

QML for the Web

Lauri Paimen

Tampere University of Technology
Finland

`lauri.paimen@tut.fi`

(talking)



Pietu Pohjalainen

University of Helsinki
Finland

`pietu.pohjalainen@cs.helsinki.fi`

(in the audience)



Web Systems Evolution
Williamsburg, VA, USA
September 30th, 2011

QML?

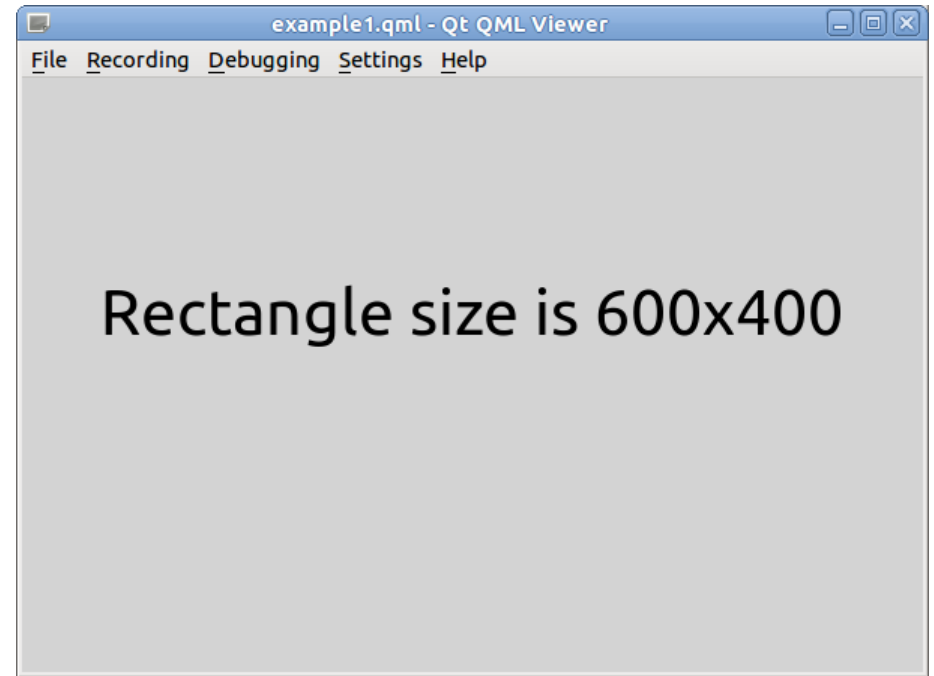


- Declarative UI language for Qt framework
- Emphasis on mobile devices and slick animations
- Easy learning curve
- Essentially: element declarations + Javascript logic

QML Example

```
import Qt 4.7

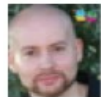
Rectangle {
    id: main
    width: 600; height: 400;
    color: "lightgray"
    function getSize() {
        return width + "x"
            + height }
    Text {
        text: "Rectangle size is"
            + main.getSize()
        font.pointSize: 32
        y: main.height / 3
        anchors.horizontalCenter:
            main.horizontalCenter
    }
}
```



For the Web?

- QML developers:
 - Easy deployment and update
 - Platform with 2 000 000 000 users

- Web developers:



vivainio Ville M. Vainio

Microsoft should also extend the graphics side with something like QML, to get rid of the horrible css stuff

15 Sep

in reply to ↑



@elburger

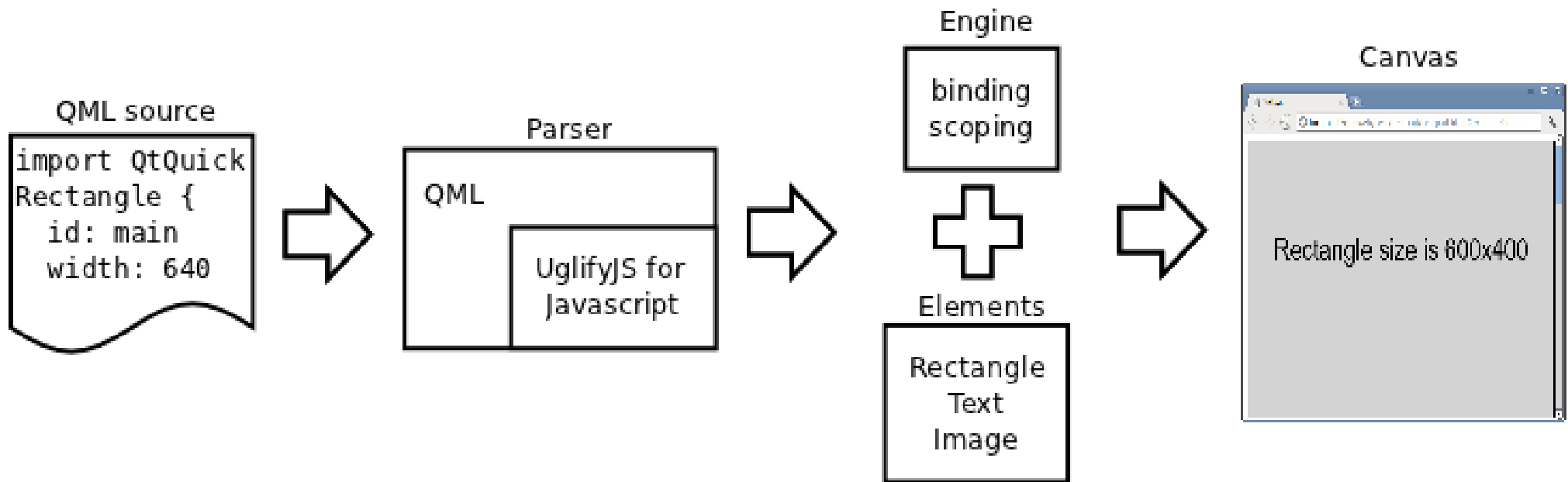
Juha Turunen

@vivainio The whole webworld should be extended with something like QML. Layouting apps with HTML+CSS... *shudder*

Demos

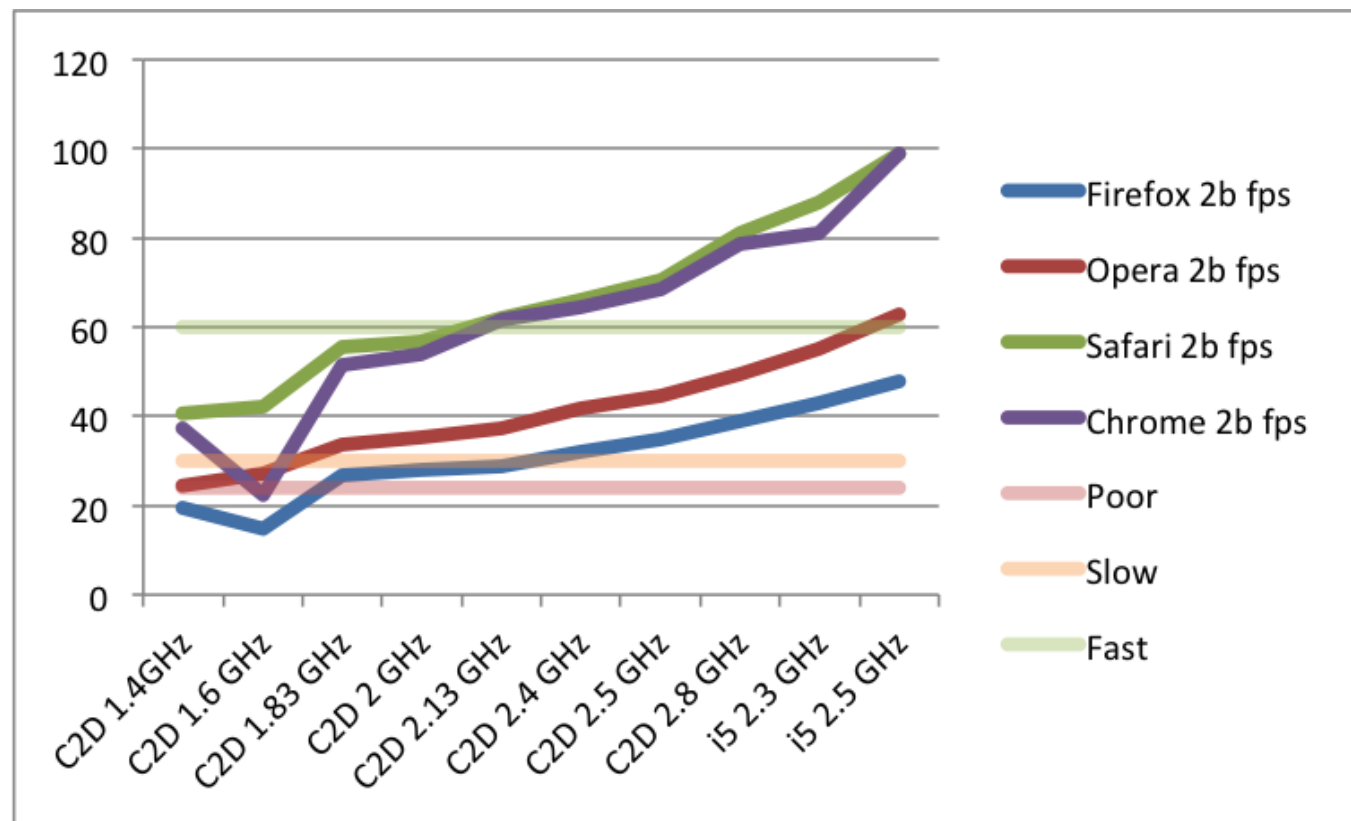
1. Example from third slide
2. Image viewer
3. Project introduction slides
<http://tinyurl.com/qmlslides>

Under the hood



Performance

- Proof-of-concept implementation
 - Not targeting performance
- 60 FPS with modern Javascript engine and processor



Summary

- Web is compelling platform due big user base
- Browser can run “alien” applications like QML
- QML makes it easy to declare slick UIs
- We created proof-of-concept QML runtime for browser
 - Parser + engine + elements
 - It works
 - Performance (FPS) is adequate

Thanks & Questions



Email: Lauri.Paimen@tut.fi

Slides: <http://tinyurl.com/qmlslides>

Git: <https://gitorious.org/qmlweb>

Bonus: Related work, alternate approaches

- Generic vs specialized
- Binary emulators
- Language transcoders
- Runtime environments

Bonus: Technical details

- Property bindings
 - Models: push and pull
 - Implementation with getters and setters
- Variable scope
 - `with (scopeObj) { eval(code) }`
- Anchoring: treat anchors as bindings
- 2d canvas

Bonus: Future work

- Performance of bindings and graphics
- Capabilities of browser (vs native platform)



Bonus: URLs

- Git repository and wiki:
<https://gitorious.org/qmlweb>
- Mirror to try out:
<http://lauri.paimen.info/qmlweb/>
 - Testpad
 - Introduction slides in viewer