



NewPipe

Porting an Android app to Sailfish OS

Fabio Giovanazzi & David Llewellyn-Jones & Jeroen Heijmans

FOSDEM • 31 January 2026



Fabio Giovanazzi / @Stypox

1. Maintainer of NewPipe and Dicio assistant
2. Member of **NewPipe e.V.** and MindsHub
3. Studying Computer Science at **ETH Zürich**
4. <https://stypox.org> / stypox@pm.me

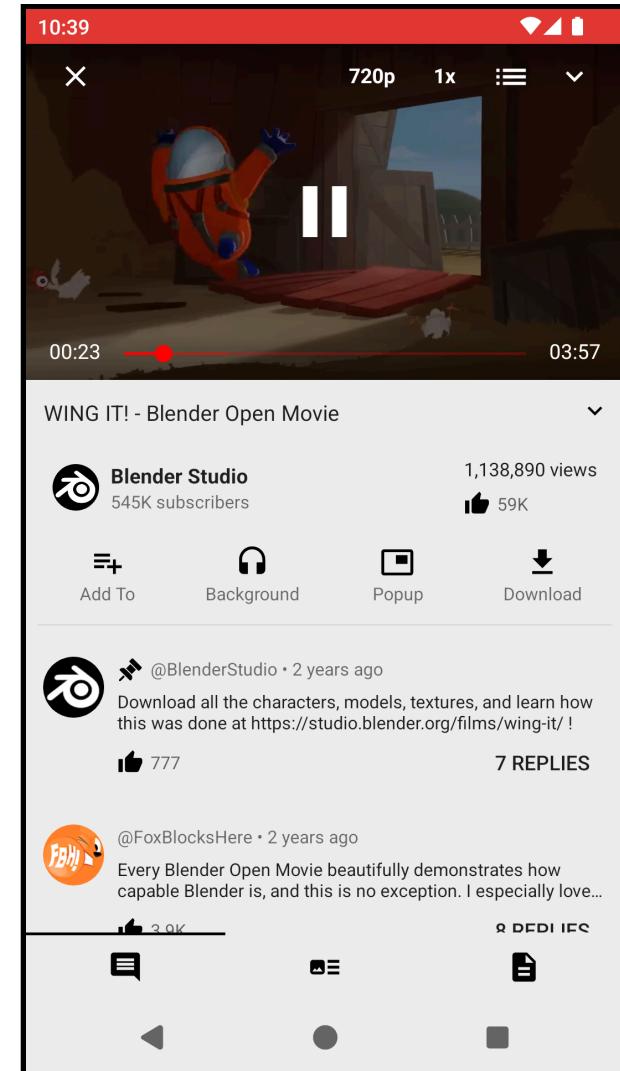
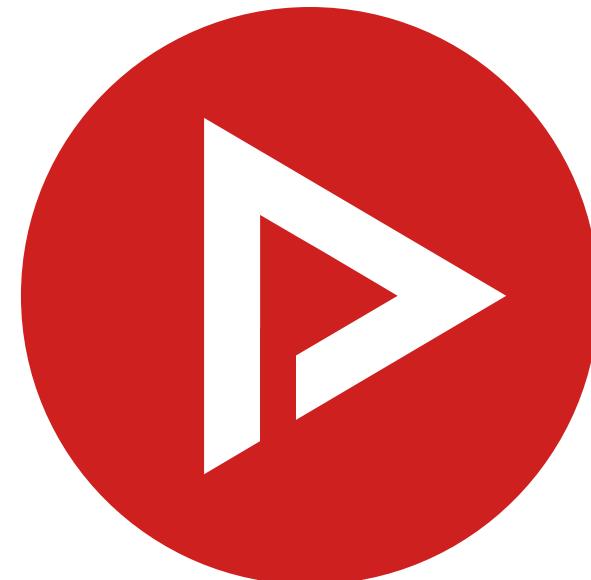


David Llewellyn-Jones / flypig

1. Ex-Jolla and die-hard **Sailfish OS** user
2. Met the NewPipe team at FOSDEM 2025
3. **Library-frontend split** piqued my interest
4. <https://flypig.co.uk>



What is NewPipe





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FOSDEM 2024
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16

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5 M All Pallets

WING IT! - Blender Open Movie Blender Studio

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4

720p 1x ⏸ ⏹

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Official Blender Open Movies Blender • YouTube 16

2

← FOSDEM 2025 - Fun... ⌂ ⏹ ⏹ ⏹

FOSDEM 2025 - Funding the FOSS ecosystem FSFE 10 videos • 5:06:23

The Free Software Foundation Europe (FSFE) co-organized this debutting devroom at FOSDEM 2025 on funding the FOSS Ecosystem. This devroom aims to bring together developers, maintainers, policymakers, entrepreneurs, donors and funders to explore various models and mechanisms for funding that...

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3



Subscription feed and multi-service

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1.2M subscribers

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Fairphone

1

What's New

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2

NewPipe

PeerTube

YouTube

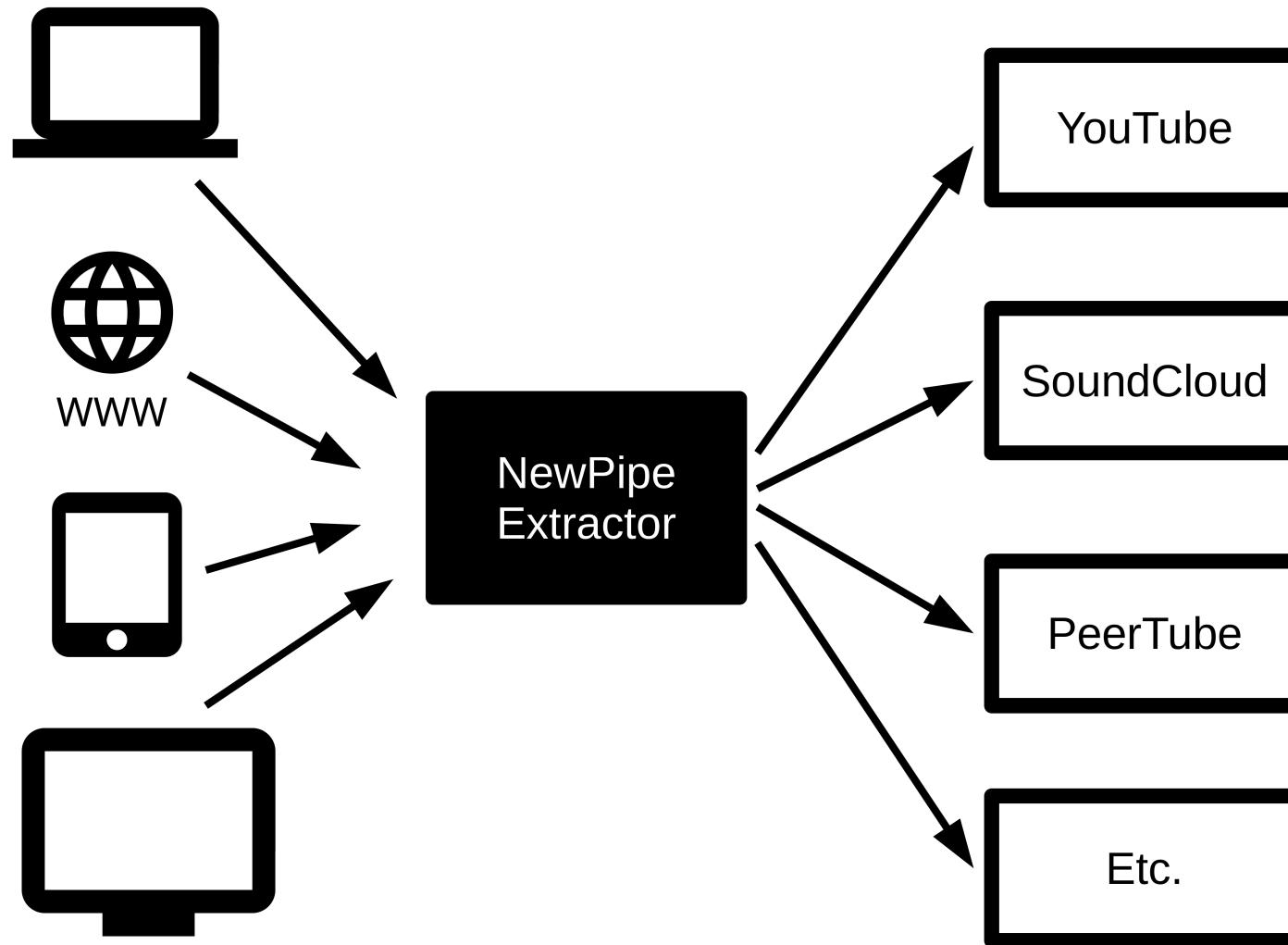
SoundCloud

media.ccc.de

FramaTube

Bandcamp

3



The screenshot shows a browser developer tools interface with the Network tab selected. A single network request is highlighted in blue, corresponding to step 2. The request is a POST to `www.youtube.com/search?prettyPrint=false` with a `fetch` method and `json` content type. The response size is 866.88 kB. The response body is displayed in JSON format, representing a search results page from FOSDEM.

1

FOSDEM

fosdem

Scott Charles

Subscribe

2

3

POST `www.youtube.com/search?prettyPrint=false` `fetch` `json` `79.55` `866.88 kB`

responseContext: { serviceTrackingParams: (4)[...], mainAppWebResponseContext: (...), webResponseContextExtensionData: (...) }
estimatedResults: "51494"

contents: { twoColumnSearchResultsRenderer: {...} }

twoColumnSearchResultsRenderer: { primaryContents: (...) }

primaryContents: { sectionListRenderer: (...) }

sectionListRenderer: { trackingParams: ..., hideBottomSeparator: true, targetId: "search-feed", ... }

contents: [{ ... }, { ... }]

0: { itemSectionRenderer: (...) }

itemSectionRenderer: { trackingParams: ..., contents: (25)[...] }

contents: (25)[{ ... }, { ... }]

0: { videoRenderer: (...) }

1: { channelRenderer: (...) }

channelRenderer: { channelId: "UC9NuJImUbaSNKiwF2bdSfAw", trackingParams: "CMUDENowGAEIewlTwumz25ISAxUKRXoFHYLnNr=" , title: (...), ... }

channelId: "UC9NuJImUbaSNKiwF2bdSfAw"

title: { simpleText: "FOSDEM" }

navigationEndpoint: { clickTrackingParams: commandMetadata: (...), browseEndpoint: (...) }

thumbnail: { thumbnails: (2)[...] }

descriptionSnippet: { runs: (3)[...] }

shortBylineText: { runs: (1)[...] }

videoCountText: { simpleText: "26.6K subscribers", accessibility: (...) }



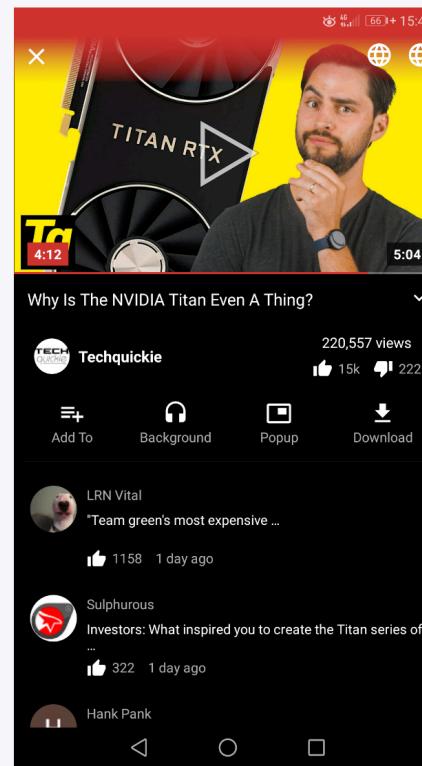
Community decisions

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🚀 Buttons on top of thumbnail

- ✓ Accessible right away
- ✗ Partially hides thumbnail
- ✗ Makes the UI cluttered and complicated for new users
- ✗ Not much space available for e.g. both audio and video selectors
- ✗ Not accessible with autoplay

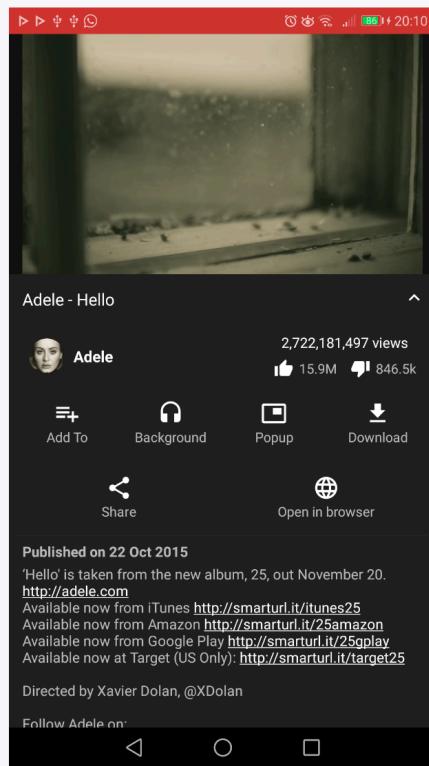
🚀 Buttons on top of thumbnail



⌚ Swipeable row of buttons

Would look exactly like now (in 0.20.5)

🤖 Secondary control panel



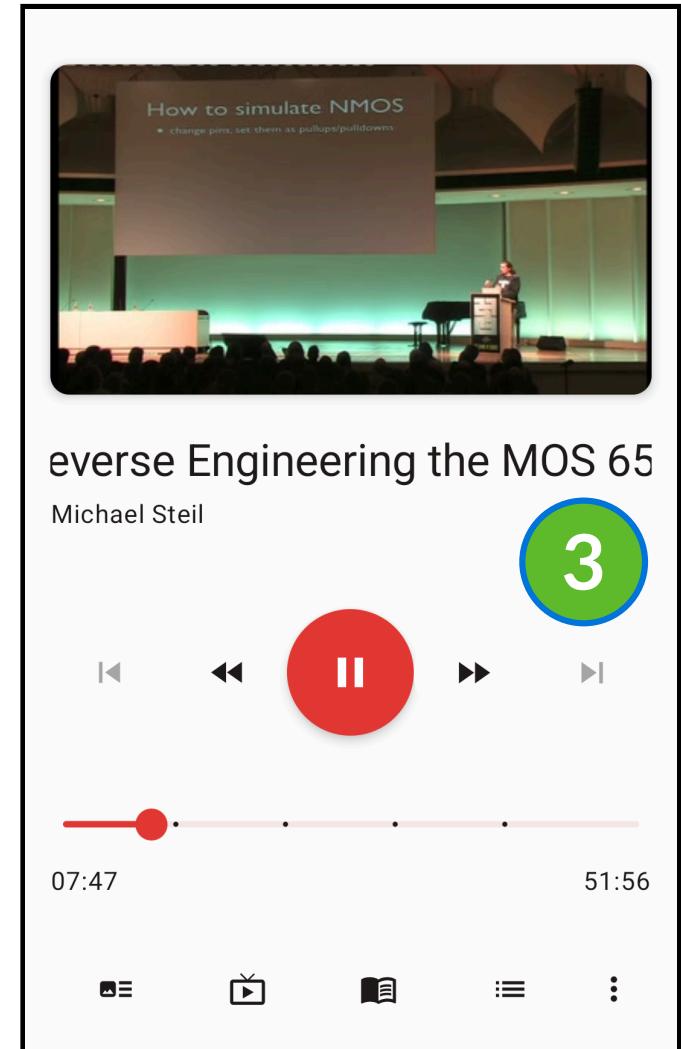
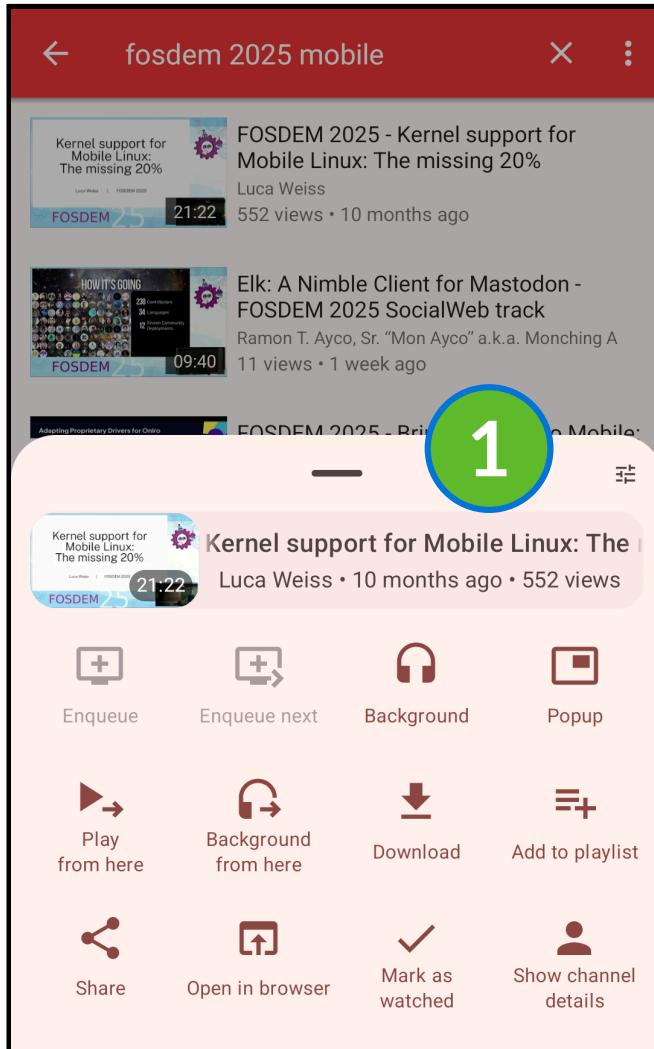
⌚ Swipeable row of buttons

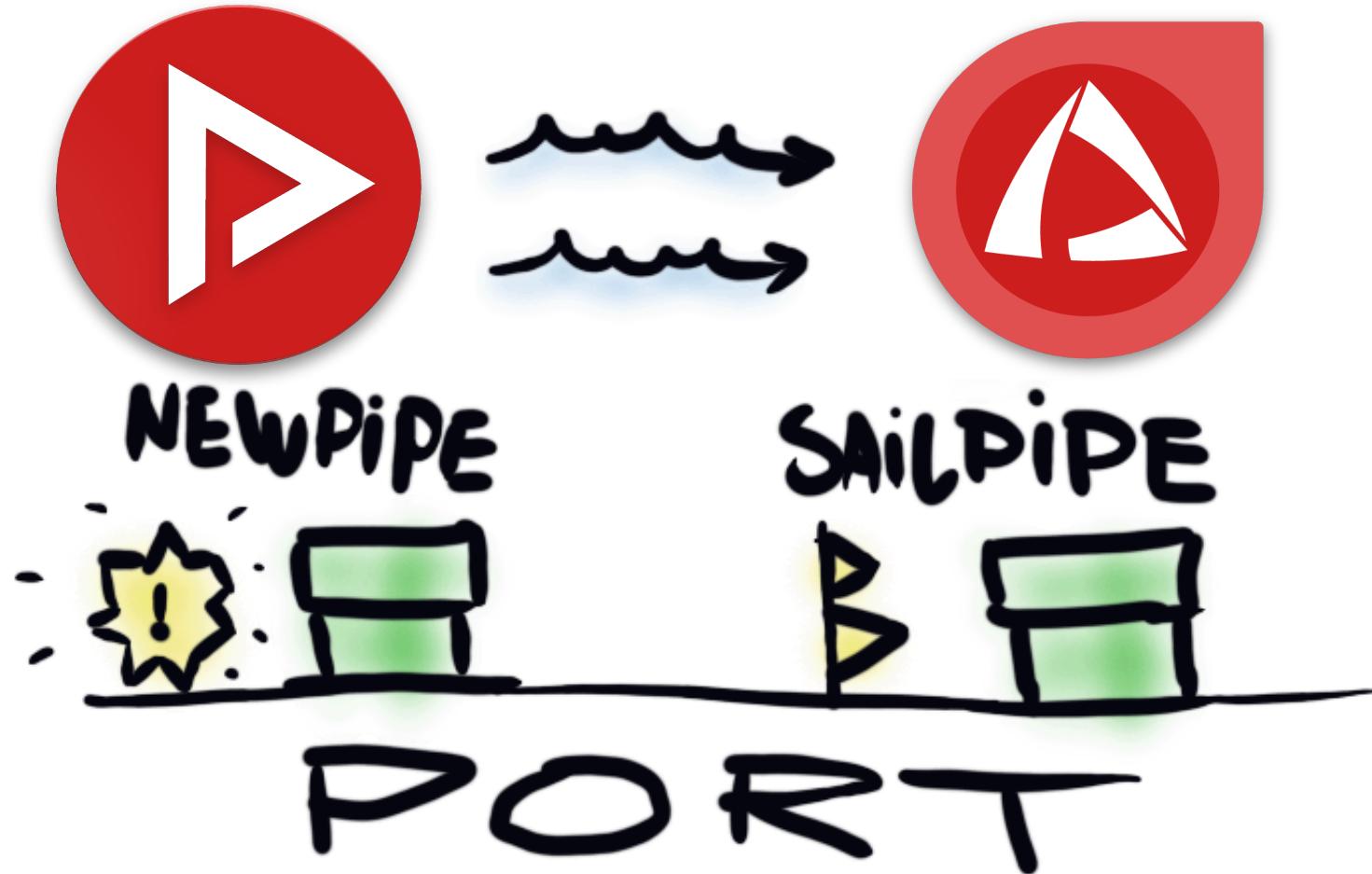
- ✓ Easy to access
- ✓ Good-looking
- ✗ Not completely intuitive for all users, also probably difficult to find out
- ✗ Too many nested swipeable views
- ✗ Audio and video selectors would not fit

🤖 Current implementation, secondary control panel with dropdown button

- ✓ Not shown if not needed (which is expected for most users, thus not cluttering the UI)
- ✓ Space available to add, in the future, audio and video selectors with multiple actions such as play, play in external player, open in browser, share
- ✓ Intuitive even for new users since it is normal to have buttons that appear after tapping on something (see e.g. three-dot menu)
- ✗ Takes one more click to access, and worse on Android TVs
- 🤷‍♂️ @vkay94 this would probably integrate well with your stream segments, wouldn't it?

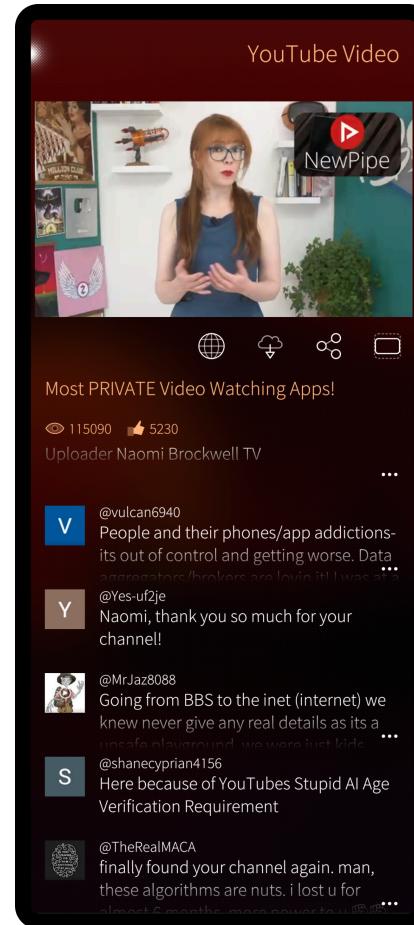






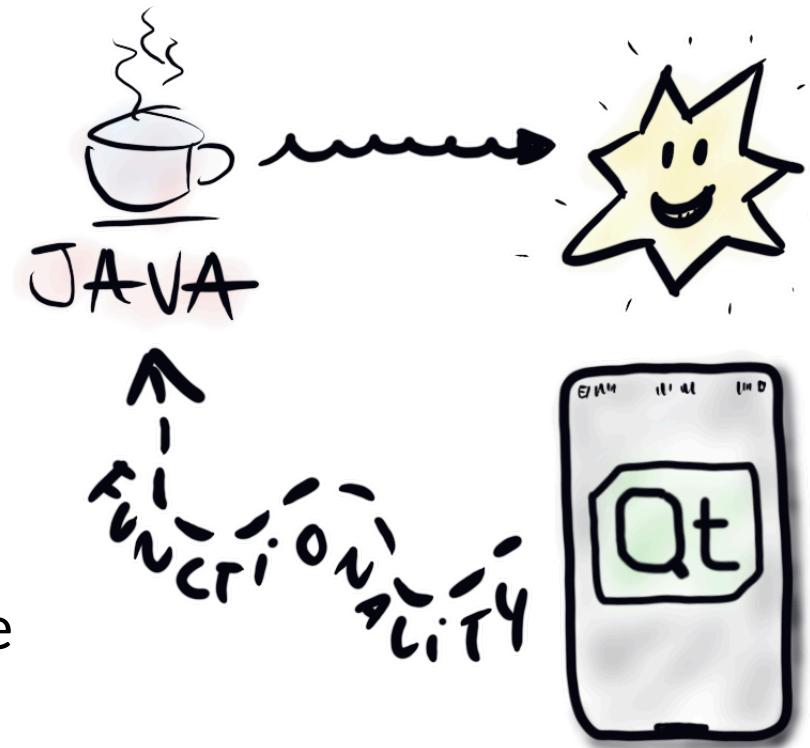
Java on Sailfish OS

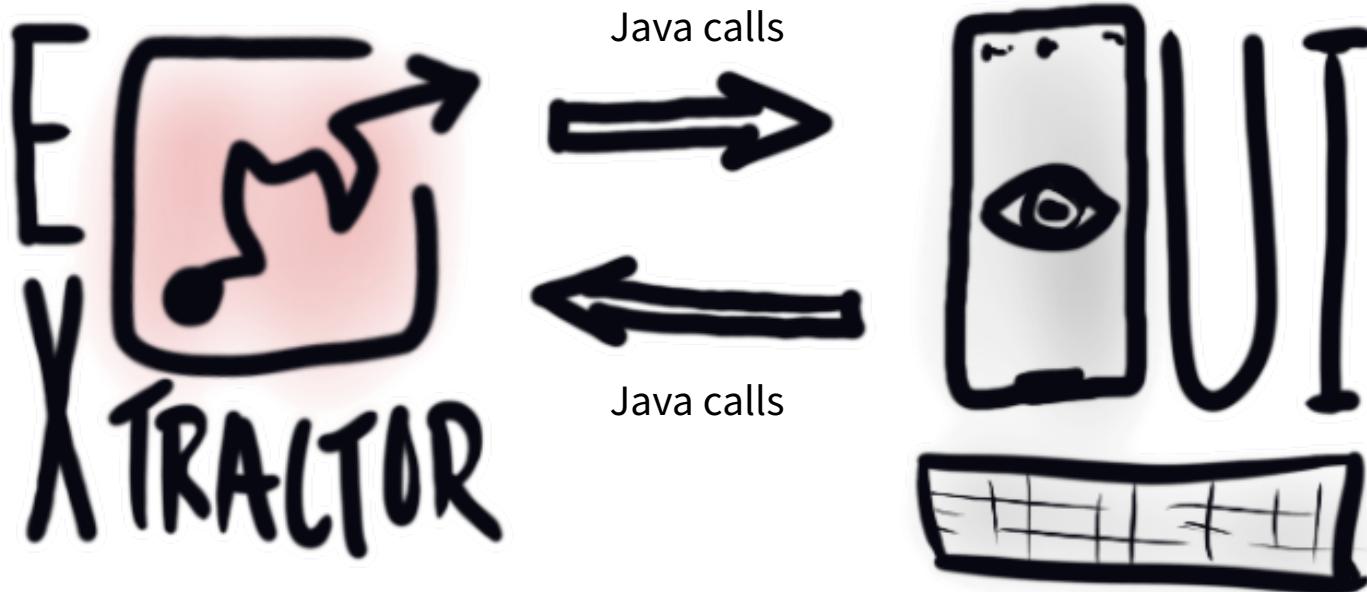
1. No Java runtime
2. Thigg developed Sailing-to-Coffee
3. Built on GraalVM
4. Functionality exposed using JNI
5. Some restrictions



Implementation

1. NewPipe Extractor code
2. Exposed through Sailing-to-Coffee shim
3. Consumed by Qt user interface
4. UI pure Sailfish, functionality pure NewPipe





58 993 lines Java

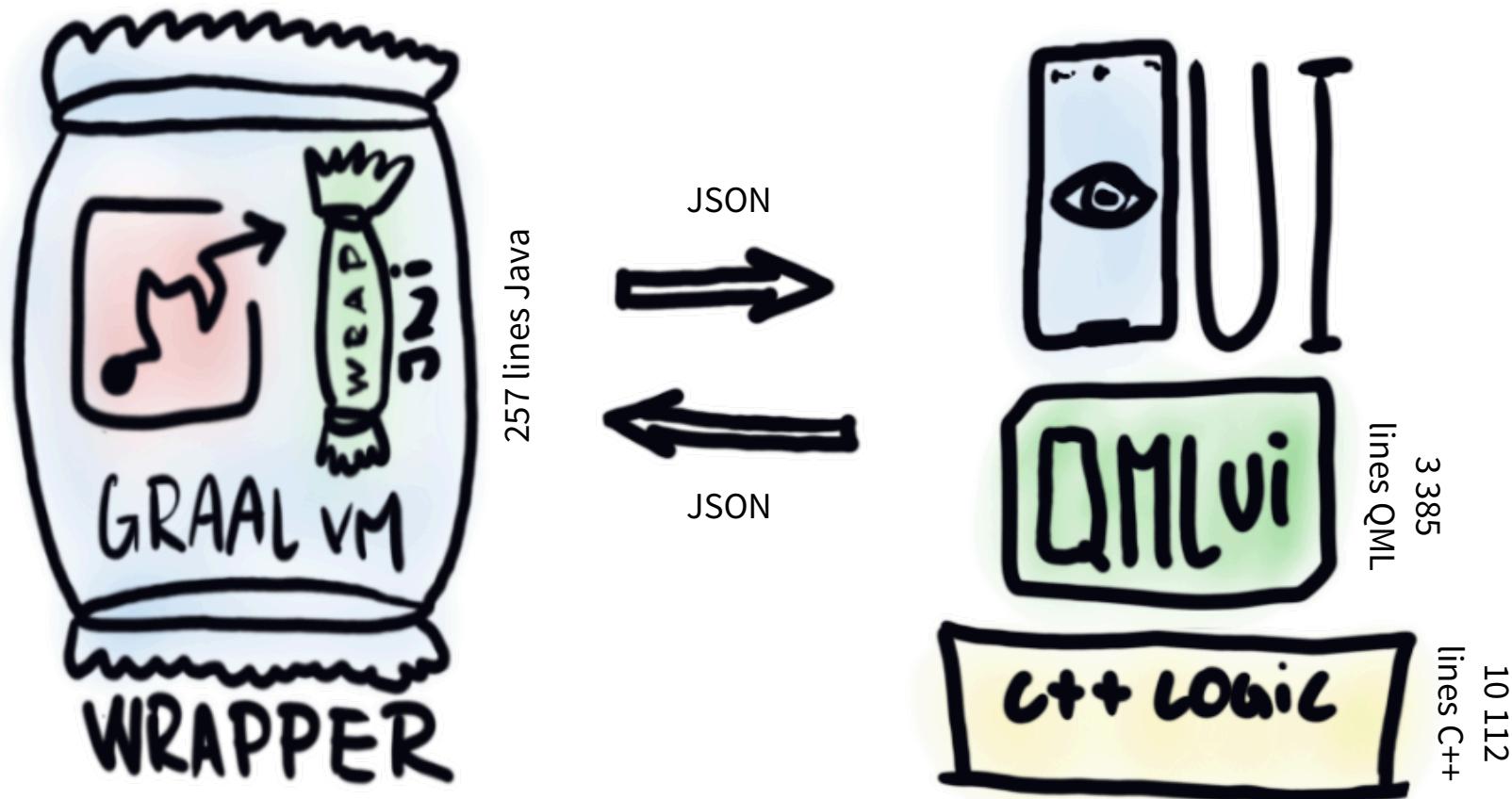
182 lines JS

67 374 lines Java

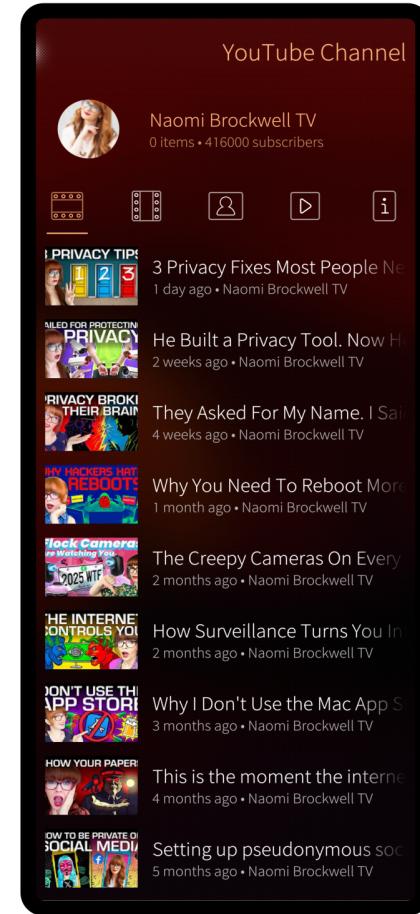
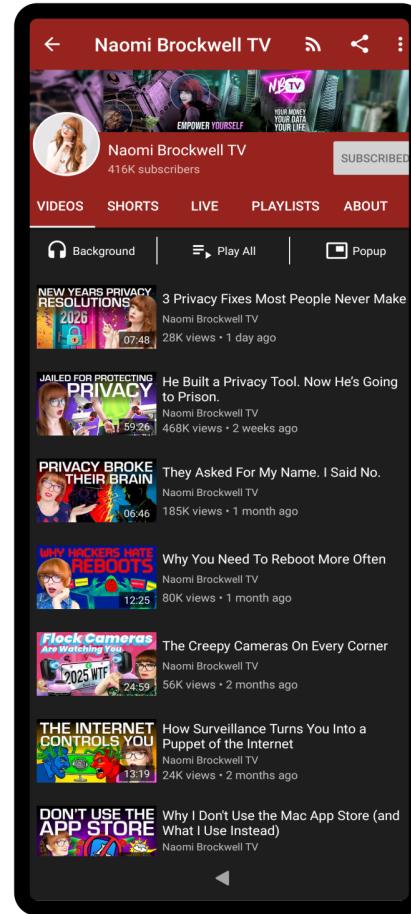
15 527 lines Kotlin

76 764 lines XML

147 lines JS



Plain Sailing?



Benefits

1. Shared functionality
2. No compromise on look-and-feel
3. Good performance

Drawbacks

1. Clear functional separation
2. GraalVM is aarch64 and x86 only
3. Extractor needed some small patches

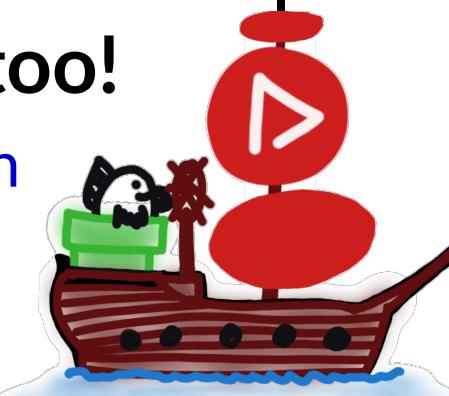


NewPipe e.V.

1. Promotes libre and accessible software for **digital media**
2. Handles bureaucracy, **hiring** and **donations**

You can participate too!

<https://newpipe-ev.de/join>



Links

Further info is on the talk page:



