

# Calendar Events with Python

by Nicco Kunzmann

# Structure

Are you curious about something? Ask instantly so I can fit answers in!

1. ICalendar
2. The recurring\_ical\_events library
3. Related Work
4. Questions and Answers
5. End: Chat and Hands-On Session

Slides: [niccokunzmann.github.io/ical-talk-fossasia-2022](https://niccokunzmann.github.io/ical-talk-fossasia-2022)

# About Nicco Kunzmann

- Website: [niccokunzmann.github.io](http://niccokunzmann.github.io)
- Living in eco-village "Tipi Valley" in Wales/UK with my family



# ICalendar - Why?

1. Sharing of calendar events around the world
2. Files: `.ics`
3. Used by: Nextcloud, Eventyay, Thunderbird, Android, ...
4. Open Specifiation: RFC 5545

# ICalendar - Overview

1. Version 1.0 from 1997
2. Current Version 2.0 since 2009
3. Includes:
  1. **events & time zones**
  2. journal entries, alarms, TODOs, free/busy times

# ICalendar - Examples - Page 1

01. BEGIN:VCALENDAR

02. VERSION:2.0

03. CALSCALE:GREGORIAN

04. X-WR-CALNAME:FOSSASIA Talks

05. BEGIN:VTIMEZONE

06. TZID:Asia/Singapore

07. ... removed lines ...

08. END:VTIMEZONE

## ICalendar - Examples - Page 2

01. BEGIN:VEVENT

02. UID:recurring-ical-events@FOSSASIA2022

03. SUMMARY:Nicco's Talk about ICAL events!

04. DTSTART;TZID=Asia/Singapore:20220408T213000

05. DTEND;TZID=Asia/Singapore:20220408T215500

06. END:VEVENT

07. END:VCALENDAR



# ICalendar - Examples - Page 3 - Lunch with Friends

01. BEGIN:VEVENT

02. .... removed lines ...

03. DTSTART:20220307T120000Z

04. RRULE:FREQ=WEEKLY;BYDAY=MO

05. EXDATE:20220314T120000Z





06. RDATE:20220326T140000Z

07. END:VEVENT

# recurring\_ical\_events - History

1. Federated calendar system: Open-Web-Calendar
2. user-controlled multi-source calendar, no self-hosting required
3. [openwebcalendar.herokuapp.com](https://openwebcalendar.herokuapp.com)
4. Issue: When do ICAL events take place?

# recurring\_ical\_events - History

1. Decision: `new library python-recurring-ical-events`
2. Advantage:
  1. Encapsulated, testable behaviour
  2. Other users → feedback
  3. Higher quality!
3.    
4. License: LGPL, open-source
5. Base: `icalendar`

# recurring\_ical\_events - Testing

1. Test-Driven-Development (TDD)
2. Knowledge not lost but increasing over time
3. Changes not destructive
4. long-term maintainability
5. increasing quality with feedback
6. Using pytest, more than 600 tests

## recurring\_ical\_events - Testing

1. Find an issue
2. Get example ICS file
3. Write tests
4. Implement change

```
01. def test_only_one_event_present(calendars):  
02.     events = calendars.issue_1.at("20220408")  
03.     assert len(events) == 1
```

# Related Work

1. [icalendar](#) - read and write ICalendar files
2. [icalevents](#) - same use-case as recurring\_ical\_events
3. [icspy](#) - create simple events
4. [x-wr-timezone](#) - correct X-WR-TIMEZONE issues
5. [open-web-calendar](#) - display ICS files as web page
6. [RFC 5545](#)

# Future

1. Open an Issue!
2. Command line interface?
3. Generation of VTIMEZONE from Python time zones?

# Questions!

1. e.g. Your experience with ICAL, project ideas, contribution practice, CI, testing, pytest?
2. Hands-on session next:

[niccokunzmann.github.io/ical-talk-fossasia-2022/example.py](https://niccokunzmann.github.io/ical-talk-fossasia-2022/example.py)



# Hands On!

1. Example program:

[niccokunzmann.github.io/ical-talk-fossasia-2022/example.py](https://niccokunzmann.github.io/ical-talk-fossasia-2022/example.py)

2. Install Python3 and pip

3. Run

```
pip install recurring-ical-events
```



# Thanks for ...

1.  shower - the presentation engine
2. FOSSASIA Summit 2022
3. Python, my teachers, your attention, the GPL, the support of my family, the smartphone apps I use for development. [piwheels.org](https://piwheels.org)

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