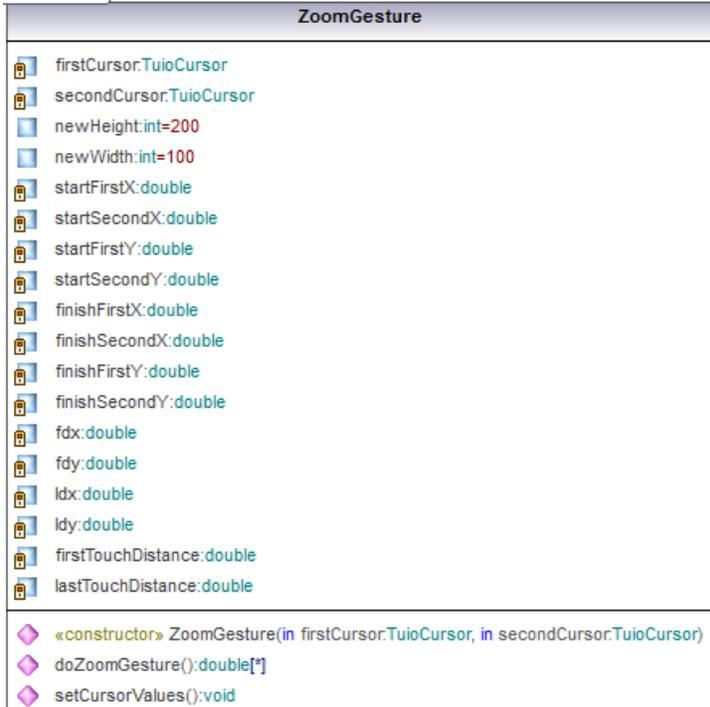
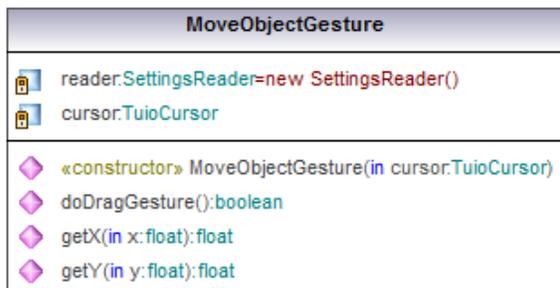
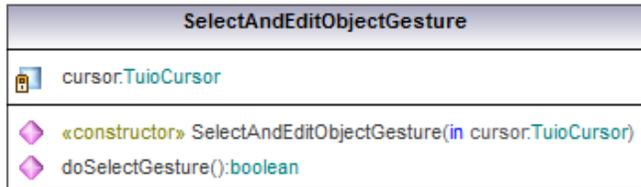


## Apéndice A. Diagramas

Diagramas UML de las clases utilizadas para la implementación de InnovaTouch.



RotateGesture	
	firstCursor:TuioCursor
	secondCursor:TuioCursor
	a:Vector<T1->Float>=new Vector<Float>()
	b:Vector<T1->Float>=new Vector<Float>()
	c:Vector<T1->Float>=new Vector<Float>()
	«constructor» RotateGesture(in firstCursor:TuioCursor, in secondCursor:TuioCursor)
	getDotProduct(in a:Vector<T1->Float>, in b:Vector<T1->Float>):float
	getModuleOfVector(in vector:Vector<T1->Float>):float
	getFirstVector():Vector<T1->Float>
	getSecondVector():Vector<T1->Float>
	getTheta():float
	getCross(in a:Vector<T1->Float>, in b:Vector<T1->Float>):float
	setCursorValues():void

FormatObjectGesture	
	reader:SettingsReader=new SettingsReader()
	first:TuioCursor
	second:TuioCursor
	«constructor» FormatObjectGesture(in first:TuioCursor, in second:TuioCursor)
	doGesture():boolean
	checkFirstCursor():boolean
	checkSecondCursor():boolean
	getX(in x:float):float
	getY(in y:float):float

FrameManagementGesture	
	first:TuioCursor
	second:TuioCursor
	«constructor» FrameManagementGesture(in first:TuioCursor, in second:TuioCursor)
	doFrameGesture():boolean

RedoGesture	
	reader:SettingsReader=new SettingsReader()
	first:TuioCursor
	second:TuioCursor
	third:TuioCursor
	«constructor» RedoGesture(in first:TuioCursor, in second:TuioCursor, in third:TuioCursor)
	doRedoGesture():boolean
	checkFirstCursor():boolean
	checkSecondCursor():boolean
	checkThirdCursor():boolean
	getX(in x:float):float
	getY(in y:float):float

UndoGesture	
	reader:SettingsReader=new SettingsReader()
	first:TuioCursor
	second:TuioCursor
	third:TuioCursor
	«constructor» UndoGesture(in first:TuioCursor, in second:TuioCursor, in third:TuioCursor)
	doUndoGesture():boolean
	checkFirstCursor():boolean
	checkSecondCursor():boolean
	checkThirdCursor():boolean
	getX(in x:float):float
	getY(in y:float):float

CopyGesture	
	first:TuioCursor
	second:TuioCursor
	third:TuioCursor
	fourth:TuioCursor
	«constructor» CopyGesture(in first:TuioCursor, in second:TuioCursor, in third:TuioCursor, in fourth:TuioCursor)
	doCopyGesture():boolean

PasteGesture	
	first:TuioCursor
	second:TuioCursor
	third:TuioCursor
	fourth:TuioCursor
	«constructor» PasteGesture(in first:TuioCursor, in second:TuioCursor, in third:TuioCursor, in fourth:TuioCursor)
	doPasteGesture():boolean

TuioComponent	
	formatGesture:FormatObjectGesture
	selectAndEditGesture:SelectAndEditObjectGesture
	undoGesture:UndoGesture
	redoGesture:RedoGesture
	copyGesture:CopyGesture
	pasteGesture:PasteGesture
	selectMany:SelectManyObjectsGesture
	moveGesture:MoveObjectGesture
	zoomGesture:ZoomGesture
	frameGesture:FrameManagementGesture
	rotation:RotateGesture
	reader:SettingsReader=new SettingsReader()
	tempDragCursors:LinkedList<T1->TuioCursor>=new LinkedList<TuioCursor>()
	alreadyCopy:boolean=false
	selected:boolean=false
	manySelected:boolean=false
	frameSelected:boolean=false
	selectedTime:long=0
	manySelectedTime:long=0
	frameTiming:long=0
	lastX:float=0
	lastY:float=0
	lastSelectedX:float=0
	lastSelectedY:float=0
	frameX:float=0
	frameY:float=0
	executedGesture:String="NONE"
	firstRadius:int=0
	sizeModification:double[*]=new double[2]
	angle:float=0
	xArray:double[*]
	yArray:double[*]
	radiusArray:double[*]
	addTuioCursor(in tcur:TuioCursor):void
	updateTuioCursor(in tcur:TuioCursor):void
	removeTuioCursor(in tcur:TuioCursor):void
	addTuioObject(in tobj:TuioObject):void
	removeTuioObject(in tobj:TuioObject):void
	refresh(in ftime:TuioTime):void
	updateTuioObject(in tobj:TuioObject):void
	getNormalizedX(in x:float):float
	getNormalizedY(in y:float):float
	getString():String
	setString(in executedGesture:String):void
	getSizeMod():double[*]
	setSizeMod(in sizeMod:double[*]):void
	getAngle():float
	setAngle(in angle:float):void
	getX():double
	setX(in x:double):void
	getY():double
	setY(in y:double):void
	startNotification():void

