

Supervising Student Projects in the FOSS on Mobile Space

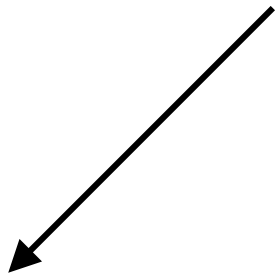
Prof. Dr. Daniel Kulesz

2023-08-06

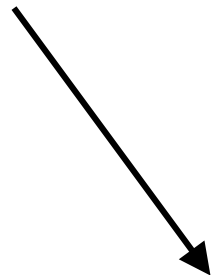


Prof. Dr. Daniel Kulesz

- Professor for this and that at the THWS¹



Software development



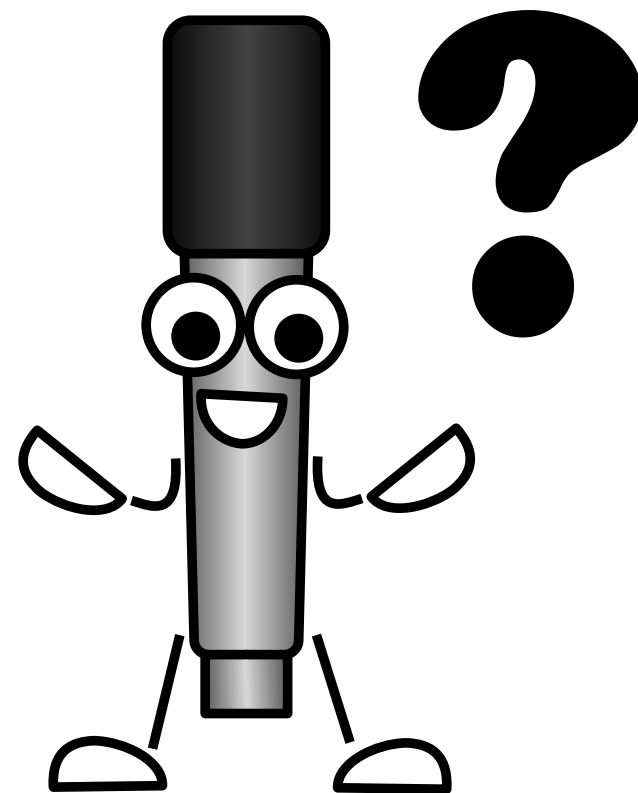
Programming



Foto: Andreas Ebinger

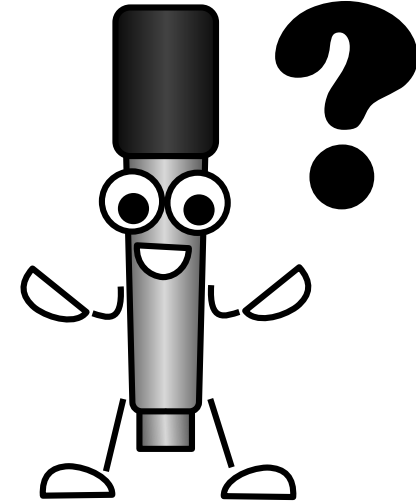
1: Technische Hochschule Würzburg-Schweinfurt

Some Questions for you ...



Some Questions for you ...

- Who uses a device running a LinuxMobile system on a regular basis?
- Who uses it as daily driver?
- Who agrees that we have a lack of apps when compared with other ecosystems (such as F-Droid)?
- Who develops software for LinuxMobile?
- Who develops software for the LinuxMobile user space?



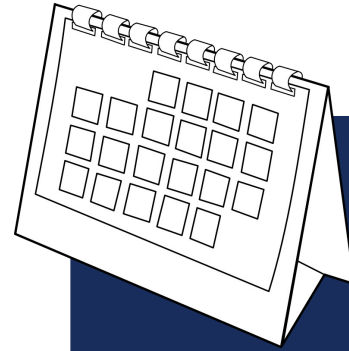


Objectives

- You understand that it is not trivial to motivate students to develop apps for FOSS on Mobile.
- You reason about some (anecdotal) hurdles that my students encountered.
- You see a „shining“ example for a successful project that produced a new app for programming LED badges (`led_blink`).
- We discuss what could be improved to attract more userspace software developers into our ecosystem.

Agenda

- Motivation
- Context
- Encountered Issues
- Shiny example: `bit_blink`
- Discussion



Context

- I am a huge (moral) supporter of LinuxMobile. However, making the switch is hard if essential apps are missing and hardware options are ... limited.
- Of course, it highly depends which apps are considered essential on the actual end-user.
- Since I have to supervise student projects anyways, why not let them develop some apps so everybody will profit from this?
- Finding the „apps gaps“ was not a big challenge.



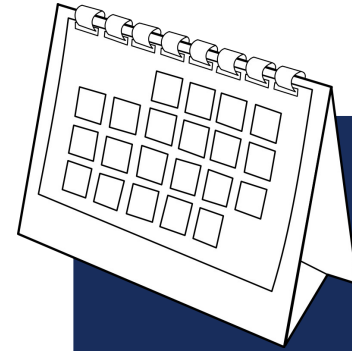
Context (Cont'd)

- All mentions in this talk refer to our course „Bachelor Informatik“.
- I offer(ed) projects as „programming internship“ for 4th semester students (they can choose from different projects by different offerors). Unfortunately, the only group which showed initial interest withdraw quickly.
- I had more luck with students in their 6th/7th semester who took our „safe and secure programming in Rust“ elective module.



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Encountered Issues

- All-new technology stack (maybe except CSS)
- Hardly any industrial relevance
- Lack of general Linux/UNIX skills
- The LinuxMobile World is changing quickly (frequent releases of core components, many components haven't reached their 1.0 milestone yet, libhandy vs. libadwaita, ...)
- Dev setup on Windows/macOS not documented well
- Lack of easy beginner's guides



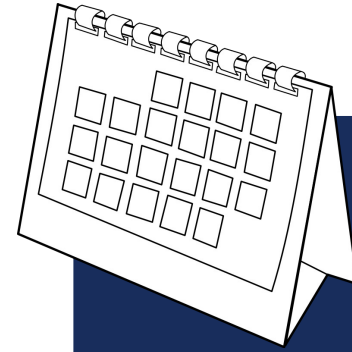
Encountered Issues

- Students don't own any supported devices.
- Lack of skills to do the initial installation or to work on the device (e.g. copy app to device and start it there).
- Packaging the app was also not trivial (even for pmOS), mostly due to lack of „glue“ documentation.
- Students could not find out how to make the launcher icon work in Phosh.
- General programming skills have *not* been an issue!



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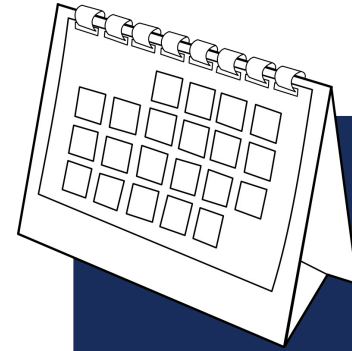
bit_blink allows to program LED badges

- Written in Rust
- Uses libadwaita
- Early prototype was based on python cmdline program but was later replaced with a native implementation
- (Imho) documented quite well
- Available here: https://github.com/JoGehring/bit_blink

bit_blink: Live Demo!

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PWAs: Another possible way out?

- PWA = Progressive Web App
- Very promising (supervised PWA projects often were more successful).
- Didn't find any support for PWAs in Phosh/Plasma Mobile :-)

Thank you!



Foto: Andreas Ebinger

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