



Katja Glass  
Consulting

# Open Source

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## Practicalities and the legal side



# Disclaimer and Disclosures

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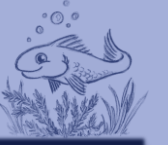


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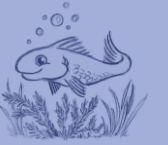
# Agenda

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- Introduction
  - Rights & Limitations
  - Practicalities
  - Examples
  - Summary
- 

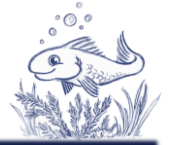




# Introduction

# Introduction

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Once upon a time ...

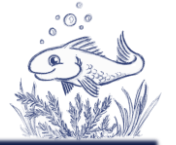


'90s



# Introduction

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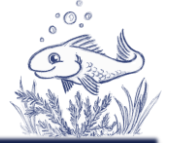
Once upon a time ...



'90s



# Introduction



## Personal homepages

'90s



# Introduction

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Astonishment, information sharing, images

- Access to information
- Access to images
- Use them!

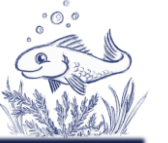
'90s





# Introduction

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Legal Claims

➤ Copyright

Uncertainty



# Introduction

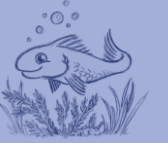
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Missing education

- How can I use?
- How to share?





# Rights & Limitations

# Rights and Limitations

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What do we know?

- Copy text NO
- Learn from text YES
- Reference text YES



# Rights and Limitations



- Default copyright
- Explicit licenses can be provided

## ➤ Example Papers

- Copy text NO
- Copy code NO
- Learn from text YES
- Reprogram content YES

Conference Proceedings (1976 - present) ... and more

This searches **37802** conference papers from SAS Global Forum, SUGI, PharmaSUG, PhUSE, NESUG, SESUG, WUSS, MWSUG, PNWSUG, SCSUG, SEUGI, ...

ENHANCED BY Google

Perform a [search](#) for papers based on title, author or keywords.

[38 Papers](#) written by [Lex Jansen](#). [Contact me](#)

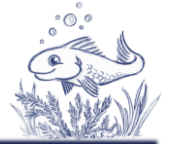
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4030 <a href="#">PharmaSUG</a> papers (1997-2023) PharmaSUG 2024 May 19-22 - Baltimore, MD	337 <a href="#">PHUSE/FDA CSS</a> posters (2012-2023) PHUSE CSS 2024 June 3-5 - Silver Spring, MD	578 <a href="#">PharmaSUG China</a> papers (2012-2023) PharmaSUG China 2024 August 2-3 - Beijing, China
3008 <a href="#">WUSS</a> papers (1993-2023) WUSS 2024 September 4-6 - Sacramento, CA	3301 <a href="#">SESUG</a> papers (1993-2023) SESUG 2024 September 22-24 - Bethesda, MD	2561 <a href="#">PHUSE EU Connect</a> papers (2005-2023) PHUSE EU Connect 2024 November 11-13 - Strasbourg, France

Screenshot from <https://www.lexjansen.com/>

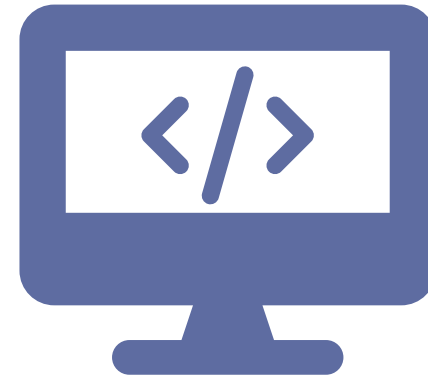
# Rights and Limitations

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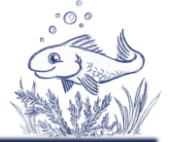
## Copy Code

- Default copyright
- License explicitly provided
- Use copyright code -> possible sue
- Open source license -> follow terms
- Safe way, take idea, rewrite code



# Rights and Limitations

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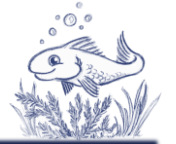


## Licenses

- Copyright (default)
- General licenses
  - Data, Data Model
  - Documents
  - Trainings
- Open Source Licenses
  - Source code
- Many other licenses



# © Licenses – Creative Commons

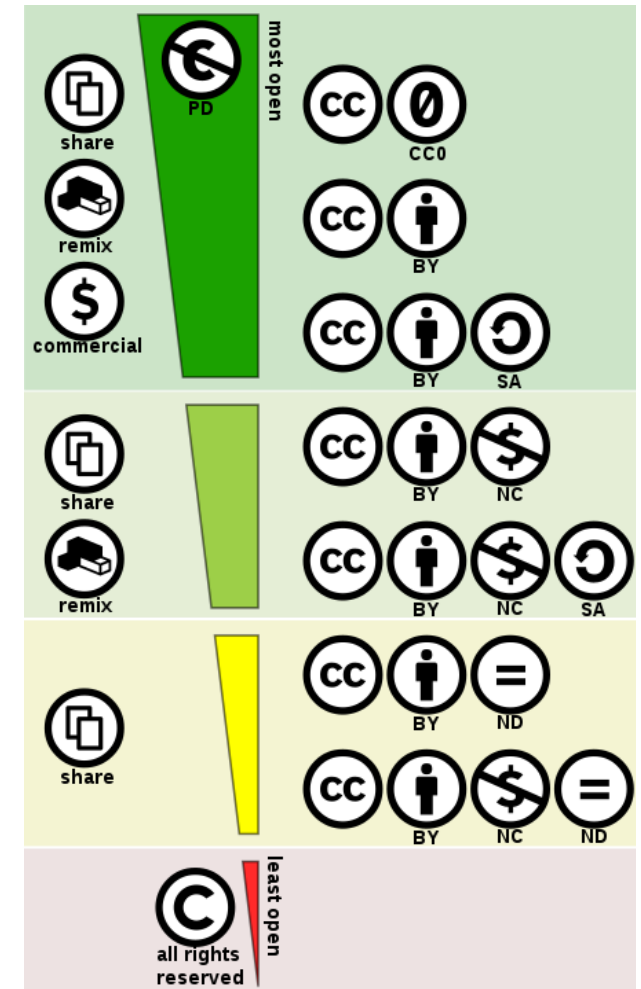


➤ Can be applied all copyright work

 **Public domain - No rights reserved**

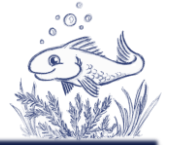
 **BY - Attribution**

 **SA - Attribution - ShareAlike**





# 🔗 Licenses – Open Source Initiative



## ➤ License types

### Permissible

- Allows re-licensing of derived work

- Similar BY-Attribution



### Copyleft

- Derives must use same license

- Similar ShareAlike

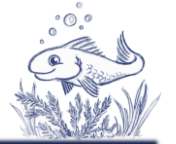


Permissible 78%

Copy-Left 22%

\* 2021 Statistics according [WhiteSource](#)

# 🔗 Licenses – Open Source Initiative



## ➤ License types

### Permissible

- Apache 2.0
- MIT
- BSD
- ...

### Copyleft

- GPLv3
- Microsoft Public
- ...

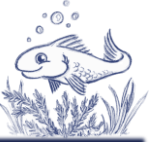
Permissible 78%

Copy-Left 22%

\* 2021 Statistics according [WhiteSource](#)

# Rights and Limitations

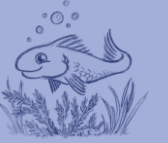
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## No plaintiff, no judge

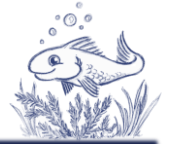
- Illegal examples available
- Paper presenter likely wanted to share code for reuse
  - Ask author for permission to be sure





# Practicalities

# Practicalities



Where to copy code from?

- Documentation, help & examples

SAS® Help Center Customer Support | SAS Documentation

SAS® 9.4 and SAS® Viya® 3.5 Programming Documentation | SAS 9.4 / Viya 3.5

PDF | EPUB | Feedback

Language Statements

ODS Statement Category

SAS Output Delivery System: User's Guide

ODS DOCUMENT Statement

Terms of Use | Copyright © SAS Institute Inc. All Rights Reserved

ODS \_ALL\_ CLOSE Statement

ODS CHTML Statement

ODS CSVALL Statement

ODS DECIMAL\_ALIGN Statement

**ODS DOCUMENT Statement**

ODS EPUB Statement

ODS EPUB2 Statement

**Interaction:** The combination of the ODS DOCUMENT statement and the DOCUMENT procedure enables you to store a report's individual components and then modify and replay the report. The ODS DOCUMENT statement stores the actual ODS objects that are created when running a report. You can then use the DOCUMENT procedure to rearrange, duplicate, or remove output from the results of a procedure or a database query without invoking the procedures from the original report. For complete documentation about the DOCUMENT procedure, see [DOCUMENT Procedure](#) in *SAS Output Delivery System: Procedures Guide*.

Table of Contents

[Syntax](#)

[Optional Arguments](#)

English Privacy Statement [Terms of Use](#) | Copyright © SAS Institute Inc. All Rights Reserved

# Practicalities

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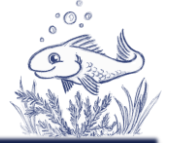
## SAS “Terms of Use” (Use of Website)

- 1) [...] own personal informational, educational or other **non-commercial** purposes unless otherwise expressly indicated;
- 2) all copies you make must properly **attribute** [...]
- 3) you may **not modify** any of the materials [...]
- 4) ...



# Practicalities

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Check the “Terms of Use” etc.

- Inconvenient
- People rarely do it
- Expectation for online help & documentation is that examples can be use

Purpose

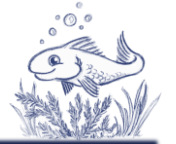
- Protect documentation
- Avoid create a book / embed in different software

Will Software providers sue customer using code from their help documentation?

- Unlikely
- 



# Practicalities



Where to copy code from?

➤ Stack Overflow

Terms of Service



stackoverflow About Products For Teams Search... Log in Sign up

Home Questions Tags Users Companies LABS Discussions Discussions NEW COLLECTIVES + TEAMS

### ggplot manually adjusting attributes

Asked today Modified today Viewed 12 times Part of R Language Collective

0

I am trying to change the legend on this plot in ggplot. I want it to have both the appropriate linetype and color in the one legend. However, I would be satisfied if I could just fix the linetype so it is correct and forget about the different colors. The below code does everything I want expect having the correct linetype in the legend. The last line of code does not appear to do anything, but I have included it to show my best attempt so far.

```
library(tidyverse)

ggplot(data.frame(x = c(-3,3)), aes(x = x))+
  stat_function(fun=dnorm, aes(color="mean 2"), linetype = 1,
               linewidth = 1.5, args = list(mean = 2))+
  stat_function(fun=dnorm, aes(color="mean 0"), linetype = 2,
               linewidth = 1.5, args = list(mean = 0))+
  scale_color_manual(values = c("red", "blue"),
                    name = "Mean")+
  scale_linetype_manual(values = c(1, 2))
```

Run code snippet Expand snippet

R Language Collective Join the discussion

This question is in a collective: a subcommunity defined by tags with relevant content and experts.

The Overflow Blog

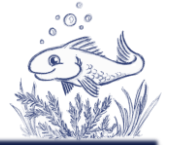
- How do mixture-of-experts layers affect transformer models?
- What a year building AI has taught Stack Overflow

Featured on Meta

- New Focus Styles & Updated Styling for Button Groups
- Upcoming initiatives on Stack Overflow and across the Stack Exchange network



# Practicalities



Where to copy code from?

➤ Stack Overflow

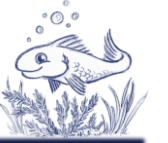


**user contributions licensed under CC BY-SA.**

The screenshot shows a Stack Overflow question page. At the top, a red box highlights the text 'user contributions licensed under CC BY-SA'. Below this, the page header includes 'Log in' and 'Sign up' buttons. The main content area shows a question titled 'ggplot manually adjusting attributes' with a blue 'Ask Question' button. The question text reads: 'I am trying to change the legend on this plot in ggplot. I want it to have both the appropriate linetype and color in the one legend. However, I would be satisfied if I could just fix the linetype so it is correct and forget about the different colors. The below code does everything I want expect having the correct linetype in the legend. The last line of code does not appear to do anything, but I have included it to show my best attempt so far'. To the right of the question is a blue 'R Language Collective' badge with a 'Join the discussion' button. Below the question, a footer section contains navigation links for 'STACK OVERFLOW', 'PRODUCTS', 'COMPANY', and 'STACK EXCHANGE NETWORK'. A red box at the bottom right of the footer highlights the text: 'Site design / logo © 2024 Stack Exchange Inc; user contributions licensed under CC BY-SA, rev 2024.4.5.7373'.

# Practicalities

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Will contributed people or Stack Overflow sue?

- Unlikely

How to be safe?

- Check for license & follow
- Use idea and re-program

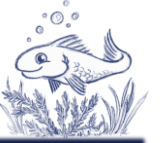
What is the content type?

- Trivial simple source & process
- Intellectual property



# Practicalities

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Create documentation

- Include license for source examples

Create post, blog, paper

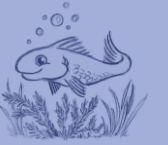
- Include license for source

Unlicense / Public Domain

MIT (very simple, quote origin)

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Examples

# Examples

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## Open Source

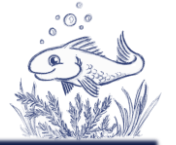
- Use it as you like
- Modification
- Free distribution

## Types

- Permissible  
(attribution & more)
- Copyleft  
(re-share)



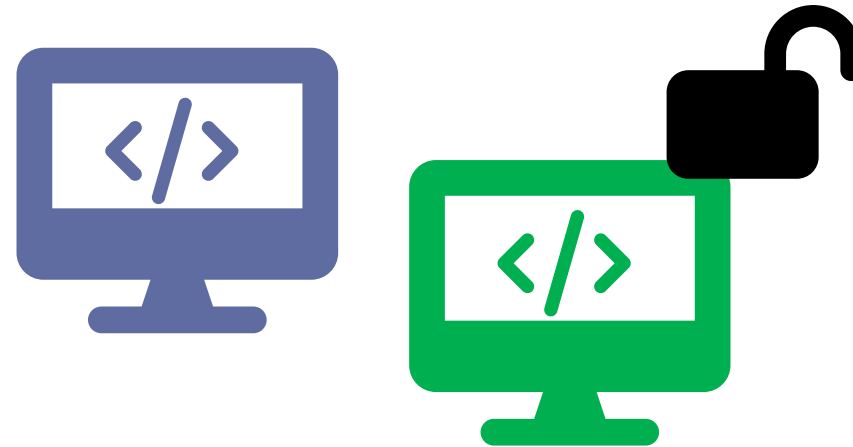
# Examples



Permissible

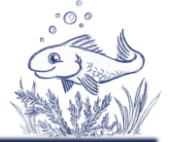


Copyleft



User have right to get source-code

# Examples



## Find open source tools?

- Open Source Portal for Clinical Study Evaluations  
<https://www.glacon.eu/portal>

The screenshot shows the website interface for Katja Glass Consulting. The header includes the company logo and navigation links: Home, Overview, Programs, More, and Info. Below the header, there are two tabs: 'Visual' and 'Table'. The main content area displays three featured open-source tools:

- OpenStudyBuilder**: An open-source metadata repository with a graph database, user interface, APIs, and more from NovoNordisk. It includes a screenshot of the application interface and lists technologies: Python, Cypher, Web, Tool, CDISC, MDR.
- admiral**: A Package to map SDTM to ADaM in R Asset Library, a collaboration project by Roche and GSK. It includes a screenshot of the R package documentation and lists technologies: R, Scripts, Programming.
- RPact**: An R package for statistical program modules, enabling simulation and analysis of parallel group designs. It includes a screenshot of the R package documentation and lists technologies: R, Tool, Statistics.

# Example – R Package - Tplyr



Tplyr: A Grammar of Clinical Data Summary. A tool created to simplify the data manipulation necessary to create clinical reports.

- Permissible
- MIT License

row_label2	var1_Placebo
<chr>	<chr>
<65	14 [ 16.3%]
65-80	42 [ 48.8%]
>80	30 [ 34.9%]
	86 [100.0%]

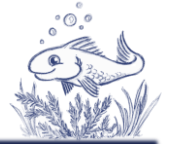
```
tplyr_table(ads1, TRT01P, where = SAFFL == "Y") %>%  
  add_layer(  
    group_desc(AGE, by = "Age (years)")  
  ) %>%  
  add_layer(  
    group_count(AGEGR1, by = "Age Categories n (%)")  
  ) %>%  
  build() %>%  
  kable()
```

row_label1	row_label2	var1_Placebo	var1_Xanomeline High Dose	var1_Xanomeline Low Dose	ord_layer_index	ord_lay
Age (years)	n	86	84	84	1	
Age (years)	Mean (SD)	75.2 ( 8.59)	74.4 ( 7.89)	75.7 ( 8.29)	1	
Age (years)	Median	76.0	76.0	77.5	1	
Age (years)	Q1, Q3	69.2, 81.8	70.8, 80.0	71.0, 82.0	1	
Age (years)	Min, Max	52, 89	56, 88	51, 88	1	



# Example – R Package - Tplyr

---



## CustomTplyr

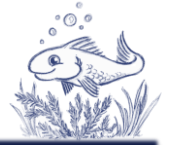
- Copy the package
- Modify and use
- Keep the original license as reference
- Final source can be copyright



## CustomSummary

- Copy and use code snippets from Tplyr
  - Keep the original license as reference
  - Final source can be copyright
-

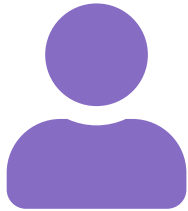
# Examples - Copyleft



Open Source  
GPL (& similar)



Can sell software  
MUST provide source



## Rights of users

Use  
Modify  
Share



Users put everything to public, granting GPL rights

Users can even sell further, granting GPL rights

Source NOT published in internet  
Rights are to USERS, not public

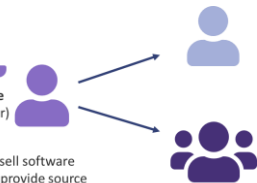
Users can use rights,  
Can publish to public



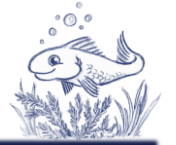
Open Source  
GPL (& similar)



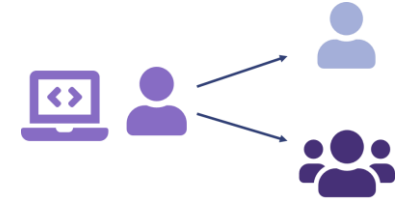
Can sell software  
MUST provide source



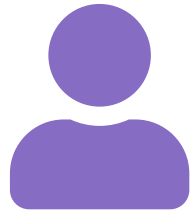
# Example – Copyleft - OpenStudyBuilder



GPL Copyleft License



VendorX Version



GPL

VendorX is paid by PharmaY which is using OpenStudyBuilderModified

- PharmaY has rights to use, modify, reshare code

Source Code managed in private GitHub



Users

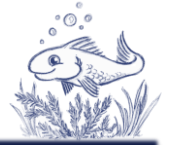


Externals



Academia (ARO)

# Example – Copyleft – OpenStudyBuilder

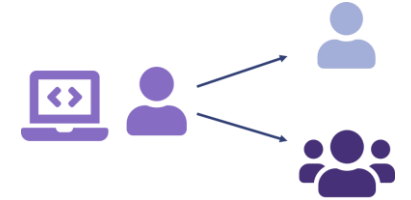


Academia (ARO)

John Doe wants the source for re-use.

John goes to VendorX and ask for source.

VendorX must provide source.



- John receive source
- He does not receive
  - Documentation
  - Change details
  - Database content
  - Configuration details
  - Plugins / Extension which are separate and separately licensed

# Example – Copyleft

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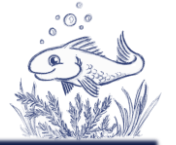


## Copyleft license

- Risk of financial loss
  - Data is not to be exposed
  - Configuration (secrets, keys to be stored externally)
  - Source is just a small amount of work
    - Documentation
    - Configuration
    - Testing
    - Training
    - ...



# Example – Copyleft – OpenStudyBuilder



GPL



Harmonized Solution

- Enable extensions
- Configurations

GPL



Divergent Solutions

GPL



Divergent Solutions

GPL



Divergent Solutions

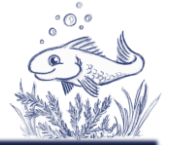
Any License





Plugins  
Extensions  
Apps



# Example – Copyleft – OpenStudyBuilder

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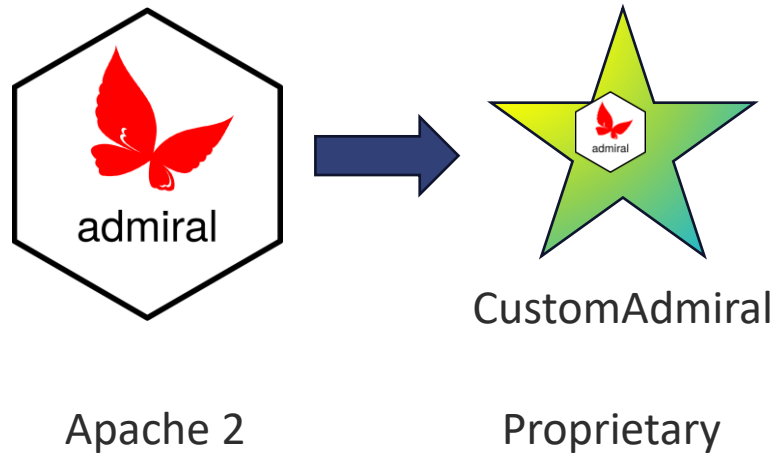


- Configuration -> color to green 
  - Plugin -> new tab „documentation“ 
  - Extension / App -> new cost calculation tool 
  - Change code, hardcode color (GPL) 
-

# Example – Copyleft - R



- R software is copyleft open source

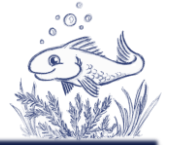


R executable, embedding R  
This software is GPL!

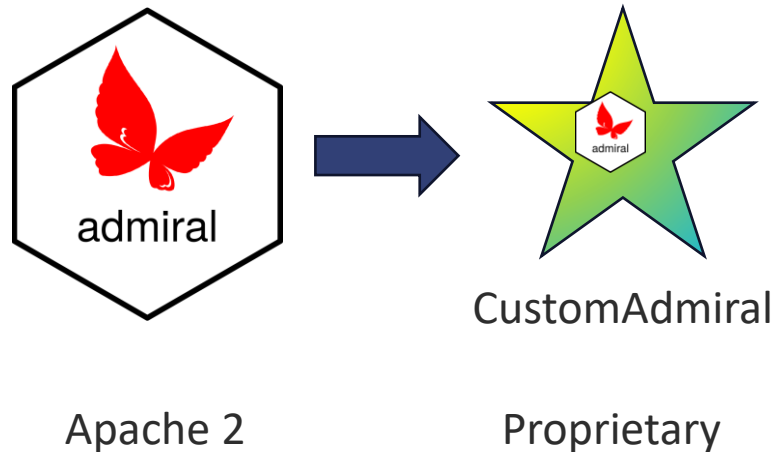




# Example – Copyleft - R



- R software is copyleft open source

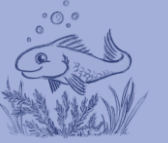


Read Excel File  
Create Derivations  
Create Excel File  
**Requires R**



This software is Proprietary!

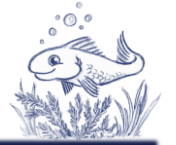




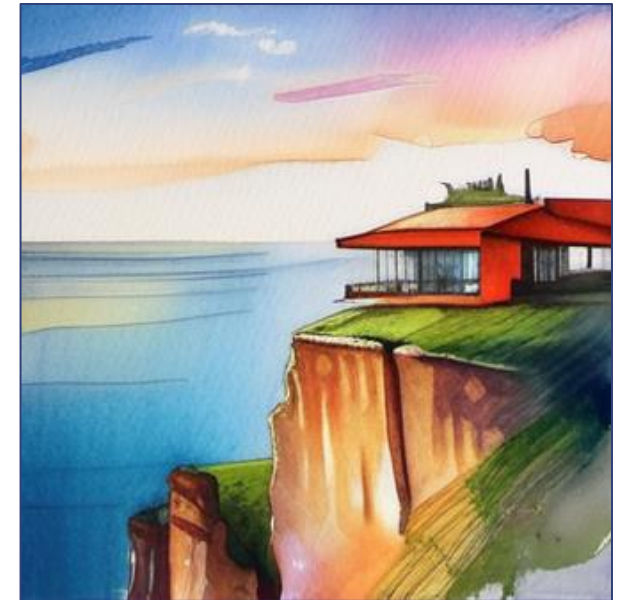
# Summary

# Summary

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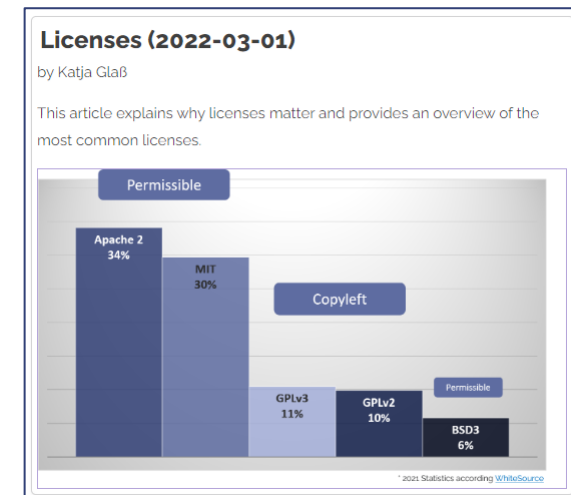
- Still much uncertainty
- Default copyright
- Safest, use idea and re-program
- Care about licenses (terms of use)
- Apply license to own code
  
- Don't be afraid of copyleft
  - Code is not the diamonds, it's the data



# Links

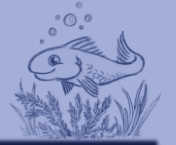


- Article on licenses  
(<https://www.glacon.eu/portal/articles/2022-03-01-licenses.html>)
- Choose a license – good overview  
(<https://choosealicense.com/licenses/>)
- The legal side of open source  
(<https://opensource.guide/legal/>)
- CDISC Open Source Alliance  
(<https://cosa.cdisc.org/>)
- Open Source Technology in Clinical Data Analysis  
(<https://phuse-org.github.io/OSTCDA/>)



# Questions?

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Katja Glass Consulting

[info@glacon.eu](mailto:info@glacon.eu)

[www.glacon.eu](http://www.glacon.eu)

[www.glacon.eu/portal](http://www.glacon.eu/portal)

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