Roassal 3

ObjectProfile
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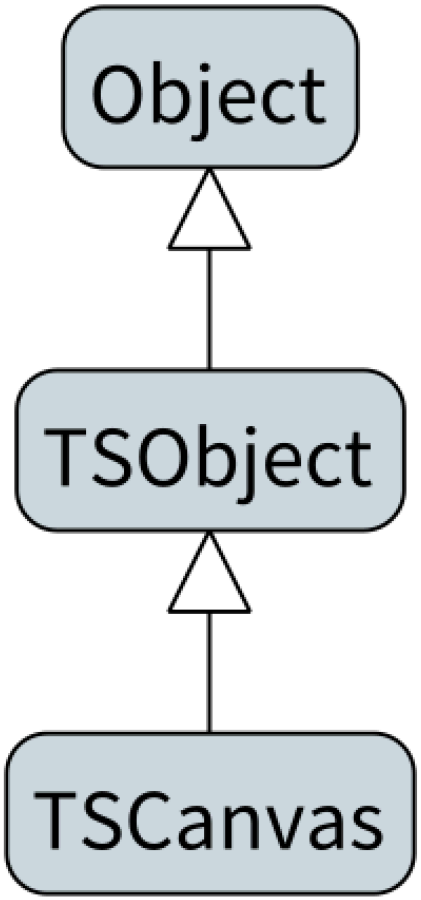
Roassal in a nutshell

- Canvas and shapes
- View and elements.
- This is the version more than 2 less than 4.
- Nothing in this presentation is final.

Canvas

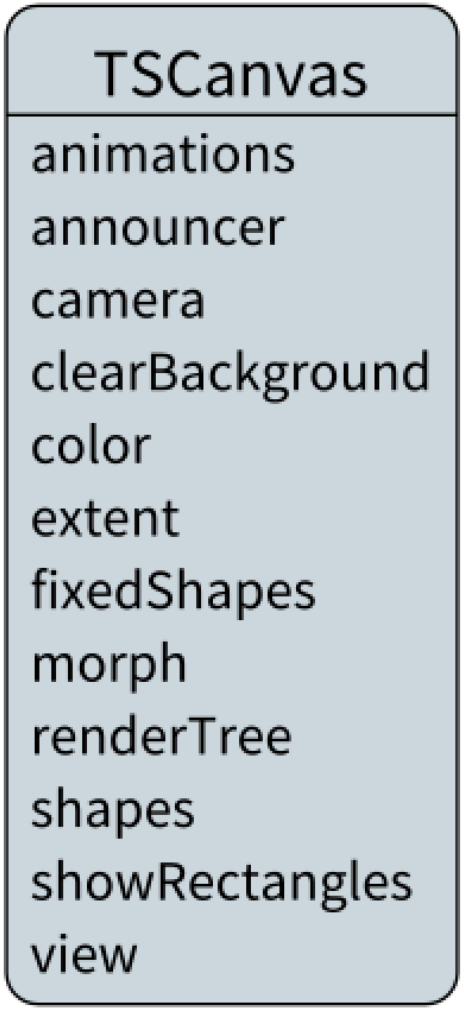
The Canvas



- Used to draw graphic objects.
- The canvas is a TSCanvas.
- It is the canvas where you can put shapes.
- It is subclass of TSObject or Object.
- Roassal use the notation **TS**Shape, **TS**Canvas, **TS**Box, (Trachel Shape) for canvas components.

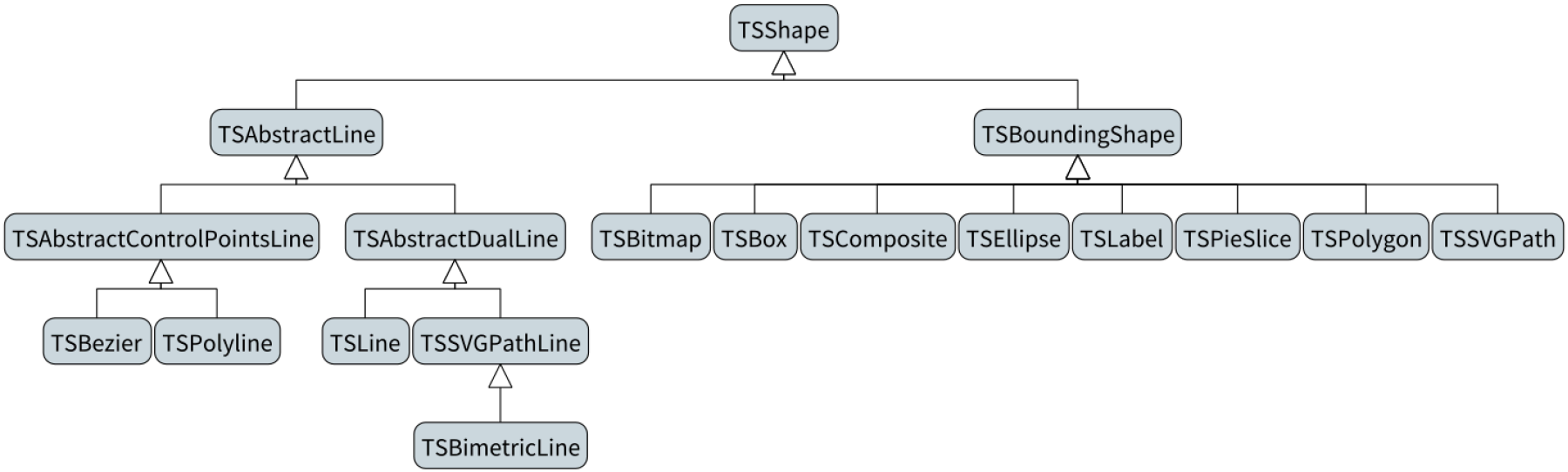
Canvas parts

- Shapes
- Events
- Morph
- Animations
- And more

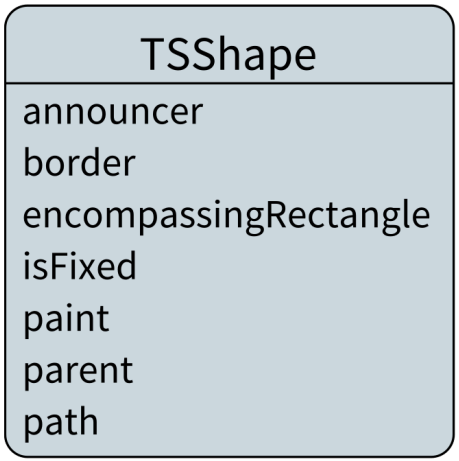


Canvas Shapes

- The canvas has basic shapes
- And fixed shapes



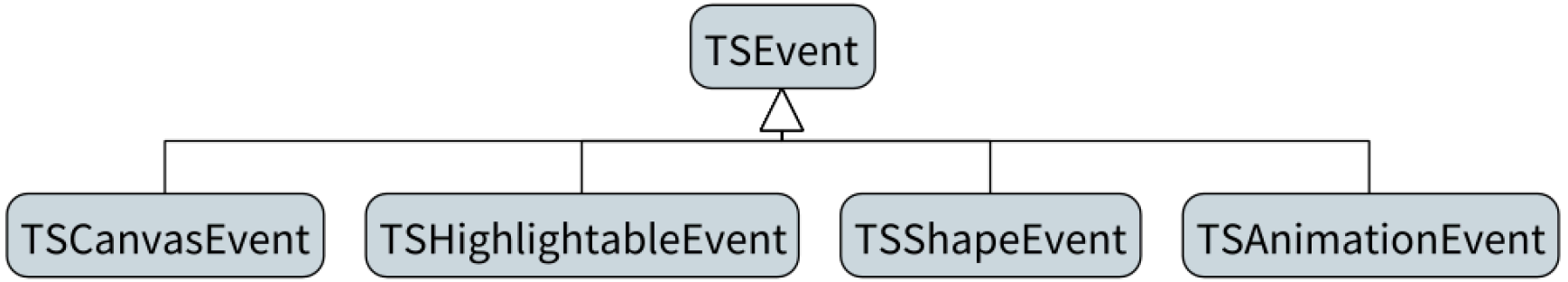
Shapes



- All the shapes has these properties.
- There is composition.
- There are 2 groups, lines and bounding shapes.

Canvas events

- The canvas and the shapes has an announcer.



Canvas morph

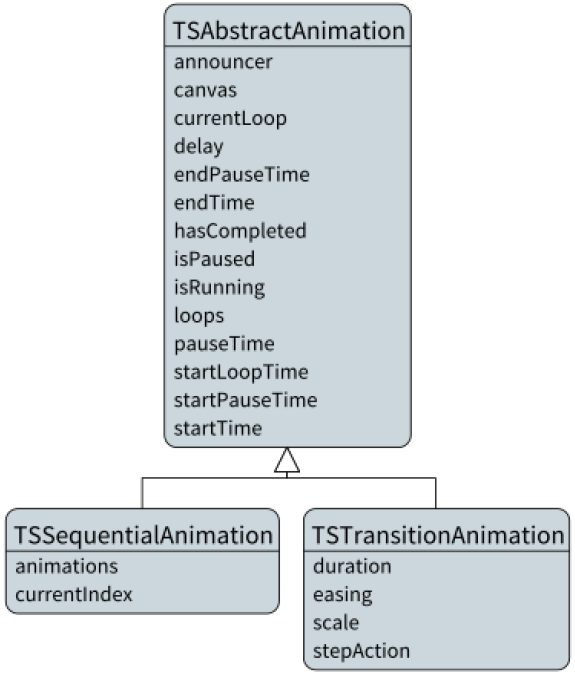
- TSCanvas has an instance TSAthensMorph
- This is the visual representation, in the visual smalltalk system.
- TSAthensMorph has reference to the TSCanvas.
- The morph sends the events to the canvas
- The morph draws the canvas

Canvas visitor

- TSCanvas handles a visitor, with *accept:* method
- This visitor renders the canvas and each shape in the morph with athens. TSAthensRenderer
- For the future Roassal could have: TSBlocRenderer, TSPNGRenderer, svg, pdf, html visitors.

Animation

- TSCanvas has a collection of animations.
- When TSAthensMorph renders the canvas it play the animations, to update the canvas.

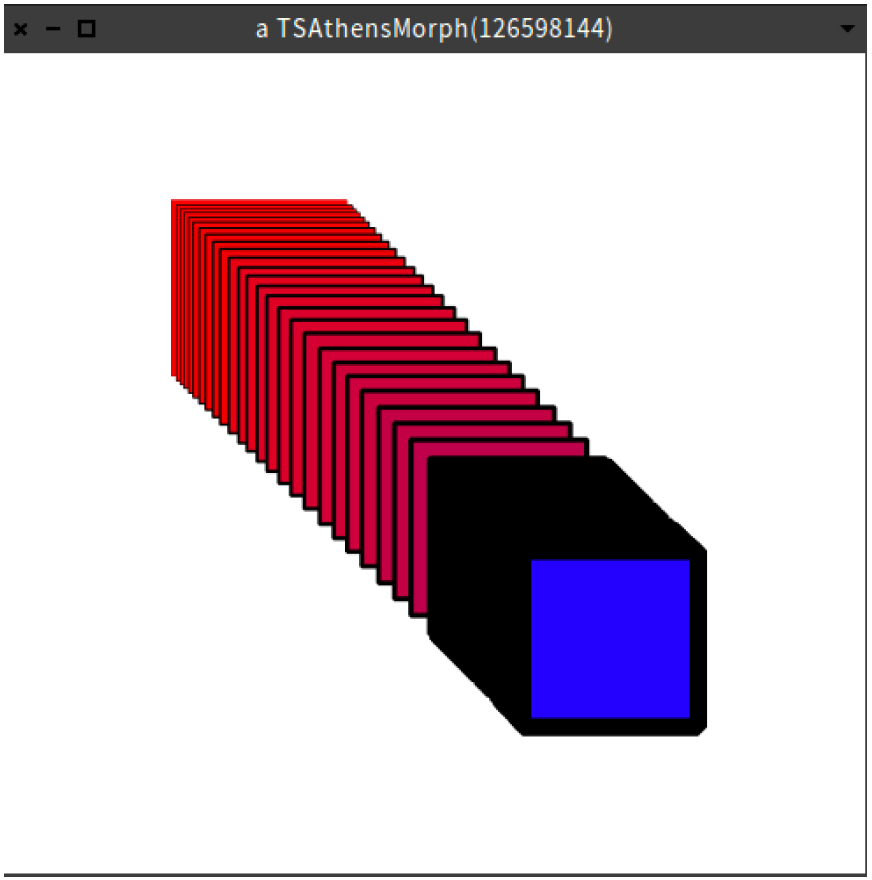


Scales

- The animation and other examples of roassal uses package Roassal3-Scales
- These scales objects are very useful to transform(scale) a value to another value.
- Scale is f(x) = y
- Scale has a domain, x or input(numbers, points or arrays)
- Scale has a range, or y or output(number, points or colors).

Canvas Example

```
| c b |
c := TSCanvas new.
b := TSBox new
    extent: 100@100;
    border: TSBorder new.
c addShape: b.

c newAnimation
    easing: TSEasing bounce;
    from: -100@ -100;
    to: 100@100;
    on: b set: #position:.
c newAnimation
    from: Color red;
    to: Color blue;
    on: b set: #color:.
c newAnimation
    from: 0;
    to: 10;
    on: b border set: 'width:'.
c
    when:TSMouseClick
    do: [ c animations do: #pause ];
    when: TSMouseDoubleClick
    do: [ c animations do: #continue ].
c clearBackground: false.
c open.
```



View

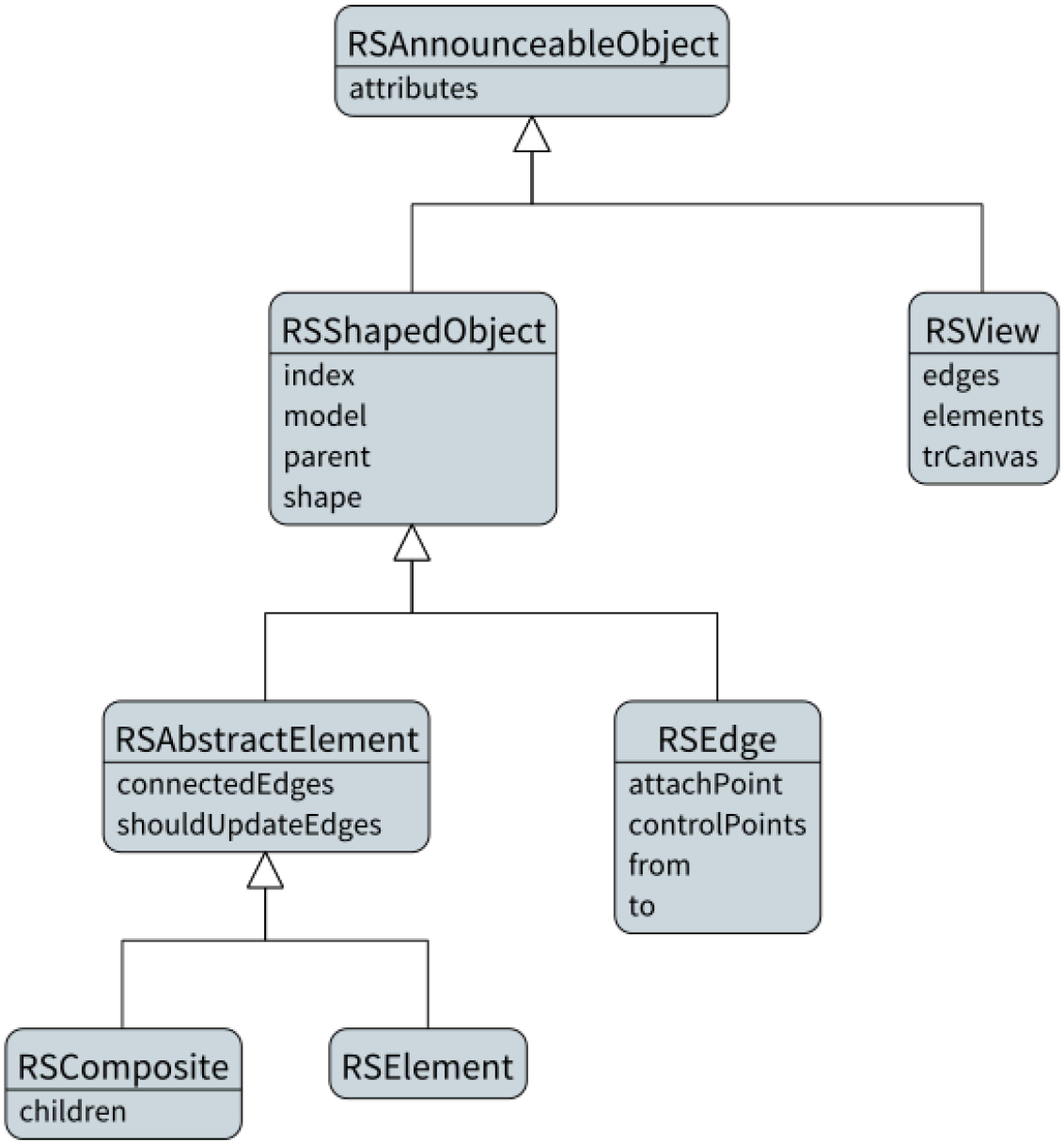
View

- View is the main component in Roassal
- View has elements, edges and a canvas
- To create a view and its elements, Roassal uses builders and interactions.
- View uses layouts.

View

- The view is a RSView (Roassal View).
- RSView and RSElements are used to unify the model visualization to the renderable object.
- Components related to the view uses the notation **RS**View, **RS**Element, **RS**Edge, etc
- Uses a canvas, and handles elements and edges

View


RSAnnounceableObject
attributes
RSShapedObject
index
model
parent
shape
RSView
edges
elements
trCanvas
RSAbstractElement
connectedEdges
shouldUpdateEdges
RSEdge
attachPoint
controlPoints
from
to
RSComposite
children
RSElement

Builders

- There are two groups o builders
- Shapes builders
- View builders

Shape builder

- Shape builders creates from the models or a domain, elements.

```
elementsBuilder := RSShapeBuilder box
   width: [ :model | model methods size + 5 ];
   height: [ :model | model instVarNames size + 5 ].

elementsBuilder elementsOn: Collection withAllSubclasses.
```

View builders

- Creates a view with a predefined elements.
- These builders depends on the issue.
- Examples: UML class builder, grapher, sunburst, etc.

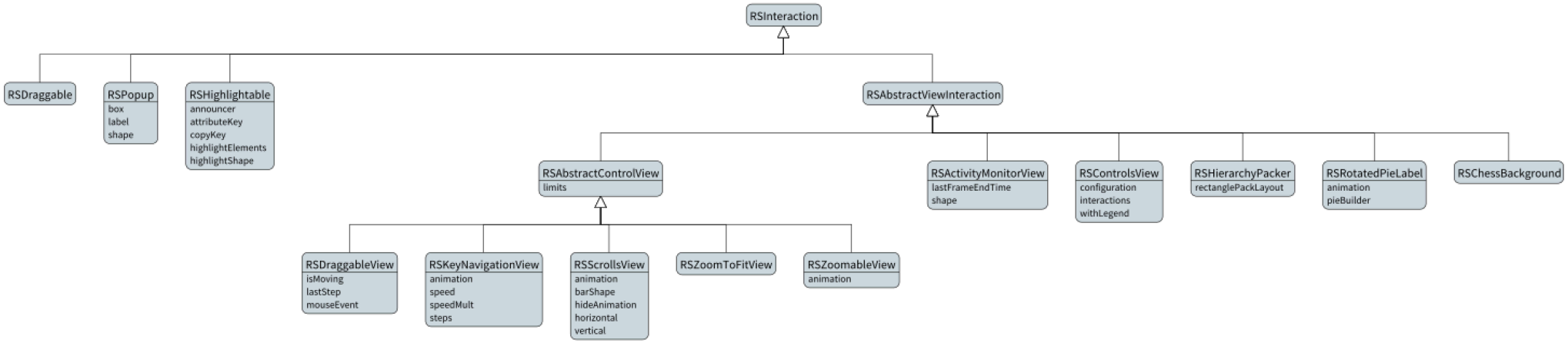
Interactions

- Usually interactions modify the element or view, added into them events or elements with a special behavior.

- Interactions subclasses needs the override the method **onElement:**

```
element @ RSDraggable.
element addInteraction: (RSPopup
    text: [ :model| 'Class: ', model asString ] ).
```

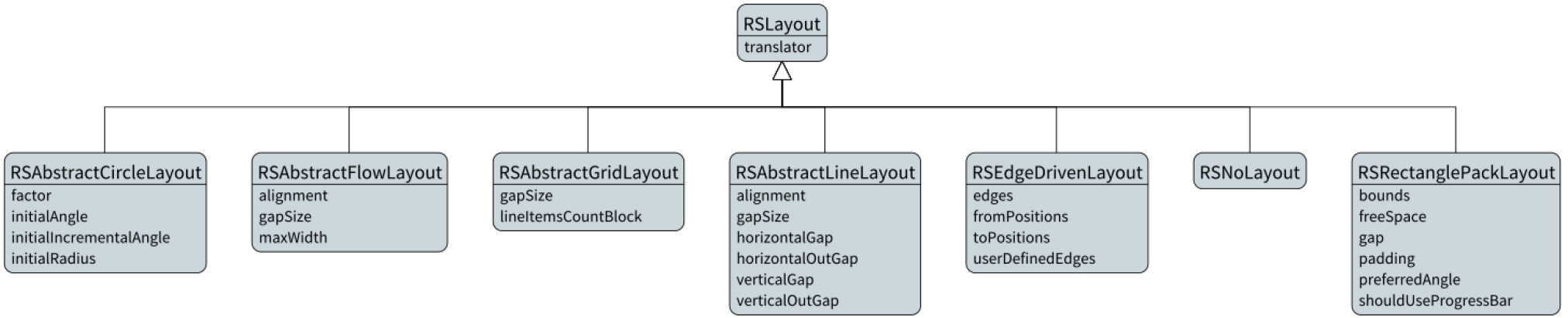
Interactions



Layouts

- Roassal defines its own layouts.
- Grid layout, vertical, horizontal, tree, force layout.
- This layouts only execute one time.

Layouts

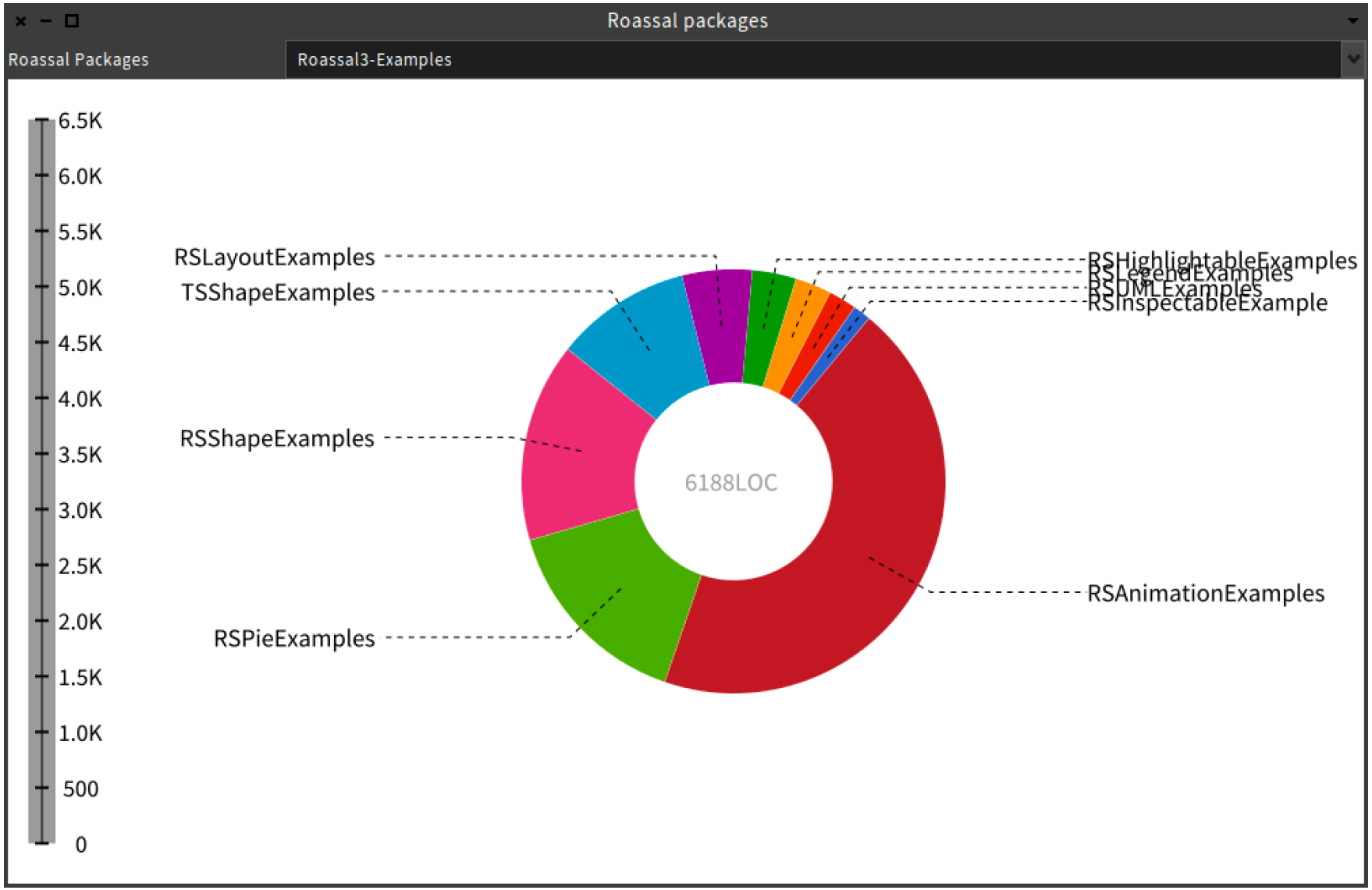

RSLayout
translator
RSAbstractCircleLayout
factor
initialAngle
initialIncrementalAngle
initialRadius
RSAbstractFlowLayout
alignment
gapSize
maxWidth
RSAbstractGridLayout
gapSize
lineItemsCountBlock
RSAbstractLineLayout
alignment
gapSize
horizontalGap
horizontalOutGap
verticalGap
verticalOutGap
RSEdgeDrivenLayout
edges
fromPositions
toPositions
userDefinedEdges
RSNoLayout
RSRectanglePackLayout
bounds
freeSpace
gap
padding
preferredAngle
shouldUseProgressBar

Spec, Inspector, Iceberg and calypso

Spec

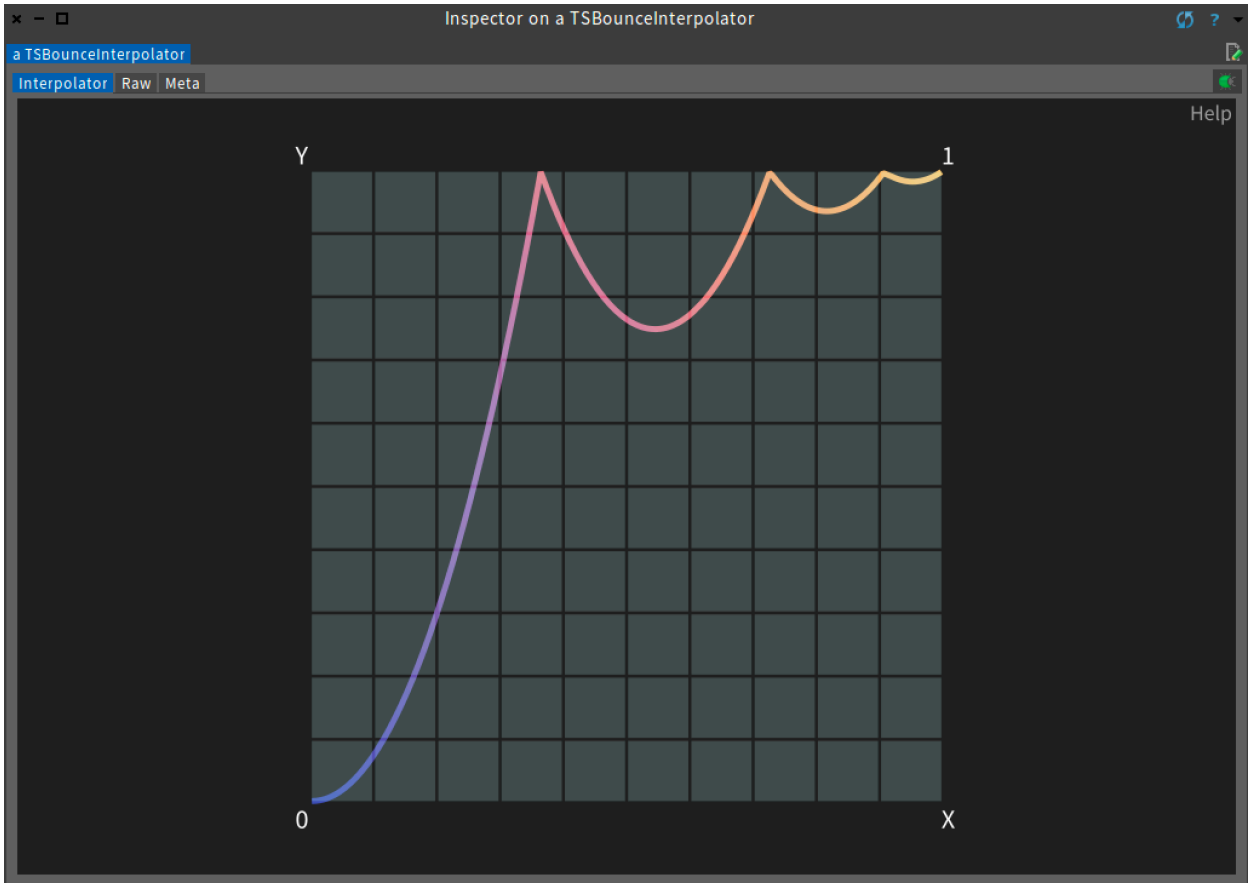
```
initializeWidgets
    |  org |
    droplist := self instantiate: SpLabelledDropList.
    org := RPackage organizer.
    packages := (org packageNames
        select: [ :s | '*Roassal3*' match: s  ]
        thenCollect: [ :s | org packageNamed: s ])
        sorted: [:a :b | a linesOfCode > b linesOfCode ].
    totalSum := packages max: #linesOfCode.
    droplist
        label: 'Roassal Packages';
        items: packages;
        displayBlock: [:i | i name].

    chart := self instantiate: RoassalPresenter.
    pie := self instantiate: RoassalPresenter.
    droplist whenSelectedItemChangedDo: [ :pkg |
        chart script: [ :view |
            view when: TSExtentChangedEvent do: [
                view edges copy do: #remove.
                view elements copy do: #remove.

                self visualizeChart: view package: pkg
                 ]
             ].
        pie script: [ :view| self visualizePie: view package: pkg ] ].
    droplist dropList selectedIndex: 1.
```

Spec

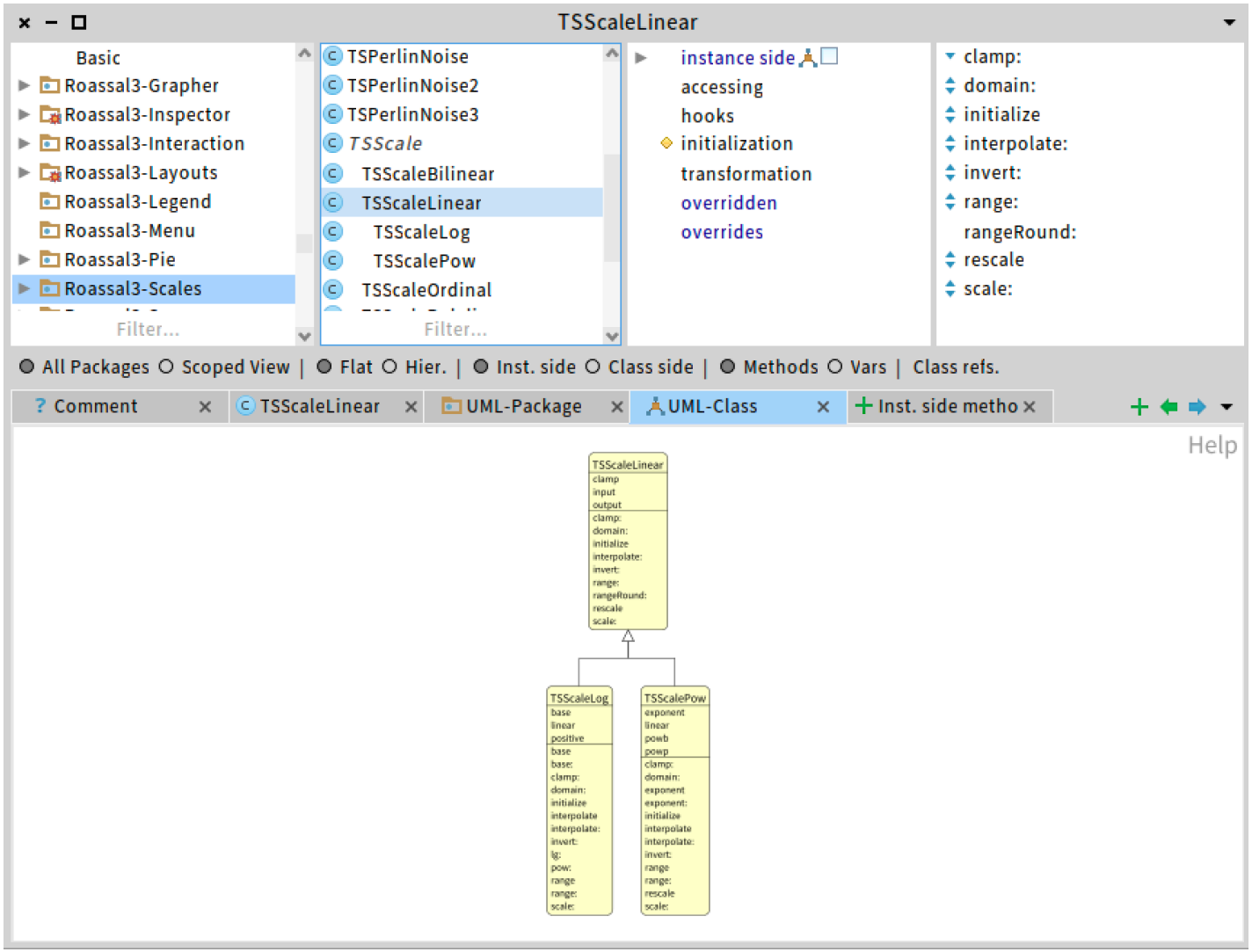

Roassal packages
Roassal Packages
Roassal3-Examples
6.5K
6.0K
5.5K
5.0K
4.5K
4.0K
3.5K
3.0K
2.5K
2.0K
1.5K
1.0K
500
0
RSLayoutExamples
TSShapeExamples
RSShapeExamples
RSPieExamples
RSHighlightableExamples
RSLegendExamples
RSUMLExamples
RSInspectableExample
RSAnimationExamples
6188LOC

Inspector

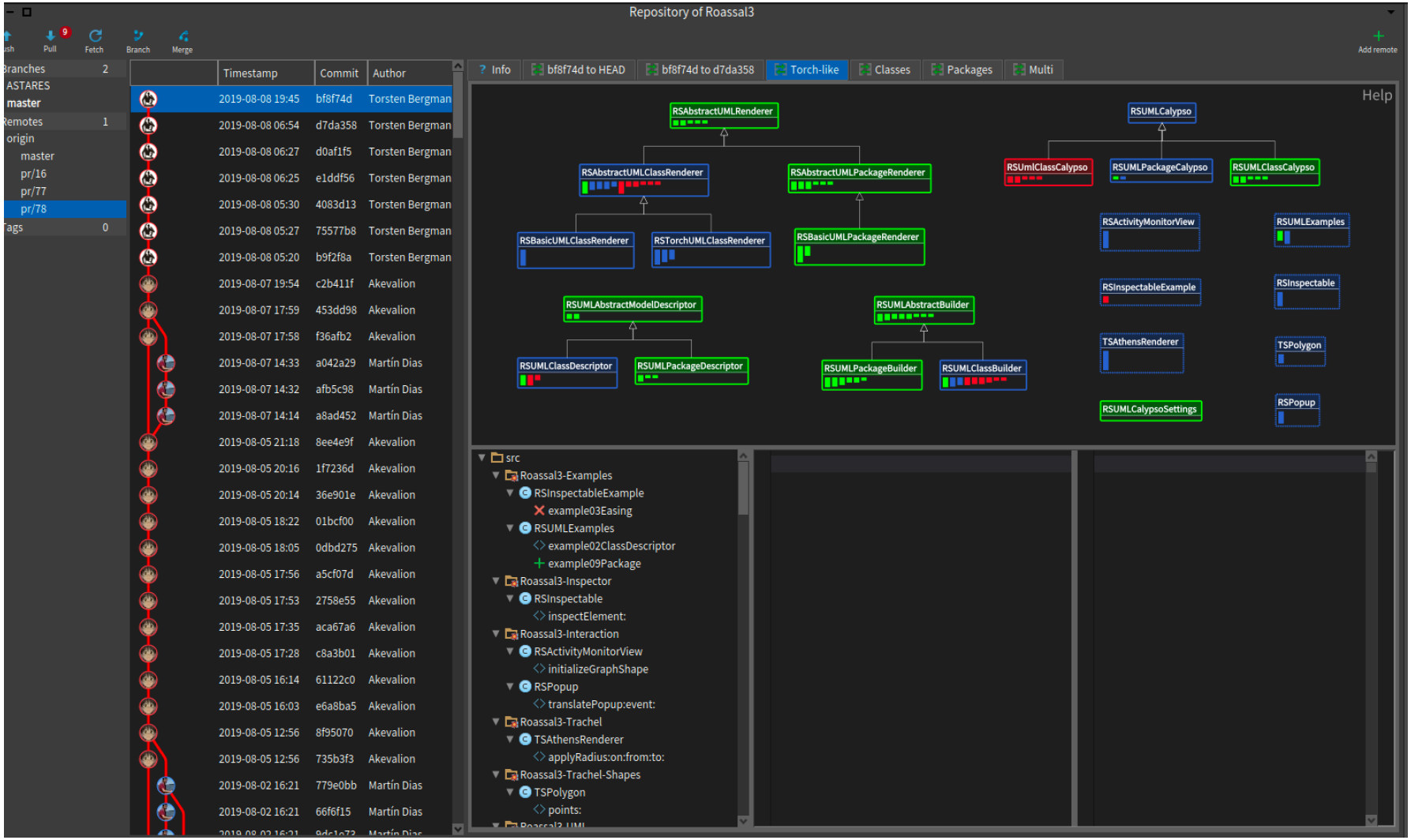
- View/canvas, elements/shapes can be inspected and visualized in the



Calypso


TSScaleLinear
Basic
Roassal3-Grapher
Roassal3-Inspector
Roassal3-Interaction
Roassal3-Layouts
Roassal3-Legend
Roassal3-Menu
Roassal3-Pie
Roassal3-Scales
Filter...
TSPerlinNoise
TSPerlinNoise2
TSPerlinNoise3
TSScale
TSScaleBilinear
TSScaleLinear
TSScaleLog
TSScalePow
TSScaleOrdinal
Filter...
instance side
accessing
hooks
initialization
transformation
overridden
overrides
clamp:
domain:
initialize
interpolate:
invert:
range:
rangeRound:
rescale
scale:
All Packages Scoped View | Flat Hier. | Inst. side Class side | Methods Vars | Class refs.
Comment
TSScaleLinear
UML-Package
UML-Class
Inst. side metho
Help
TSScaleLinear
clamp
input
output
clamp:
domain:
initialize
interpolate:
invert:
range:
rangeRound:
rescale
scale:
TSScaleLog
base
linear
positive
base
base:
clamp:
domain:
initialize
interpolate
interpolate:
invert:
lg:
pow:
range
range:
scale:
TSScalePow
exponent
linear
powb
powp
clamp:
domain:
exponent
exponent:
initialize
interpolate
interpolate:
invert:
range
range:
rescale
scale:

Iceberg


Repository of Roassal3
Pull
Fetch
Branch
Merge
Add remote
Branches 2
ASTARES
master
Remotes 1
origin
master
pr/16
pr/77
pr/78
Tags 0
Timestamp
Commit
Author
2019-08-08 19:45 bf8f74d Torsten Bergman
2019-08-08 06:54 d7da358 Torsten Bergman
2019-08-08 06:27 d0af1f5 Torsten Bergman
2019-08-08 06:25 e1ddf56 Torsten Bergman
2019-08-08 05:30 4083d13 Torsten Bergman
2019-08-08 05:27 75577b8 Torsten Bergman
2019-08-08 05:20 b9f2f8a Torsten Bergman
2019-08-07 19:54 c2b411f Akevalion
2019-08-07 17:59 453dd98 Akevalion
2019-08-07 17:58 f36afb2 Akevalion
2019-08-07 14:33 a042a29 Martín Dias
2019-08-07 14:32 afb5c98 Martín Dias
2019-08-07 14:14 a8ad452 Martín Dias
2019-08-05 21:18 8ee4e9f Akevalion
2019-08-05 20:16 1f7236d Akevalion
2019-08-05 20:14 36e901e Akevalion
2019-08-05 18:22 01bcf00 Akevalion
2019-08-05 18:05 0dbd275 Akevalion
2019-08-05 17:56 a5cf07d Akevalion
2019-08-05 17:53 2758e55 Akevalion
2019-08-05 17:35 aca67a6 Akevalion
2019-08-05 17:28 c8a3b01 Akevalion
2019-08-05 16:14 61122c0 Akevalion
2019-08-05 16:03 e6a8ba5 Akevalion
2019-08-05 12:56 8f95070 Akevalion
2019-08-05 12:56 735b3f3 Akevalion
2019-08-02 16:21 779e0bb Martín Dias
2019-08-02 16:21 66f6f15 Martín Dias
Info
bf8f74d to HEAD
bf8f74d to d7da358
Torch-like
Classes
Packages
Multi
Help
RSAbstractUMLRenderer
RSAbstractUMLClassRenderer
RSAbstractUMLPackageRenderer
RSBasicUMLClassRenderer
RSTorchUMLClassRenderer
RSBasicUMLPackageRenderer
RSUMLAbstractModelDescriptor
RSUMLClassDescriptor
RSUMLPackageDescriptor
RSUMLAbstractBuilder
RSUMLPackageBuilder
RSUMLClassBuilder
RSUMLCalypso
RSUmlClassCalypso
RSUMLPackageCalypso
RSUMLClassCalypso
RSActivityMonitorView
RSInspectableExample
TSAthensRenderer
RSUMLCalypsoSettings
RSUMLExamples
RSInspectable
TSPolygon
RSPopup
src
Roassal3-Examples
RSInspectableExample
example03Easing
RSUMLExamples
example02ClassDescriptor
example09Package
Roassal3-Inspector
RSInspectable
inspectElement:
Roassal3-Interaction
RSActivityMonitorView
initializeGraphShape
RSPopup
translatePopup:event:
Roassal3-Trachel
TSAthensRenderer
applyRadius:on:from:to:
Roassal3-Trachel-Shapes
TSPolygon
points:

Future work

TODO

- Roassal and #(Pharo Calypso Iceberg VisualWorks).
- Documentation.
- Grapher, and other builders.
- Issues.

Try it it is free
https://github.com/ObjectProfile/Roassal3

Thanks