

Digitisation and Education

How the AleksIS project fosters co-creation of school software
by young people

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AleksIS

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Tom Teichler

- 16 years old
- Wermelskirchen, Germany
- Apprentice systems engineer at babil GmbH
- Systems engineer and software maintainer at Teckids e.V.
- Interests:
 - Coding and DevOps
 - Travelling to FOSS conferences
 - Geocaching



Dominik George

- 30 years old
- Bonn, Germany
- Systems engineer and database consultant at credativ GmbH
- Chairperson and founder at Teckids e.V.
- Interests:
 - Python & Django
 - Cheese & Wine
 - Geocaching



Teckids e.V. & schul-frei

- Teckids e.V.
 - Probably the only free software youth organisation
 - Headquarters in Germany, but works internationally
 - Goal: Set up a free software community for children and adolescents
 - Hosting stuff for educational organisations (Moodle, BigBlueButton, Jitsi)
 - Contributing to and maintaing educational FOSS
- schul-frei
 - Free, open and secure digitasation for educational organisations
 - Selection of high-quality educational FOSS
 - Bringing schools, developers and consulting companies together
 - Opportunities for adaptation and participation



General participation

- FOSS projects should include everyone
- Most ToS are not legally acceptable by children and youths
- Keep barriers to a minimum (ToS, licences, . . .)



Participation of children and adolescents

- Young users are a marginalised minority in the FOSS world
- The smallest contributions are valuable (for the project and especially for contributors as a „stepping stone“), in the simplest case a question of understanding is also a contribution from a general public point of view



Negative examples

- GitHub, GitLab.com, Slack, Zoom
- Development, discussion and conferences should choose free, open platforms that do not exclude any group of people
- Children and young people are just one example of such groups, but those cannot even legally defend themselves

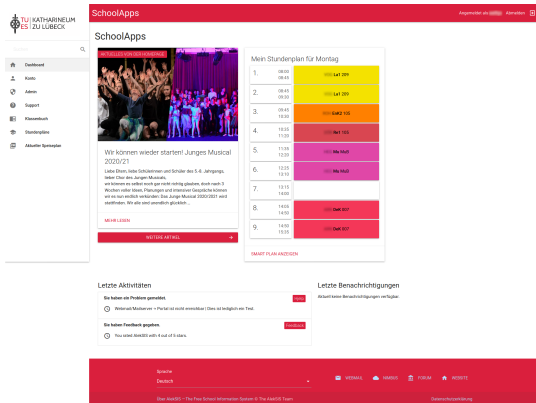


Free alternatives

- EduGit/FramaGit - free, self-hosted GitLab instances
- BigBlueButton/Jitsi for A/V conferences
- Mattermost/Matrix for text communication
- Ask your local free software group for advice!



AleksIS Dashboard



**TU KATHARINENUM
LES ZU LÜBECK**

SchoolApps Angemeldet als [Avatar] Abmelden

SchoolApps

Wir können wieder starten! Junges Musical 2020/21

Liebe Eltern, liebe Schülerinnen und Schüler des 5.-8. Jahrgangs, lieber Ober den Jüngsten Musikanten, wir können es endlich noch gar nicht richtig glauben, dass nach 3 Wochen voller Stress, Plänen und mehreren Gesängen können wir es nun endlich verkünden: Das Junge Musical 2020/2021 wird stattfinden. Wir alle sind unendlich glücklich...

MEHR LESEN

MEIN STUNDENPLAN FÜR MONTAG

1.	08:00 08:45	111 L41 200
2.	08:45 09:30	111 L41 200
3.	09:45 10:30	111 G42 110
4.	10:35 11:00	111 L41 100
5.	11:35 12:00	111 M4 100
6.	12:05 13:10	111 M4 100
7.	13:15 14:00	
8.	14:05 14:50	111 G42 107
9.	14:55 15:35	111 G42 107

Letzte Aktivitäten

Sie haben ein Problem gemeldet.

- Prüfung/Musterklausur** - Ihr Teil ist nicht anerkannt (Dies ist lediglich ein Test)

Sie haben Feedback gegeben.

- Neu umf. Block20** with 4 out of 5 stars

Letzte Benachrichtigungen

Als sollt keine Benachrichtigungen verfügbar.

Sprache: Deutsch

VERMELDUNG WISSEL FORUM WEBSITE

© 2020 AleksIS - TU Free School Information System © The AleksIS Team

Dienstleistungsformular

AleksIS-App-Chronos timetable

The screenshot shows the SchoolApps app interface. At the top, there's a red header with 'SchoolApps' and user information. Below that, a notification banner reads 'Lesson cancellation due to AleksIS Dev-Sprint' with a download icon and a date 'today 11 September 2020'. The main content is a timetable for 'Stundenplan Q1b (Q1b) (2020.2)' for the group 'KALL FRE'. The timetable is a grid with rows for lesson periods (1-9) and columns for days (Monday, Tuesday, Thursday, Friday). Each cell contains lesson details like course numbers (e.g., B41 201, B42 204) and teacher initials (e.g., Sp, P, M). A red border highlights the cancellation for Tuesday, Thursday, and Friday in period 1. The bottom of the app shows a navigation bar with icons for Dashboard, PERSONAL, WISSEL, FÜRNEH, and VERGLEICH.



AlekSIS-App-Alsijil Class register

SchoolApps Anmelden als [Avatar] | Ausloggen

Klassenbuchübersicht für Math, 10A11111

Unentschuldigte Fehlzeiten
Es gibt keine unentschuldeten Unterrichtsstunden.

Statistiken zu Fehlzeiten, Verspätungen und Bemerkungen

2020/2	
Fehlerrunden	11
Erreichung	0
Gesamt	11
Unentschuldig	0
Verspätung	0
Hausaufgaben vergessen	0

Relevante persönliche Notizen

2020/2

Wuche 36

3. September 2020

1. Englisch Kernfach 2 Abwesen Unentschuldig
2. Englisch Kernfach 2 Abwesen Unentschuldig
3. Biologie Abwesen Unentschuldig
4. Religion 1 Abwesen Unentschuldig
5. Mr. Kuchler's Poodle Abwesen Unentschuldig

4. September 2020

1. Mathematik Kernfach Abwesen Unentschuldig
4. Informatik Abwesen Unentschuldig
5. Informatik Abwesen Unentschuldig
6. Informatik Abwesen Unentschuldig
7. Informatik Abwesen Unentschuldig

Wuche 34

20. August 2020

1. Biologie Abwesen Unentschuldig

Navigation: Home | Dashboard | **Wochen** | **Wochen** | **Funk** | **Profile**

Über AlekSIS - The Free School Information System © The AlekSIS Team | Datenschutzerklärung



Current features

- Core feautres
 - Management of persons and groups
 - School term management
 - Two-factor authentication
 - App platform
 - Base templates (Materialize)
 - Automatic backup of database, static and media files
- Alsijil - Online class register
- Chronos - Timetables for persons, rooms and classes
- Exlibris - Library management
- Hjelp - Feedback and support requests



AlekSIS integrations

- Untis (German timetabling software)
- SchILD-NRW (one of the mandatory school management tools in Germany)
- LDAP / AD
- RSS and calendar feeds for dashboard



Development practices

- Adhere to Python and Django best practices
- Productive application can also be a "textbook example"
- Abstraction of complex things in well-documented classes and methods as thin abstraction
 - e.g. QuerySets and Managers for timetable data



Modularity according to real-world processes

- Multiple apps encapsulating one real-world process each
- Process = One digitisation requirement in the real world (e.g. “manage textbook lending”, “provide timetables to students”, “maintain a class register”)
- Most important goal: Computer/coding classes can write own apps for their school, to turn learning efforts into real-world value



Licensing under EUPL

- All official apps and the core are licenced under EUPL (European Union Public Licence)
- Good protection for users and contributors inside the EU and outside
- Available officially in all EU languages, so can be read, understood and taught better
- SaaS protection easier to implement in practice than with AGPL
- Handles questions like place of jurisdiction as additional protection for contributors
- Compatible and remixable with (A,L)GPL and many other licences



Development process

- Based on an agile approach (mix of Scrum and Feature-Driven Development)
- Slightly pulled apart due to different availability in terms of time
- two-week sprints with combined review and planning during the computer workgroup at Katharineum
- Representatives of Katharineum (Deputy Headmaster) and Teckids (Chairperson) as Product Owners



Use of free, open platforms that can be used regardless of age (and other criteria)

- EduGit (self-hosted GitLab) for development
- Mattermost and BigBlueButton (linked to EduGit) for communication



Schools using AlekSIS in production

- Development at Katharineum (Lübeck, Germany)
- Feedback from teachers and students
- Patches from students outside the core team
 - Fast and clean
 - Responsive, consistent, mobile-friendly design
 - Hjelp: direct support request is very easy
 - Alsijil: automatic summation of absent hours relieves the teachers, class register is no longer lost, can now be edited from home
 - Good response to bug and feature requests by capable and motivated team of students



Contributing to FOSS in education

- Most importantly: Adapt an open, minor-friendly development process and platforms
- Raise awareness for FOSS as a learning opportunity in schools
- Raise awareness for young users and contributors in FOSS communities
- Donate to Teckids e.V. to foster educational FOSS projects and children as contributors



Thank you for listening!

- Any questions?
- AlekSIS website: <https://www.aleksis.org/>
- schul-frei: <https://www.schul-frei.org/>
- Teckids e.V.: <https://www.teckids.org/>
- Katharineum: <https://katharineum.de/>
- Contact by mail: foss@teckids.org
- schul-frei chatroom: [#schul-drei:matrix.teckids.org](#) (see website for other options)

