

# ALL YOU NEED TO KNOW ABOUT SOFTWARE LICENSES AS A RSE

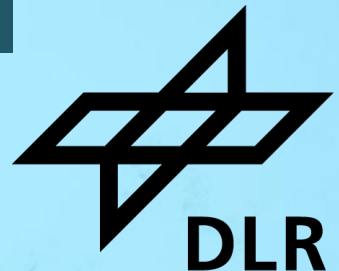
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Tobias Schlauch <Tobias.Schlauch@DLR.de>

Institute for Software Technology

German Aerospace Center (DLR)

<http://www.dlr.de/sc>



- **Copyright**

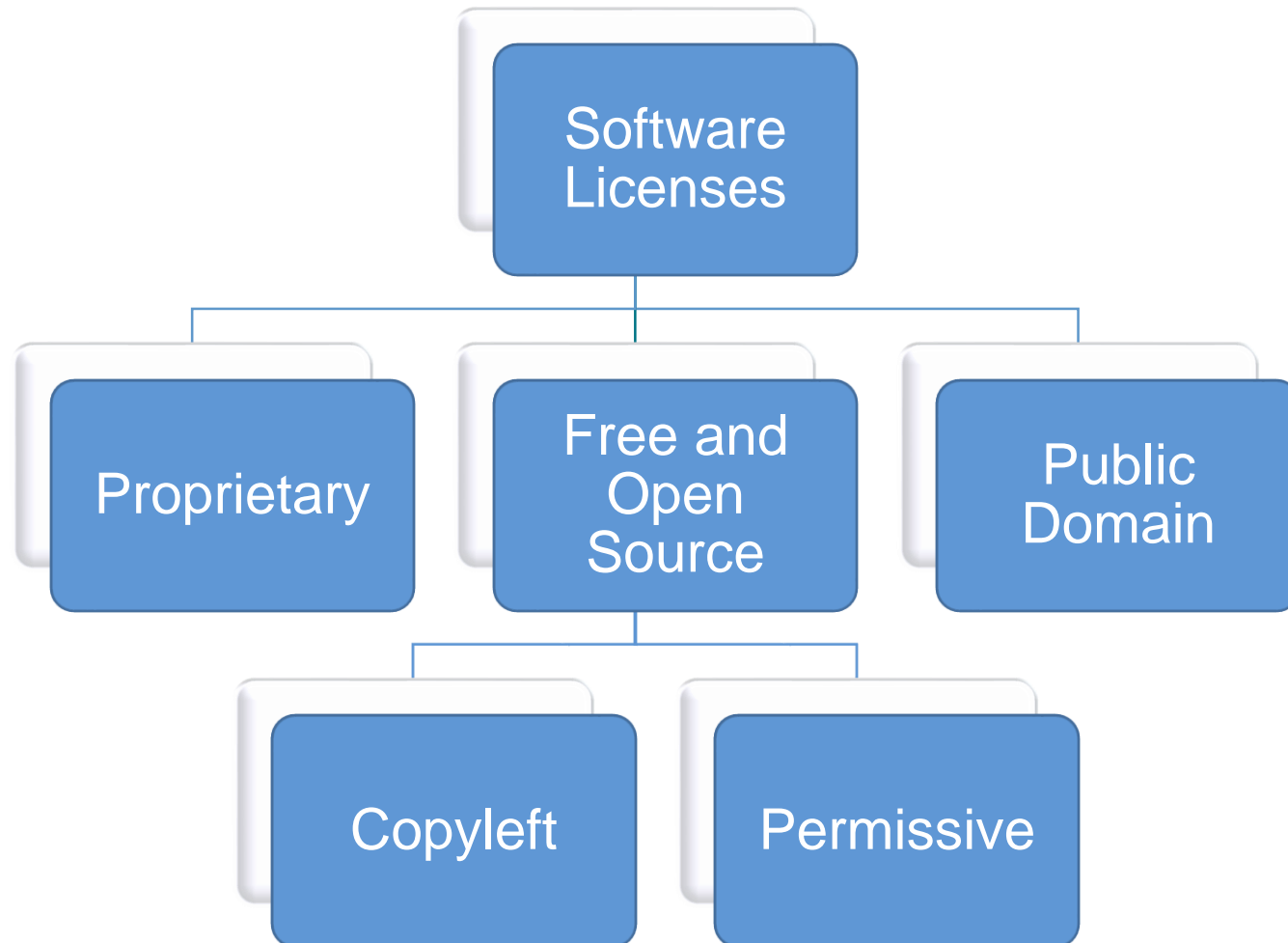
- Software is protected by copyright.
- Copyright protects the expression of an idea.
- Copyright grants exclusive rights to the copyright holder.

- **Who is the copyright holder of a software?**

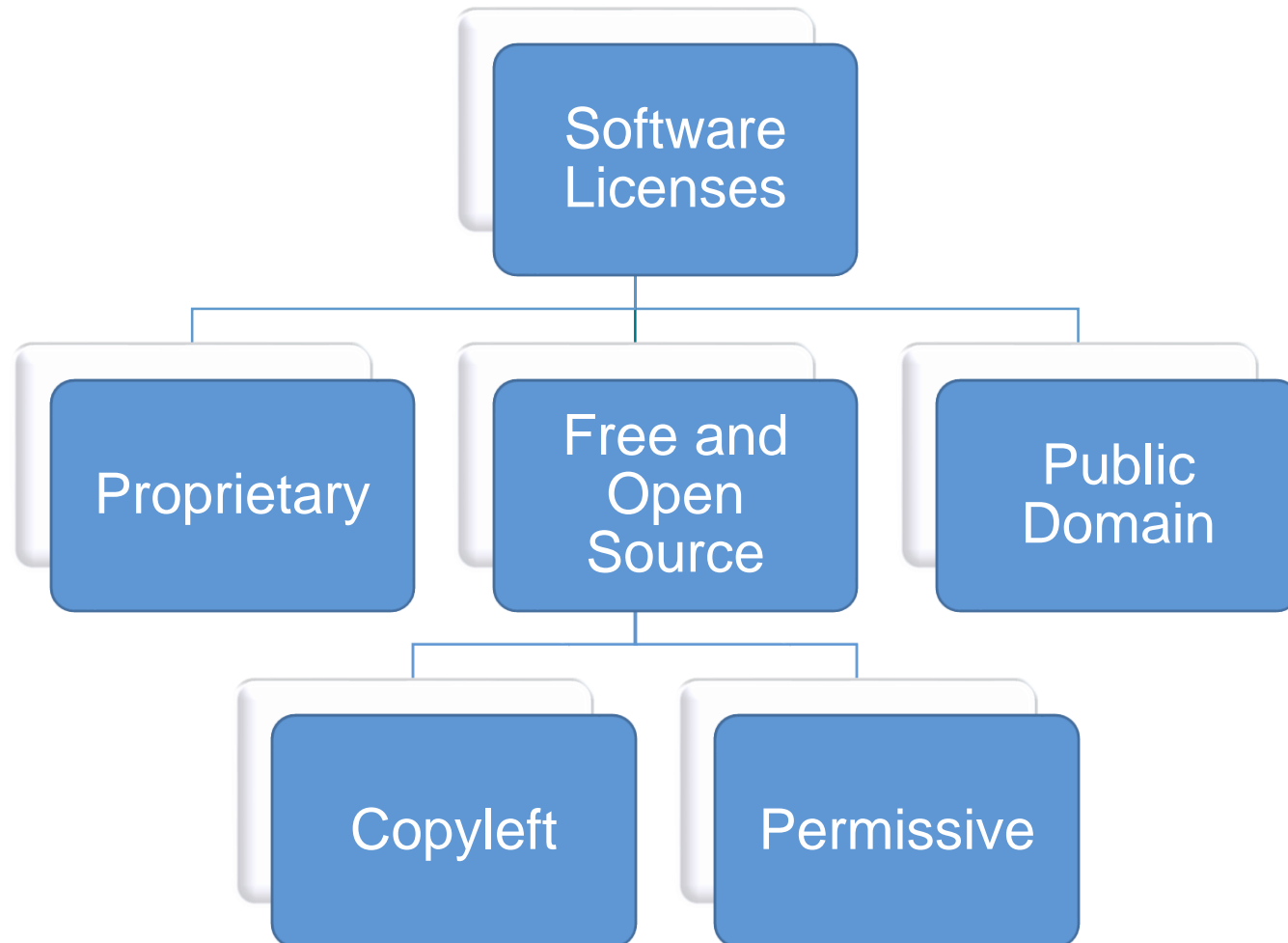
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- A company paying an employed developer obtains most of the exclusive rights.



# Software License Types



# Software License Types



**Make sure that every code that you use is covered by a license!**

**Take care when combining code under different licenses!**

# Minimal License Checklist



## 1. Choose a license

- Consider strategical implications
- Comply with licenses of third-party dependencies

## 2. Ask your boss for permission

## 3. Add copyright holder and license information

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**Find out about  
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**Ask for legal  
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### • Please note:

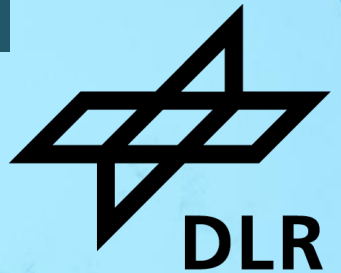
- You can contact the [HIFIS Consulting Team](#) if you are part of the Helmholtz Association.
- [DLR Open Source Brochure](#) (German only) provides further detailed information.

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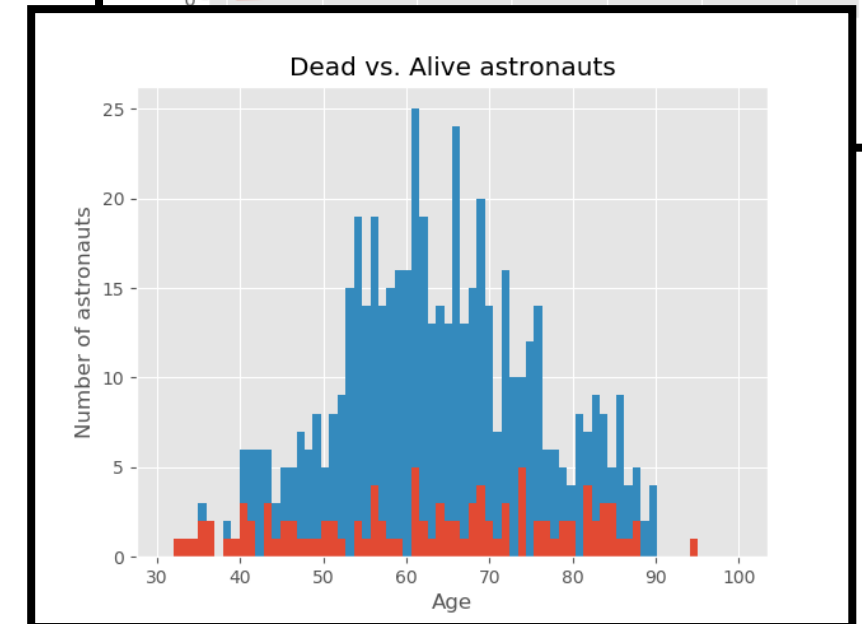
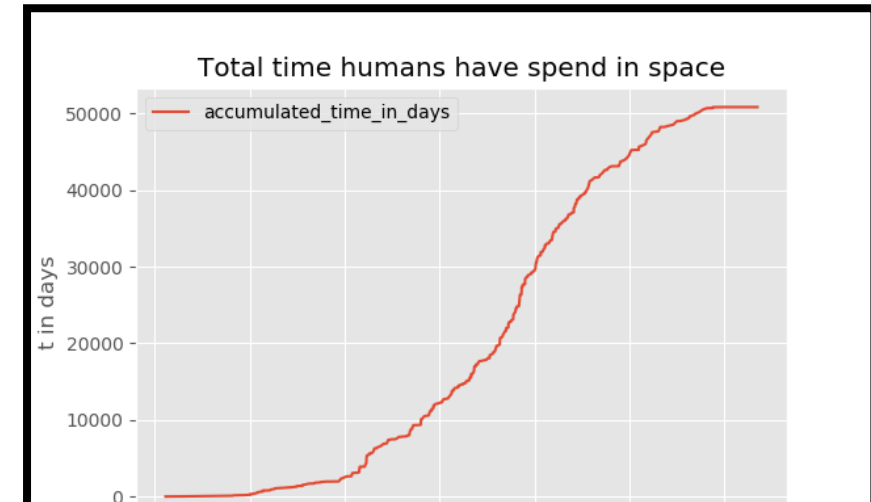
# EXAMPLE





# Example: Astronaut Analysis

- [Astronauts Analysis](#) is a data publication consisting of:
  - Data set
  - Analysis script written in Python using [pandas](#) and [matplotlib](#)
  - Result plots
- **Scenario:**
  - I created it on my own as part of my job.
  - I want to publish it with my research paper.
  - I want to make its reuse as easy as possible and make it available under an open source license.



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- After checking the recommendation from <https://choosealicense.com/>, I want to use the MIT License. But do the licenses of my dependencies fit?

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- Let us check the dependencies of the analysis script:
  - You can do this check manually or using a tool such as [liccheck](#) or [pip-licenses](#).

# Choose a License



- After checking the recommendation from <https://choosealicense.com/>, I want to use the MIT License. But do the licenses of my dependencies fit?
- Let us check the dependencies of the analysis script:
  - You can do this check manually or using a tool such as [liccheck](#) or [pip-licenses](#).
  - Results look good 😊 Both libraries are licensed under permissive licenses!

```
$ liccheck -s liccheck.ini -r requirements.txt --no-deps
gathering licenses...
3 packages.
check unknown packages...
3 packages.
  flake8 (3.9.2): ['MIT']
  matplotlib (3.4.2): ['Python Software Foundation']
  pandas (1.2.4): ['BSD']
```

# Choose a License



- After checking the recommendation from <https://choosealicense.com/>, I want to use the MIT License. But do the licenses of my dependencies fit?
- Let us check the dependencies of the analysis script:
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3 packages.
  flake8 (3.9.2): ['MIT']
  matplotlib (3.4.2): ['Python Software Foundation']
  pandas (1.2.4): ['BSD']
```

**But what about  
the non-code  
artifacts?**



# Choose a License

## Finalize Decisions



- Although the license decision for our code is fine,  
I do not want to use the MIT license for all content!

# Choose a License

## Finalize Decisions



- Although the license decision for our code is fine,  
I do not want to use the MIT license for all content!
- **Final copyright and license decisions:**
  - Copyright holder: German Aerospace Center
  - Source code: MIT
  - Data set: CC0-1.0
  - Docs and plots: CC-BY-4.0
  - Insignificant files: CC0-1.0
- **Finally, I need the approval from my boss...**

# Choose a License

## Finalize Decisions



- Although the license decision for our code is fine,  
I do not want to use the MIT license for all content!

- **Final copyright and license decisions:**

- Copyright holder: German Aerospace Center
- Source code: MIT
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- Docs and plots: CC-BY-4.0
- Insignificant files: CC0-1.0

- **Finally, I need the approval from my boss...**

**My boss is fine  
with it 😊 But  
how do I  
annotate this  
information  
“correctly”?**

# Add Copyright Holder and License Information

## REUSE SOFTWARE



**REUSE**  
SOFTWARE

- **Goal:** Make it easy for humans and machines to determine what license a file is licensed under and who owns the copyright!
- Heavily builds on SPDX: <https://spdx.dev/>
- Provides the reuse helper tool for annotation, validation, and more: <https://git.fsfe.org/reuse/tool>
- For more information: [Tutorial](#), [FAQ](#), [Specification](#)

# Add Copyright Holder and License Information

## Step 1: Add License Files



- Add all required license files to the `LICENSES` directory
- You can provide them manually or via `reuse download`:

```
$ reuse download MIT CC-BY-4.0 CC0-1.0  
Successfully downloaded LICENSES\MIT.txt.  
Successfully downloaded LICENSES\CC-BY-4.0.txt.  
Successfully downloaded LICENSES\CC0-1.0.txt.
```

- **Notes:**

- `reuse download` supports all licenses from the [SPDX License List Data repository](#)
- Other licenses can be used as well
- `reuse download -a` can download all referenced but missing license files



# Add Copyright Holder and License Information

## Step 2: Add Copyright and Licensing Information



- Add copyright and license information to all files in the code repository
- You can add them manually or via `reuse annotate`:

```
$ reuse annotate --copyright="German Aerospace Center" --license="MIT" code/*  
Successfully changed header of code\requirements.txt  
Successfully changed header of code\test.sh  
Successfully changed header of code\astronaut-analysis.py  
  
# SPDX-FileCopyrightText: 2023 German Aerospace Center  
#  
# SPDX-License-Identifier: MIT  
  
""" This script analysis the astronaut data set and creates different plots as result. """
```

- **Notes:**

- `reuse annotate` handles comment styles and uncommentable files automatically
- You can have multiple copyright and license statements in each file
- License identifiers are standardized (see also: [SPDX expressions](#))

# Add Copyright Holder and License Information

## Step 3: Check Compliance



- You can check whether everything is fine via reuse lint:

```
$ reuse lint
# SUMMARY

* Bad licenses:
* Deprecated licenses:
* Licenses without file extension:
* Missing licenses:
* Unused licenses:
* Used licenses: CC-BY-4.0, CC0-1.0, MIT
* Read errors: 0
* Files with copyright information: 12 / 12
* Files with license information: 12 / 12

Congratulations! Your project is compliant with version 3.0 of
the REUSE Specification :-)
```

- You can [use the linter in pre-commit hooks or in your CI/CD workflow](#).

# Summary



- Copyright protects software and grants exclusive rights to the copyright holder(s).
- Software licenses grant rights but also come with obligations:
  - Make sure that every code that you use is covered by a license!
  - Take care when combining code under different licenses!
- Software publication processes depend on your organization:
  - Find out about your process!
  - Ask for legal advice if you are unsure with licensing or copyright aspects!
- REUSE SOFTWARE helps you to annotate copyright and licensing information properly and to validate it continuously.

# Copyright and License Information



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# Thank you!

## What are your Questions?

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HIFIS Mattermost: @schlauch