# Meet Qt 6.6, and more!

Dr. Cristián Maureira-Fredes

@cmaureir

# Slides available

qtinfo.dev/gnuhealthcon23

# After 3 online years

## it's good to be here in person

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# My motivation to be here

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# Let's talk about the Qt framework

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- Cross platform framework for UI interfaces, and applications.
- Started in 1991
- With many, many modules.
- More info at `qt.io`

# The 6.6 Release

- RC: 26.09.2023
- Final Release: 10.10.2023

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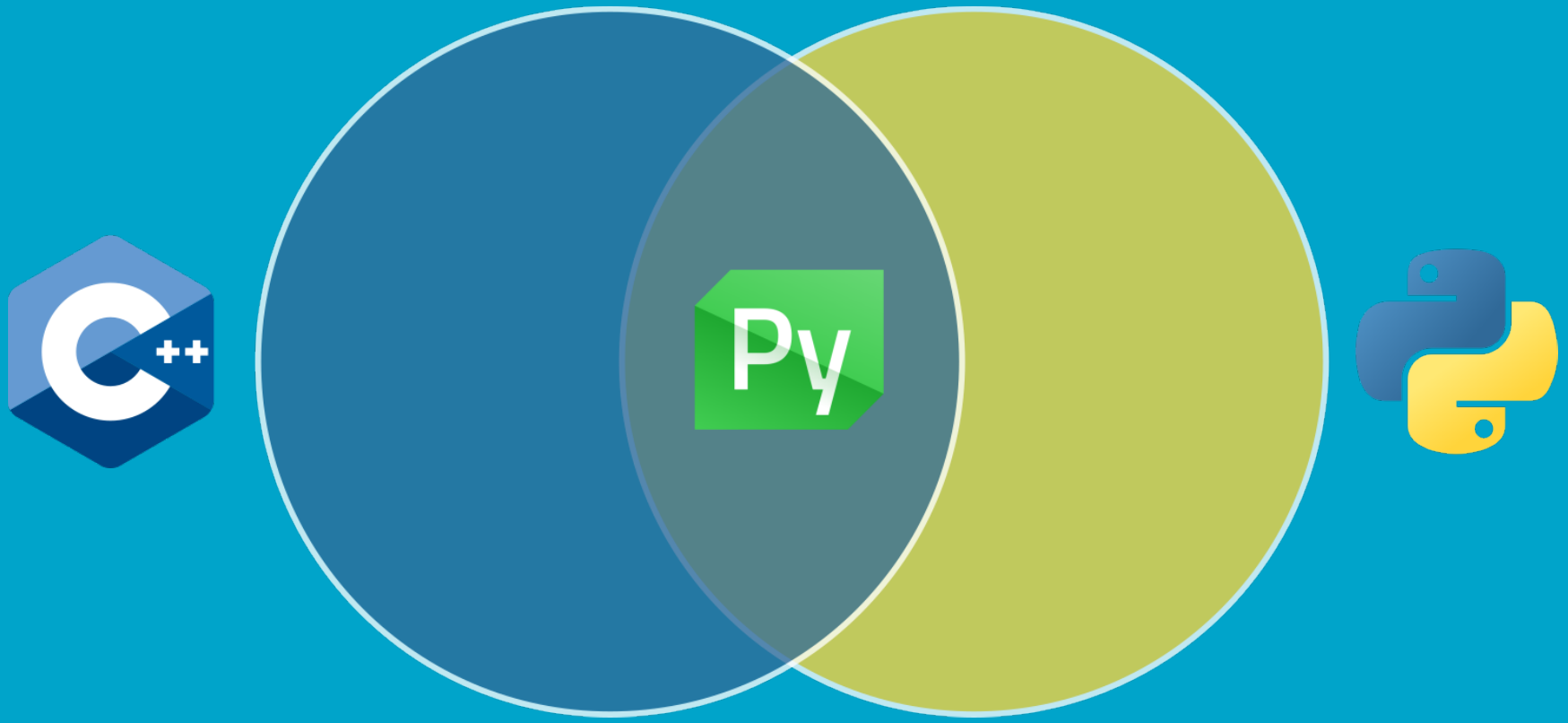
# Where were we? 🤔

# GNUHealthCon 2022 (1/2)

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# GNUHealthCon 2022 (2/2)

## Motivation

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## Features

- PyPy compatibility
- New wheel structure
- Embedded support
- Tooling
  - `pyside6-qml` (app preview)
  - `pyside6-deploy` (using nuitka)
  - `pyside6-project` (new projects)
  - `pyside6-qtpy2cpp` (converter)

# A few highlights of the 6.6 release

doc-snapshots.qt.io/qt6-6.6/whatsnew66.html

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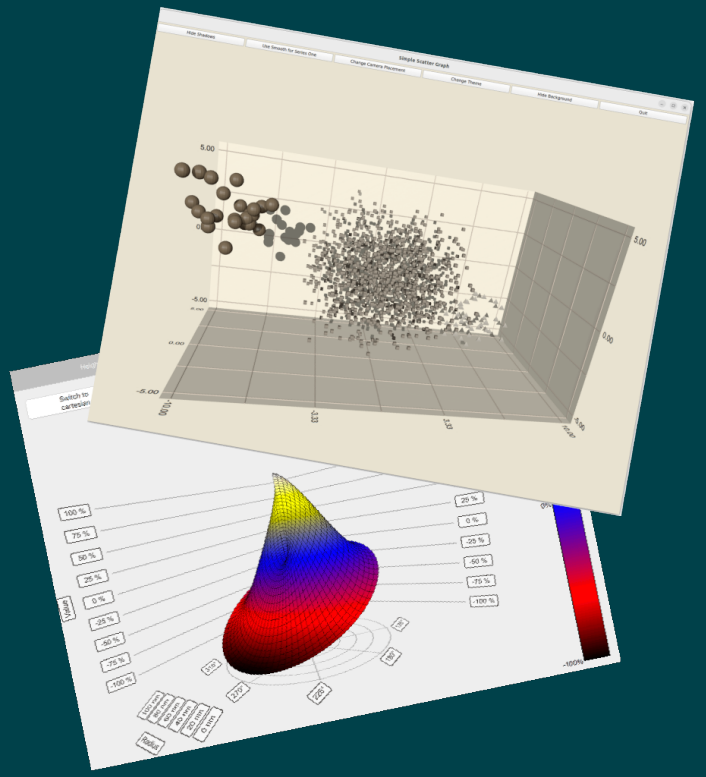
# Qt Graphs (TP)

## QtGraphs

- New module, replacing OpenGL based DataVisualization



Surface Graph Gallery

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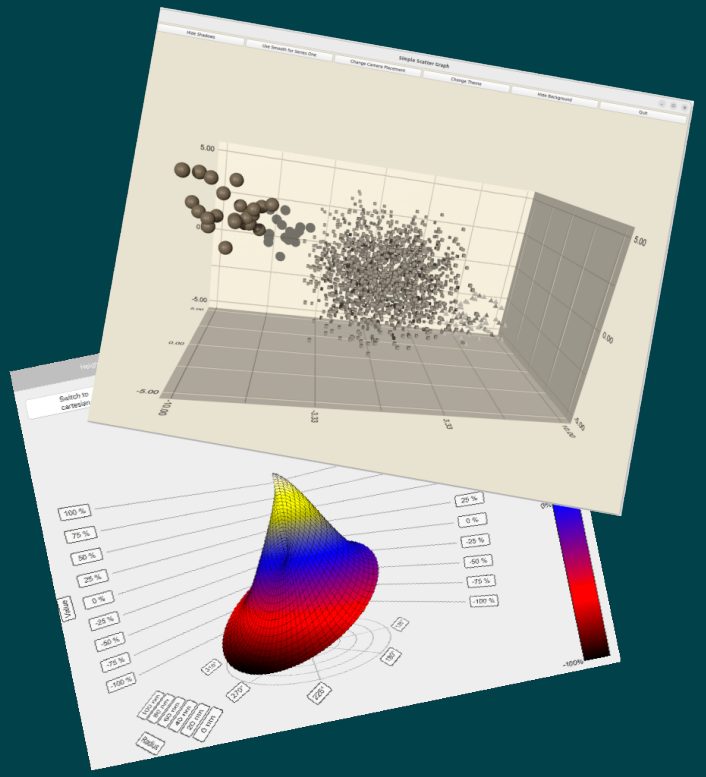

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  - Customizable charts with themes, items and labels
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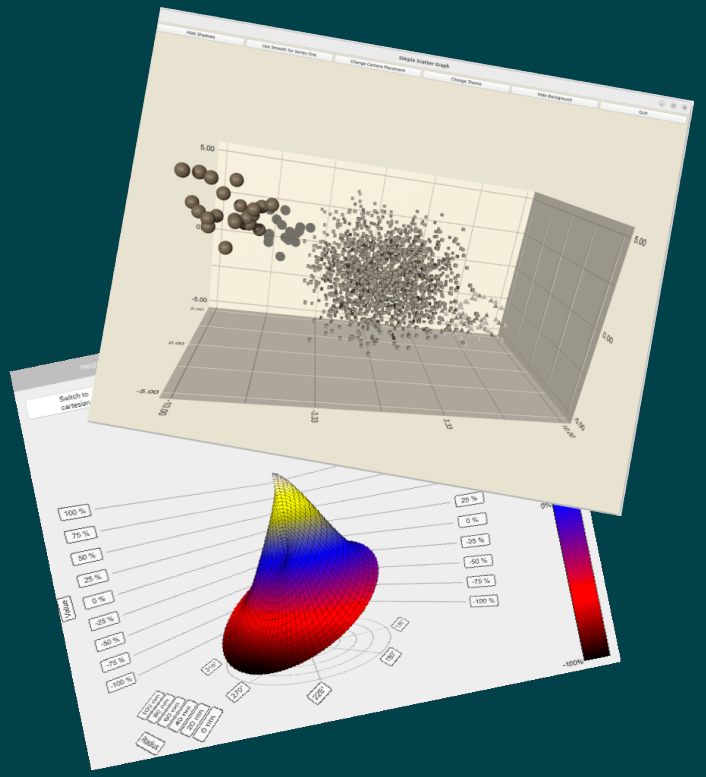

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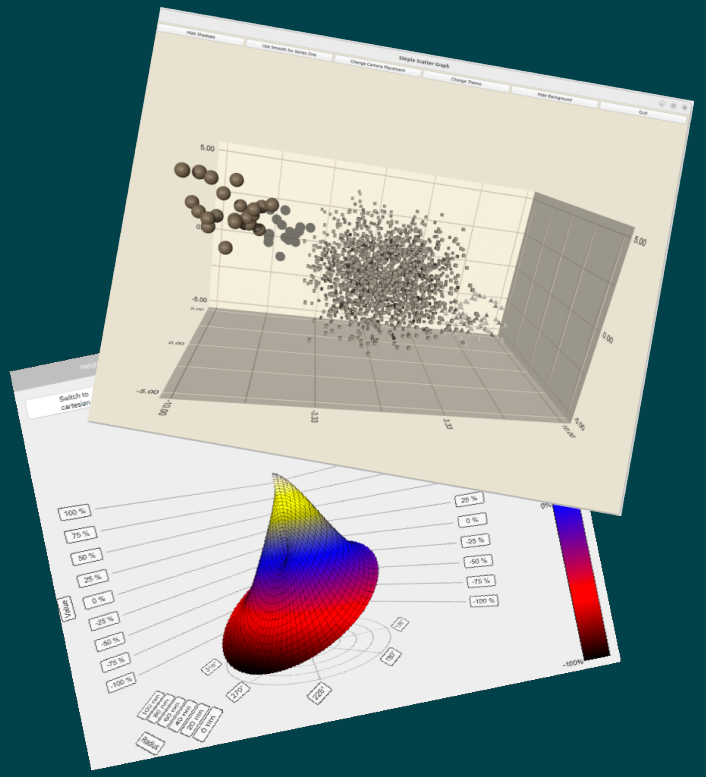

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# Qt Quick responsive layouts (TP)

## `QtQuick.Layouts`

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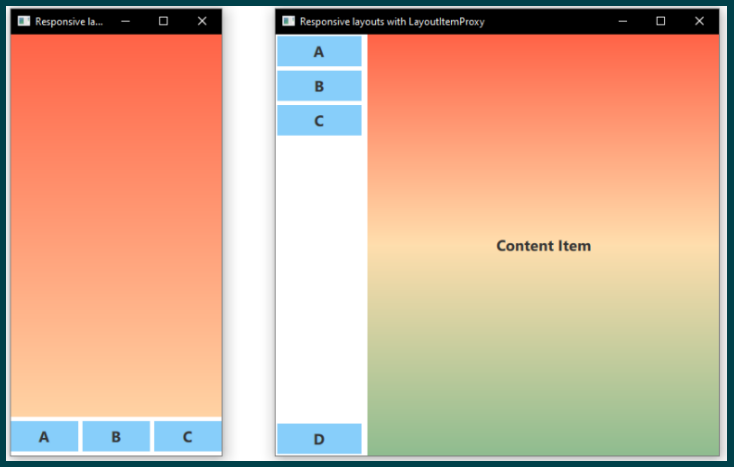


Responsive Layout Example

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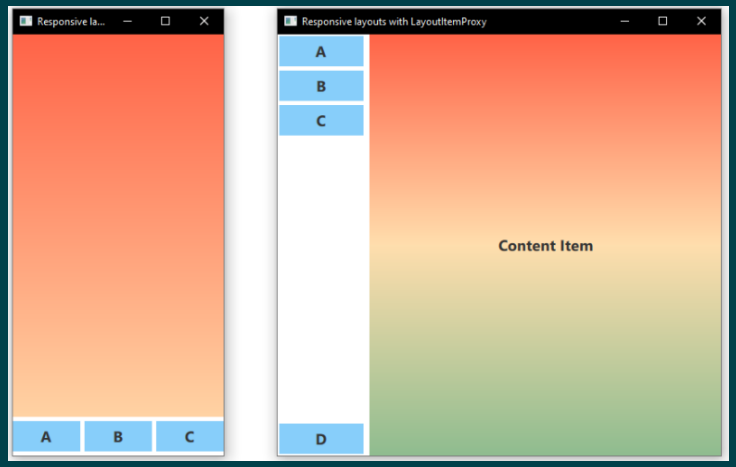


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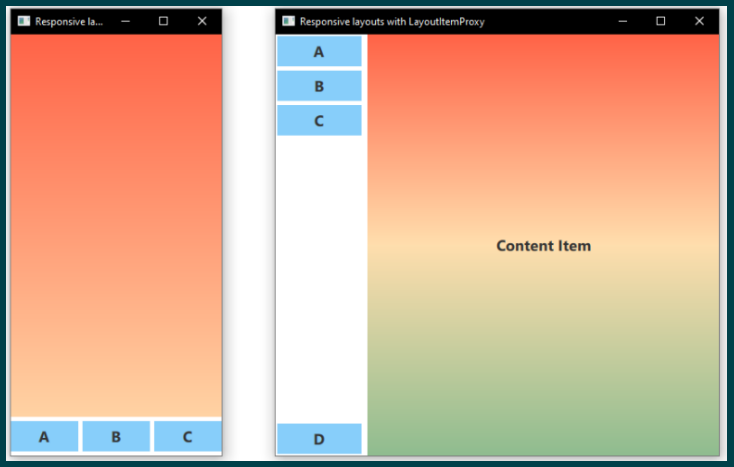


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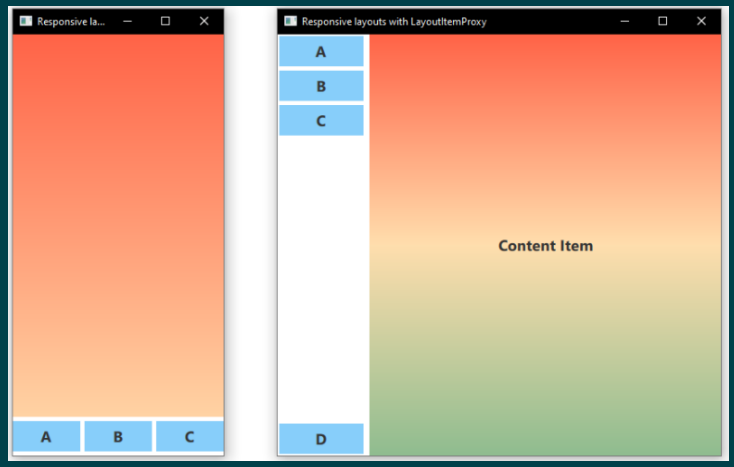


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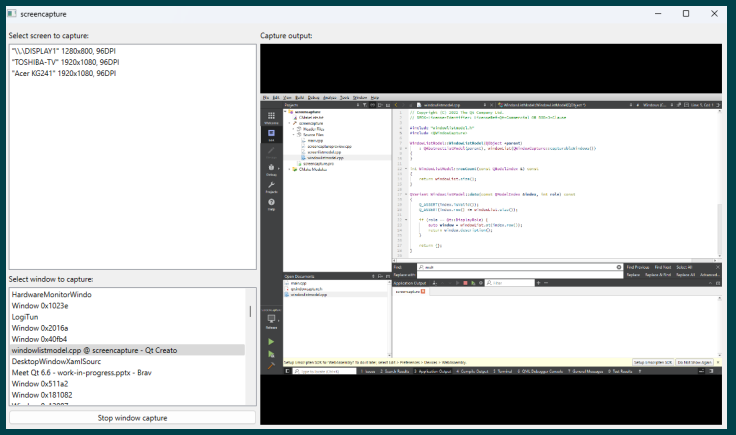
# Window capturing

## QtMultimedia

- Capture videos of individual desktop applications windows




Screen capture example

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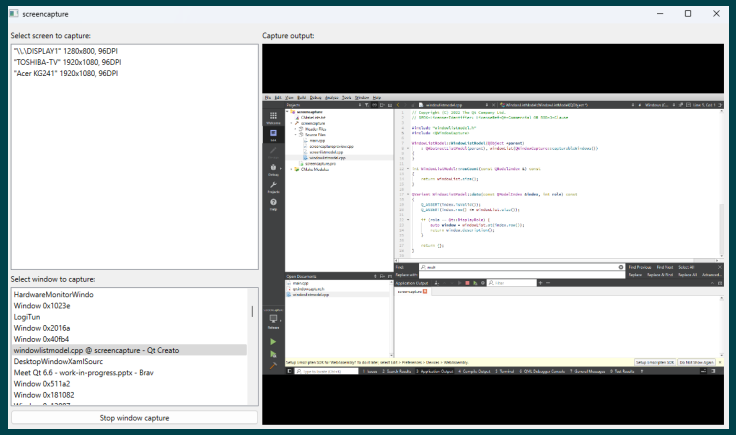


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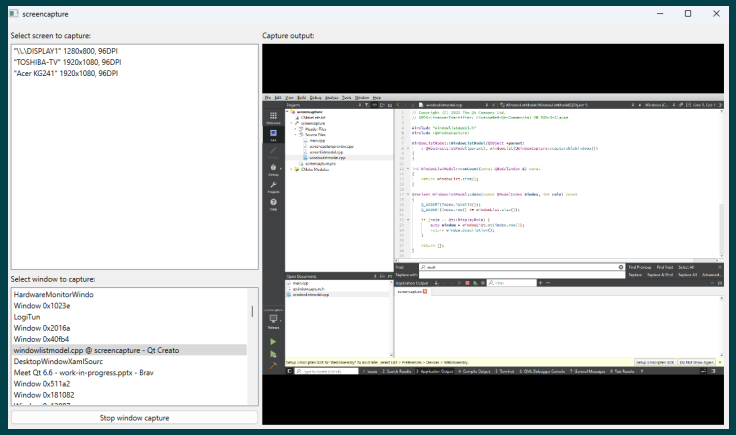


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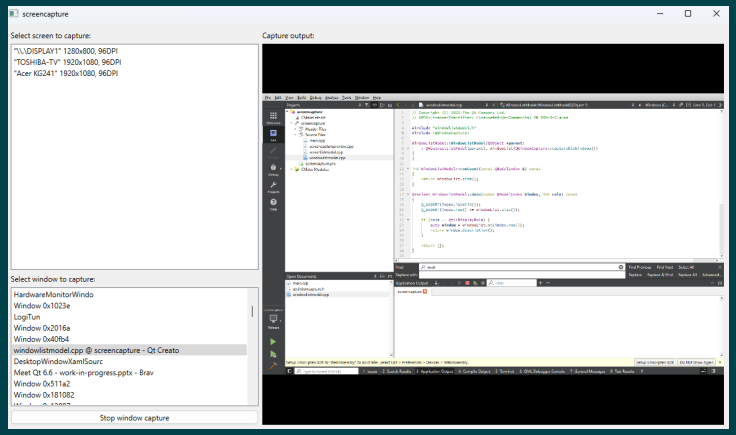


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# OpenType fonts support

## QtFonts

- Advanced access to font shaping features

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# New Text to Speech

## QTextToSpeech

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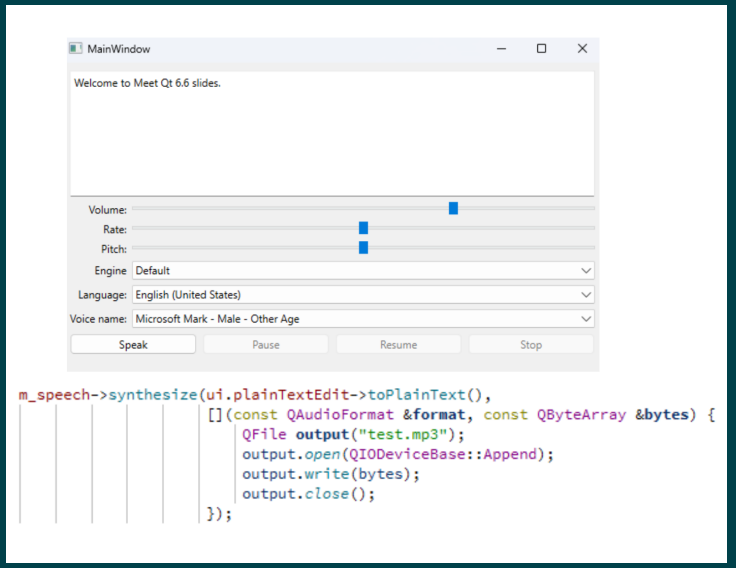


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m_speech->synthesize(ui.plainTextEdit->toPlainText(),
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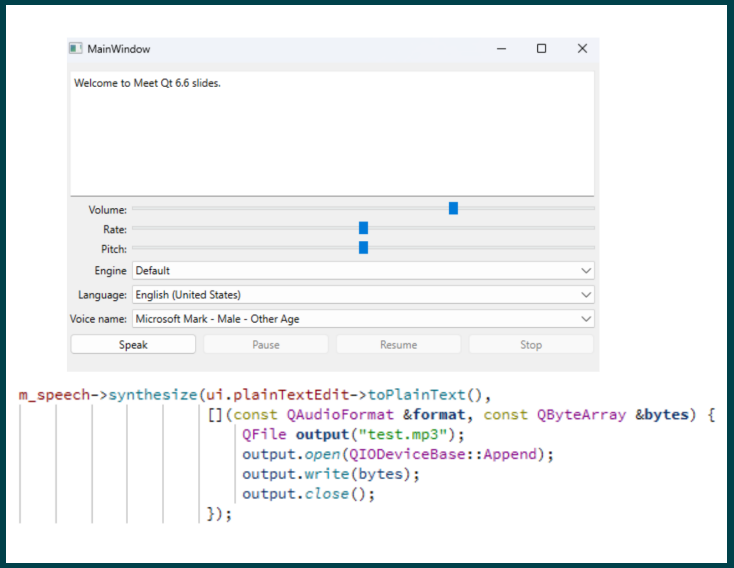


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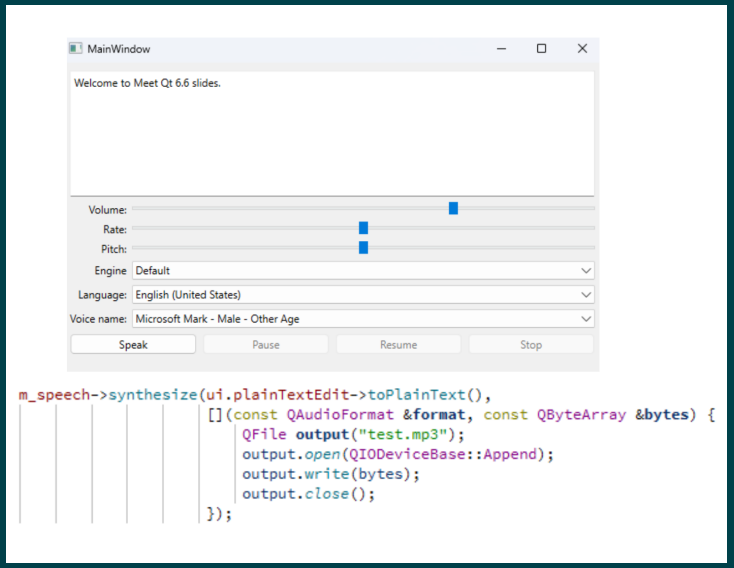


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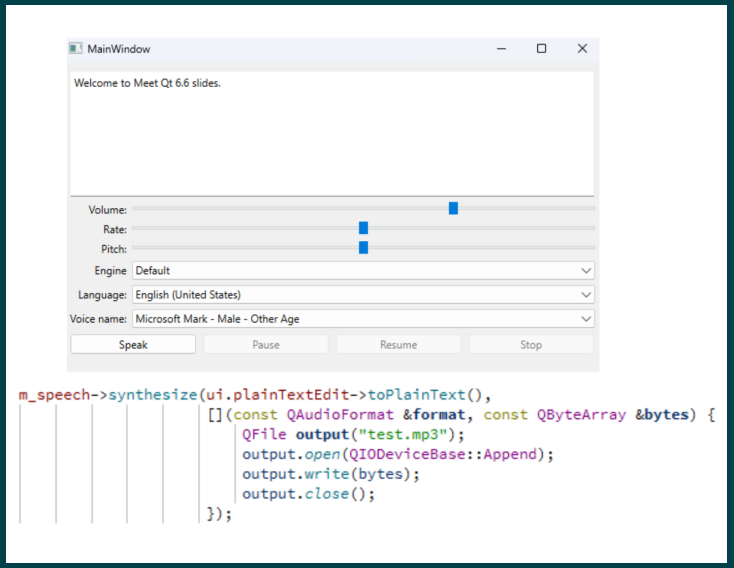

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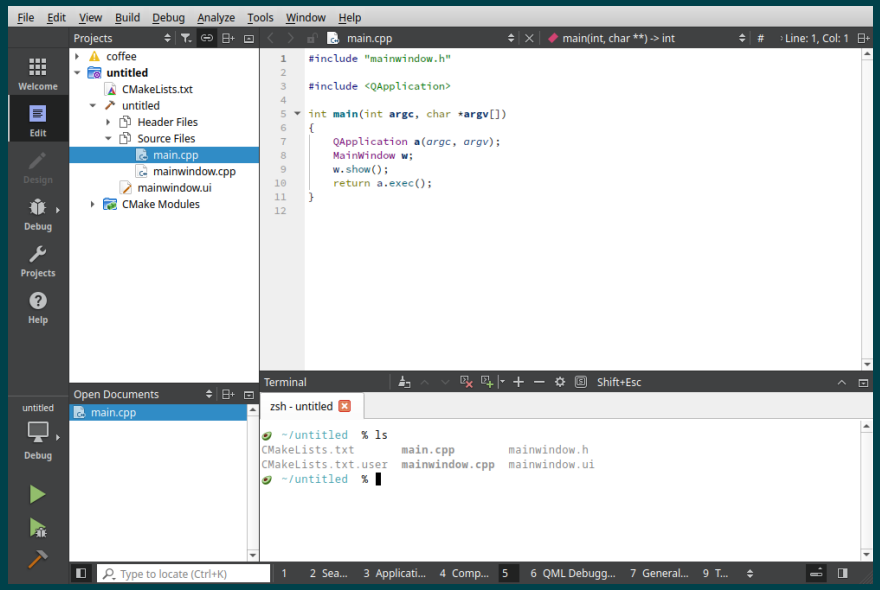

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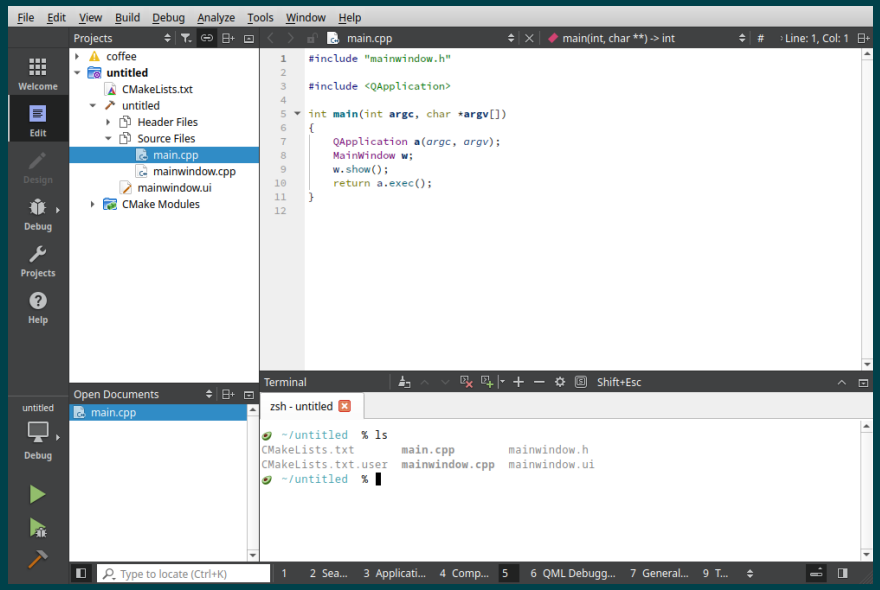


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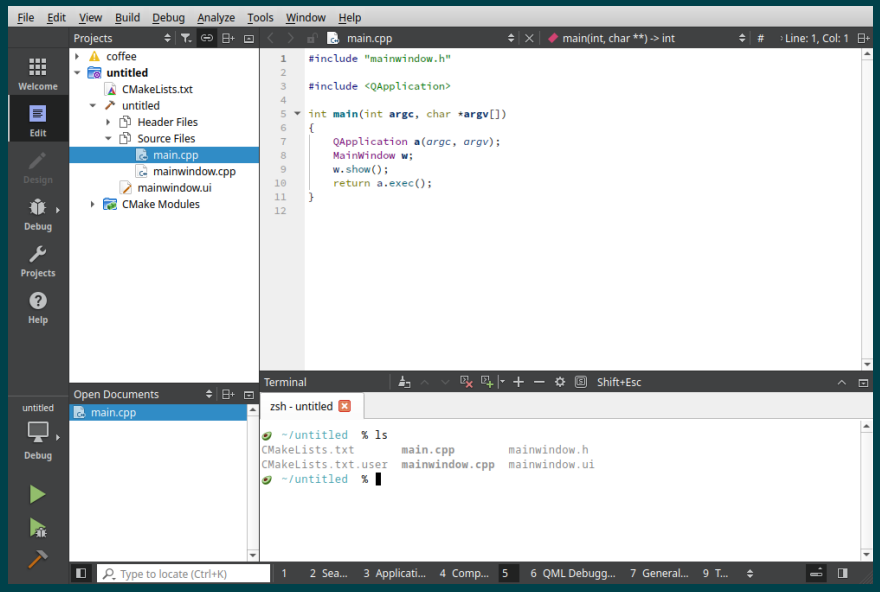

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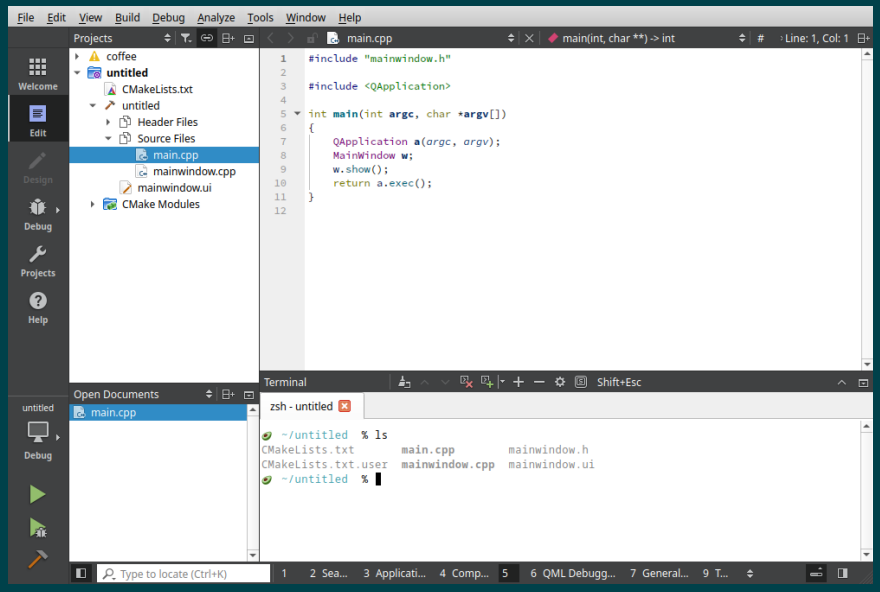

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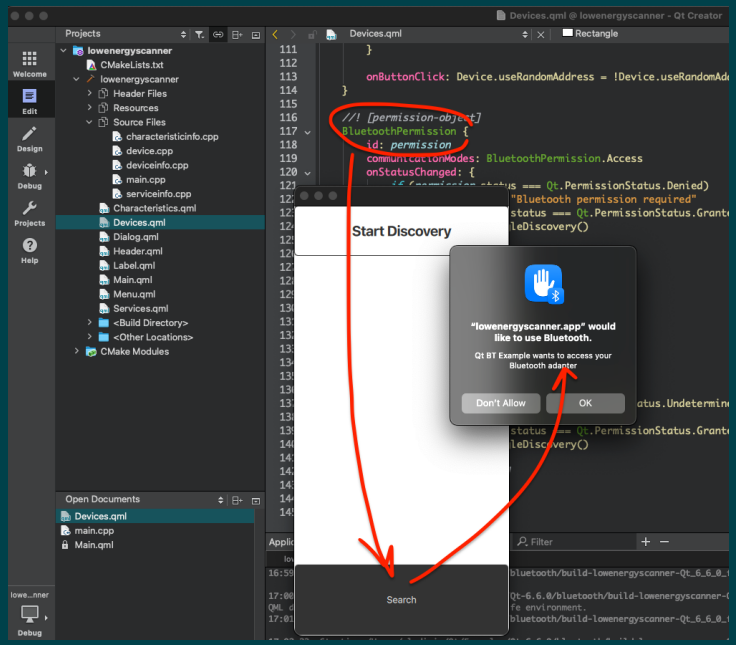

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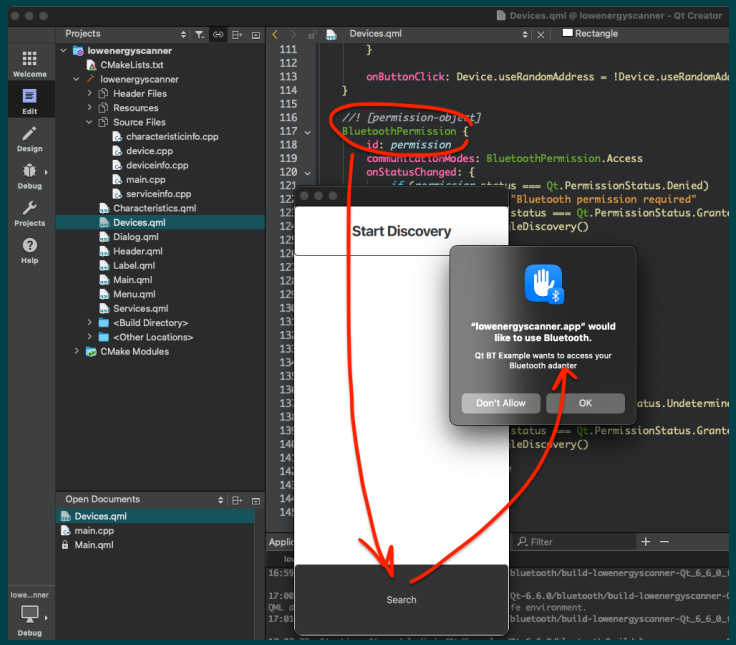

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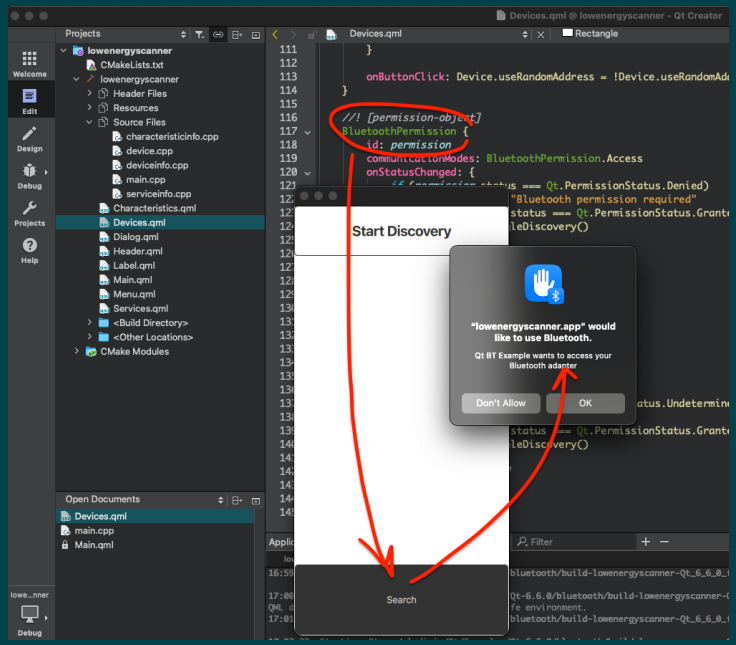

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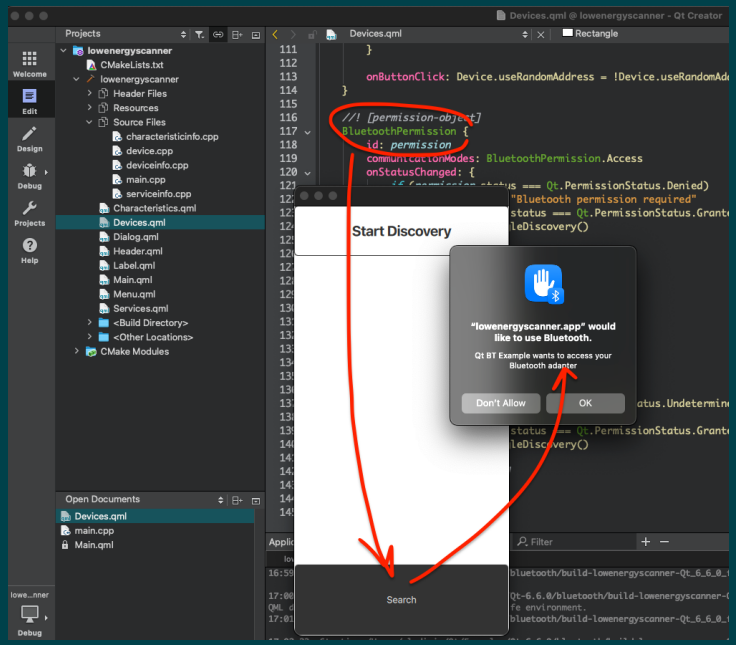

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qt_standard_project_setup(REQUIRES 6.5) # <- this is needed!

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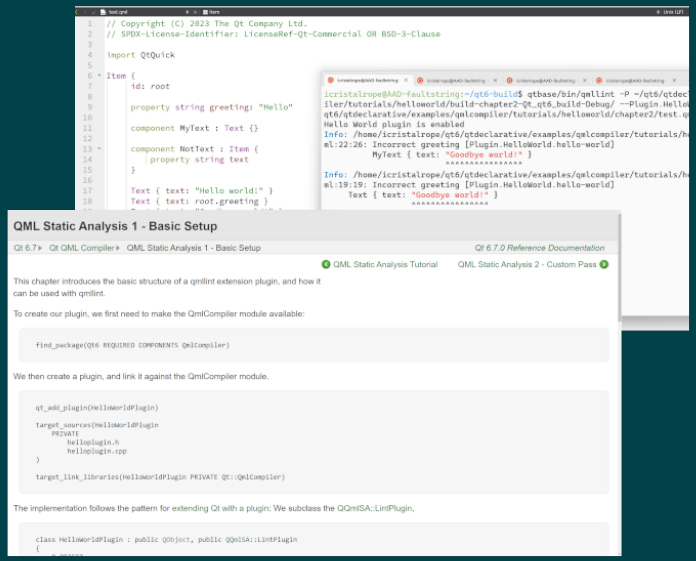

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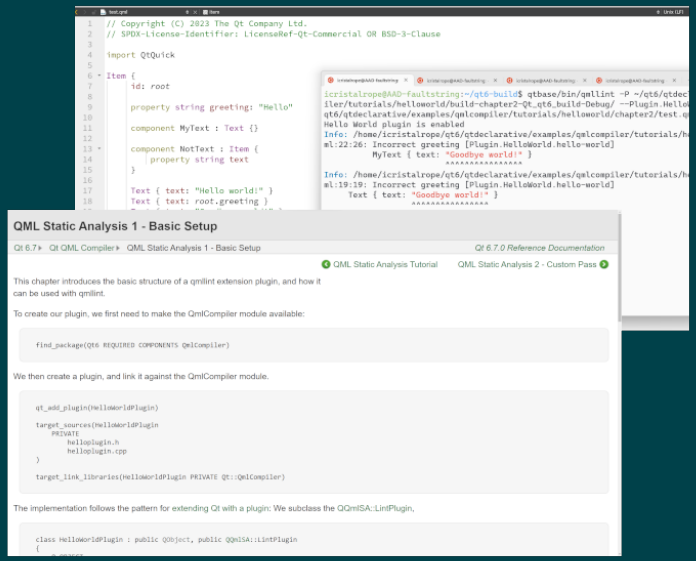

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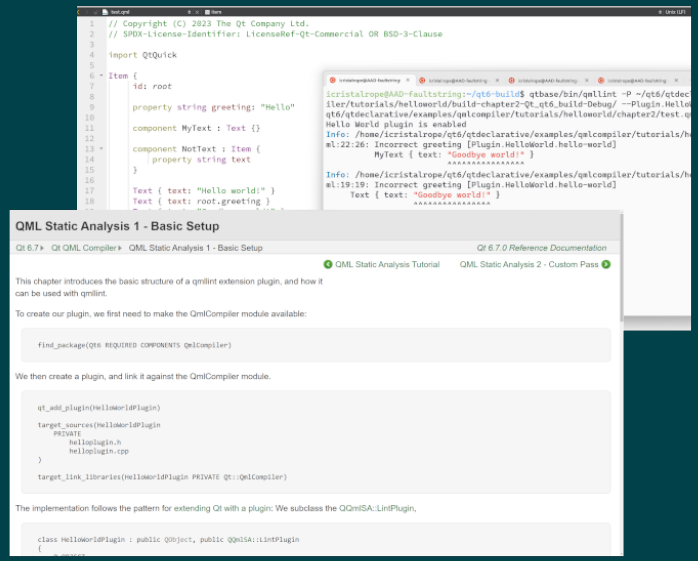

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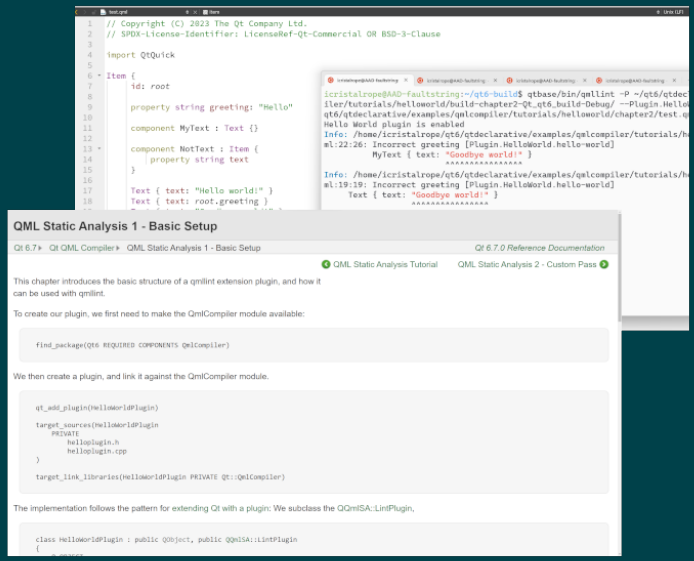
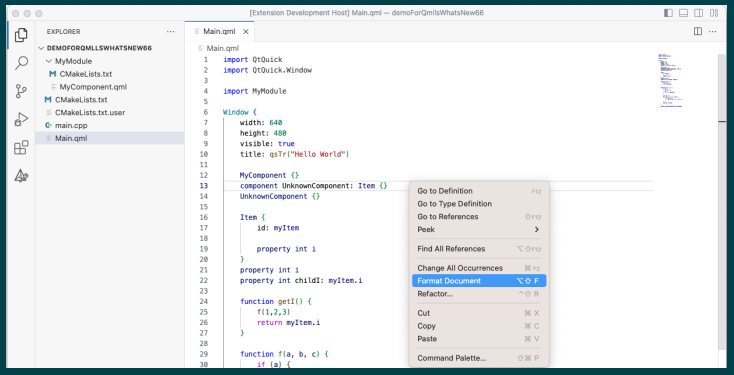


# QML Language Server is getting solid

## QML

- Can be used in Visual Studio Code, and QtC 10+



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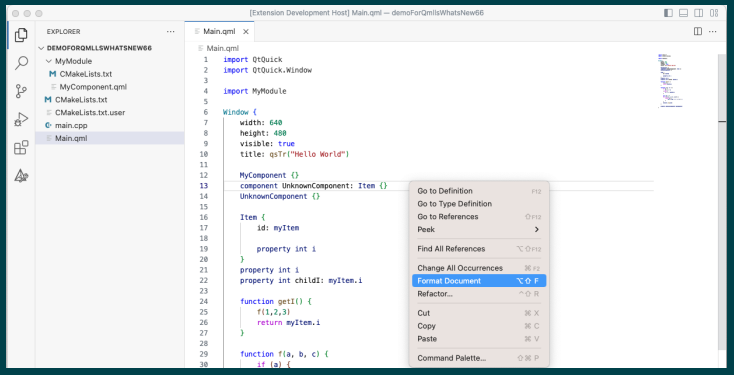

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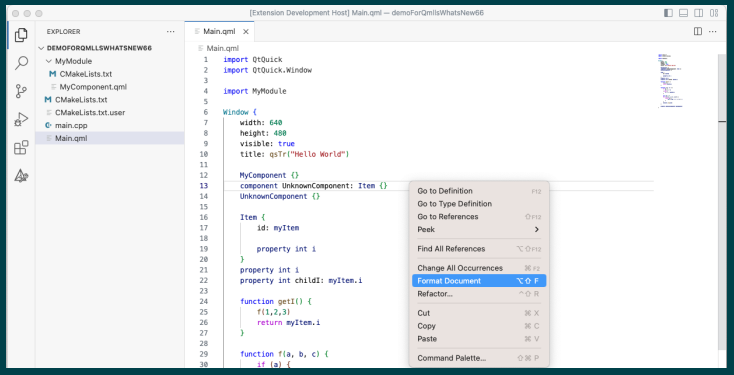

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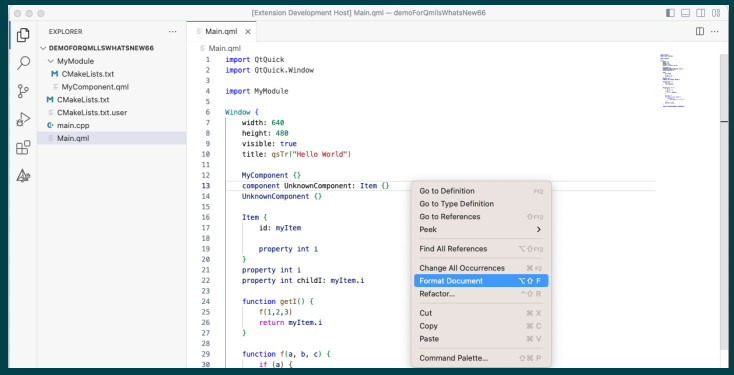
  - Post: https://qt.io/blog/whats-new-in-qml-language-server-qmlls-shipped-with-qt-6.6
  - `qmlls --help`



# Qt gRPC: overview of the ongoing works (TP) - (1/2)

## QrGrpc and Qt Protobuf

- Qt 6.6
  - Added support for channel and call options
  - Integrated QML-types support in code generation
  - New QML API: in discussion and under reviews
  - Support for "oneof"
  - qmake support

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# Qt gRPC: overview of the ongoing works (TP) - (2/2)

## QrGrpc and Qt Protobuf

- Plans for Qt 6.7
  - Improve HTTP/2 support in Qt, then Qt gRPC
  - Reduce dependencies to "gRPC" itself
  - Support more well-known types
  - Finalize QML API
  - QProtobuf conformance testing
  - gRPC interoperatibility testing
  - Review and extended/improve examples if needed

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  - Review and extended/improve examples if needed
- Wish to fully release in 6.7. It is going to be popular modules, we better do them well
- How to find
  - Since Qt 6.5, Qt gRPC and Qt Protobuf are in docs and Qt Bug Reports
  - They are listed as modules and components

# API access to more privacy and securty settings

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- Enable/disable HTML5 Fetch API
- Read effective top-level domain
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  - https://doc-snapshots.qt.io/qt6-6.6/whatsnew66.html#qt-webengine-module

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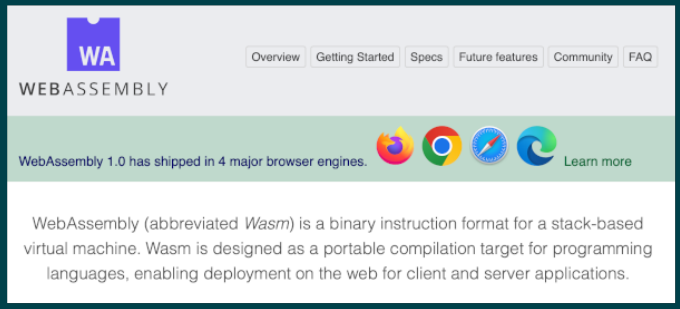
## WebAssembly

- Limited support for dynamic linking in Qt for WebAssembly
- New implementation for `QtLoader.js`




| Generated file | Brief Description |
|---|---|
| app.html | HTML container |
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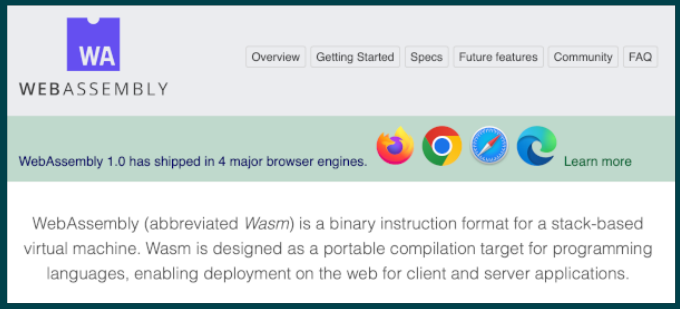


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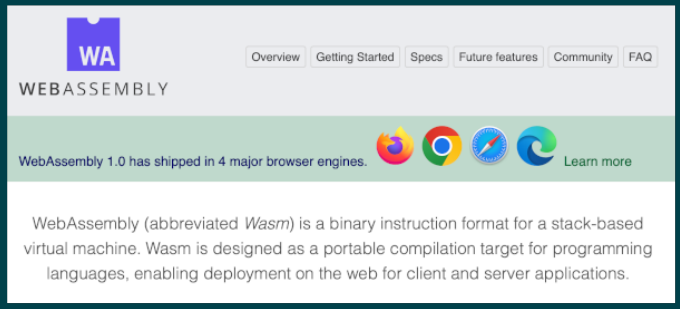


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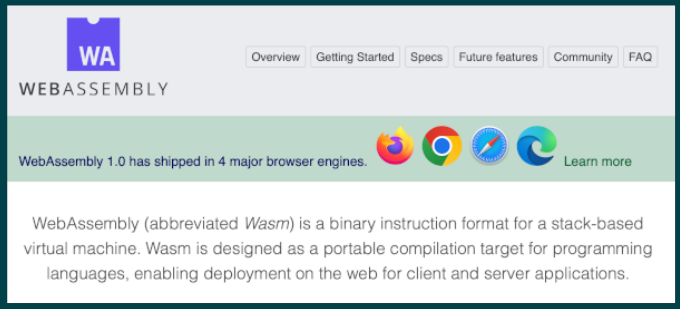


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## `Platforms`

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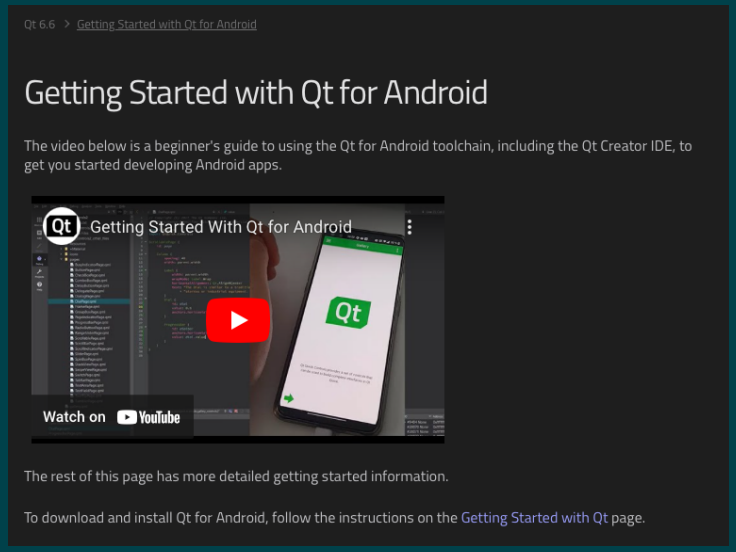

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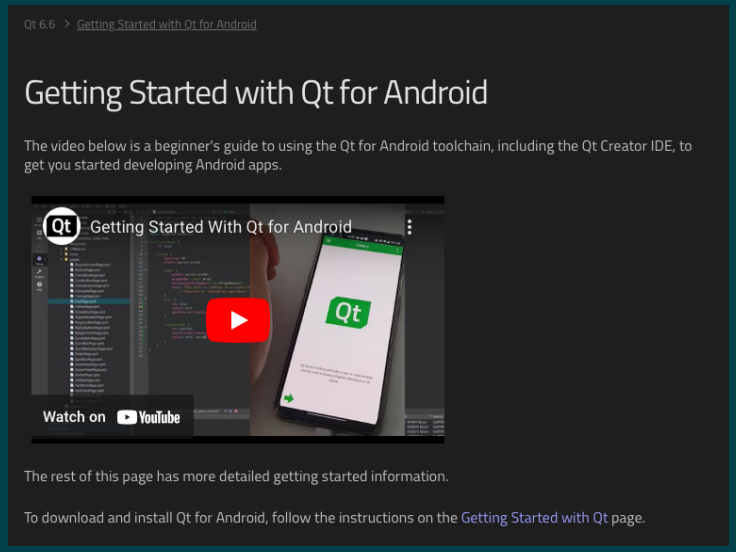

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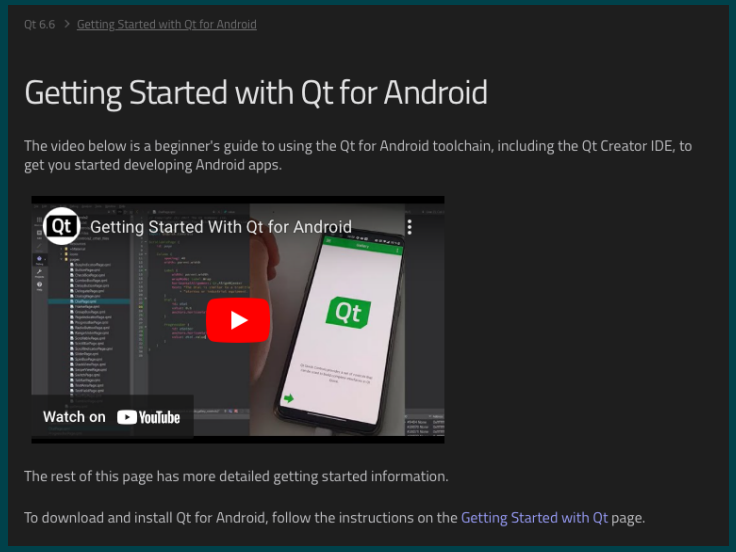

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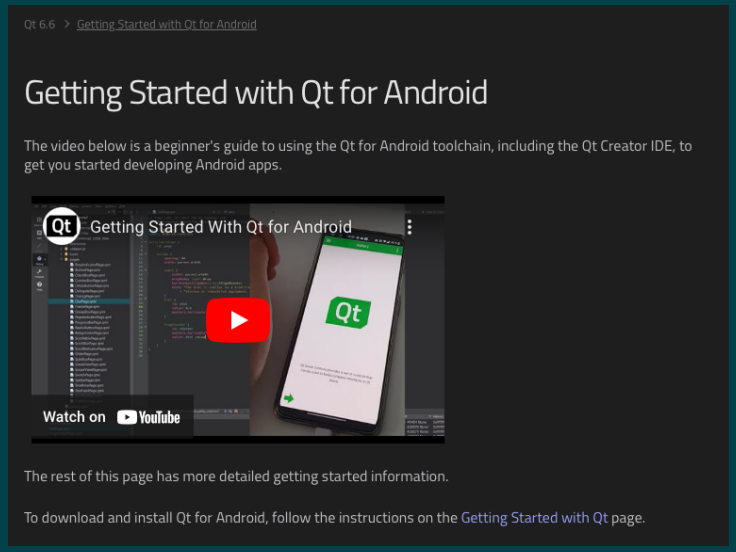


# Qt for Python


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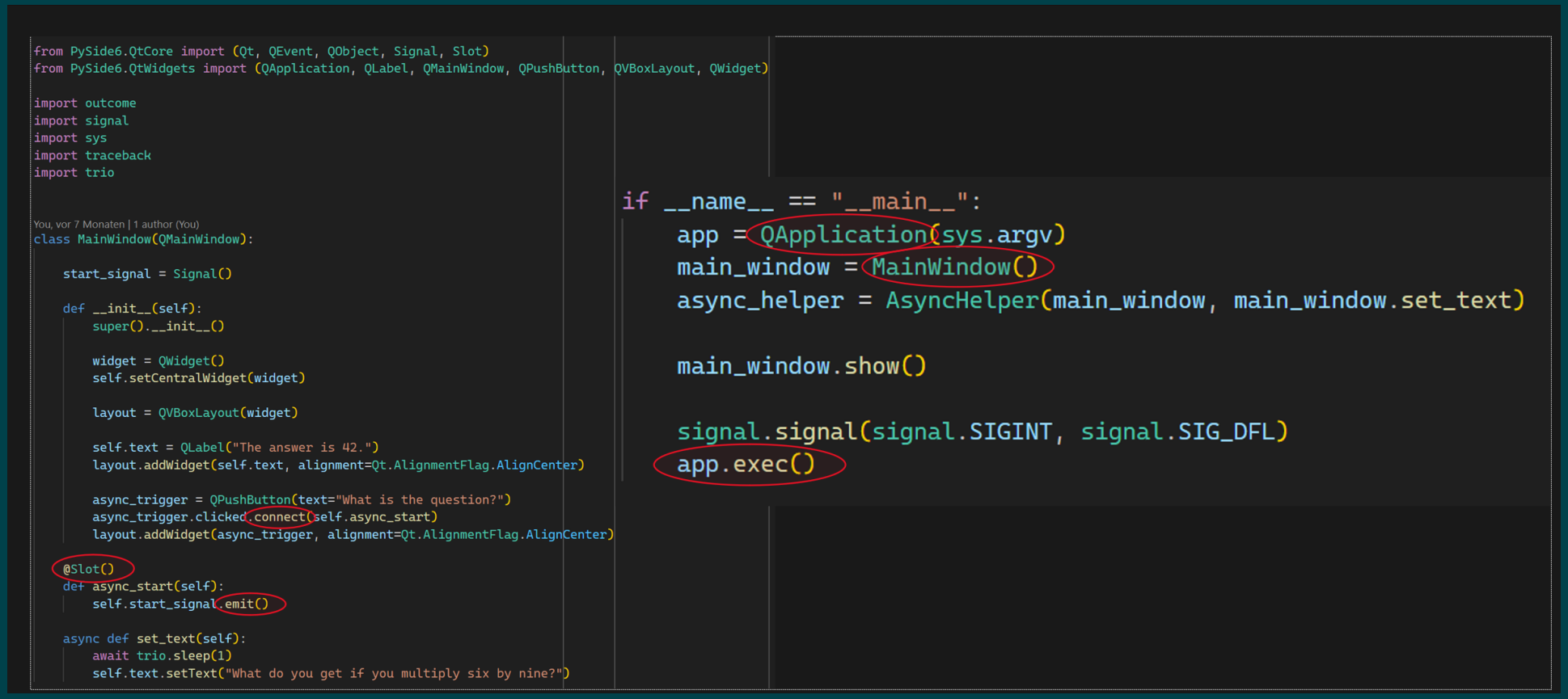
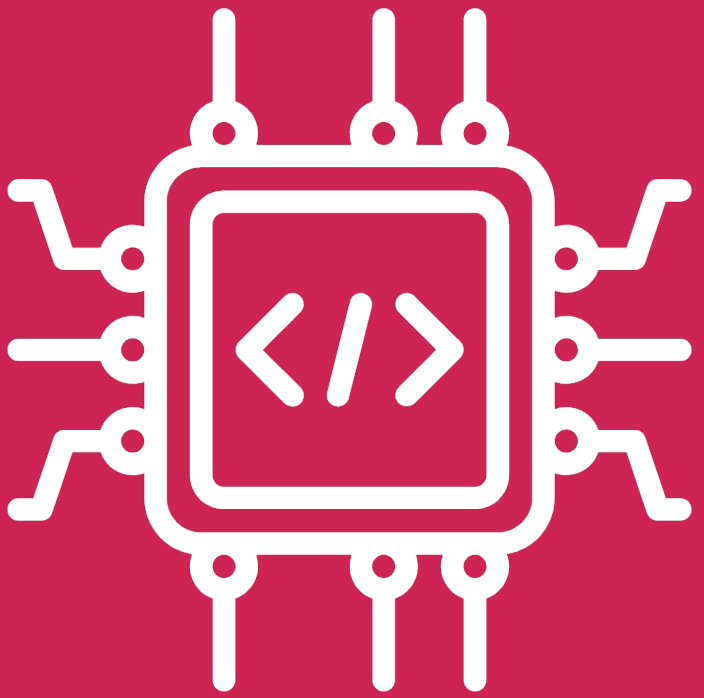
# Asynchronous compatibility



```python
from PySide6.QtCore import (Qt, QEvent, QObject, Signal, Slot)
from PySide6.QtWidgets import (QApplication, QLabel, QMainWindow, QPushButton, QVBoxLayout, QWidget)

import outcome
import signal
import sys
import traceback
import trio


You, vor 7 Monaten | 1 author (You)
class MainWindow(QMainWindow):

    start_signal = Signal()

    def __init__(self):
        super().__init__()

        widget = QWidget()
        self.setCentralWidget(widget)

        layout = QVBoxLayout(widget)

        self.text = QLabel("The answer is 42.")
        layout.addWidget(self.text, alignment=Qt.AlignmentFlag.AlignCenter)

        async_trigger = QPushButton(text="What is the question?")
        async_trigger.clicked.connect(self.async_start)
        layout.addWidget(async_trigger, alignment=Qt.AlignmentFlag.AlignCenter)

    @Slot()
    def async_start(self):
        self.start_signal.emit()

    async def set_text(self):
        await trio.sleep(1)
        self.text.setText("What do you get if you multiply six by nine?")


if __name__ == "__main__":
    app = QApplication(sys.argv)
    main_window = MainWindow()
    async_helper = AsyncHelper(main_window, main_window.set_text)

    main_window.show()

    signal.signal(signal.SIGINT, signal.SIG_DFL)
    app.exec()
```

# Embedded wheels



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# Packages for **aarch64**

- Targeting Raspberry Pi devices mainly
- To be available on PyPI


# Android


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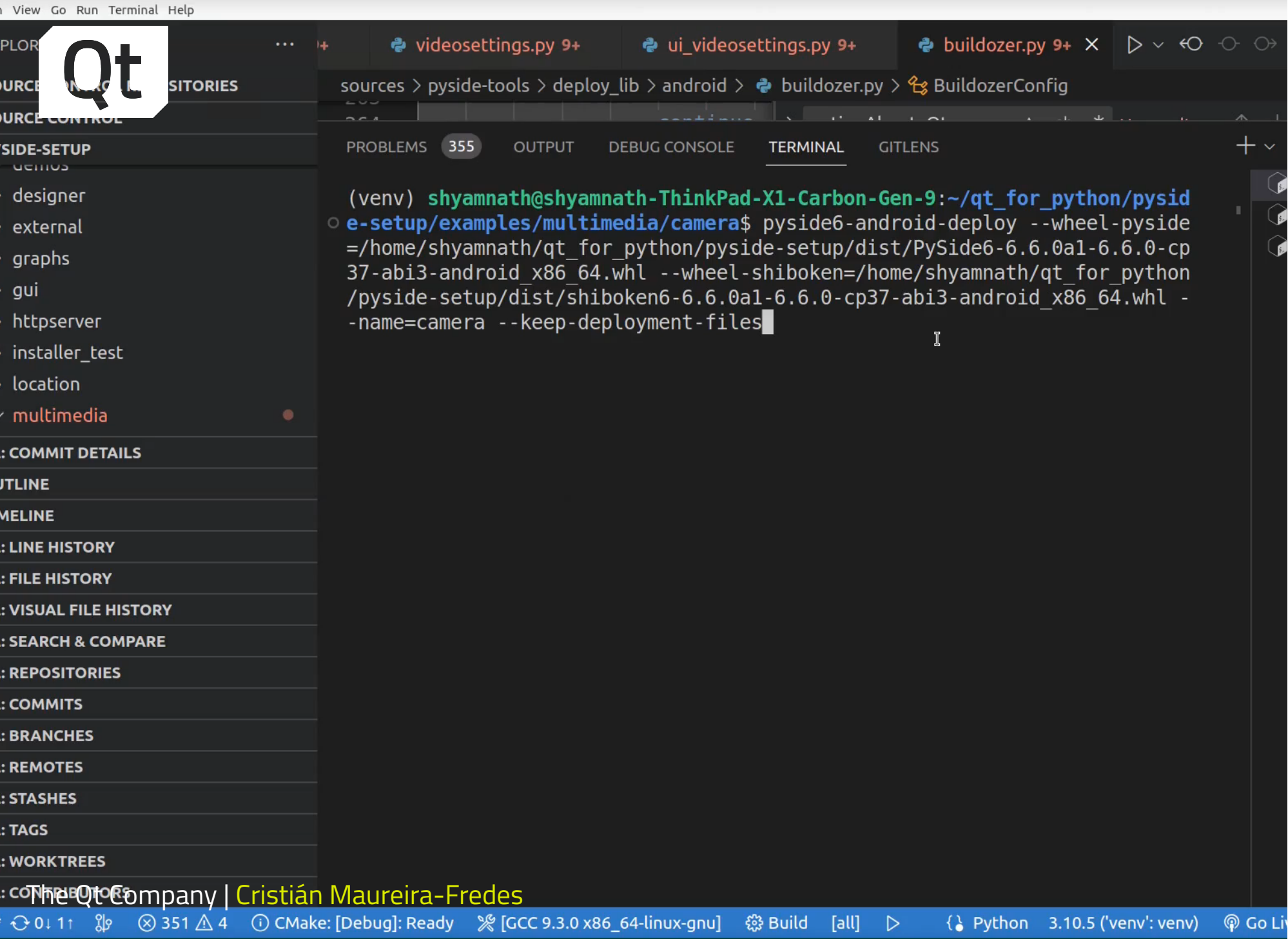


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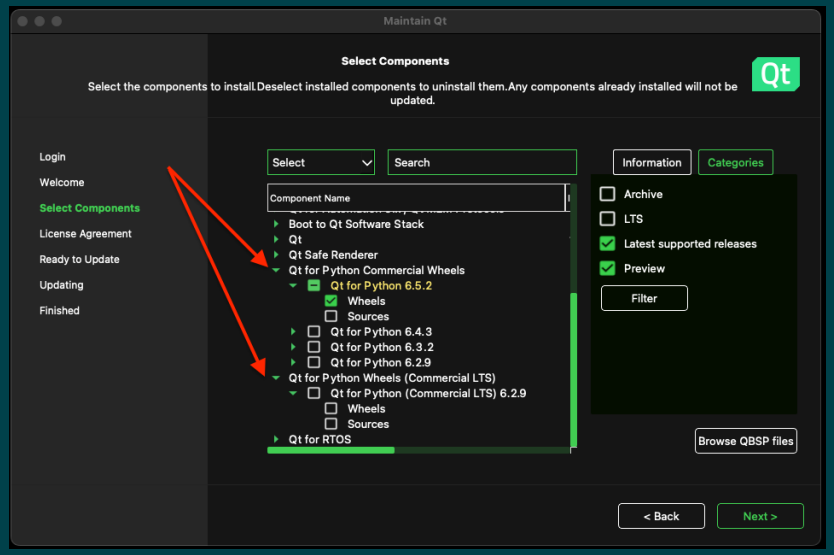
# For license holders

# Installation

## Maintenance Tool



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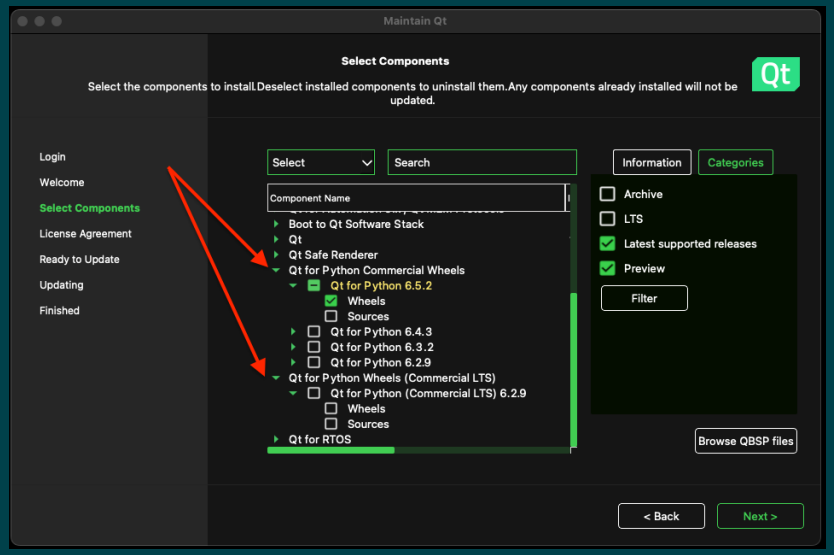
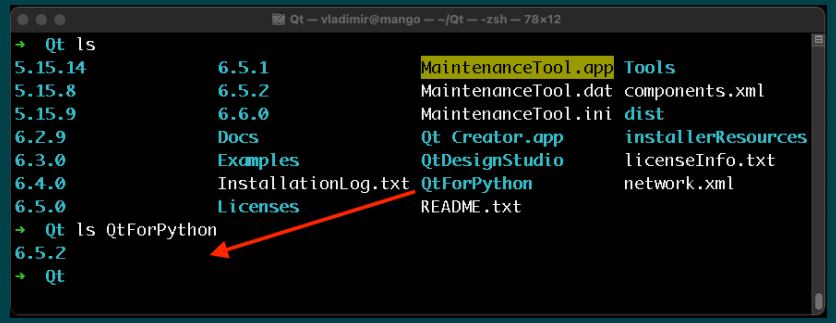


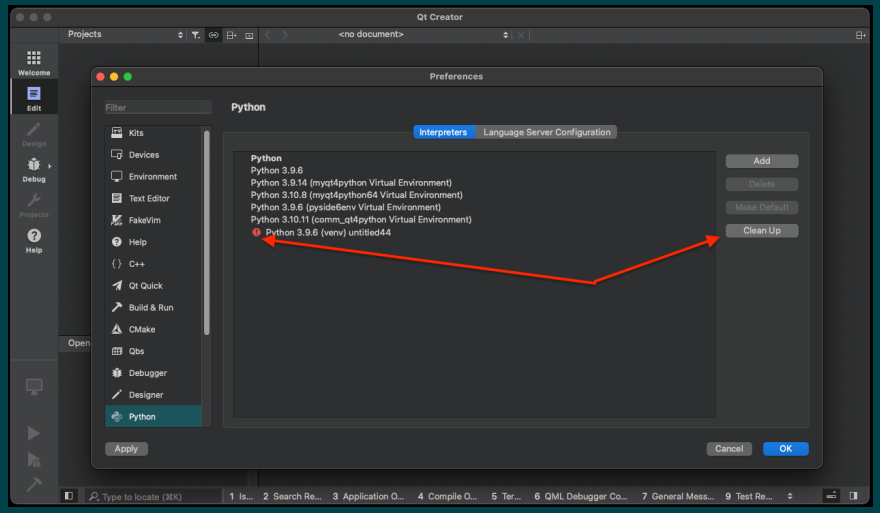

## qtpip



# Towards a Qt flavored Python IDE

## `QtCreator`

- Interpreter selection
- Virtual env creation
- Automatic PySide installation
- More to come



# Silent features and fixes

## **PySide** and **Shiboken**

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# How can Qt contribute to Libre and Open Health initiatives?

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# Let's be in touch!

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# Communication channels

- Telegram https://t.me/qtforpython
- IRC/Matrix #qt-pyside on Libera.chat
- Mailing list lists.qt-project.org/mailman/listinfo/pyside

More platforms at wiki.qt.io/Qt_for_Python#Community

# Don't forget the documentation

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doc.qt.io/qtforpython/

Qt for Python

search

Python Documentation

Python Getting Started

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iner Classes

linate System

# Qt for Python

**Qt for Python** offers the official Python bindings for Qt, which enables you to use Python to write your Qt applications. The project has two main components:

- PySide6, so that you can use Qt6 APIs in your Python applications, and
- Shiboken6, a binding generator tool, which can be used to expose C++ projects to Python, and a Python module with some utility functions.

Porting from PySide2 to PySide6 provides information on porting existing PySide2 applications.

This project is available under the LGPLv3/GPLv3 and the Qt commercial license.

CONTENTS

Quick Start

Documentation

## Quick Start

You can obtain the latest stable version by running `pip install pyside6`. If you want to build it yourself, check the getting started guide.

To learn how to use it, check out write your first application, and to learn what is installed with the `pyside6`, check the package content, structure, and tools page.

## Documentation

Write your first Qt application.

Install and build from source.

PySide API reference.

Getting Started

API Docs

# Meet Qt 6.6, and more!

Dr. Cristián Maureira-Fredes

@cmaureir