Using the Qt Scene Graph from C++ with QSkinny

Who am I?

» working on Qt since 2008

» former QtNetwork maintainer

» @peha23 on Twitter

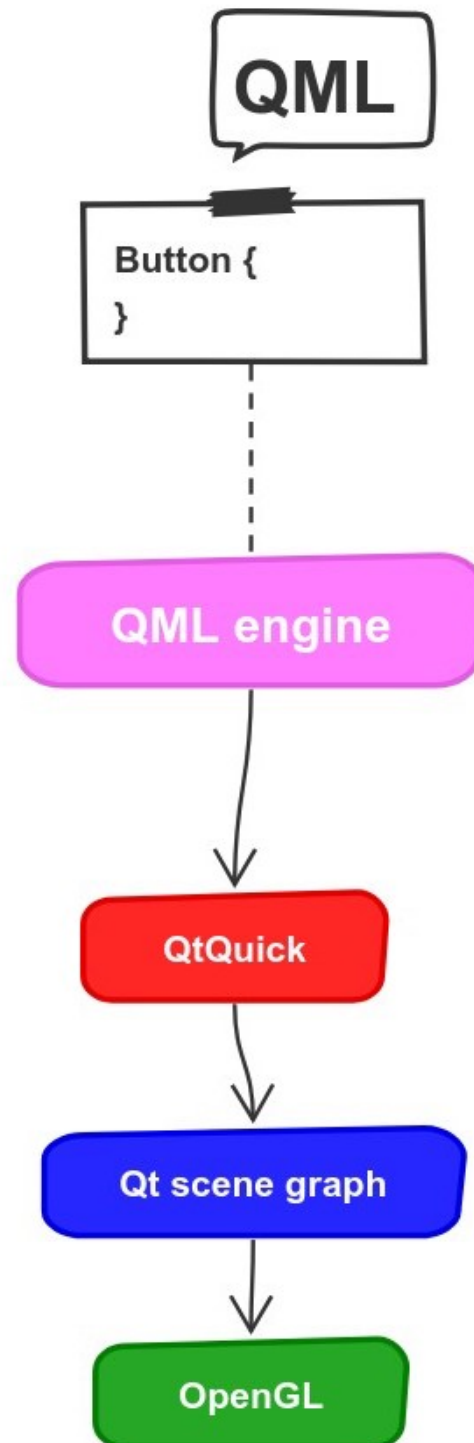# What is this talk about?

Using the Qt graphic stack from C++

Agenda

1. QML under the hood

2. The QML / C++ boundary

3. QSkinny

4. Outlook

Agenda
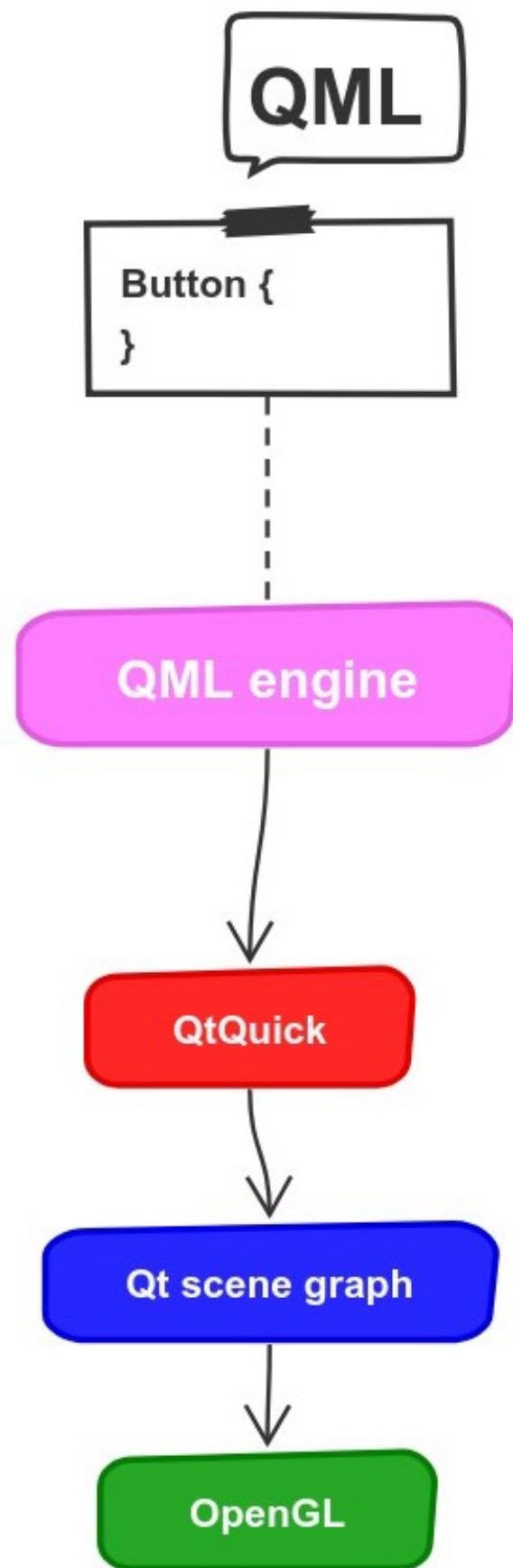
QML under the hood

types of scene graph nodes:

» opacity / clip / transform / image / rectangle etc.

(here diagram)

What happens when instantiating a "Rectangle { }"

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QML

Button {
}

QML engine

QtQuick

Qt scene graph

OpenGL

QtQuickControls 1

Write everything in QML

```
Control {
    id: slider
    (...)
    style: Settings.styleComponent(Settings.style, "SliderStyle.qml", slider)
    property Component tickmarks: Repeater {
    Rectangle {
        color: "#777"
        width: 1
        height: 3
        y: (...)
        x: (...)
        }
    }
}
```

QtQuickControls 2

some parts QML, some C++

```
qquickslider_p.h:

class Q_QUICKTEMPLATES2_PRIVATE_EXPORT QQuickSlider : public QQuickControl
{
    Q_OBJECT
    Q_PROPERTY(qreal from READ from WRITE setFrom NOTIFY fromChanged FINAL)
    Q_PROPERTY(qreal to READ to WRITE setTo NOTIFY toChanged FINAL)
    (...)
};
```
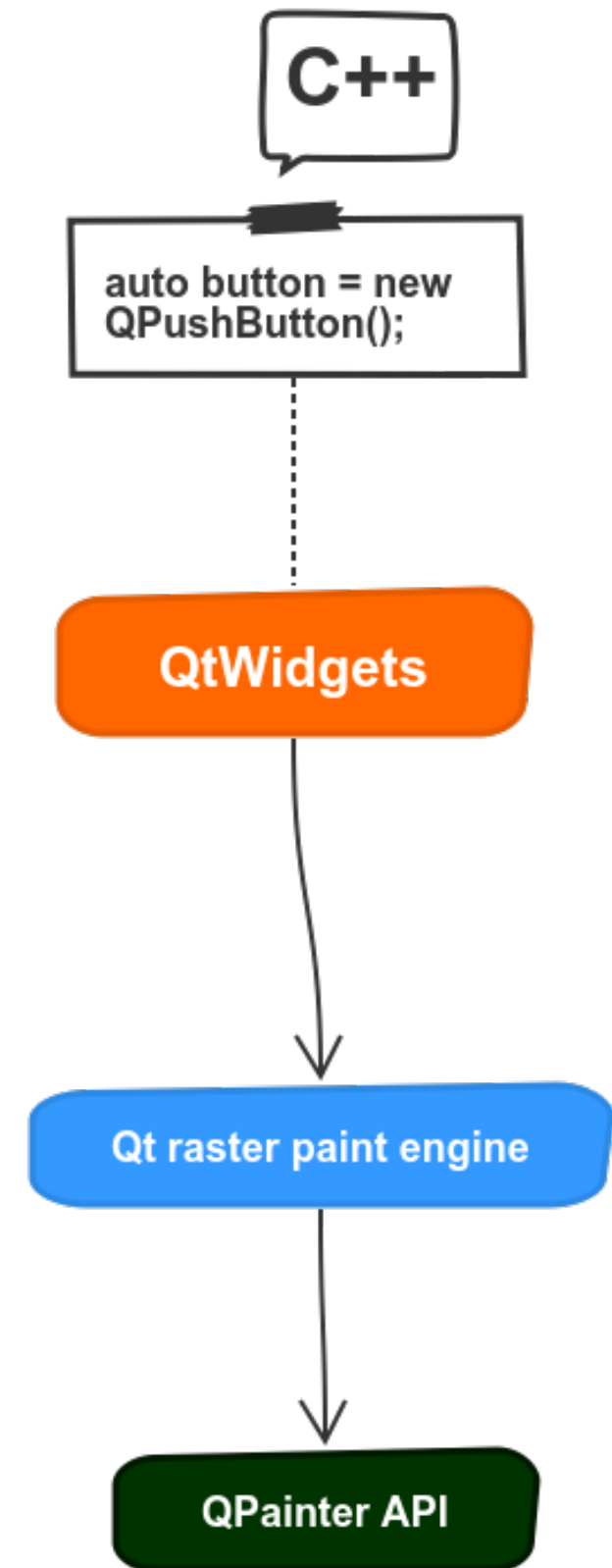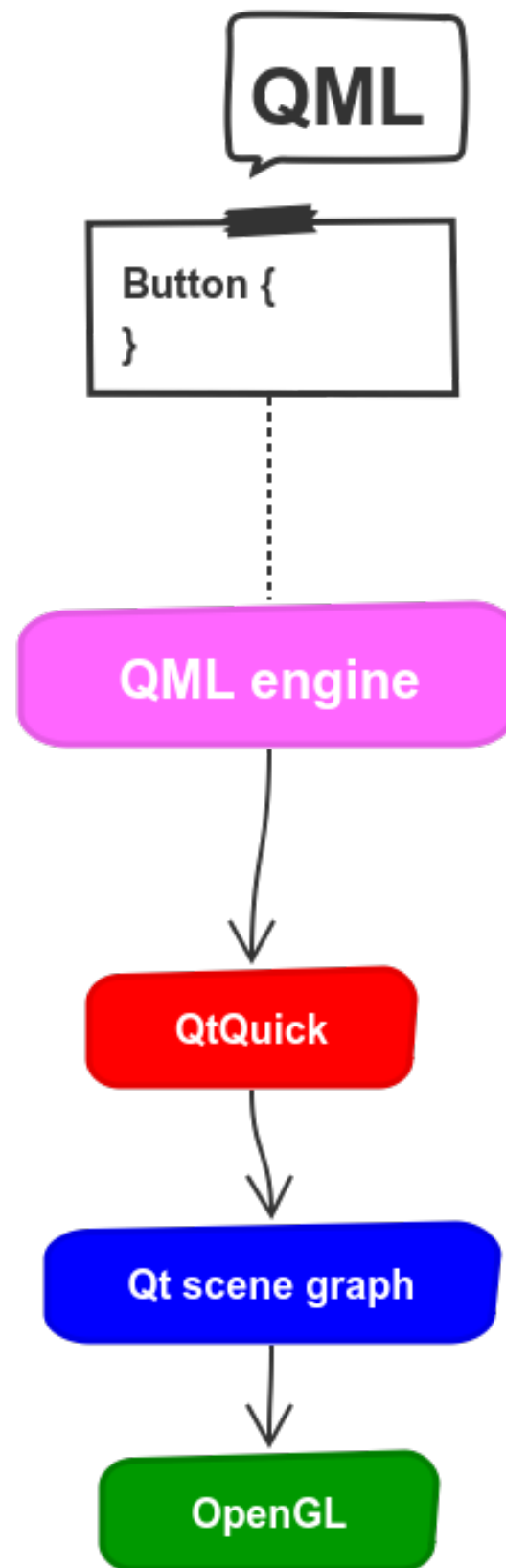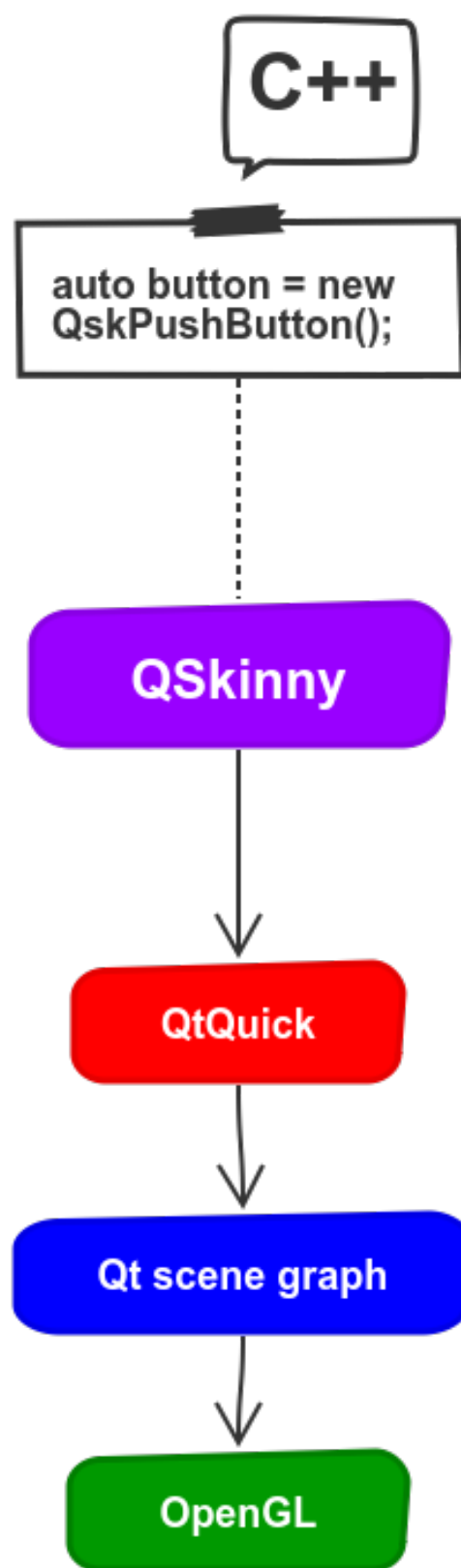
```
Slider.qml:

T.Slider {
    id: control
}
```

Agenda

1. QML under the hood

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3. <u>QSkinny</u>

4. Outlook

C++

```
auto button = new
QskPushButton();
```

QML

```
Button {
}
```

C++

```
auto button = new
QPushButton();
```

QSkinny

QML engine

QtWidgets

QtQuick

QtQuick

Qt scene graph

Qt scene graph

Qt raster paint engine
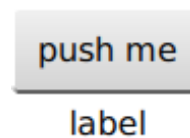
OpenGL

OpenGL

QPainter API

www.sketchboard.io

QSkinny design goals

» lightweight
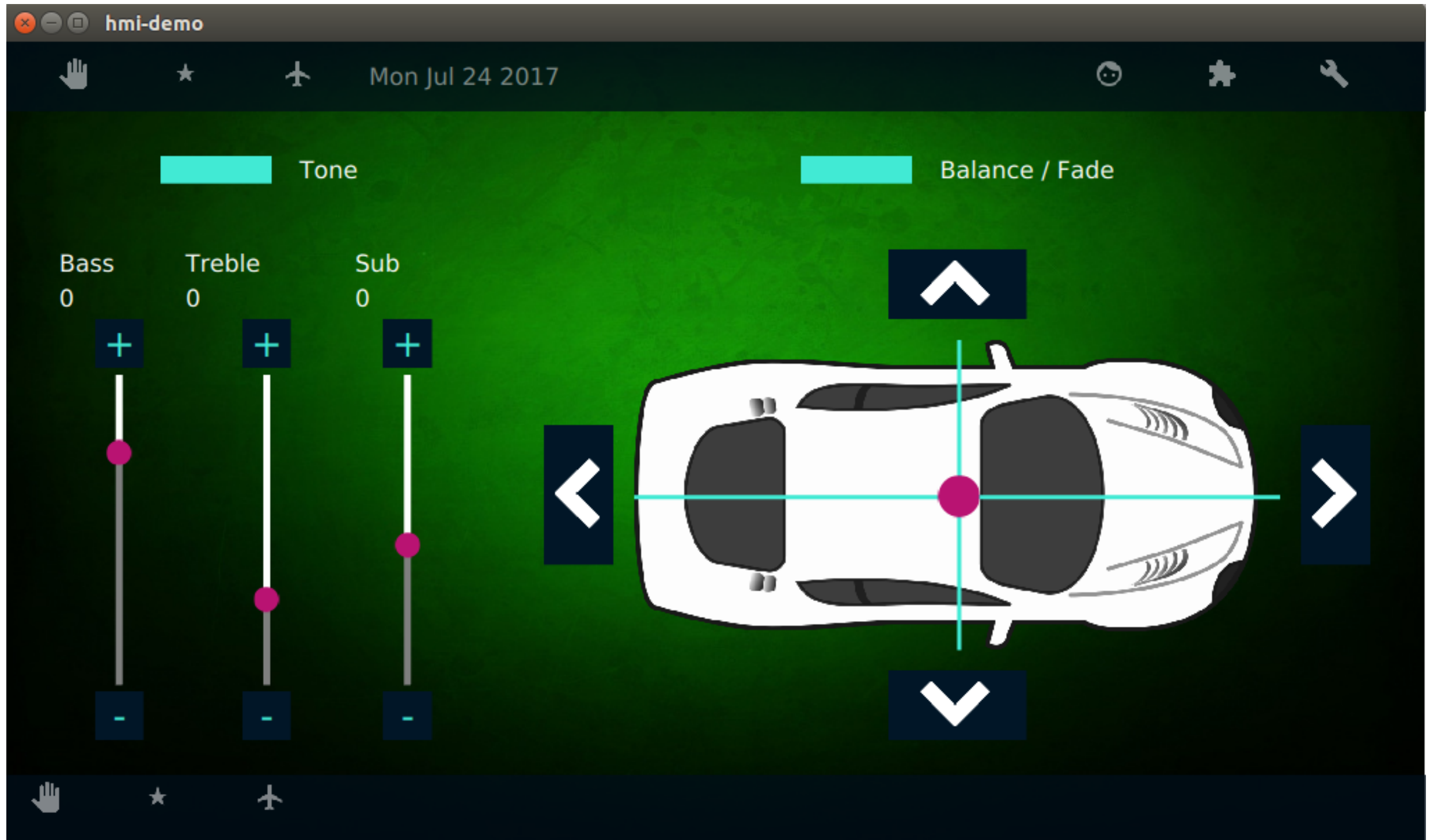
» flexible theming

» dynamic sizing

QSkinny API

```cpp
QskWindow window;
auto box = new QskLinearBox(Qt::Vertical);
auto button = new QskPushButton("push me", box);
auto label = new QskTextLabel("label", box);
window.addItem(box);
window.show();
```
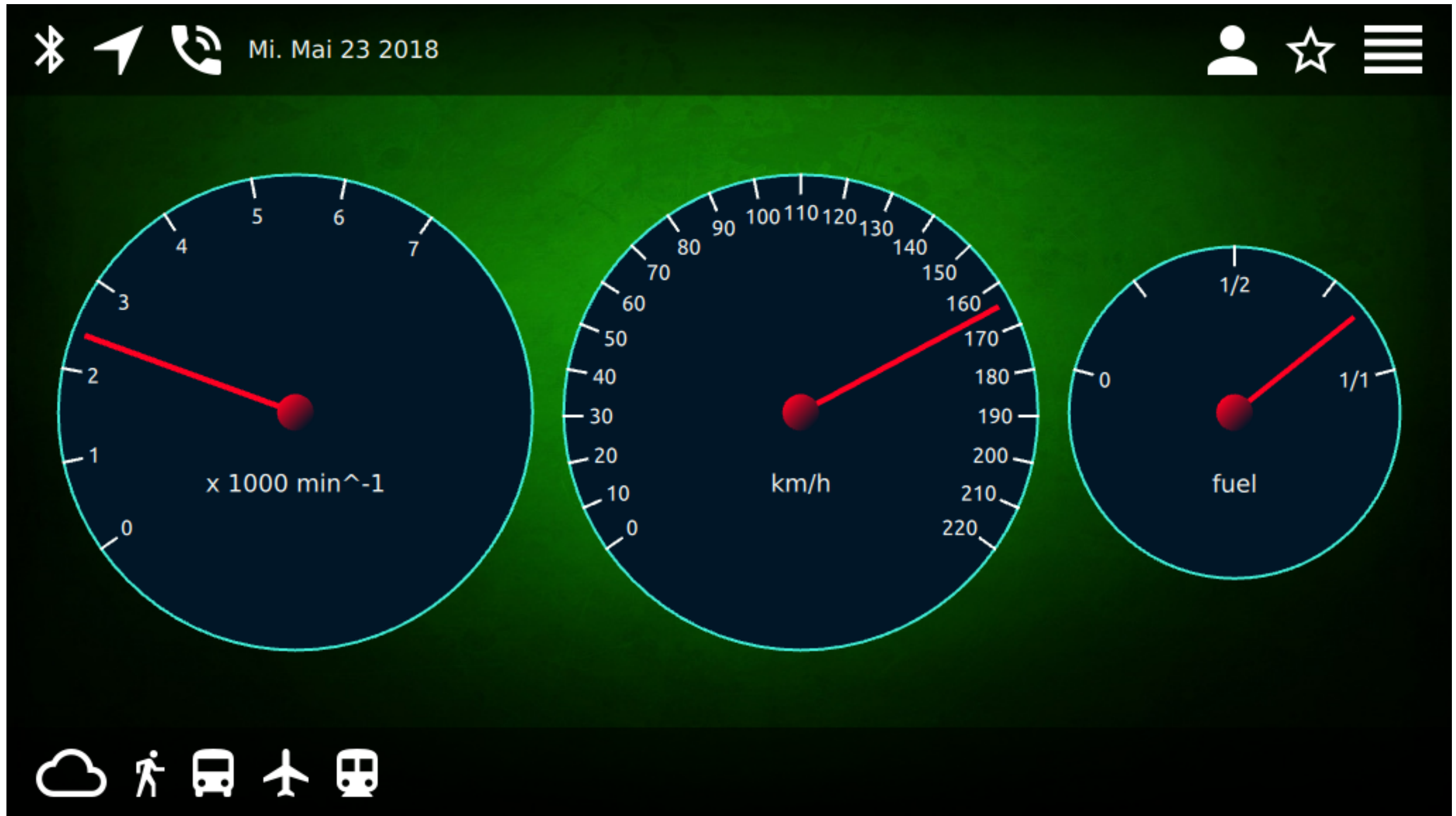
separation of content and style

(here diagram of skinlet etc.)

example

example

Outlook
QSkinny

polishing / documentation

Qt 6

(maybe) new styling / opening up
QtQuickControls 2?

Discussion
@peha23 on

Twitter