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What every programmer should know about licenses

Create usable code while abiding by the law

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Learning Goals

- Why a license is important
- How to differentiate between
  - Public Domain Licenses
  - Permissive Licenses
  - Copyleft Licenses
- How to approach non-code licensing

Why you should care

What happens if you don’t use a license? [1]

- If a file has no license, then **all rights are reserved**!

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Why you should care

What happens if you don't use a license? [1]

- If a file has no license, then **all rights are reserved**!
- This means that international copyright laws apply.
- Therefore, nobody is allowed to:
  - **Use**
  - Copy
  - Modify
  - Distribute

If you want your code to be used, you need a license!

Rule of Thumbs

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1. Don’t invent your own licenses
   - They can be legally invalid
   - They can have unexpected consequences:
     - Examples: BSD No-Nuclear, Anti-996, Beerware
   - There is a good license for everything

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   - You can’t make previous commits more restrictive...
3. Don’t think about licenses, think about your goals
   - Which goal do you want to acomplish?

Overview of Code Licenses

Licenses can be divided into three categories:

- Public Domain-like
  - The Unlicense
- Permissive
  - MIT
  - Apache 2.0
  - BSD-3-Clause
- Weak Copyleft
  - LGPL
- Strong Copyleft
  - GPL

Public Domain (Gemeinfreiheit)

- Releases code into the public domain
- Thus, everybody can do everything the copyright holder can. Including
  - Use (commercially)
  - Modify (keeping the modifications private)
  - Distribute / Copy / Publish
  - Sell
- No attribution required
- Changes can be kept closed-source
- Note that public domain **is not a license**.

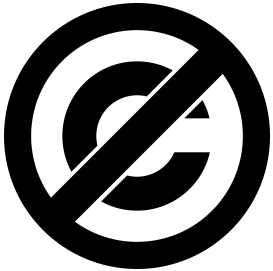

Figure: Unlicense logo [2]

Permissive Licenses

- Sometimes also called BSD-like [3]
- Thus, everybody can do everything the copyright holder can. Including
- Only requirements are to mention the following three:
  1. The copyright holder
  2. The license text
  3. liability disclaimer
- Example licenses:
  - MIT: Most commonly used
  - Apache 2.0 [4]: Like MIT, but with a patent clause [5]
    - If you are a contributor with a relevant patent, you grant a license to the patent
  - BSD-3: Similar to MIT but adds a no-endorsement clause
    - If you use our tool, don't use us to endorse or promote your product

Strong Copyleft Licenses

- Allow for any usage and modification
- Source has to be made available
- Modifications need to have same license
- Changes have to be contributed back!
- Example: GPLv3

Four Freedoms [6]

1. Run the program for any purpose
2. Be able to read the source code
3. Distribute the program as you wish
4. Distribute your modified versions

Strong vs Weak Copyleft

Strong: GPL

- Every software linking GPL libraries have to be GPL.

Weak: LGPL

- Only changes to your library have to be LGPL.

GPL requires that the full software is open source!

Copyleft Implications

- Without copyleft, open source projects can be forked to closed source
  - Chromium to Google Chrome (BSD-3)
- Copyleft requires all changes to be made public as well
- Without copyleft, people could sell your software
- With copyleft, less companies will use your software
- If React (most popular Web Framework) were GPLv3, those companies would not use it:
  - Facebook
  - Netflix
  - Uber
  - Airbnb
  - Dropbox

How to Add a License

1. Find License Fulltext: `https://spdx.dev/`
2. Add name and year if required
   - Update the year as long as it is maintained
3. Save as `LICENSE` file in repository
4. Add license notice and Copyright holder to every file!
   - At least SPDX-Identifier

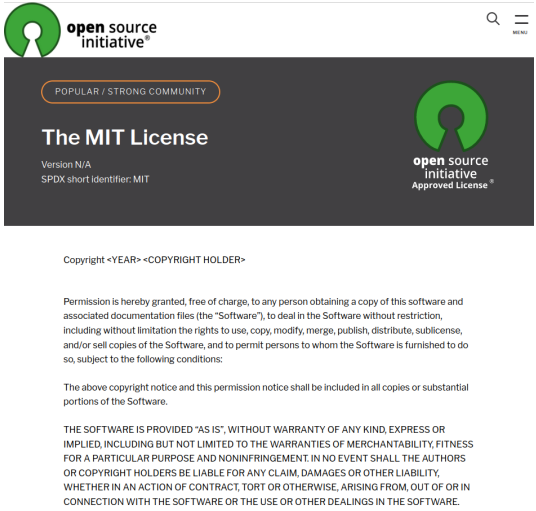

Figure: MIT license from OSI [7]

What else needs a license

Short answer: Everything!

What else needs a license

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Including:

- Images
- Audio, Video
- Fonts
- **Data**
- Models, Hardware Schematics
- Everything that has a copyright.

Font Licenses

- Most open fonts can be found at Google Fonts [8]
  - All of those fonts are licensed permissively
- Most used License [9]: SIL Open Font License [10]
- Other common licenses:
  - Apache license [4]
  - Ubuntu Font License [11]

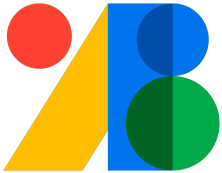

Figure: Google Fonts logo [8]

Creative Commons Licenses

- Standardized licenses for creative works
- Different licenses
  - **CC0:** No Copyright
  - **CC-BY:** Attribution, Mention license
  - **CC-BY-SA:** CC-BY + ShareAlike
  - **CC-BY-SA-NC:** CC-BY-SA + NonCommercial

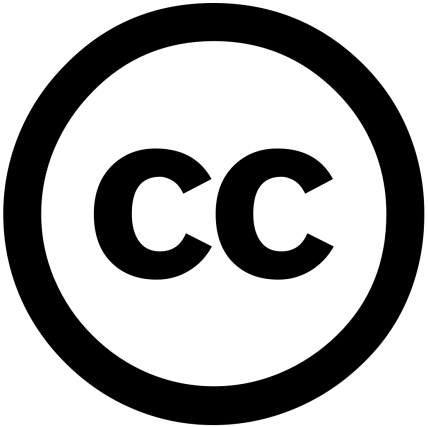

Figure: Creative Commons logo [8]

Conclusion

Summary

- Licenses are required so that people can use your work
- Don’t invent your own licenses
- You can use the following code licenses:
  - Public Domain ⇒ Unlicense
  - Permissive ⇒ MIT
  - Weak Copyleft ⇒ LGPL
  - Strong Copyleft ⇒ GPLv3
- All assets need licenses as well
- Creative Commons is used for non-code

If you need further help

- https://ak-oss.gi.de/
- https://www.ifross.org/
  - Insb. Lizenscenter Institut für Rechtsfragen der Freien und Open Source Software
- https://choosealicense.com
- https://tldrlegal.com
- https://www.gnu.org/licenses/license-list.en.html
- https://opensource.org/licenses
- https://creativecommons.org/

References I

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The Unlicense. URL: https://unlicense.org/ (visited on 08/21/2023).

Open Source Licensing Guide | New Media Rights. URL: https://www.newmediarights.org/open_source/new_media_rights_open_source_licensing_guide (visited on 08/21/2023).

Apache License, Version 2.0. URL: https://www.apache.org/licenses/LICENSE-2.0 (visited on 08/21/2023).

Top 10 Questions About the Apache License. Mend. URL: https://www.mend.io/blog/top-10-apache-license-questions-answered/ (visited on 08/21/2023).

What is Free Software? - GNU Project - Free Software Foundation. URL: https://www.gnu.org/philosophy/free-sw.en.html (visited on 08/21/2023).

The MIT License. Open Source Initiative. Oct. 31, 2006. URL: https://opensource.org/license/mit/ (visited on 09/14/2023).

References II

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SIL Open Font License (OFL). URL: https://scripts.sil.org/cms/scripts/page.php?site_id=nrsi&id=OFL (visited on 08/21/2023).

Ubuntu font licence. Ubuntu. URL: https://ubuntu.com/legal/font-licence (visited on 08/21/2023).