Exercise 7: Your First Own Widgets

Winter Term 2018/19

In this exercise, you will be learning how to implement your own widgets.

Unit 1: Combine a spinbox with a slider, such that both are always in synchrony. That is, if you change the slider’s position, the spinbox should be automatically changing as well, and vice versa. The focus of this exercise is on the connections of signals and slots.

Unit 2: Build a widget that consists of an LCD display and a slider underneath it. Put two additional push buttons next to the right and left of the slider. These push buttons should decrease/increase the slider’s value. Key question: which slots of the slider do you have to use?

Unit 3: Push Button - LED Display:
Create a simple application that consists of a widget programmed by yourself. The widget consists of only a group of three LED-displays each with one push button underneath it.

Note: Since Qt does not provide a particular LED, you might be using an LCD widget with one number, and visualizing “on” and “off” by “1” and “0”, respectively.

Implement the following functionalities one after the other:

1. A click on one of the three push buttons should switch on the corresponding LED and switch off all others.
2. A click on any of the push buttons should move forward the LED, i.e., one is on, the others are off, by one position.
3. The LEDs should be acting like a binary counter, which is incremented by a click on any of the buttons.

Unit 4: RGB-Color Control:
Create a widget that can be used as a color chooser. The displayed color should be adjustable by using three controls for red, green, and blue, respectively. Display the current values of the controls.

Please note: The background color of a widget can be adjusted by using the method setPalette(QPalette(QColor(r,g,b))).

Have fun, Theo and Ralf