

# Gauchos

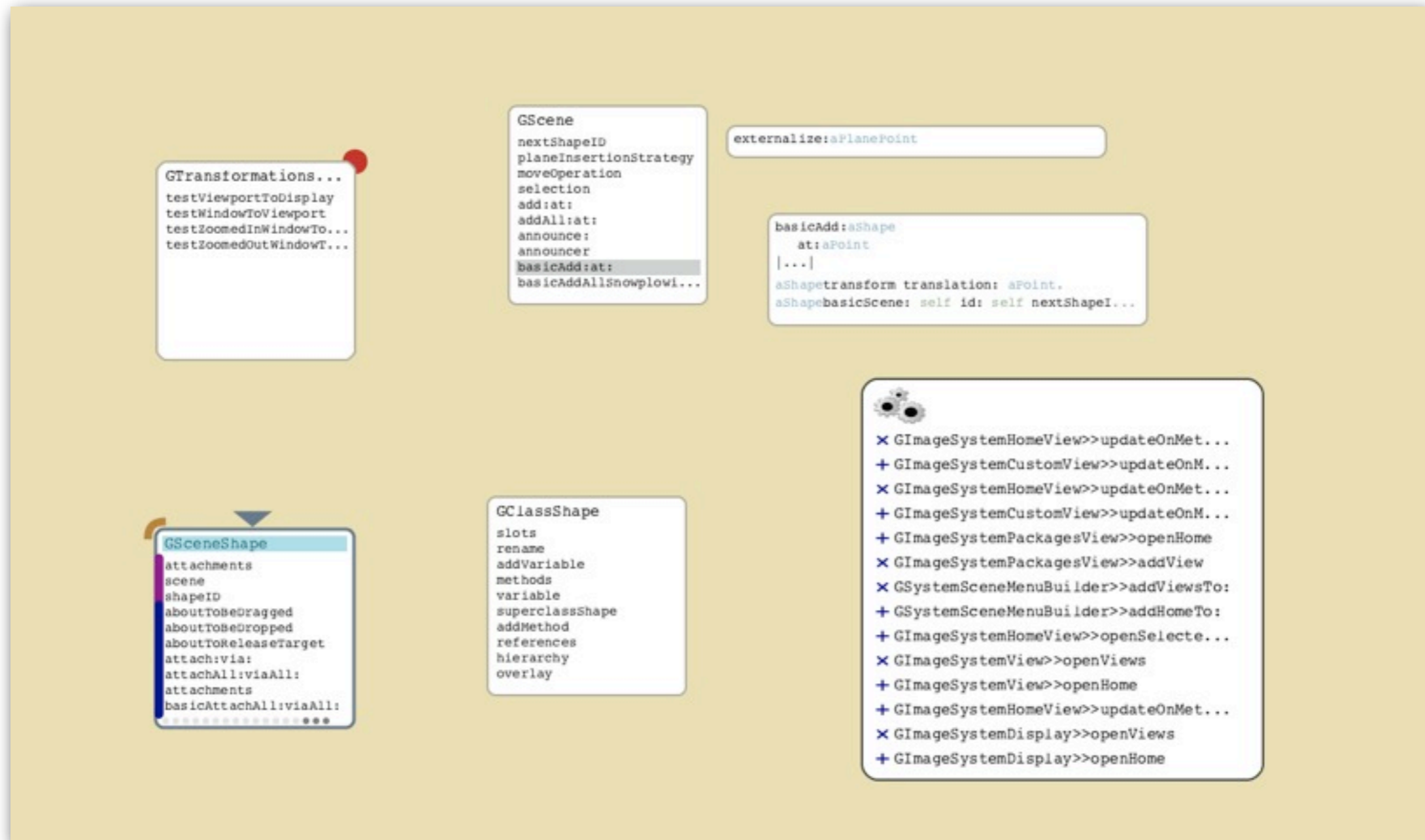
## an object-focused IDE

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Ph.D. Student  
University Of Lugano



# Gauchos

An object-focused IDE



# Gauche

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~~Morphic~~ Shapes

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Pharo

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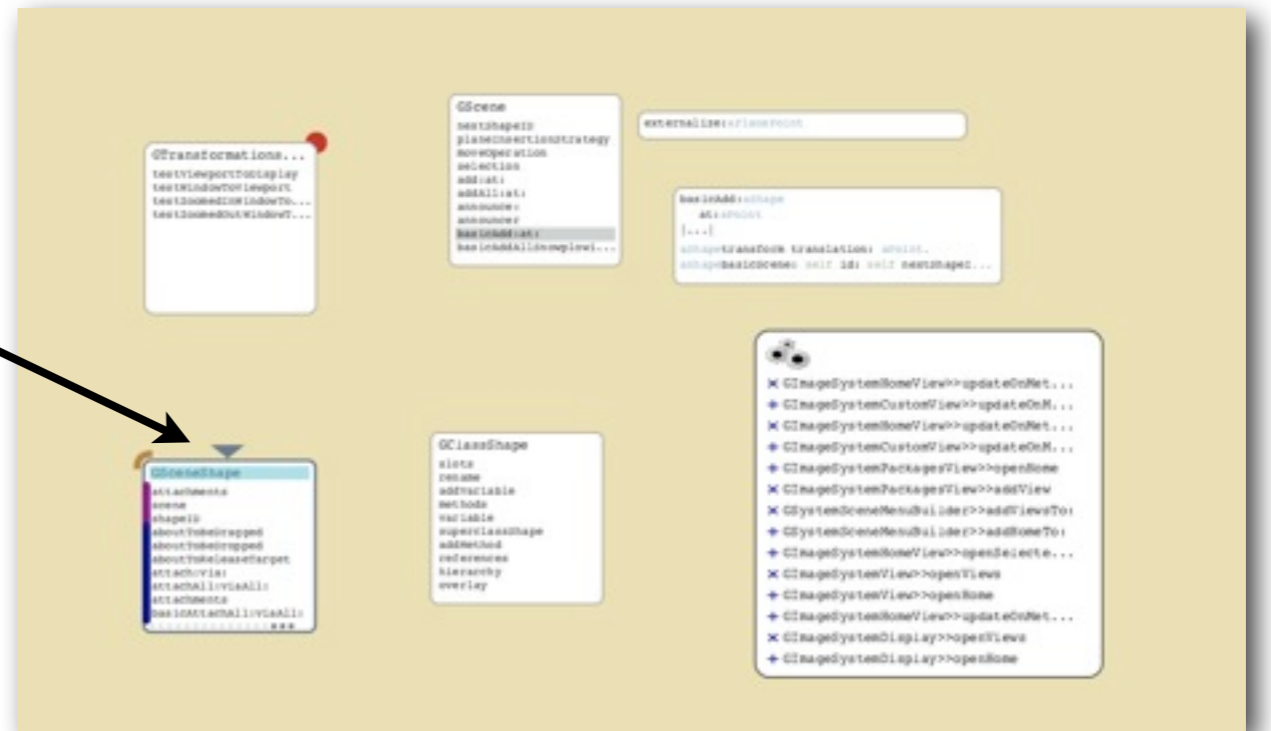
VM

Shapes

Gaucha

# GaUCHO

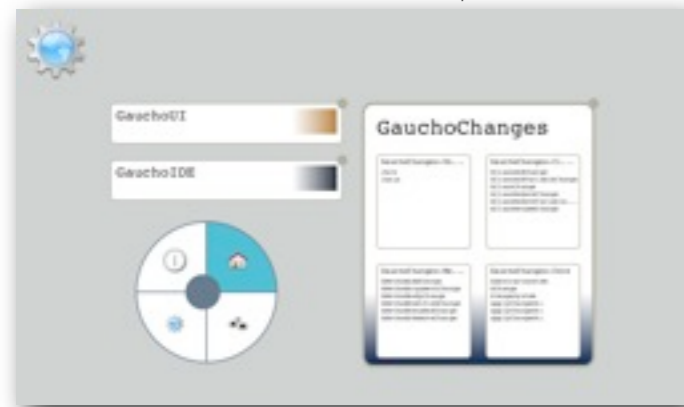
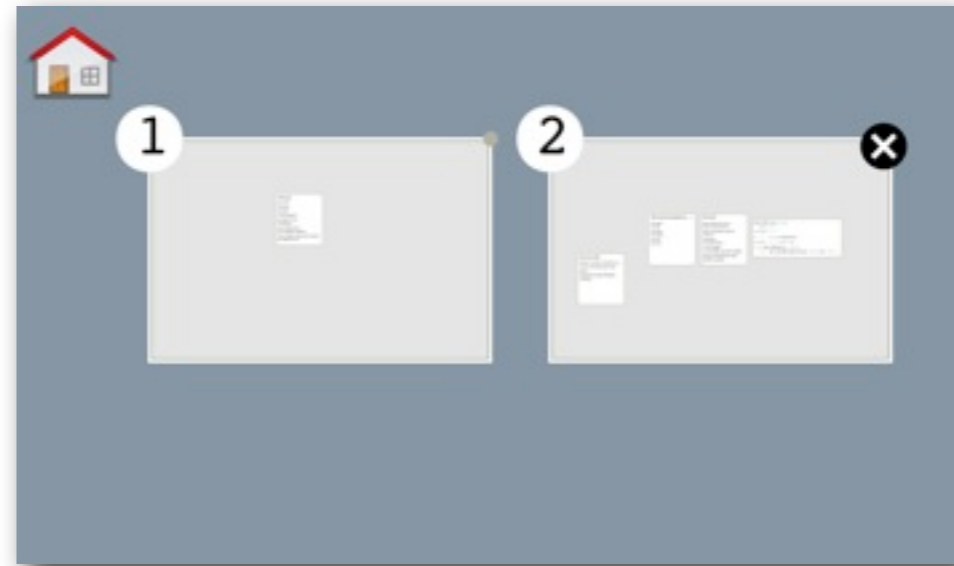
GaUCHO enables the crafting of Object-Oriented programs by direct manipulation of **Shapes**



Shapes populate the **Pampas**, an infinite 2D Surface.

# GaUCHO

In GaUCHO, developers can create multiple **Views** →



which can be persisted across **Sessions**.



# DEMO

*Programming with Shapes*  
*Method Refactoring's*  
*System View*  
*Home View*  
*Sessions*

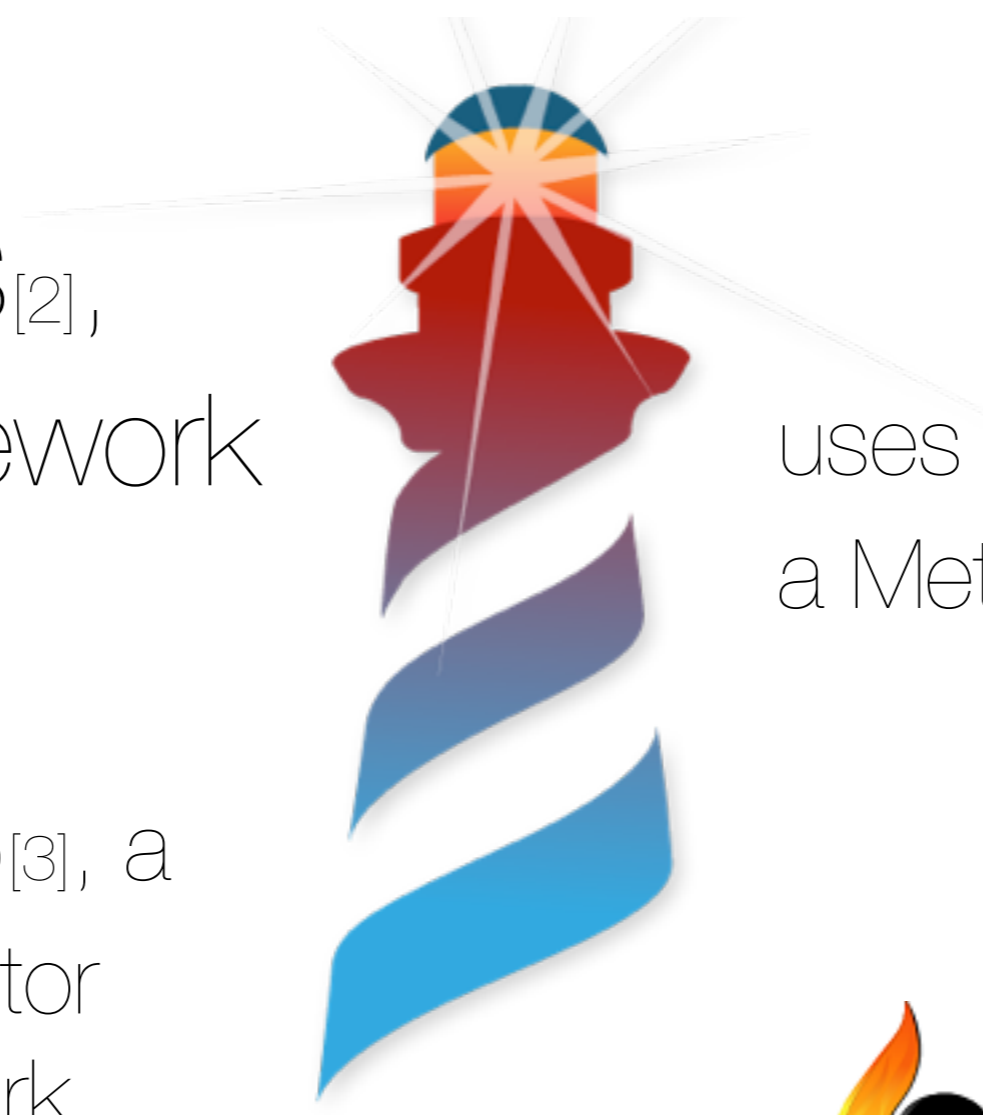
# Gauchos

uses Shapes<sup>[2]</sup>,  
a novel UI framework

uses Athens<sup>[3]</sup>, a  
modern OOP vector  
graphics framework

uses RING<sup>[4]</sup>,  
a Meta-Model for Smalltalk.

uses  **Fuel**  
to load/save Sessions<sup>[5]</sup>.



[1] [www.pharo.org/](http://www.pharo.org/)

[2] <http://smalltalkhub.com/>

[3] <http://vimeo.com/40653315>

[4] <http://hal.inria.fr/inria-00629677>

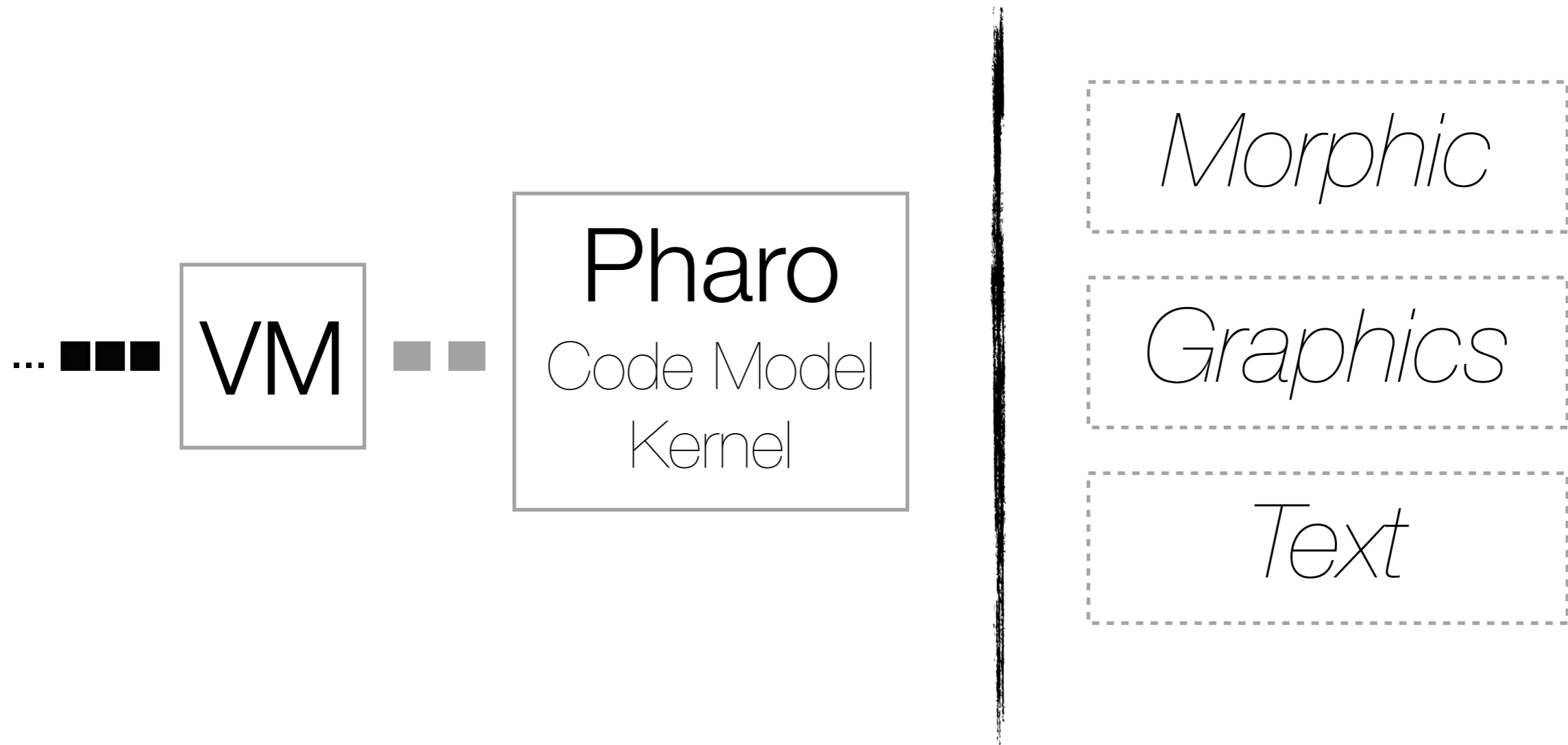
[4] <http://rmod.lille.inria.fr/web/pier/software/Fuel>



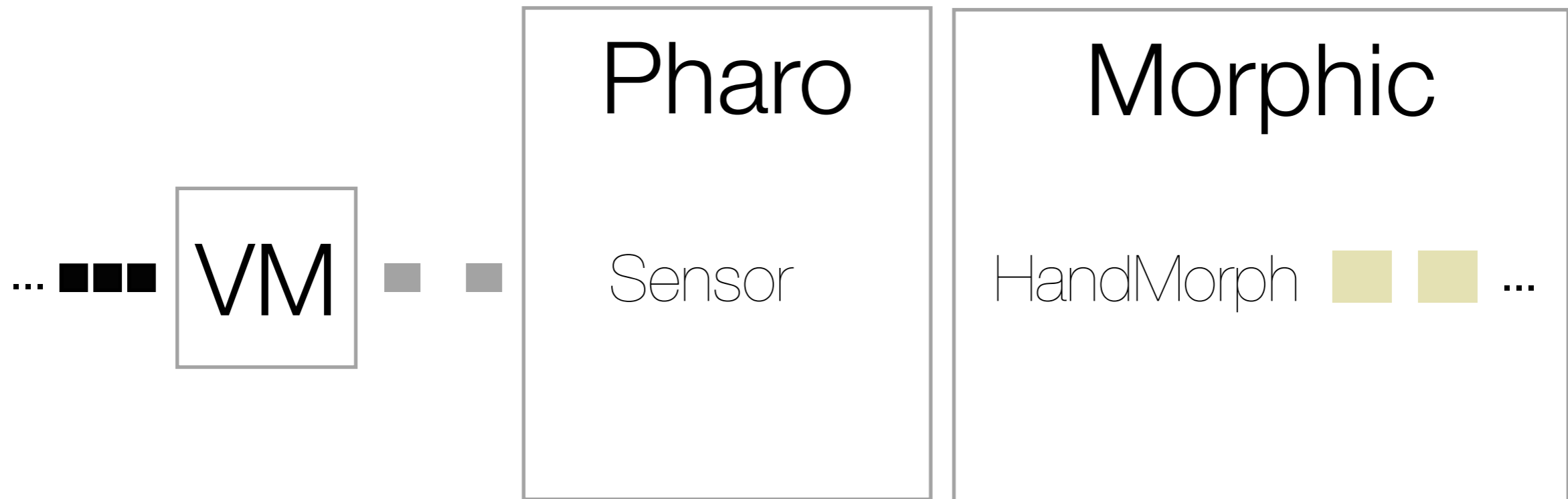
Shapes

Gauchos

# Shapes: Prerequisites



# Event Handling

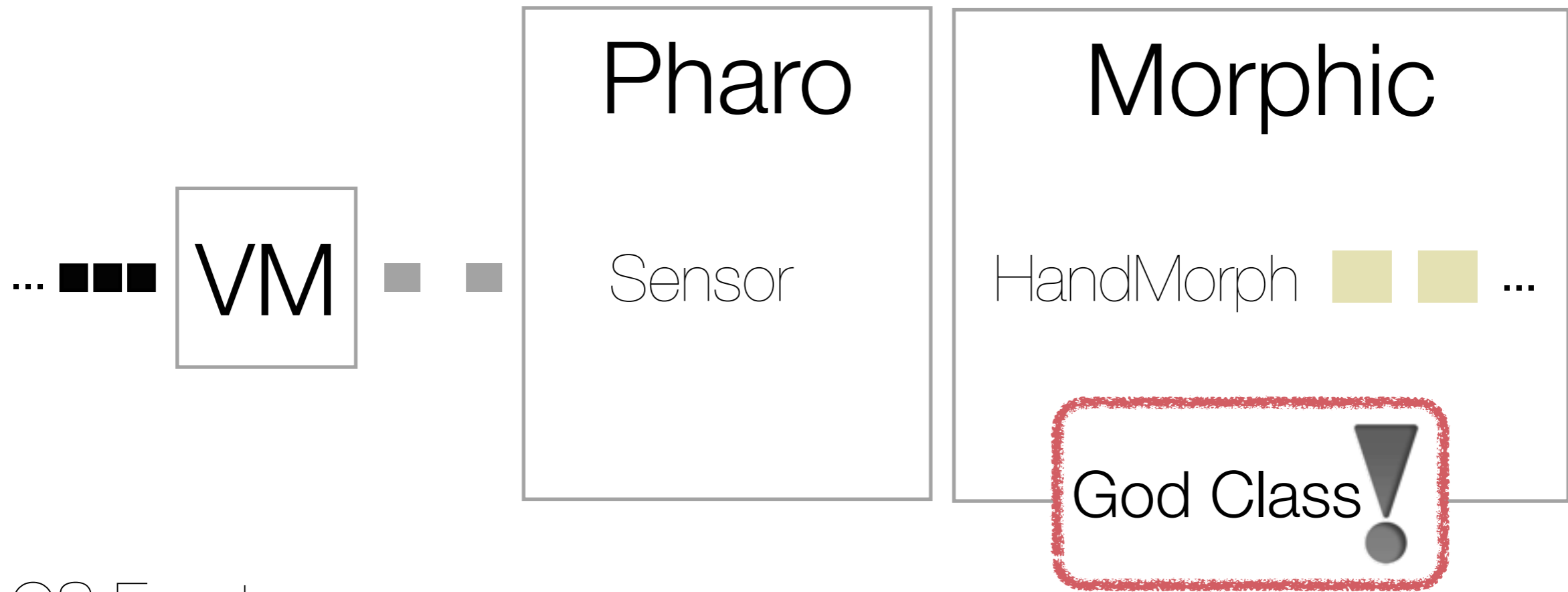


■ OS Event

■ VM Buffer Event

■ UI Event

# Event Handling

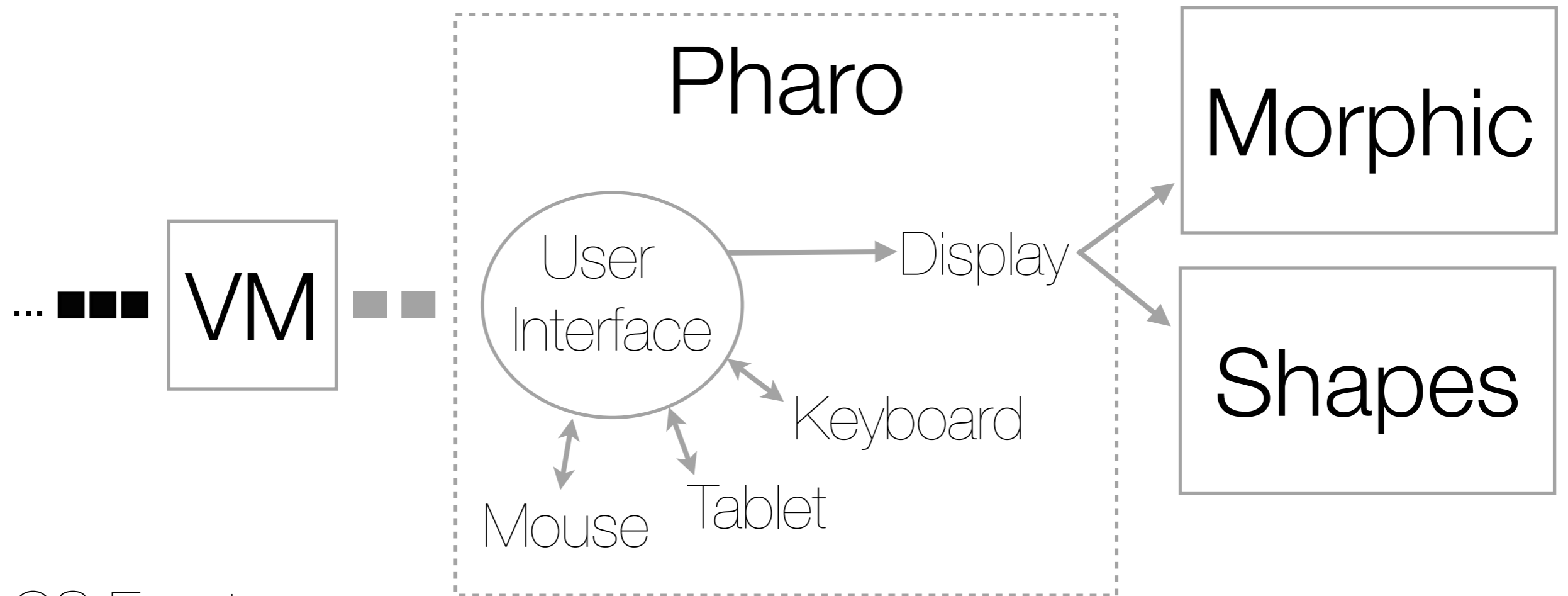


■ OS Event

■ VM Buffer Event

■ UI Event

# Event Handling: Revisited

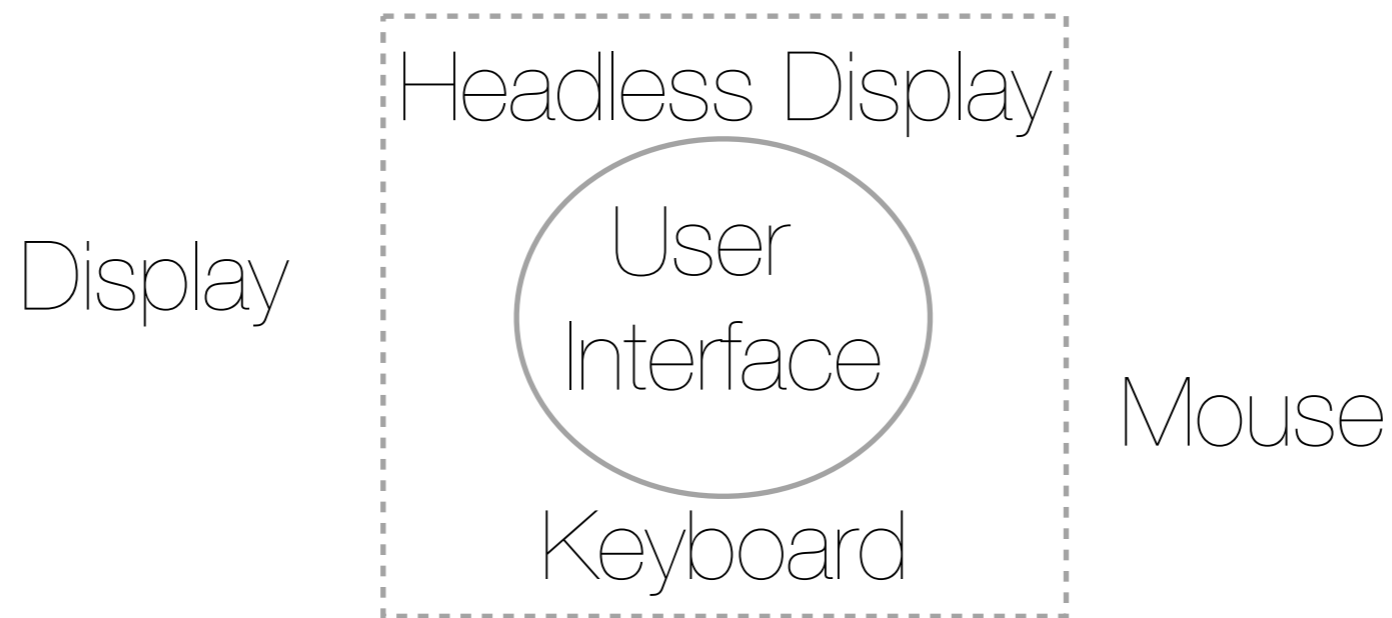


■ OS Event

■ VM Buffer Event

■ UI Event

# Event Handling: Revisited



```
ui := GUserInterface new.
```

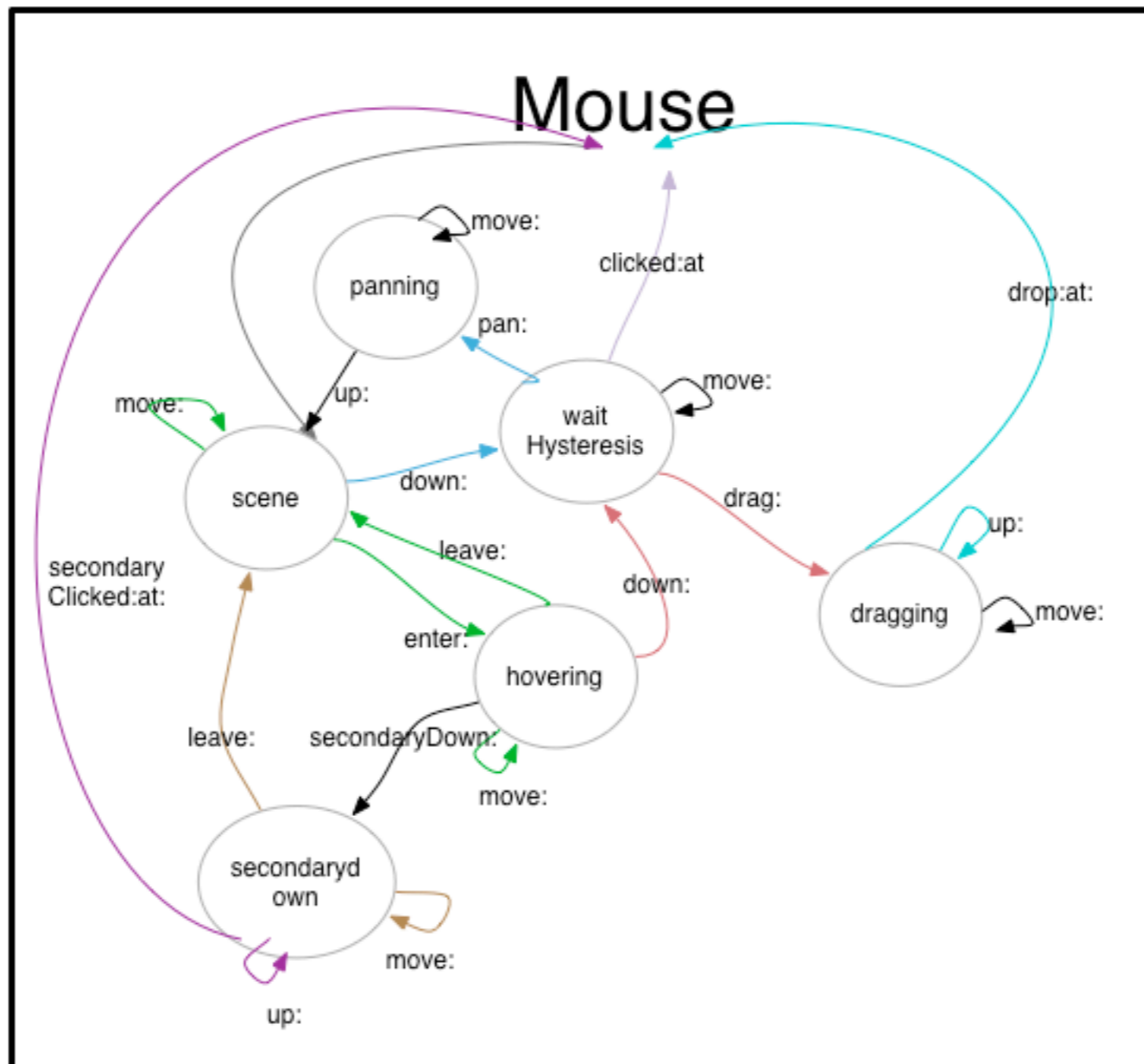
```
mouse := ui peripheralDeviceNamed: #mouse.  
mouse detach.
```

```
ui switchDisplayTo: GHeadlessDisplay new.
```

```
ui install.
```

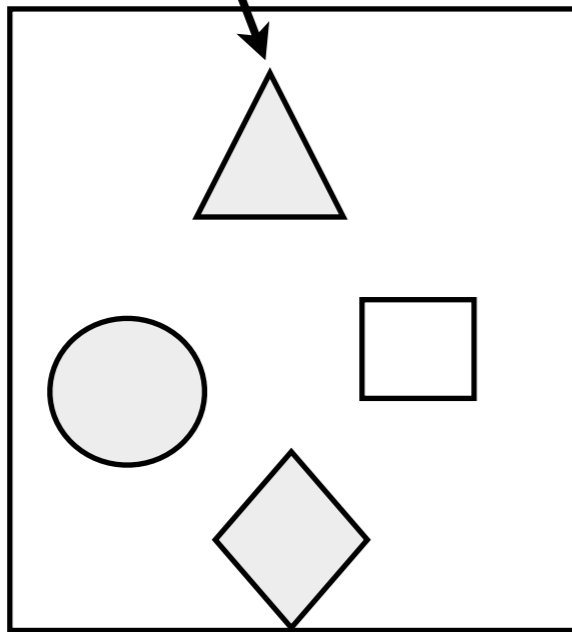
# Peripheral Devices

## Revisited



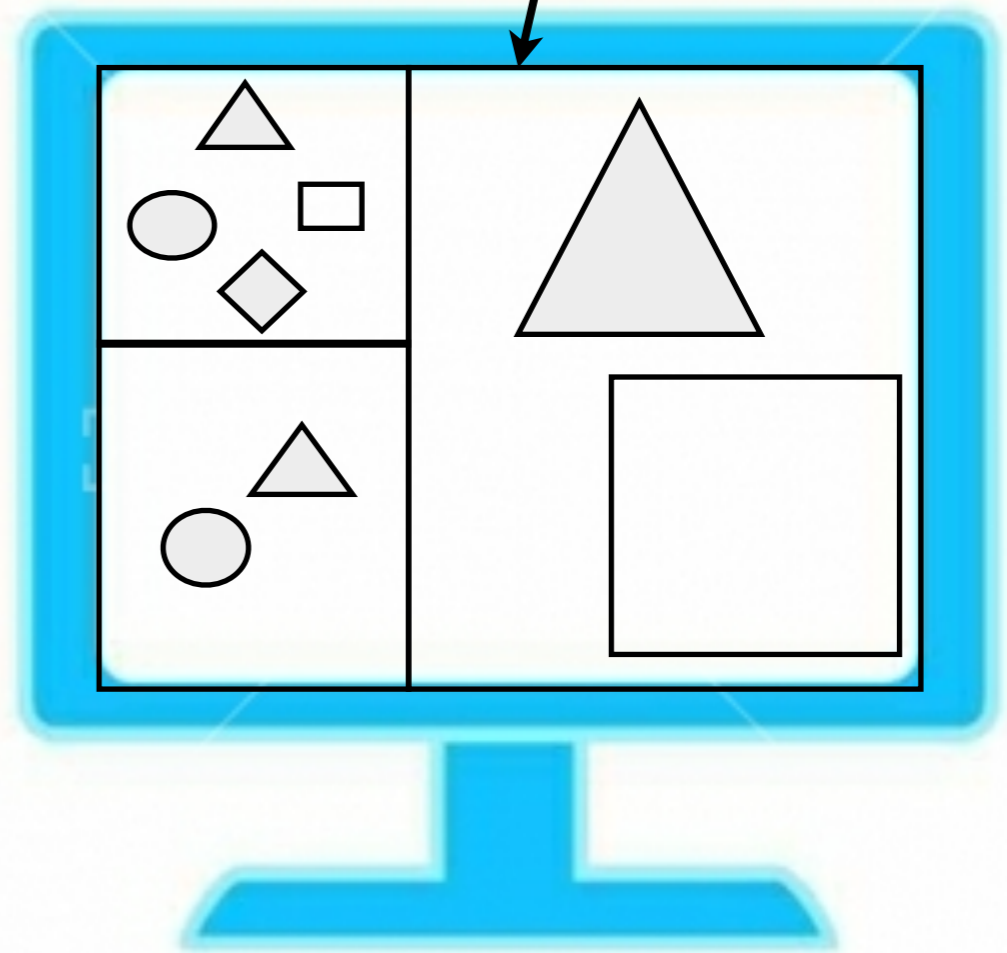
# Shapes: Design

Shape



Scene

View



Display



# Shapes

Shape 

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Drawing:



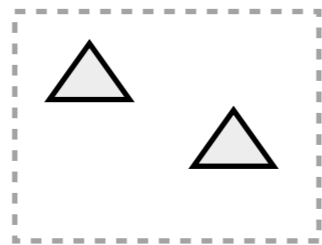
CSS: Styles & Modes   

KeyBindings: {cmd-a->select, cmd-b->dismiss}

# Shapes

Scene Shape

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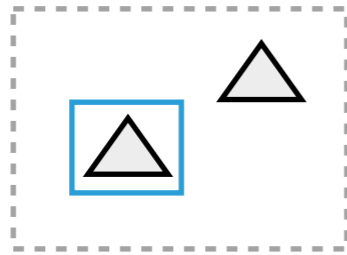
shape

transform 4@4  x2 45°

scene

# Shapes

Scene

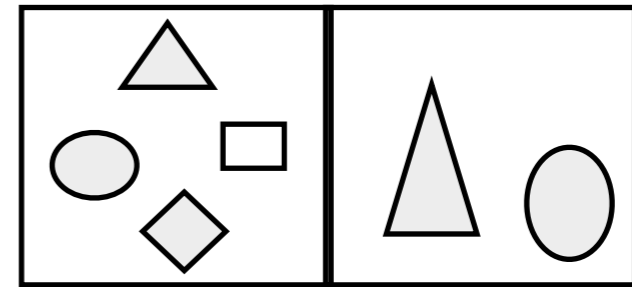


shapes

focus

plane

View

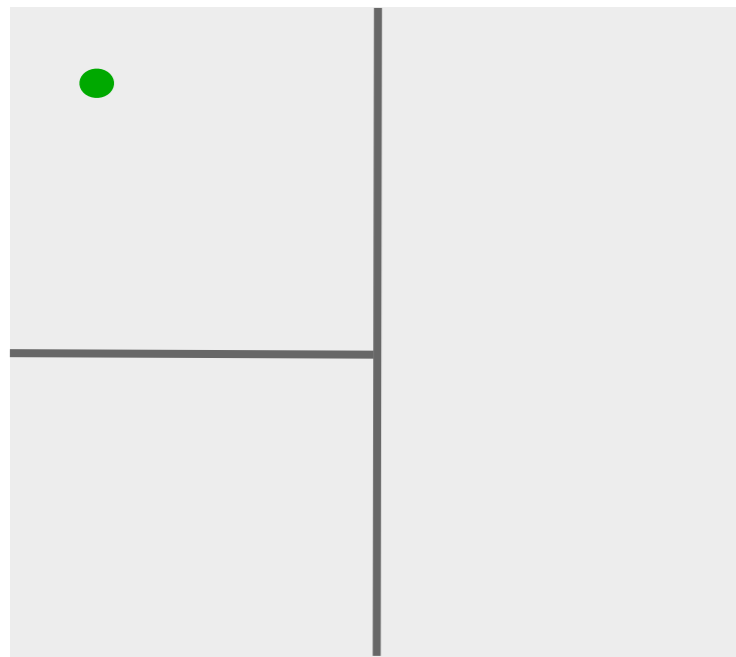


scene

viewport

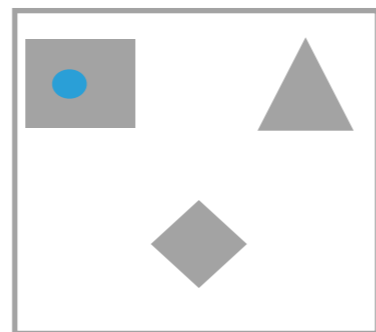
# Shapes

## Local Coordinates



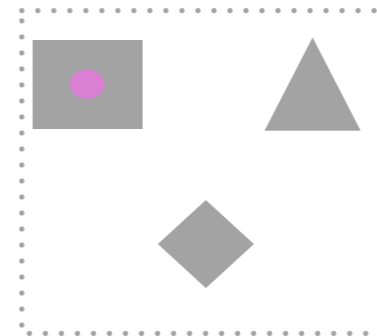
Display

● 10@10



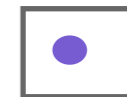
View

● 214@4421



Scene

● 5@5

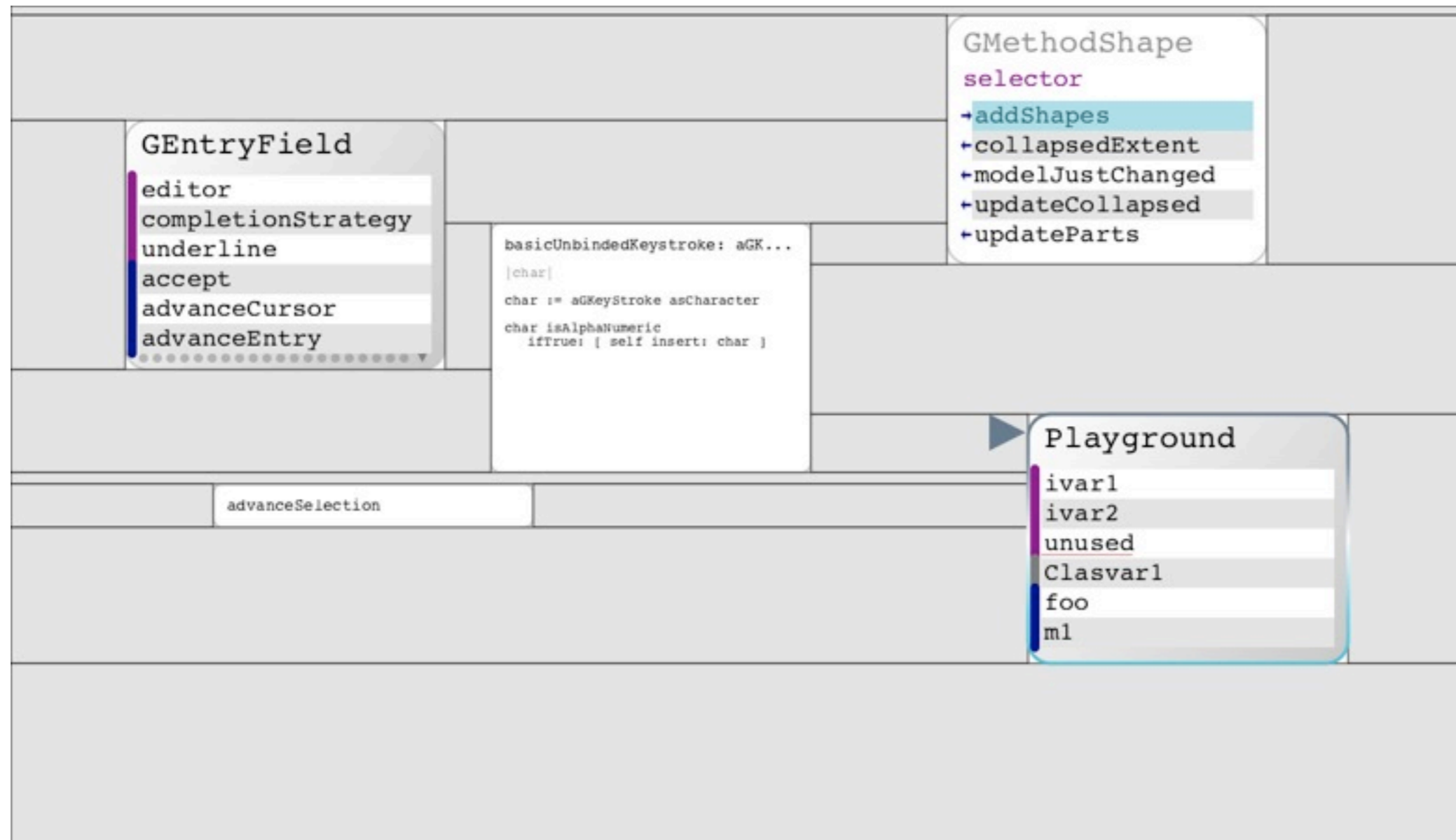


Shape

● 100@100



# Pampas: Tiles



# DEMO

*Keyboard based Navigation*

*Corner Stitched Layout*

*Non-overlapping scheme*

*Multiple Views*

Gaucha

Nautilus/Glamour

Shapes

Morphic



Pharo

VM

# GaUCHO

www.gaucho.inf.usi.ch



```
GTransformations...
testViewportToDisplay
testWindowToViewport
testZoomedInWindowTo...
testZoomedOutWindowT...
```

```
GScene
nextShapeID
planeInsertionStrategy
moveOperation
selection
add:at:
addAll:at:
announce:
announcer
basicAdd:at:
basicAddAllSnowplowi...
```

```
externalize:aPlanePoint
```

```
basicAdd:aShape
  at:aPoint
  [...]
aShapeTransform translation: aPoint.
aShapeBasicScene: self id: self nextShapeI...
```

```
GSceneShape
attachments
scene
shapeID
aboutToBeDragged
aboutToBeDropped
aboutToReleaseTarget
attach:via:
attachAll:viaAll:
attachments
basicAttachAll:viaAll:
.....
```

```
GClassShape
slots
rename
addVariable
methods
variable
superclassShape
addMethod
references
hierarchy
overlay
```

```
× GImageSystemHomeView>>updateOnMet...
+ GImageSystemCustomView>>updateOnM...
× GImageSystemHomeView>>updateOnMet...
+ GImageSystemCustomView>>updateOnM...
+ GImageSystemPackagesView>>openHome
× GImageSystemPackagesView>>addView
× GSystemSceneMenuBuilder>>addViewsTo:
+ GSystemSceneMenuBuilder>>addHomeTo:
+ GImageSystemHomeView>>openSelecte...
× GImageSystemView>>openViews
+ GImageSystemView>>openHome
+ GImageSystemHomeView>>updateOnMet...
× GImageSystemDisplay>>openViews
+ GImageSystemDisplay>>openHome
```