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SpinSliderLabel (#p1845)
by **Digital Larry** » Tue Sep 30, 2014 2:52 pm

I need to remember how these work!

```
SpinSliderLabel:
    '@sliderLabel' ename = ID controlName = ID (minVal = SPINDOUBLE maxVal = SPINDOUBLE initVal = SPINDOUBLE
multiplier = SPINDOUBLE precision = INT (option = ID)?)?;



package com.holycityaudio.spincad.generator

import com.holycityaudio.spincad.spinCAD.SpinSliderLabel

class SliderLabel extends ControlPanel {

// this will generate setters and getters in the CADBlock class

def static declareVar(SpinSliderLabel e) { '''
      JSlider «e.ename»Slider;
      JLabel  «e.ename»Label;
'''}

def static initialize(String blockName, SpinSliderLabel e) { '''

      «IF e.option != null»
         «IF e.option == "lengthToTime"»
            «e.ename»Slider = new JSlider(JSlider.HORIZONTAL, (int)(«e.minVal» * «e.multiplier»),(int)
(«e.maxVal» * «e.multiplier»), (int) (gCB.get«e.ename»() * «e.multiplier»));
         «ENDIF»
         «IF e.option == "LOGFREQ"»
            «e.ename»Slider = new JSlider(JSlider.HORIZONTAL, (int)(Math.log10(«e.minVal») * 100.0),(int)
(Math.log10(«e.maxVal») * 100.0), (int) (Math.log10(gCB.get«e.ename»()) * 100));
         «ENDIF»
      «ELSE»
            «e.ename»Slider = new JSlider(JSlider.HORIZONTAL, (int)(«e.minVal» * «e.multiplier»),(int)
(«e.maxVal» * «e.multiplier»), (int) (gCB.get«e.ename»() * «e.multiplier»));
      «ENDIF»
      «e.ename»Slider.addChangeListener(new «blockName»SliderListener());
      «e.ename»Label = new JLabel();
      update«e.ename»Label();
      frame.getContentPane().add(«e.ename»Label);
      frame.getContentPane().add(«e.ename»Slider);
'''
   }

def static genSetterGetter(SpinSliderLabel e) { '''
   public void set«e.ename»(double __param) {
      «e.ename» = __param;
   }

   public double get«e.ename»() {
```

```
            return «e.ename»;
        }
    '''
    }


    // this will generate the proper style of listener
    def static genChangeListener(SpinSliderLabel e) { '''
        if(ce.getSource() == «e.ename»Slider) {
            gCB.set«e.ename»((double) («e.ename»Slider.getValue()/«e.multiplier»));
            update«e.ename»Label();
        }
    '''
    }


    def static genLabelUpdater(SpinSliderLabel e) {
        '''
        private void update«e.ename»Label() {
        «IF e.option != null»
        «IF e.option == "lengthToTime"»
            «e.ename»Label.setText("«e.controlName» " + String.format("%4.«e.precision»f", (1000 *
gCB.get«e.ename»())/gCB.getSamplerate()));
        «ENDIF»
        «IF e.option == "LOGFREQ"»
            «e.ename»Label.setText("«e.controlName» " + String.format("%4.«e.precision»f", Math.pow(10.0,
gCB.get«e.ename»())) + " Hz");
        «ENDIF»
        «ELSE»
            «e.ename»Label.setText("«e.controlName» " + String.format("%4.«e.precision»f",
gCB.get«e.ename»()));
        «ENDIF»
        }
    '''
    }
}
```

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Re: SpinSliderLabel (#p2112)
by **Digital Larry** » Mon Feb 02, 2015 6:36 am

OK here we go again... (in the olden days I would have scribbled this in a notebook which I would have subsequently lost)...

Trying to add a Symmetry slider to the Sample/Hold block.

What I'd like is to have a visual representation, of say, 12.5% to 50%.

Internally, 50% maps to the "symmetry" value of 0.25 (negative of the offset for a 4096 width ramp LFO (which has a peak value of 0.5). Shift it down by 0.25 and its range is -0.25 to +0.25. An offset of 0.0 doesn't give you any pulse at all. Offset of -0.125 would give you 25% duty cycle. I think. Offset of -0.06125 would give 12.5% duty cycle.

Slider visual value = 12.5, symmetry = 0.06125 (it's negated in the algorithm itself)
Slider = 50.0, symmetry = 0.25.

Slider = symmetry * 200.
Slider values have to be integers (not necessarily the value labels which you display). And in this case it might actually be nice to reduce the resolution of the slider so that it has increments of 0.06125 to preserve a rhythmic relationship such as 1/8, 1/4, 3/8, etc.

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Re: SpinSliderLabel (#p2121)
by **Digital Larry** » Sat Feb 07, 2015 7:13 am

There's always the possibility that my initial implementation was too specific to adapt to all the circumstances that might arise. I thought about this a bit on the train the other day, and actually did scribble some notes into a notebook.

Here's a number of situations I'd like to be able to handle.

#1 Filter resonance slider.
Displayed values = 0.0 to 1.0
Generated values = 1.0 to 0.0
Displayed units = none
100 Steps
Linear

#2 Gain control slider
Displayed values = -60 to 0
Generated values = 0.001 to 1.0
Displayed units = dB
120 Steps
Log

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Re: SpinSliderLabel (#p2162)
by **Digital Larry** » Sat Mar 07, 2015 6:20 am

In SpinCAD.xtext:

```
SpinSliderLabel:
    '@sliderLabel' ename = ID controlName = ID (minVal = SPINDOUBLE maxVal = SPINDOUBLE initVal = SPINDOUBLE
multiplier = SPINDOUBLE precision = INT (option = ID)?)?
;
```

In SpinCADBlockGenerator:

If such an element is declared, then say that we have a control panel:

```
        // if any control panel elements declared, set hasControlPanel to true
        «FOR SpinElement e : pr.elements»
            «switch e {
                SpinCheckBox:{setHasControlPanel()}
                SpinComboBox:{setHasControlPanel()}
                SpinSliderLabel:{setHasControlPanel()}
            }»
        «ENDFOR»            }
```

and also create some setters and getters for exchange of data between the control panel and the SpinCADBlock:

```
        «FOR SpinElement e : pr.elements»
            «switch e {
                SpinSliderLabel:{spcbSliderLabel.genSetterGetter(e)}
                SpinComboBox:{spcbComboBox.genSetterGetter(e)}
            }»
        «ENDFOR»
    }
```

Ok now here's the good part, with the options:

```
def static initialize(String blockName, SpinSliderLabel e) { '''

    «IF e.option != null»
        «IF e.option == "lengthToTime"»
            «e.ename»Slider = new JSlider(JSlider.HORIZONTAL, (int)(«e.minVal» * «e.multiplier»),(int)
(«e.maxVal» * «e.multiplier»), (int) (gCB.get«e.ename»() * «e.multiplier»));
        «ENDIF»
        «IF e.option == "LOGFREQ"»
```

```
            «e.ename»Slider = new JSlider(JSlider.HORIZONTAL, (int)(Math.log10(«e.minVal») * 100.0),(int)
(Math.log10(«e.maxVal») * 100.0), (int) (Math.log10(gCB.get«e.ename»()) * 100));
        «ENDIF»
        «IF e.option == "LINEAR"»
            «e.ename»Slider = new JSlider(JSlider.HORIZONTAL, (int)(int)(«e.minVal» * «e.multiplier»),(int)
(«e.maxVal» * «e.multiplier»), (int) ((gCB.get«e.ename»()) * «e.multiplier»));
        «ENDIF»
        «IF e.option == "SINLFOFREQ"»
            «e.ename»Slider = new JSlider(JSlider.HORIZONTAL, (int)(int)(«e.minVal» * «e.multiplier»),(int)
(«e.maxVal» * «e.multiplier»), (int) ((gCB.get«e.ename»()) * «e.multiplier»));
        «ENDIF»
        «IF e.option == "RAMPLFOFREQ"»
            «e.ename»Slider = new JSlider(JSlider.HORIZONTAL, (int)(int)(«e.minVal» * «e.multiplier»),(int)
(«e.maxVal» * «e.multiplier»), (int) ((gCB.get«e.ename»()) * «e.multiplier»));
        «ENDIF»
        «IF e.option == "BOOSTCUT"»
            «e.ename»Slider = new JSlider(JSlider.HORIZONTAL, (int)(int)(«e.minVal» * «e.multiplier»),(int)
(«e.maxVal» * «e.multiplier»), (int) ((gCB.get«e.ename»()) * «e.multiplier»));
        «ENDIF»
    «ELSE»
            «e.ename»Slider = new JSlider(JSlider.HORIZONTAL, (int)(«e.minVal» * «e.multiplier»),(int)
(«e.maxVal» * «e.multiplier»), (int) (gCB.get«e.ename»() * «e.multiplier»));
    «ENDIF»
        «e.ename»Slider.addChangeListener(new «blockName»SliderListener());
        «e.ename»Label = new JLabel();
        update«e.ename»Label();
        frame.add(Box.createRigidArea(new Dimension(5,4)));
        frame.getContentPane().add(«e.ename»Label);
        frame.add(Box.createRigidArea(new Dimension(5,4)));
        frame.getContentPane().add(«e.ename»Slider);
'''
    }
```

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Re: SpinSliderLabel (#p2163)
by **Digital Larry** » Sat Mar 07, 2015 6:28 am

Let's look at the default case for an average SpinSLiderLabel:

```
            «e.ename»Slider = new JSlider(JSlider.HORIZONTAL, (int)(«e.minVal» * «e.multiplier»),(int)
(«e.maxVal» * «e.multiplier»), (int) (gCB.get«e.ename»() * «e.multiplier»));
```

I declared:

```
equ pitch1 -12
@sliderLabel pitch1 Pitch_1 -12 17 7 100.0 0
```

Which means:

Create a SpinSliderLabel.
It will control a variable in the SpinCADBlock code called **pitch1**.
The label will be: **Pitch_1**.
The JSlider minimum value will be -12 * 100. The multiplier is setting what level of resolution I need. In this case I do not need 100, I just need 1.0.
The JSlider Maximum value with be 17 * 100. As before I really just need this to be 17 * 1.0.
The current value of the JSlider will be obtained by calling the function gCB.getpitch1() and then multiplying that by the multiplier.
The number at the end (zero in this case) sets the number of decimal places to display when showing the numeric value of the label.

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Re: SpinSliderLabel (#p2167)
by **Digital Larry** » Mon Mar 09, 2015 2:40 pm

One thing I need is a case where the value passed back and forth between the CADBlock and ControlPanel classes for a given block is the same value that gets sent to the JSlider. Current example is dB of cut in the volume control. We'd like equal dB steps on the slider so it can go from -24 dB to 0 dB or whatever. Then, over in code generation we're gonna convert this into a decimal value which gets included in an RDAX instruction, most likely.

I think all of the options I've used up until now presumed that the actual value used by the CADBlock would be passed back and forth and any adjustments to it would be made between there and the JSlider initialization code.

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Re: SpinSliderLabel (#p2171)
by **Digital Larry** » Tue Mar 10, 2015 4:56 pm

OK I got the DBLEVEL option working! What's next???

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