



A Little Journey in the Smalltalk Model

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A pure and minimal object model



No constructors
 No types declaration
 No interfaces
 No packages/private/protected
 No parametrized types
 No boxing/unboxing



Still powerful

We take it personally



1600 simultaneous users
 1.9 billions objects
 10 000 updates/day



AMD **Smarter Choice**



Objects are instances of Classes



Objects are instances of Classes

(10@200)



Objects are instances of Classes

(10@200) class



Objects are instances of Classes

(10@200) class
 Point



Classes are objects too



Classes are objects too

Point selectors



Classes are objects too

Point selectors

```
> an IdentitySet(#eightNeighbors ## #isZero #sortsBefore: #degrees #printOn: #sideOf: #fourNeighbors #hash
#roundUpTo: #min: #min:max: #max #adaptToCollectionandSend: #quadrantOf: #crossProduct: ##
#nearestPointOnLineFromTo: #isShkPoint: # # #guarded: #insideTriangleWith: #isId: #truncateTo: #y #setRdegrees:
#normal #directionToLineFromTo: #truncated #nearestPointAlongLineFromTo: #theta #scaleTo: #encodePostscriptOn:
#> #asPoint: #extent: #r: #roundTo: #max: #interpolateToat: #triangleArea:with: #angleWith: #dotProduct:
#isSelfEvaluating #<= #toIntersectsto: #// #isInsideCircle:with:with: #c: #scaleFromTo: #corner: #toSideOf: #x #>=
#roundDownTo: #onLineFromTo:with:in: #transposed #ceiling #angle #basic:Type #translateBy: #asFloatPoint #//
#adaptToNumber:andSend: #abs #negated #toCentOf: #asIntegerPoint: #tipBy:centerAt: #scaleBy: #floor #onLineFromTo:
#isPoint #reflectedAbout: # #dist: #asNonFractionalPoint #bearingToPoint: #reciprocal #rotateBy:centerAt:
#rotateByabout: #rounded #setX:setY: #squaredDistanceTo: #normalized #veryDeepCopyWith: #- #storeOn: #rect:
#deepCopy #isIntegerPoint #min #adhereTo: #adaptToString:andSend)
```



Classes are objects too

Point instVarNames



Classes are objects too

Point instVarNames

```
>#('x' 'y')
```



Methods are public



Instance variables are protected

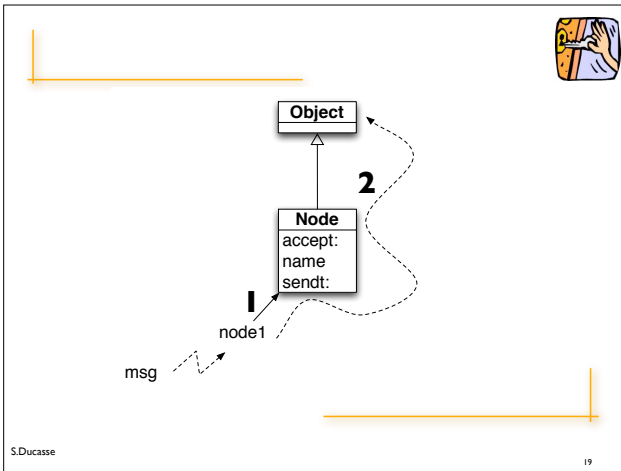


Single Inheritance



Single Inheritance

```
Object subclass: #Point
instanceVariableNames: 'x y'
classVariableNames: ''
poolDictionaries: ''
category: 'Graphics-Primitives'
```



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Classes are objects too

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Classes are objects too

Point class

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Classes are objects too

Point class

>Point class

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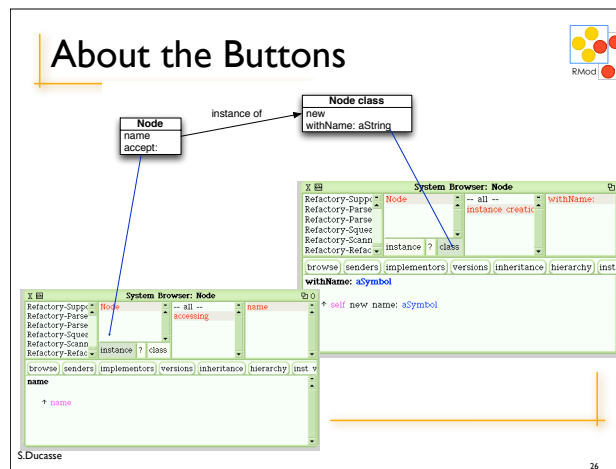
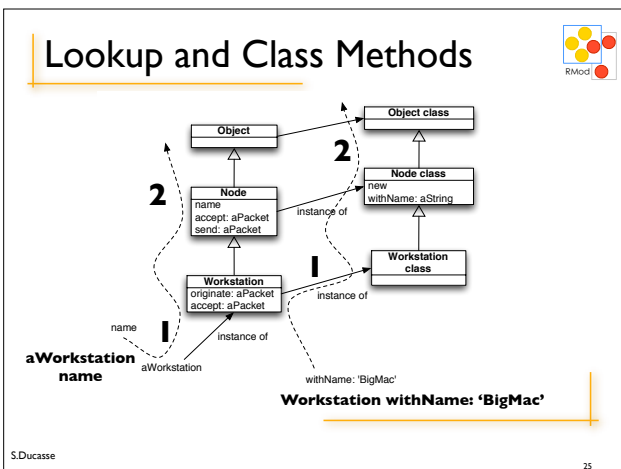
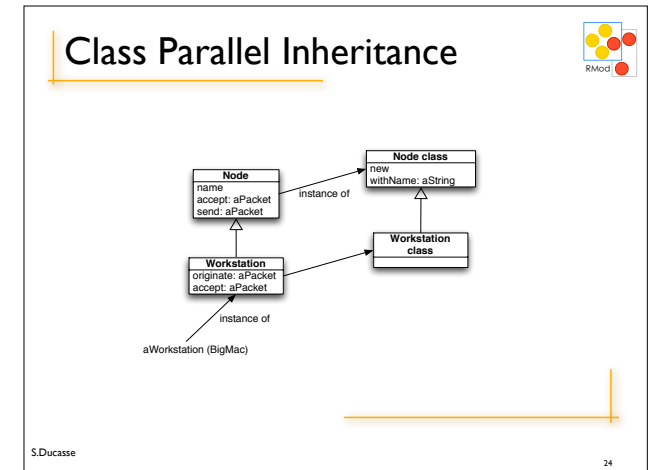
Classes are objects too

Point class

>Point class

“Point class” is an anonymous class with only one instance: Point

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Summary

- Everything is an object
- One single model
- Single inheritance
- Public methods
- Protected attributes
- Classes are simply objects too
- Class is instance of another class
- One unique method lookup
look in the class of the receiver

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