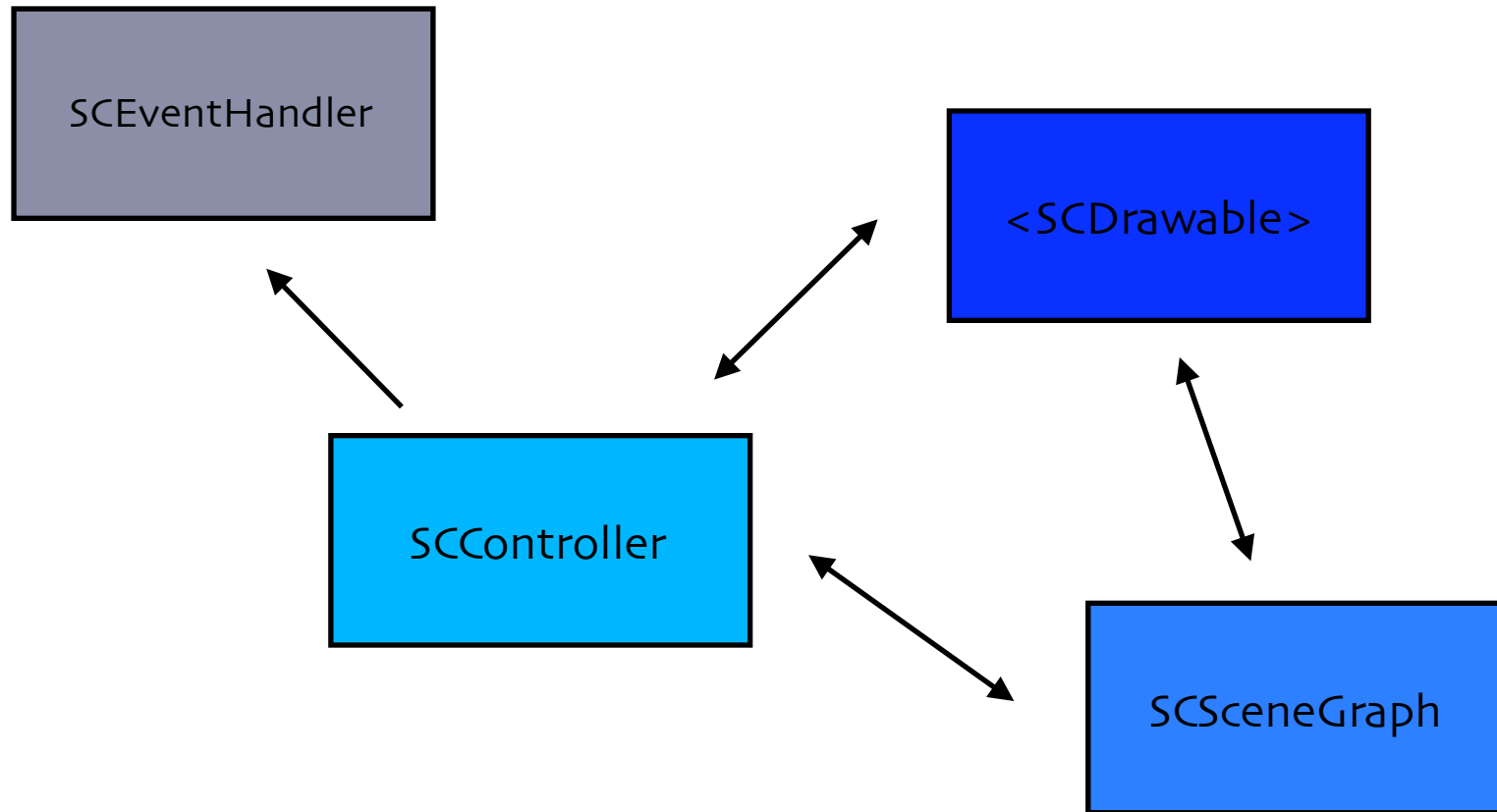


AppKit.framework

Sc21 Overview



Sc2I Overview

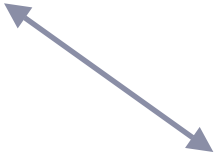
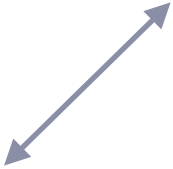
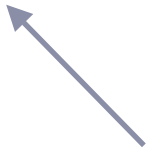


SCEventHandler

<SCDrawable>






SCController

SCSceneGraph



SCSceneGraph



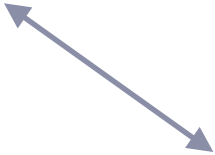
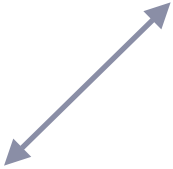
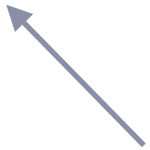
-  Abstraction for the Coin scenegraph
-  File I/O
-  Superscenegraph creation
-  checkbox in IB palette
-  delegate for more control

SCEventHandler

<SCDrawable>

SCController

SCSceneGraph



SCDrawable



formal protocol

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

SCDrawable



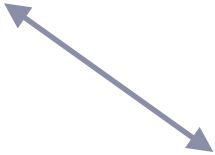
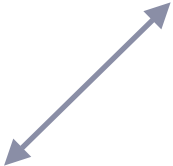
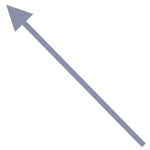
- SCView class
 - implements `<SCDrawable>`
 - behaves like `NSView`
 - events forwarded to `SCController::handleEvent`
- Fullscreen rendering?
 - just implement the protocol!

SCEventHandler

<SCDrawable>

SCController

SCSceneGraph



SCController



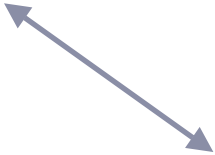
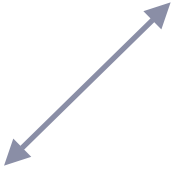
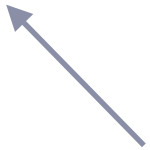
- Coin rendering
 - draws into its `SCDrawable`
- Event handling
 - `SCView` sends events to `handleEvent`:
 - `SCController` passes them on to its `SCEventHandler`

SCEventHandler

<SCDrawable>






SCController

SCSceneGraph



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, Sc2I, 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>

[Sc2 I release]

 You now know all there is to know about Sc2 I :)

 Give it a spin!

 <http://www.coin3d.org/mac/Sc2I>

 public beta of Sc2 I

 sample code

 documentation



Where to go from here...



Coin/Mac and Sc2I website

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



API documentation

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



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