

# User Lifecycle Management

## Automatic User Deletion for Moodle

Niels Gandraß

✉ [Niels.Gandrass@haw-hamburg.de](mailto:Niels.Gandrass@haw-hamburg.de)

🌐 <https://gandrass.de>

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# Motivation

Why and when do we even want to get rid of users and other content?



# Legal requirements

Let's get through the boring stuff first ... (1/3)

I'm not a lawyer  
Consult your DPO!

1. Personal data shall be: [...]

 Art. 5 GDPR

(e) kept in a form which permits identification of data subjects for **no longer than is necessary** for the purposes for which the personal data are processed;



We need to remove old user records and other personally identifiable information (PII) from our systems without undue delay

# Legal requirements

Let's get through the boring stuff first ... (2/3)

I'm not a lawyer  
Consult your DPO!

The controller shall **communicate** any rectification or **erasure of personal data** [...] to each recipient to whom the personal data have been disclosed, unless this proves impossible or involves disproportionate effort.

 Art. 19 GDPR



Students deleted from the university IDM must be deleted from Moodle without undue delay

# Legal requirements

Let's get through the boring stuff first ... (3/3)

I'm not a lawyer  
Consult your DPO!

1. The data subject shall have the right to obtain from the controller the **erasure of personal data** concerning him or her without undue delay [if] one of the following grounds applies:

 Art. 17 GDPR

(a) the personal data are **no longer necessary** [...] for which they were collected;

(b) the data subject withdraws consent [...] and where there is no **other legal ground for the processing**;



Students can't simply request the deletion of exam data or grades.  
Deletion can't be a fully automated self-service.

# You survived the boring part!

In case you missed the confetti at the MoodleMoot DACH 2025 DevCamp

# Technical & Organizational aspects

- 📁 Your moodledata/ folder is only getting bigger and bigger
  - › All uploaded files and submissions are kept for active users
- 🗄️ Your Moodle database grew to a decent size while containing mostly unused data
- 🕒 Certain tasks or database queries take ages to complete
  - › Some housekeeping tasks still scale largely with the amount of total user data
- 🔍 Having less data to sift through leaves more time for the interesting tasks
- 👤 Avoiding name collisions when searching for users
  - › Enrolling the correct "*John Smith*" out of 30 ones can be error-prone
- 🗑️ Phasing out old content (e.g., question types or activities)
  - › Some plugins can only be uninstalled once all usages / instances are deleted

# Our Current User Lifecycle(s)

How users get on and off our Moodle platforms

# Different platforms, different user lifecycles

We run a number of Moodle platforms with diverging user management

## University Moodles



- Used solely by our students
- Primary auth method is SSO
- One account per university member
- Semester-based user creation

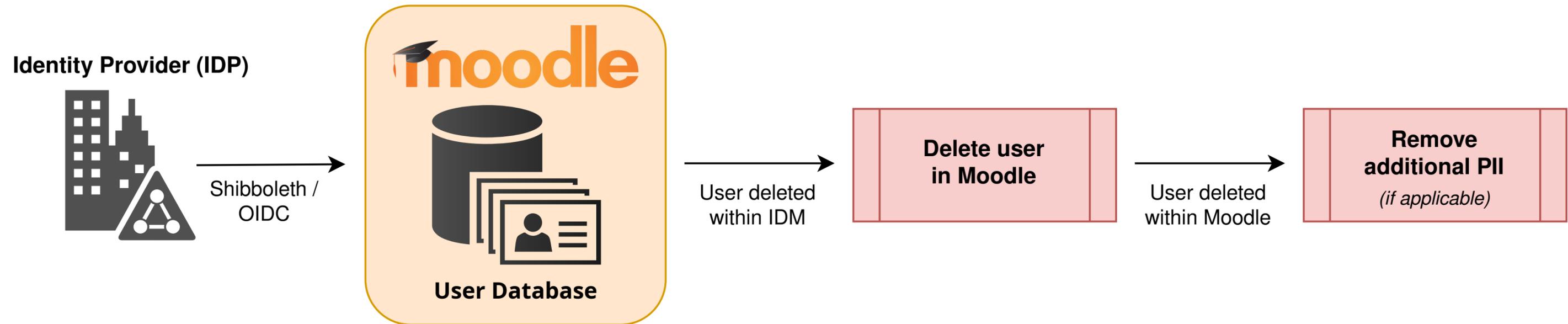
## Public Moodle



- Open to the public
- Local accounts and multiple SSOs
- Anonymous temporary accounts
- Constant user fluctuation

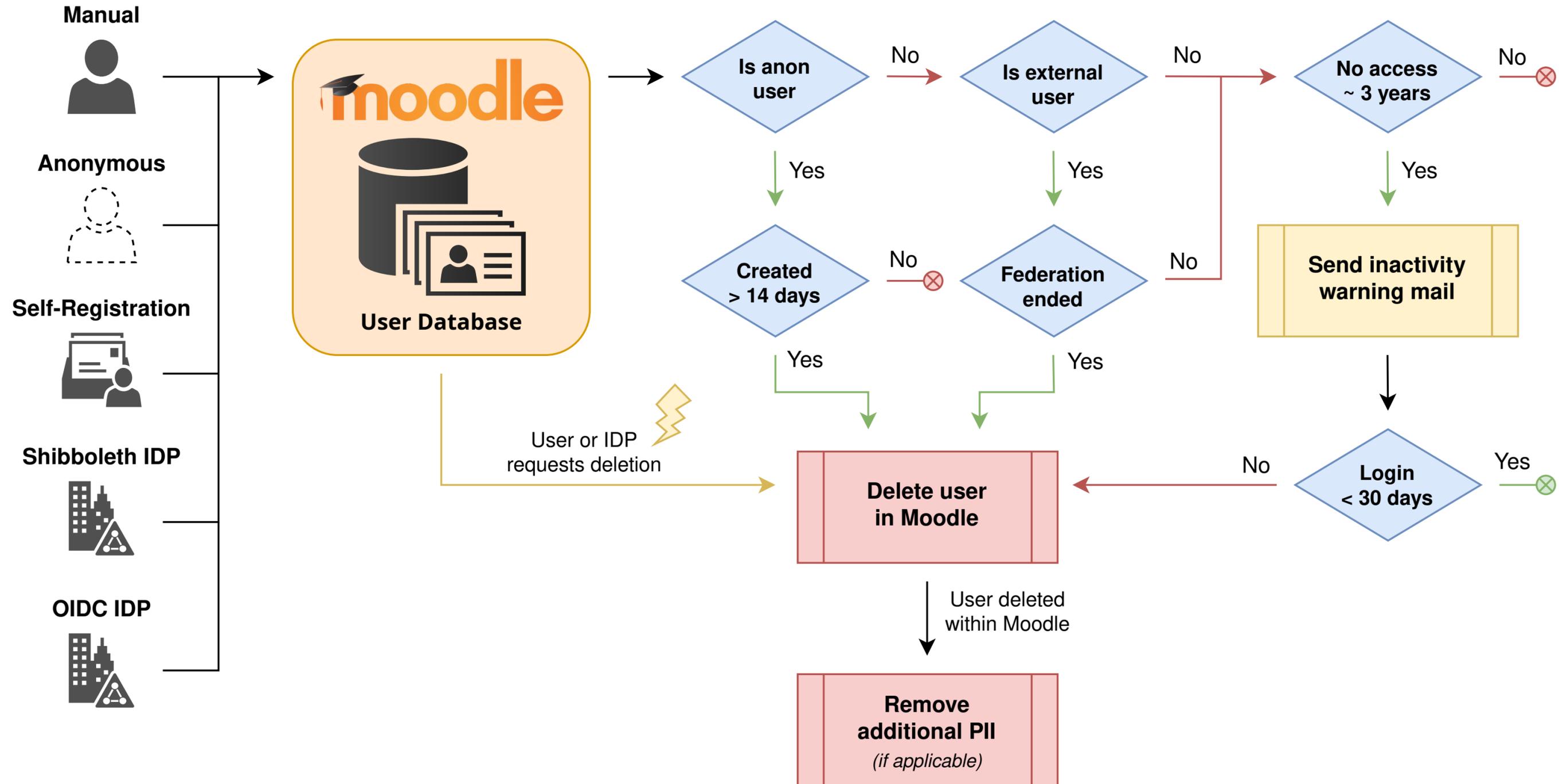
# University Moodle

The simple and straight forward case



# Public Moodle

The "slightly" more complicated case ...



# Key takeaways

1. It's only simple until it isn't
2. User life cycles can be multi-staged
3. Different user groups may require different life cycles
4. External systems / events can dictate the flow
5. There is no simple "*one size fits all*" solution

# Moodle Plugin Showcase: Automatic User Deletion

What is already possible today!

# Key features

- ⚙️ Automatically deleting inactive user accounts
- ✉️ Sending warning emails to users before deletion
- 🛡️ GDPR-compliant deletion of user accounts
- 🧪 Dry-run mode for testing the configuration
- 📊 Statistics of inactivity warnings and deletions
- 🔧 Highly configurable (time thresholds, email templates, ...)



Moodle Plugin:  
Automatic User Deletion

# User selection criteria

How users can be identified to receive a warning or being deleted

 Last access to Moodle site

 Inactivity days after warning mail

 Authentication method

 Role assignment

 Site-admin status

 Account suspension status

# Dry-run

## Dry-run

This page shows the actions that would be performed during the next check interval. None of the actions have been actually performed yet!

### Current configuration

This table lists the next time a check for inactive users would be executed in the background as well as the configured thresholds for warning e-mails and user deletions. Additionally, user roles that are excluded from the deletion process are listed here.

|                    |   |
|--------------------|---|
| Next check         | Never (plugin disabled)<br><i>Would check in 12 hours 9 mins (20 May 2025, 1:00 AM)</i> |
| Warning threshold  | 18 July 2024, 12:50 PM (60 days)  |
| Deletion threshold | 19 May 2024, 12:50 PM (365 days)  |
| Ignored roles      | <b>Site administrators</b> <b>Guest user</b> <b>My custom role</b>                      |
| Ignored auths      | <b>Manual accounts</b>  |

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### Affected users

Users listed here will either receive a warning email or will be deleted right away. If no users are listed, no user has been inactive for longer than the configured thresholds, or the user is ignored according to the plugin configuration.

#### Users to delete

The following 5 users would be deleted:

- [anonfirstname27 anonlastname27](#) (Last access: 6 July 2023, 3:42 PM)
- [anonfirstname35 anonlastname35](#) (Last access: 6 July 2023, 3:42 PM)
- [anonfirstname34 anonlastname34](#) (Last access: 6 July 2023, 3:42 PM)
- [anonfirstname33 anonlastname33](#) (Last access: 6 July 2023, 3:42 PM)
- [anonfirstname32 anonlastname32](#) (Last access: 6 July 2023, 3:42 PM)

#### Users to warn

The following 3 users would receive a warning email:

- [anonfirstname158 anonlastname158](#) (Last access: 3 July 2024, 11:06 AM)
- [anonfirstname151 anonlastname151](#) (Last access: 3 July 2024, 11:06 AM)
- [anonfirstname155 anonlastname155](#) (Last access: 3 July 2024, 11:06 AM)

# Statistics

## Action log

This page lists all actions that have been performed by the automatic user deletion plugin. Every time a warning e-mail is sent, a user is finally deleted, or a user was marked as recovered after a previously sent warning e-mail, an entry in this action log is created. User inactivity checks that did not perform any actions are not logged.

Last check 4 hours 18 mins ago (11 June 2025, 11:45 AM)

Next check in 8 hours 56 mins (12 June 2025, 1:00 AM)

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## Latest actions

This table lists the latest actions that have been performed by the automatic user deletion plugin. Checks without any action are excluded.

| Time<br>↓                | Recovered | Warned | Deleted |
|--------------------------|-----------|--------|---------|
| 11 June 2025, 3:00:00 AM | 1         | 0      | 2       |
| 10 June 2025, 3:00:00 AM | 5         | 1      | 0       |
| 9 June 2025, 3:00:00 AM  | 2         | 2      | 0       |
| 8 June 2025, 3:00:00 AM  | 0         | 10     | 0       |

## Inspecting raw logs

The checks for inactive users are performed by a Moodle scheduled task, running in the background. If you experience problems with this plugin, you can inspect the raw logs of the scheduled task runs by clicking the button below.

[View raw scheduled task logs](#)

# GDPR-compliant user deletion

Removing the remaining personally identifiable information (PII) after Moodle "deleted" a user

|             |   |
|-------------|---|
| deleted     | 0   |
| username    | johndoe   |
| password    | <Password Hash>   |
| email       | jd@foo.com  |
| firstname   | John  |
| lastname    | Doe   |
| institution | Awesome Uni   |
| idnumber    | 123456789   |
| description | My secret is 1234   |
| phone1      | +00 123456789   |
| address     | North Pole 1  |
| lastip      | 10.0.0.42   |
| picture     |  |

Moodle user table for active user



Delete  
user

|             |   |
|-------------|---|
| deleted     | 1   |
| username    | jd@foo.com.1772113756   |
| password    | <Password Hash>   |
| email       | <MD5 Hash>  |
| firstname   | John  |
| lastname    | Doe   |
| institution | Awesome Uni   |
| idnumber    | <i>empty</i>  |
| description | My secret is 1234   |
| phone1      | +00 123456789   |
| address     | North Pole 1  |
| lastip      | 10.0.0.42   |
| picture     |  |

Moodle user table for deleted user



Remove  
PII

|             |   |
|-------------|---|
| deleted     | 1   |
| username    | DELETED-USER-1  |
| password    | <i>empty</i>  |
| email       | DELETED-USER-1@localhost  |
| firstname   | DELETED   |
| lastname    | DELETED   |
| institution | <i>empty</i>  |
| idnumber    | <i>empty</i>  |
| description | <i>empty</i>  |
| phone1      | <i>empty</i>  |
| address     | <i>empty</i>  |
| lastip      | <i>empty</i>  |
| picture     |  |

Moodle user table after PII removal

# Sources

The automatic user deletion plugin is available on [GitHub](#)  
and via the [Moodle Plugin directory](#)!



[https://moodle.org/plugins/tool\\_userautodelete](https://moodle.org/plugins/tool_userautodelete)



[https://github.com/ngandrass/moodle-tool\\_userautodelete](https://github.com/ngandrass/moodle-tool_userautodelete)

# Deficiencies and Future Needs

Yeah, we got a working plugin! Not tell me what is the catch?

# Current limitations

A list of what we think is still missing

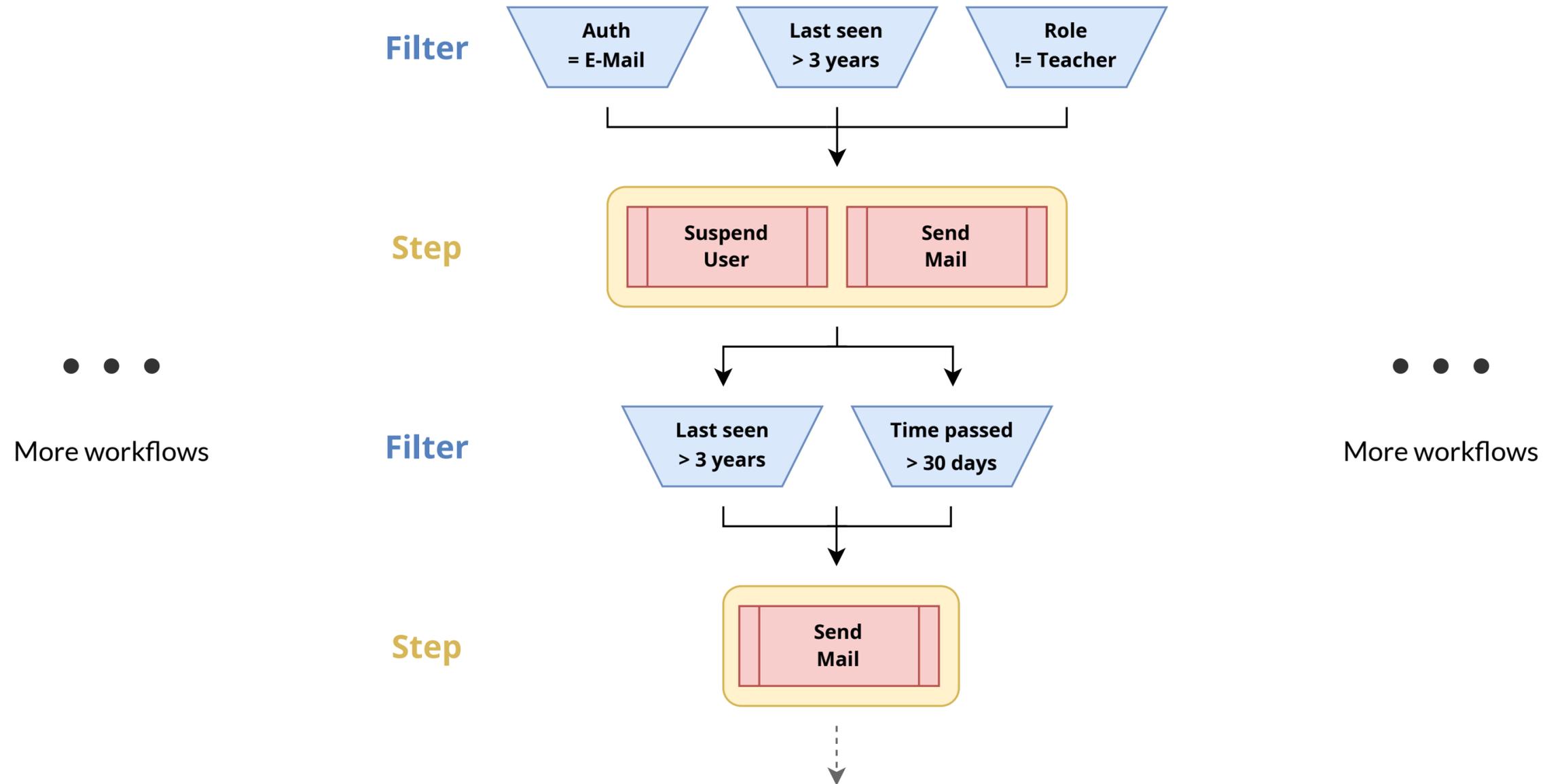
- ⬇ Only a single predefined workflow can be used
  - › Can be customized to allow ~2.5 different scenarios
- 🏠 External systems / events must flag users by suspending them
- ✉ No support for variables in mail templates
- 🔍 Missing support for advanced filters based on user fields
- 📅 Custom (institution specific) checks or actions can not be included
- 🔗 Integration with other plugins (e.g., mod\_attendance) not possible

# Upcoming Major Update of the Moodle Plugin

By this point you probably can already guess what's coming ...

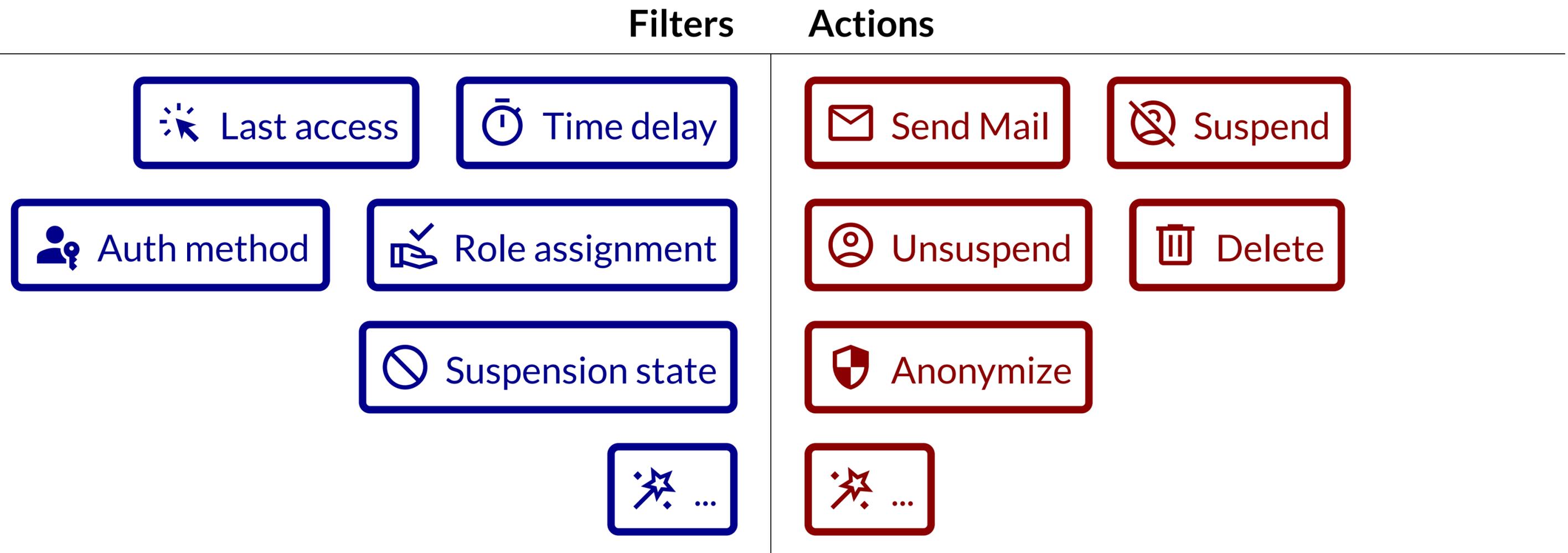
# The workflow approach

Existing predefined steps will be replaced by freely configurable workflows, similar to what is known from the [Course Life Cycle Plugin](#)

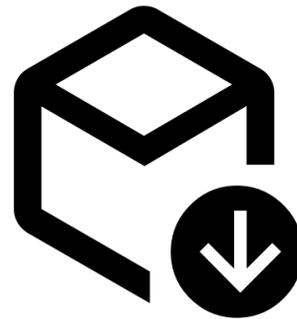


# Filters and actions are extensible sub-plugins

User filters and actions are lightweight and can be easily added according to institutional needs



# Upgrading



Existing v1.x.x installations will be upgraded to v2.x.x in-place

All settings will be converted to a new workflow  
with respective actions and filters

# Timeframe



The new version is expected to be released in Summer 2026

Watch the GitHub project or install the Moodle plugin now  
to get notified once the new release is out!

# Sources

The automatic user deletion plugin is available on [GitHub](#)  
and via the [Moodle Plugin directory](#)!



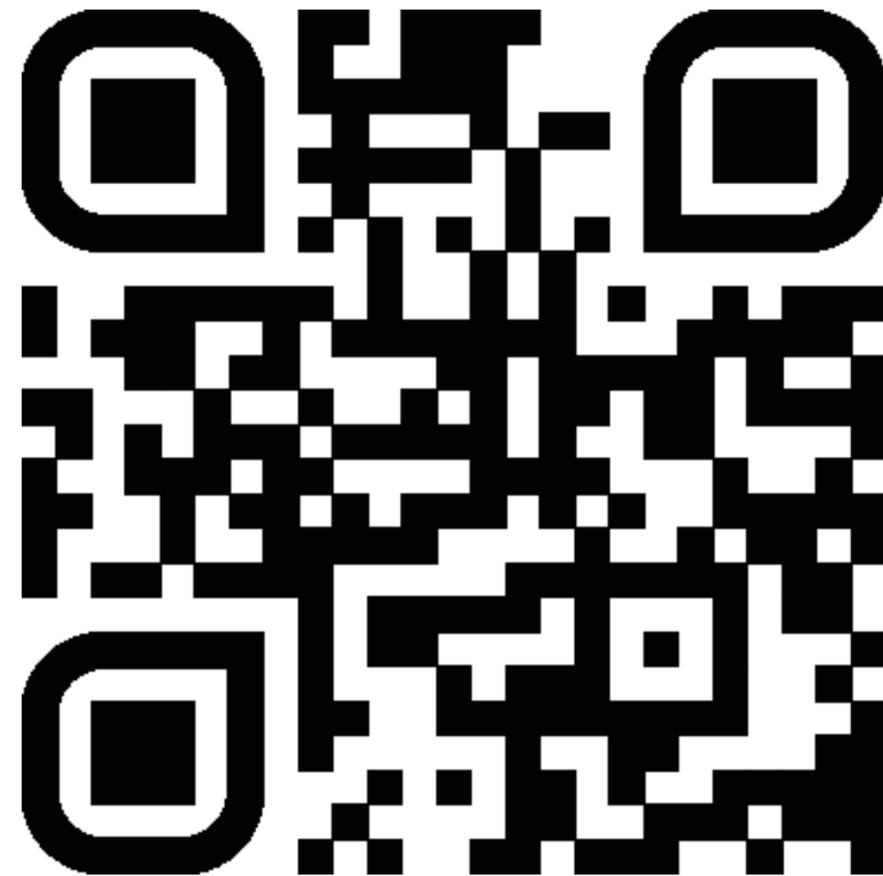
[https://moodle.org/plugins/tool\\_userautodelete](https://moodle.org/plugins/tool_userautodelete)



[https://github.com/ngandrass/moodle-tool\\_userautodelete](https://github.com/ngandrass/moodle-tool_userautodelete)

# Q&A Session

Now it's time for your questions and feature requests!



You will find all slides shortly after this talk at  
[🌐 https://gandrass.de](https://gandrass.de)