Python 3 and Qt 5 with QML
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Overview

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Background

- 2007: PyGtk / Hildon on N800/N810
- 2009: PyMaemo / Hildon on N900
- 2011: PySide / Qt 4 on N9
- 2013: PyOtherSide on Sailfish OS

- On other platforms:
  - SL4A, PyS60, BB-Tart, ...
Comparison: License/Versions

- PyQt: GPL'd and commercial bindings
  - Qt 4 and Qt 5
  - Python 2 and Python 3

- PySide: LGPL'd bindings + generator
  - Qt 4 only at the moment
  - Python 2 and Python 3

- PyOtherSide: ISC/BSD QML Plugin
  - Qt 5 (Qt 4 support available in Git history)
  - Python 3 (Python 2 still works, but unsupported)
Comparison: Performance

• Startup time (to first visible screen)
  - PySide/PyQt: CPython + Python code + Bindings + Qt
  - PyOtherSide: Qt only (Python loading delayed until use)

• Responsiveness
  - PySide/PyQt: Synchronous by default
  - PyOtherSide: Asynchronous by default

• Library size (space usage, memory footprint)
  - PySide: QtCore ~ 2.8 MiB, QtGui: ~ 12.5 MiB, ...
  - PyOtherSide: ~ 145 KiB
Comparison: Usage

• PySide/PyQt
  – Python interpreter uses Qt/QML to display UI

• PyOtherSide
  – QML uses Python as a data provider / backend
API Overview: QML

Methods

void addImportPath(path)
void setHandler(event, callback)
QVariant evaluate(expr)
void importModule(name, callback)
void call(func, args, callback)
API Overview: QML Signals

received(data)
error(traceback)
API Overview: Python Module

```python
import pyotherside
pyotherside.send(*args)
pyotherside.atexit(f)
```
API Overview: Image Provider

```python
def func(image_id, size):
    return (pixels, (width, height), format)
```

```qml
pyotherside.set_image_provider(func)
```

Image {
    src: 'image://python/<image_id>'
}
Current Status

- Desktop Platforms fully supported
- Sailfish OS
  - Best support: Already in Mer and Sailfish OS repositories
- Blackberry 10
  - Python 3 from system, ship Qt 5 and PyOtherSide in app
- Android
  - Ship Python 3 + Qt 5 + PyOtherSide in app
Roadmap

- Embed Python scripts in Qt Resources
- Static linking of libpython + modules
- Support for PyPy (JIT)
- Wrapping Python objects as QML/JS values
Snakes on a Boat
Q&A

Source: http://github.com/thp/pyotherside/

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