

openwashdata

a community effort to bring open data practices to the WASH sector

Lars Schöbitz

lschoebitz@ethz.ch

Colorado WASH Symposium 2023

March 9, 2023

openwashdata

openwashdata

- Receive **credit** for work that is not a scientific paper
- Give **recognition** to those that support your work
- Tell **stories** with data that haven't yet been told
- Meet **people** that care about data and code being open and reusable

The Opportunity

Journal Articles

Appendix A. Supplementary data

The following is the supplementary data to this article:

 [Download : Download Word document \(152KB\)](#)

Multimedia component 1.

Journal Articles

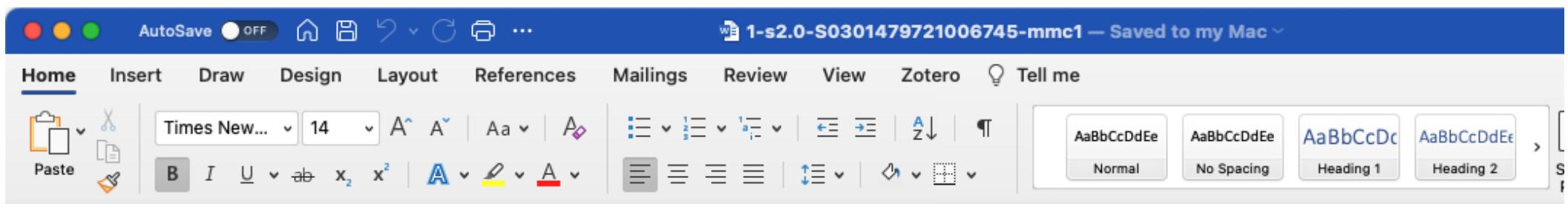


Table 1. The number of onsite sanitation facilities alphabetized by country per Service Type. The Service Type Density is calculated by dividing the population using country population. Thus, the Service Type Density covers users of sewers, onsite facilities, and open defecators. The number of facilities required for Open Defecation facilities will not be shared between households. Urban and rural proportions of the onsite facilities are provided. "ND" indicates no data available from JMP.

Country	Mechanized				Non-Mechanized				Unemptiable				No. of Facilities Required
	No. of Facilities	Service Type Density	Urban	Rural	No. of Facilities	Service Type Density	Urban	Rural	No. of Facilities	Service Type Density	Urban	Rural	
Afghanistan	367,345	10%	66%	34%	1,599,720	41%	31%	69%	1,351,493	34%	12%	88%	563,238
Algeria	482,751	6%	27%	73%	465,887	6%	18%	82%	255,876	3%	63%	37%	64,417
Angola	1,054,451	21%	97%	3%	1,817,690	36%	75%	25%	516,612	10%	44%	56%	1,232,071
Anguilla	2,875	72%	100%	0%	1,056	26%	100%	0%	15	0%	100%	0%	22

PDF reports



Treatment technologies in practice

On-the-ground experiences of faecal sludge
and wastewater treatment

SNV **UTS** Institute for
Sustainable
Futures

PDF reports

Table 2. Influent and effluent qualities of wastewater treated at Duri Kosambi FSTP plant in 2019, as compared to effluent standards

Parameter	Inlet	Outlet
pH	6, 45-7, 88 pH	7, 12-7, 61 pH
Total suspended solids, TSS	340-8933, 33 mg/L	22, 5-84, 29 mg/L
Biochemical oxygen demand, BOD ₅	106, 38-646, 82 mg/L	2, 76-69, 79 mg/L
Chemical oxygen demand, COD	687, 9-2780, 37 mg/L	41, 25-127, 67 mg/L
Total organic matter, KMnO ₄	108, 04-568, 72 mg/L	54, 21-150, 50 mg/L
Ammonia, NH ₃ -N	108, 75-239, 25 mg/L	0, 45-29, 81 mg/L
Methylene blue active surfactant, MBAS	0, 74-2, 69 mg/L	0, 13-0, 78 mg/L

PDF reports + Dropbox

Physiochemical properties

Addendum of data

<u>General information</u>	
Type of data	Composition
Place of experimentation	Pollution Research Group, University of KwaZulu-Natal (South Africa)
Dates of the experiments	2018-2019
<u>Feedstock</u>	
Type of faecal material	Faecal sludge from anaerobic baffled reactor (ABR) from a decentralised wastewater treatment plant (DEWAT)
Location of collection	Durban, South Africa
Age before collection	Unknown
Moisture content	~ 90%wt

PDF reports + Dropbox

The screenshot shows a web browser displaying a PDF document from a Dropbox link. The PDF contains two tables for moisture content and two tables for drying temperature.

Moisture content [%] Sample Water Activity [aw]

0.00	a	0.3909
	b	0.2353
	c	0.1898
	Average	0.2720
	STDev	0.1055
5.00	a	0.3687
	b	0.3812
	c	0.3750
	average	0.3750
	STDev	0.0088

Drying temperature [C] Sample Water Activity [aw]

50	a	0.4833
	b	0.4804
	c	0.4895
	average	0.4844
	STDev	0.0046
105	a	0.4479
	b	0.4014
	c	0.4209
	average	0.4234
	STDev	0.0234

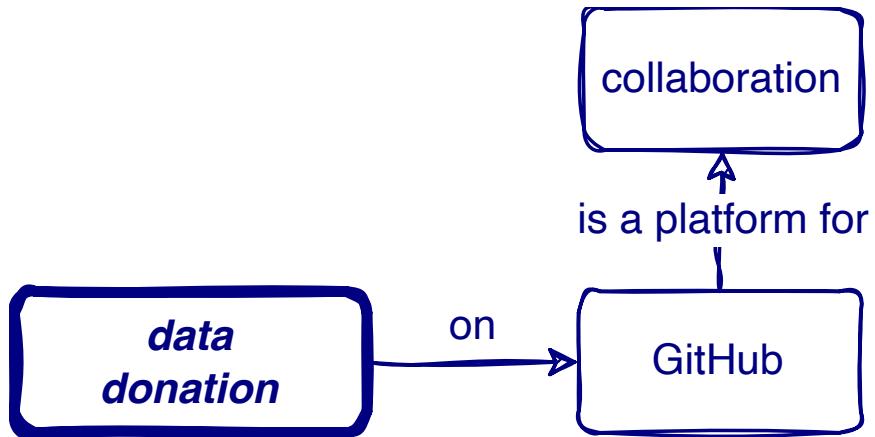
The Journey

*data
donation*

*data
publishing*

*data
cleaning*

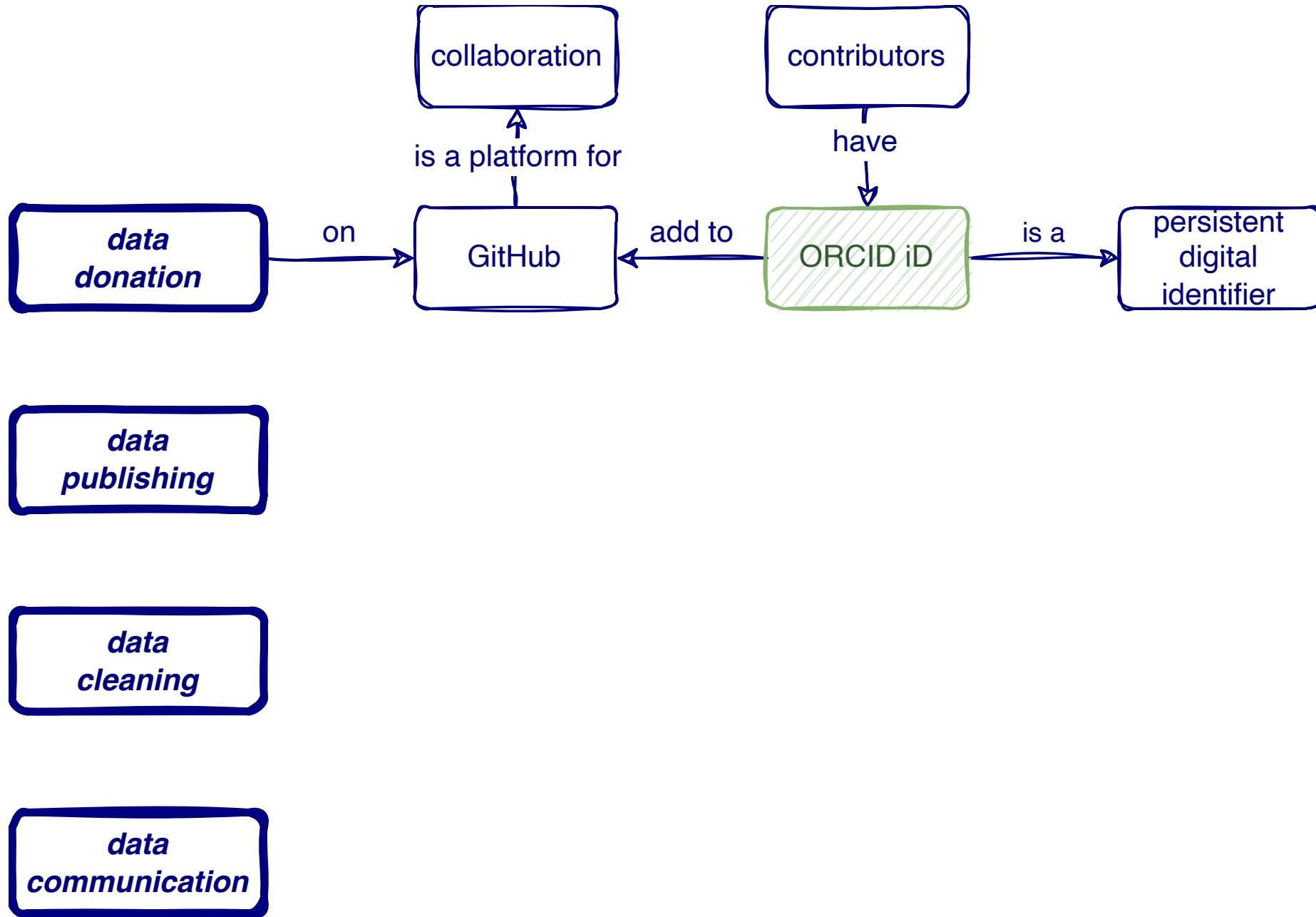
*data
communication*

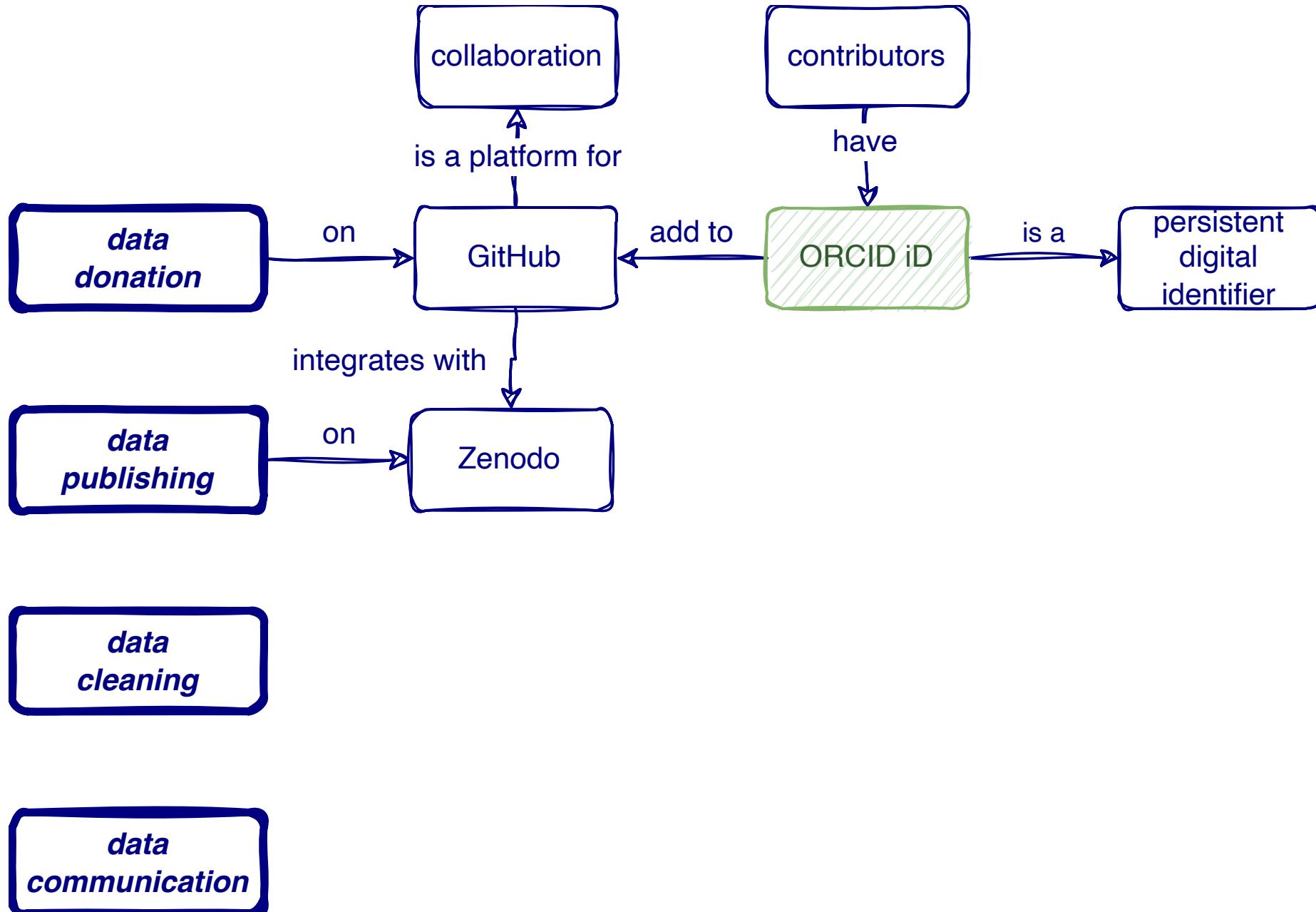


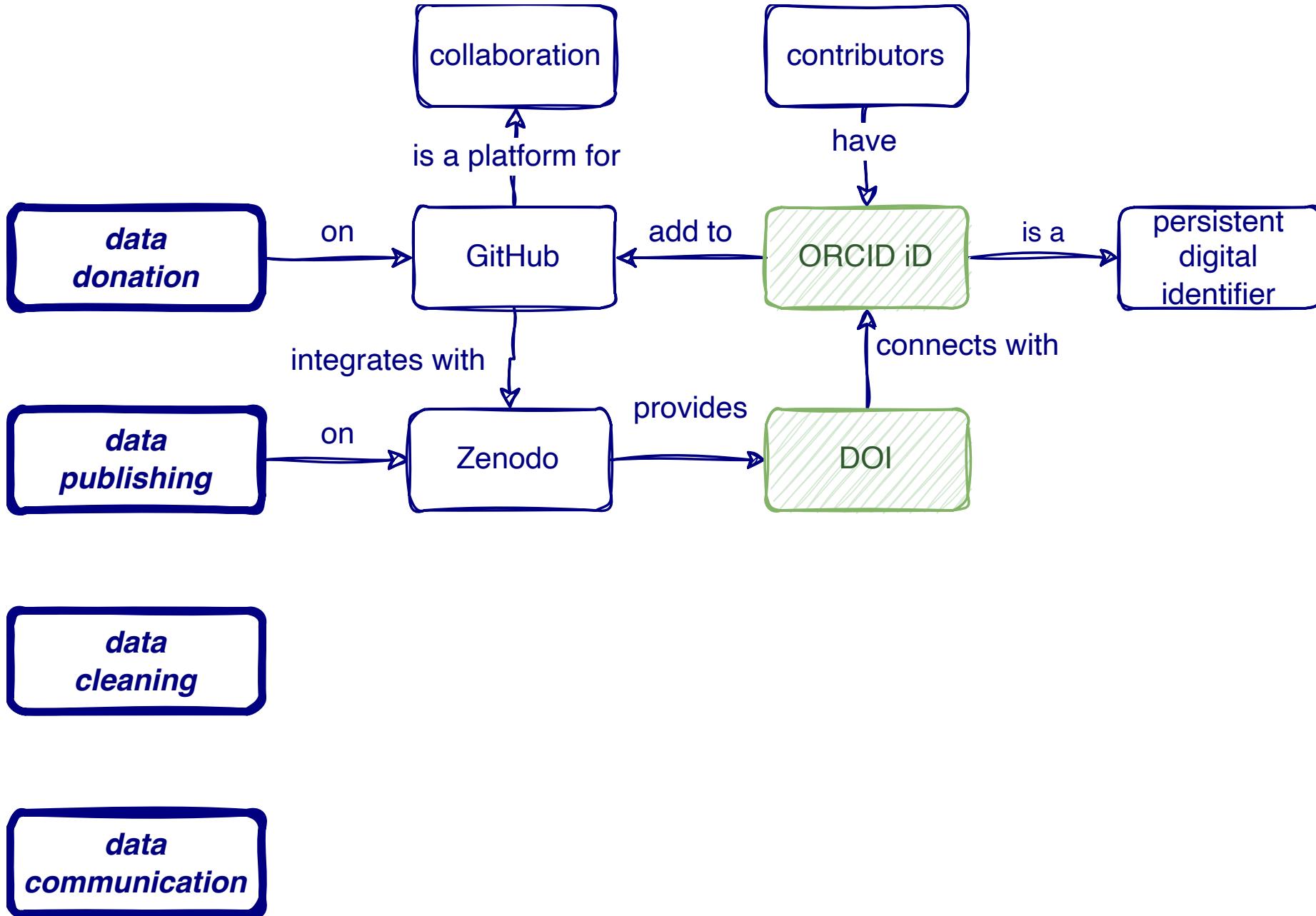
*data
publishing*

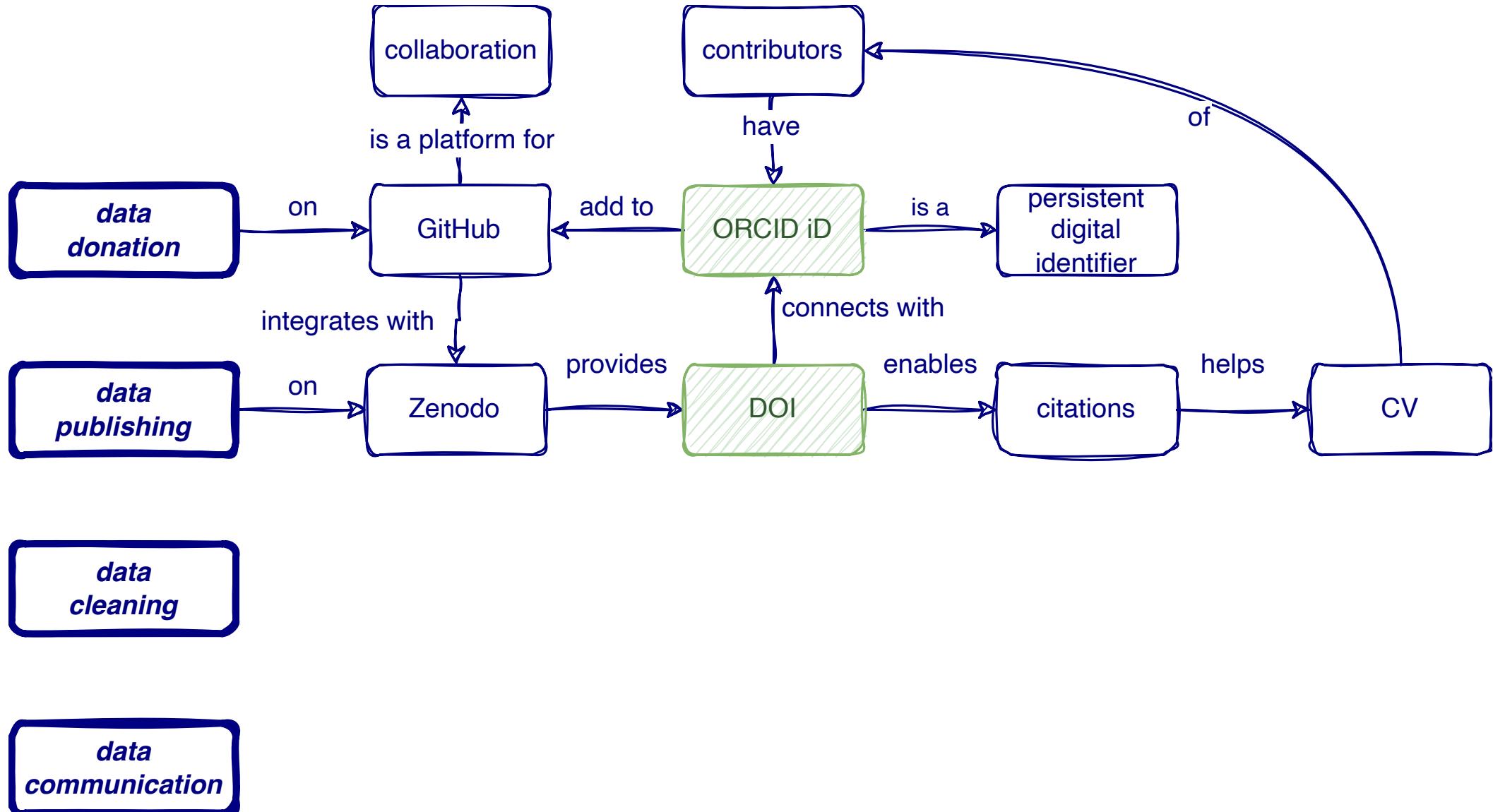
*data
cleaning*

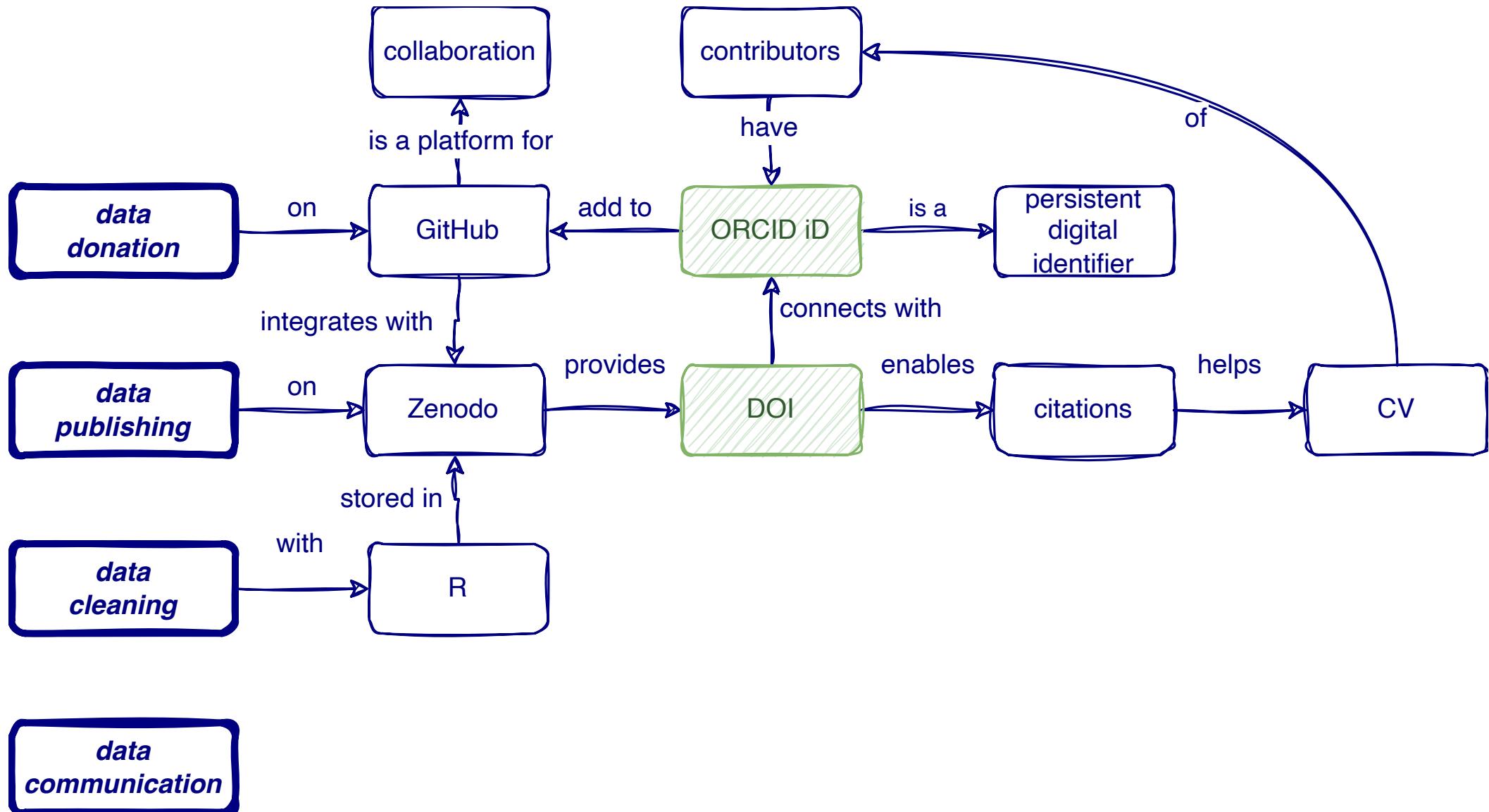
*data
communication*

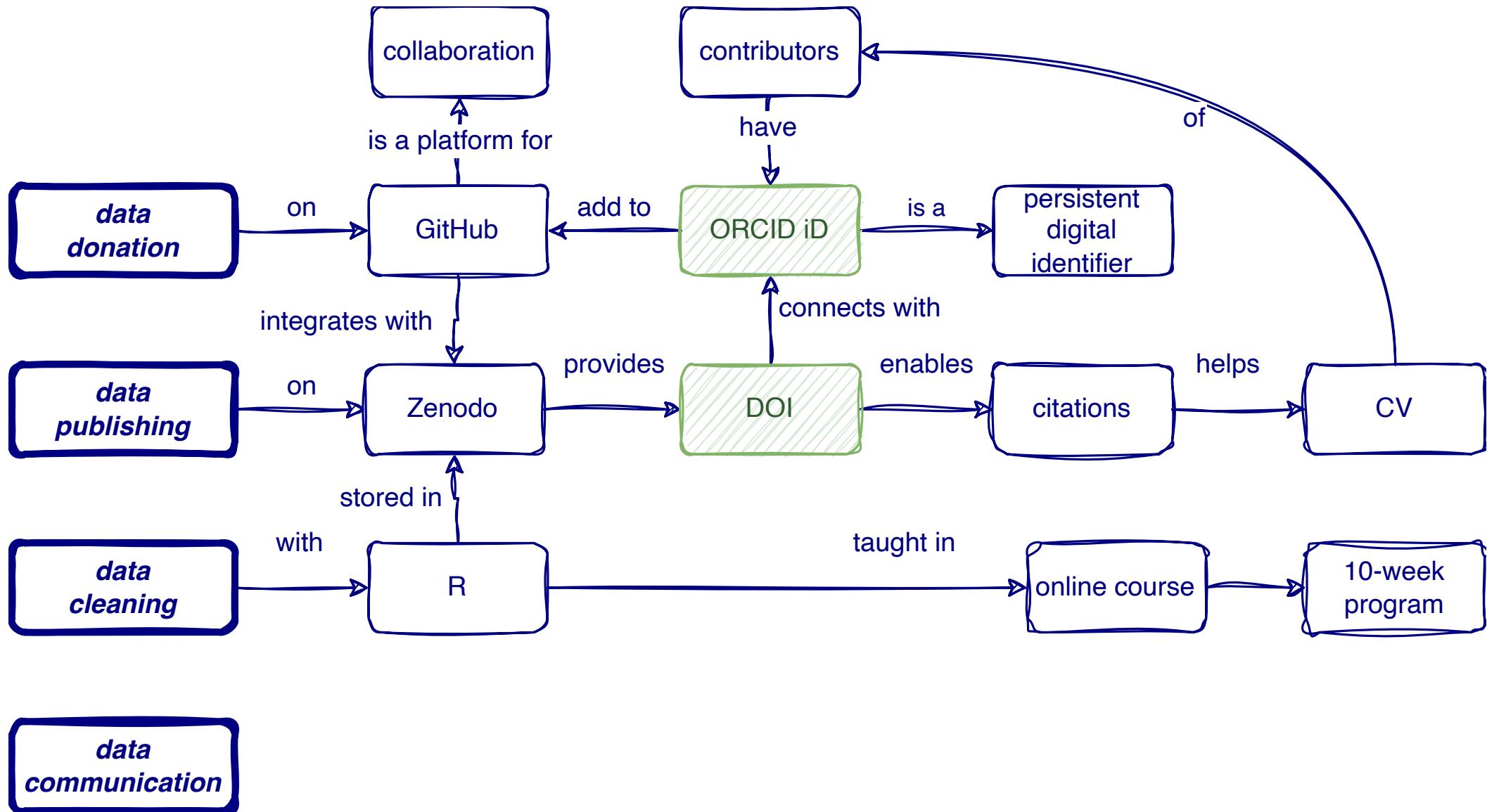


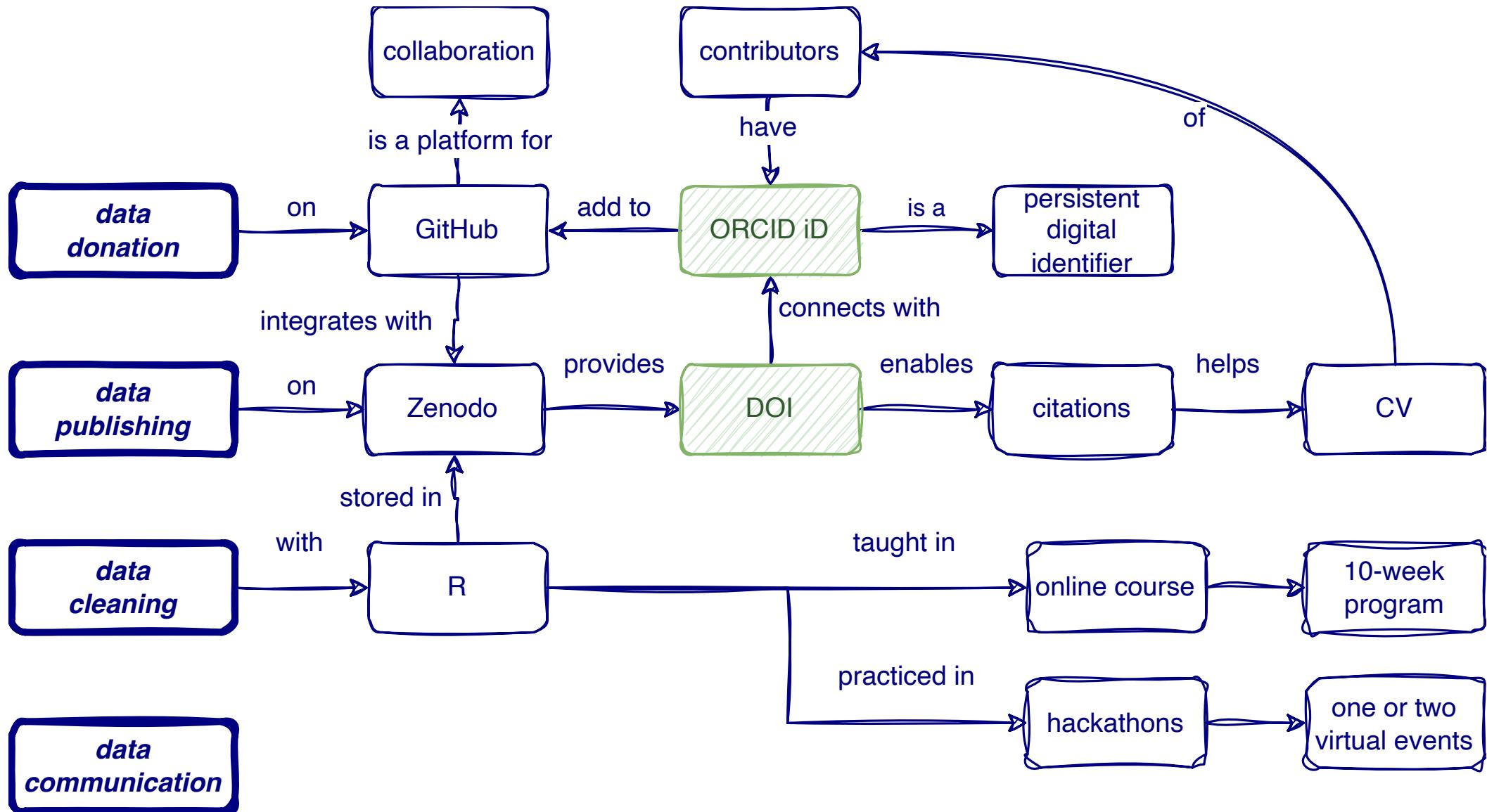


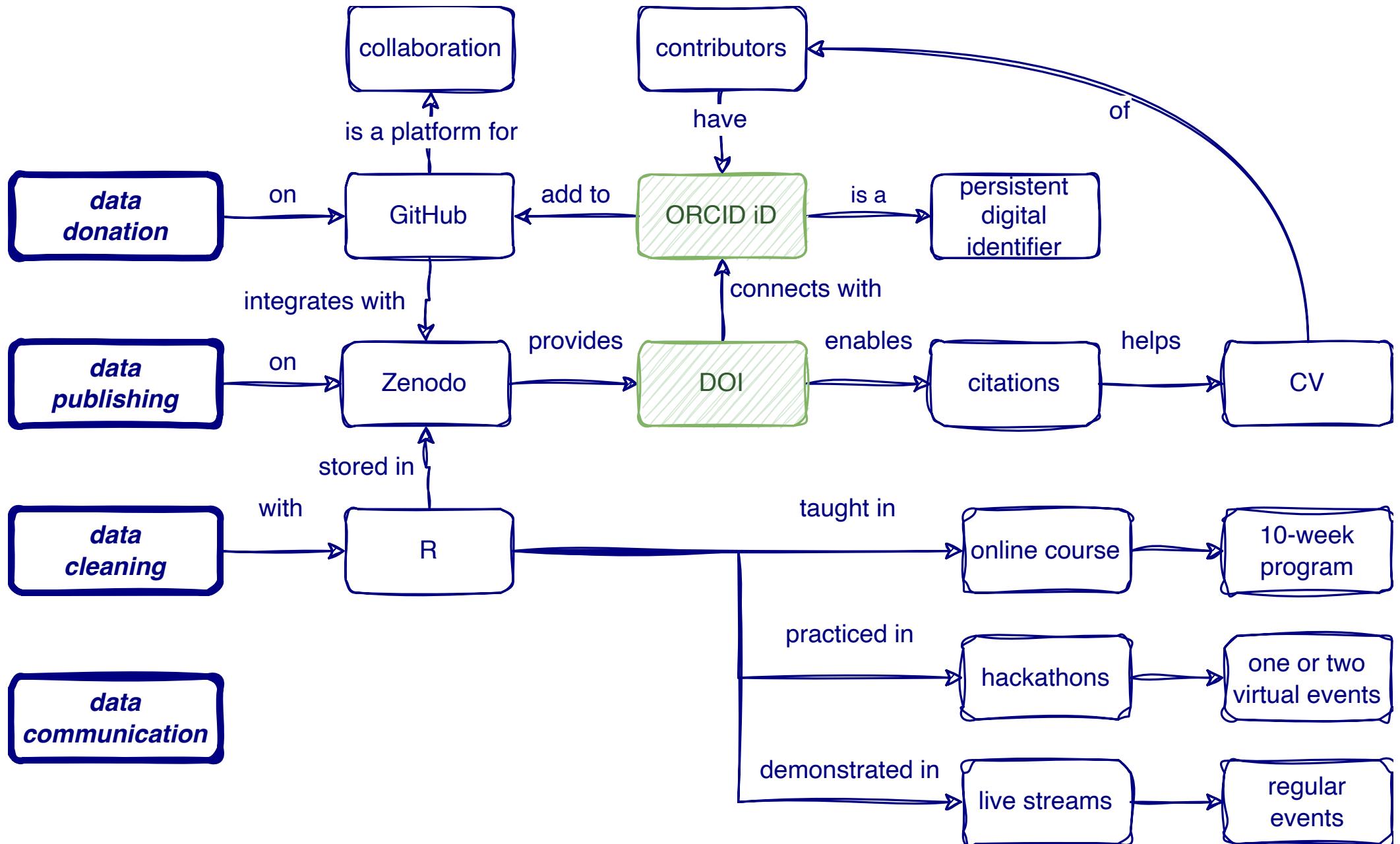


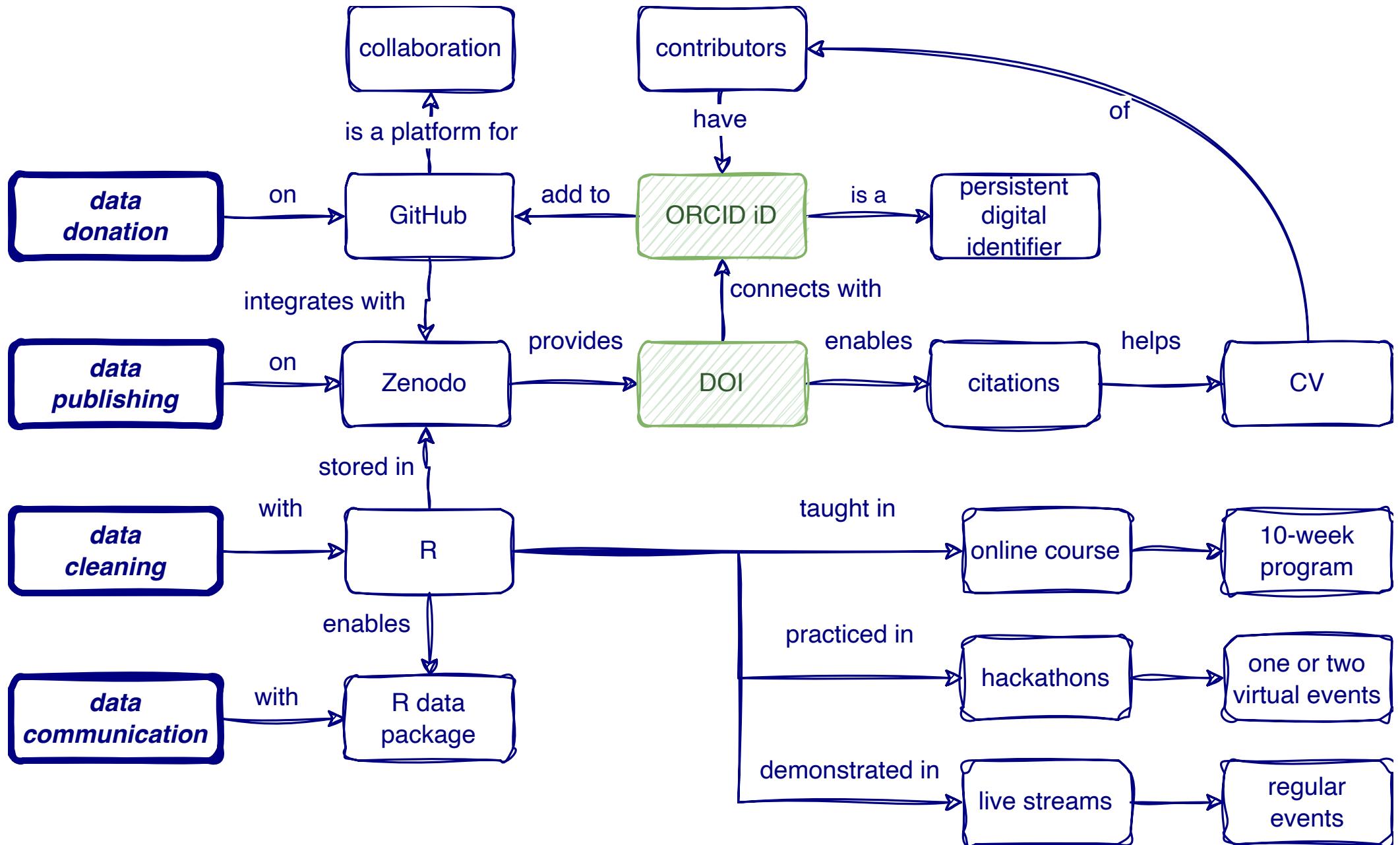


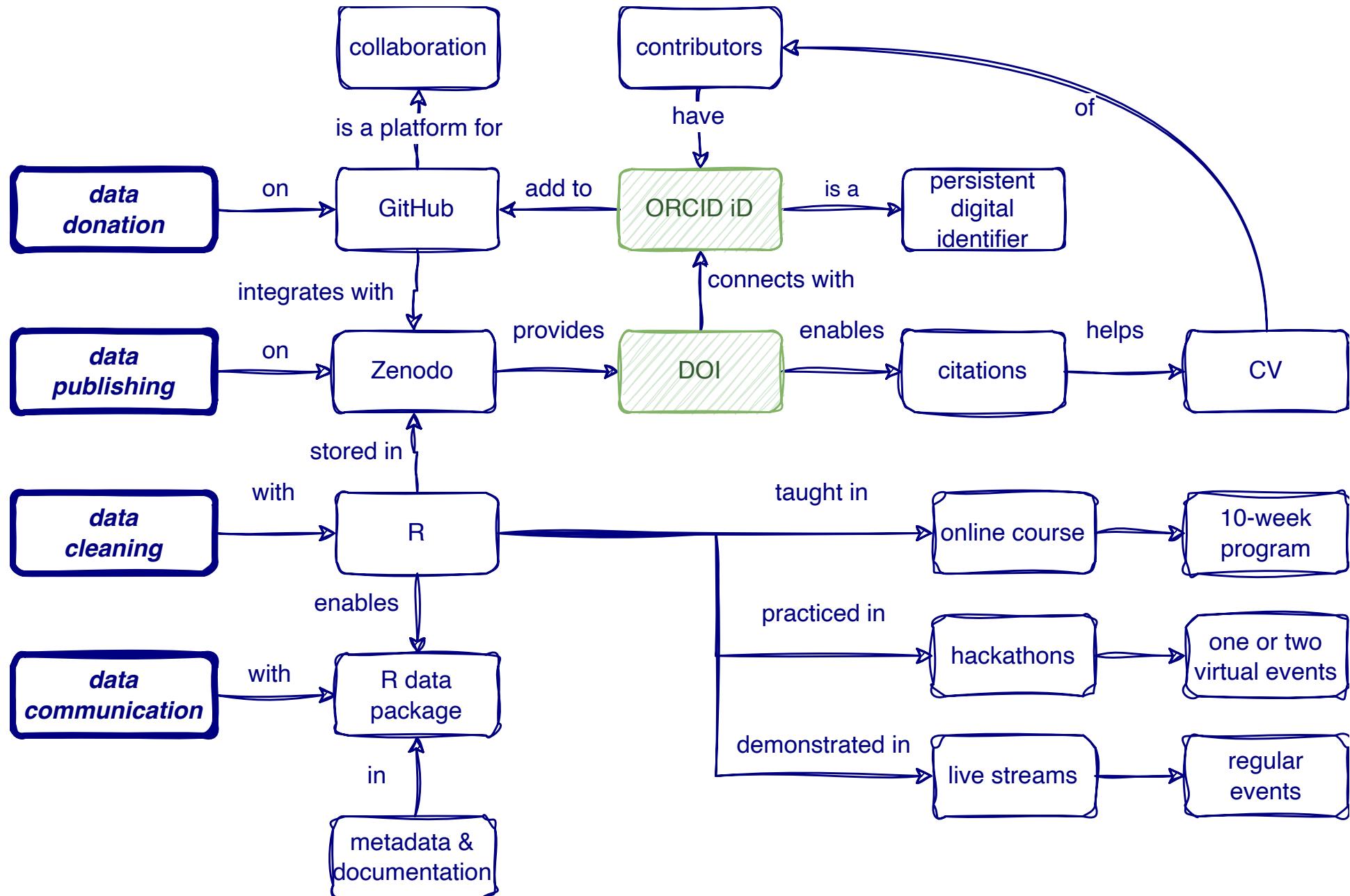


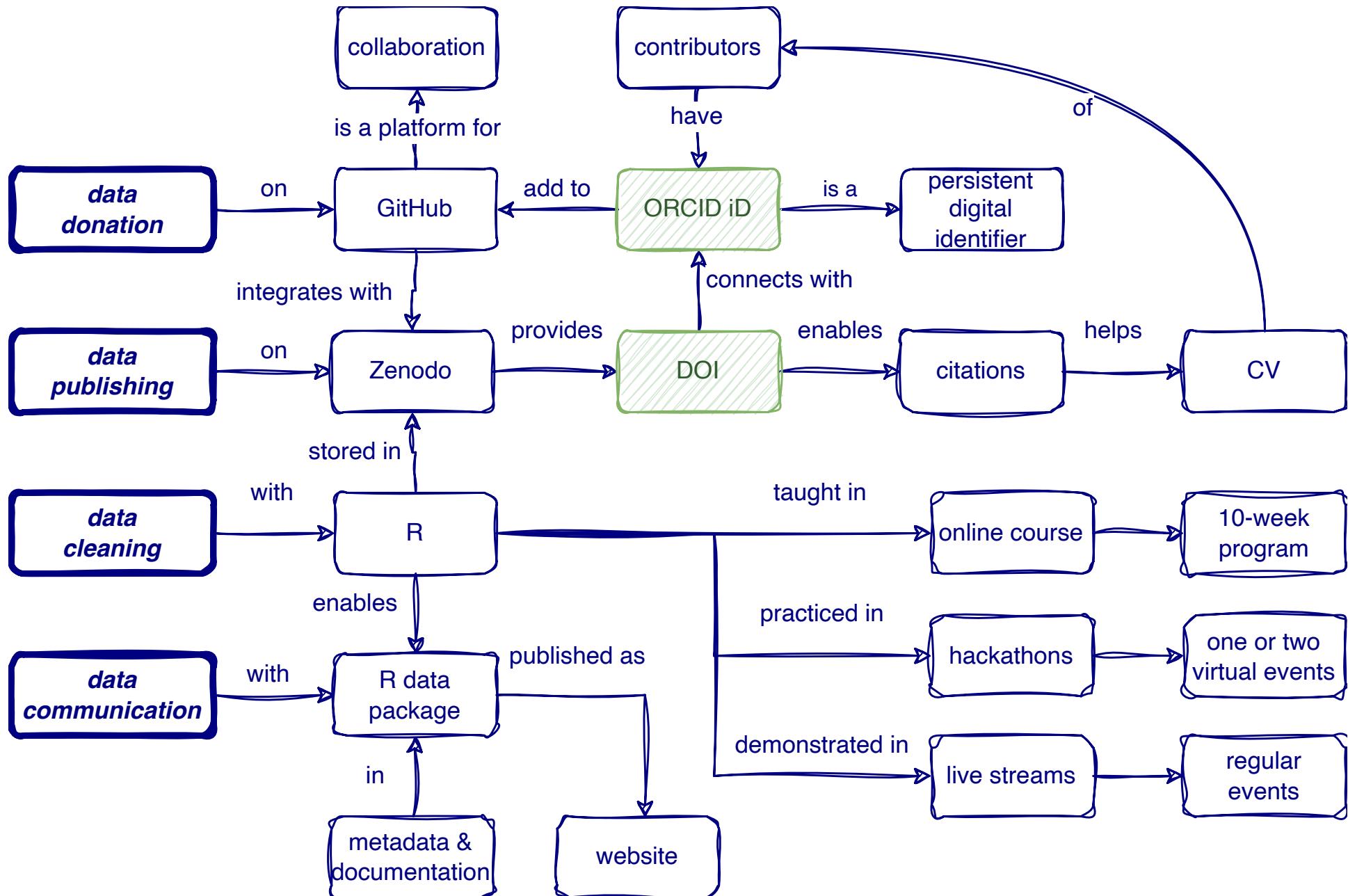


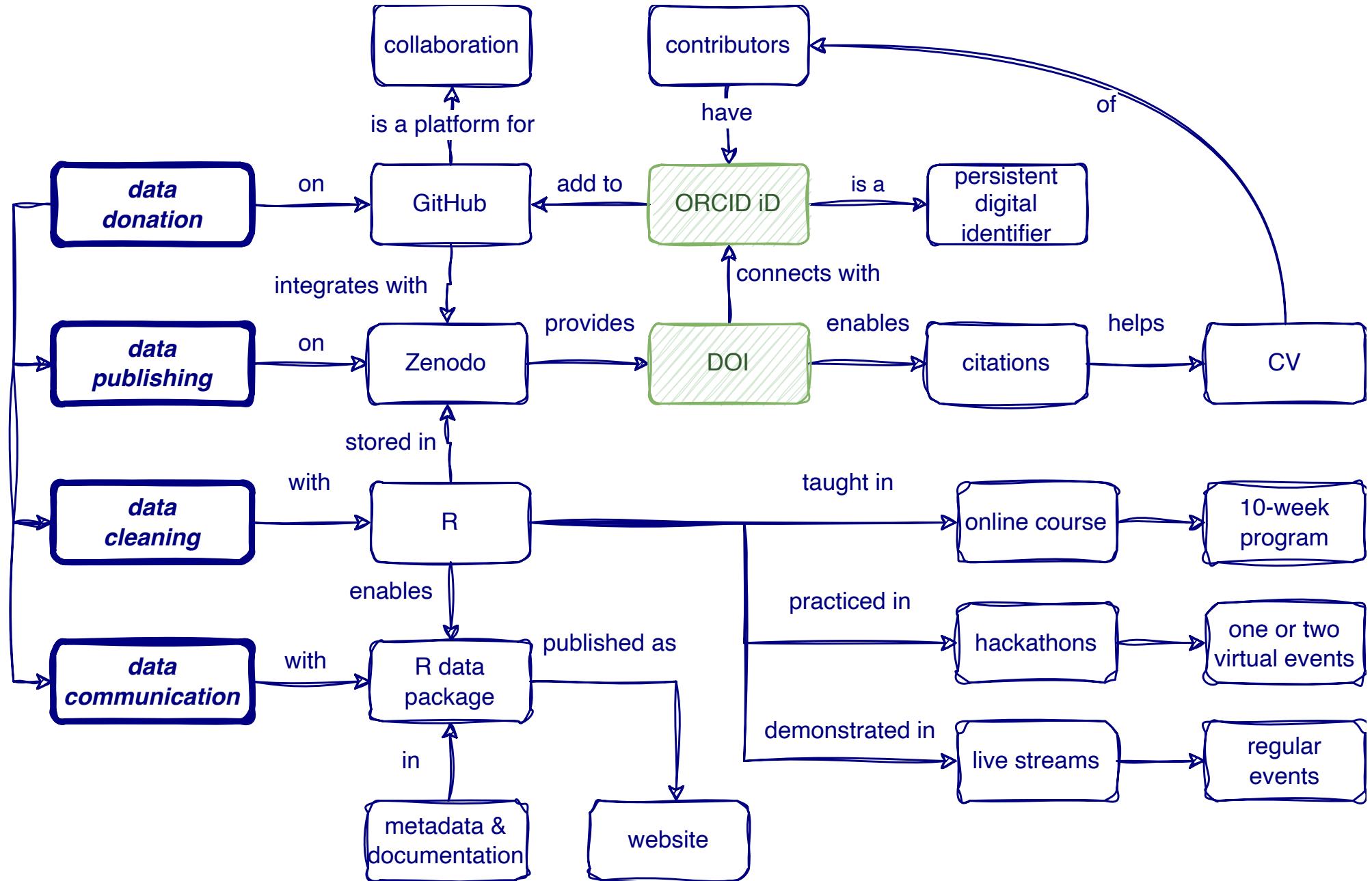












The Product

What does final look like?

The screenshot shows a web browser window with the title bar "Durban (South Africa) Plastic Waste X". The address bar displays the URL <https://global-health-engineering.github.io/durbanplasticwaste>. The page content is for the "durbanplasticwaste" package version 0.1.0. The main navigation menu includes "Reference" and "Articles".

durbanplasticwaste

Overview

This packages combines data collected as part of an MSc. Thesis Project and an MSc. Semester Project conducted in Durban, South Africa. The projects were supported by the Global Health Engineering group at ETH Zurich, Switzerland.

Installation

You can install the development version of durbanplasticwaste from [GitHub](#) with:

```
# install.packages("devtools")
devtools::install_github("Global-Health-Engineering/durbanplasticwaste")
```

Alternatively, you can download the individual data sets as a CSV or XLSX file from the table below.

dataset	CSV	XLSX
litterboom_counts	Download CSV	Download XLSX

Projects

MSc. Thesis Project

Evaluating the potential of Extended Producer Responsibility returns for a small local waste collection company
MSc. Thesis Project - Evaluating the potential of Extended Producer Responsibility returns for a small local waste collection company in Durban, South Africa

License

[Full license](#)
[CC BY 4.0](#)

Citation

[Citing durbanplasticwaste](#)

Developers

Raúl Bergen
Author

Lars Schöbitz
Maintainer

Chiara Meyer-Piening
Author

Global Health Engineering
Funder

[More about authors...](#)

Dev status

DOI [10.5281/zenodo.7708756](https://doi.org/10.5281/zenodo.7708756)

Engage

Our channels

One-way communication

- Website: openwashdata.org
- Newsletter:
buttondown.email/openwashdata

Two-way engagement

- Instant messaging **TBD**: Slack, Discord, Matrix
- Submit ideas:
github.com/openwashdata/data/issues
- Social media **TBD**: Twitter or Mastodon

Events

- **Live coding stream:** Twitch (regular)
- **Hackathon:** Online platform (one or two)
- **Workshop:** (Online) conferences (one or two)
- **Online course:** 10-weeks (one or two)

For whom?

Learner personas

persona	in brief	domain knowledge	programming knowledge	contribution motivation
Palesa	Pit emptying business owner that is tired of others asking her for her business data.	competent	novice	low
Yua	PhD student that wants to use her programming expertise to support the community.	novice	expert	high
Mandla	Master's student who wants to learn how to use R for data analysis and git version control.	competent	competent	high
Asim	Senior Researcher with a few years left to retirement who wants to share his career's worth of data with as little effort as possible.	expert	novice	low

Goals

Goals (by August 2024)

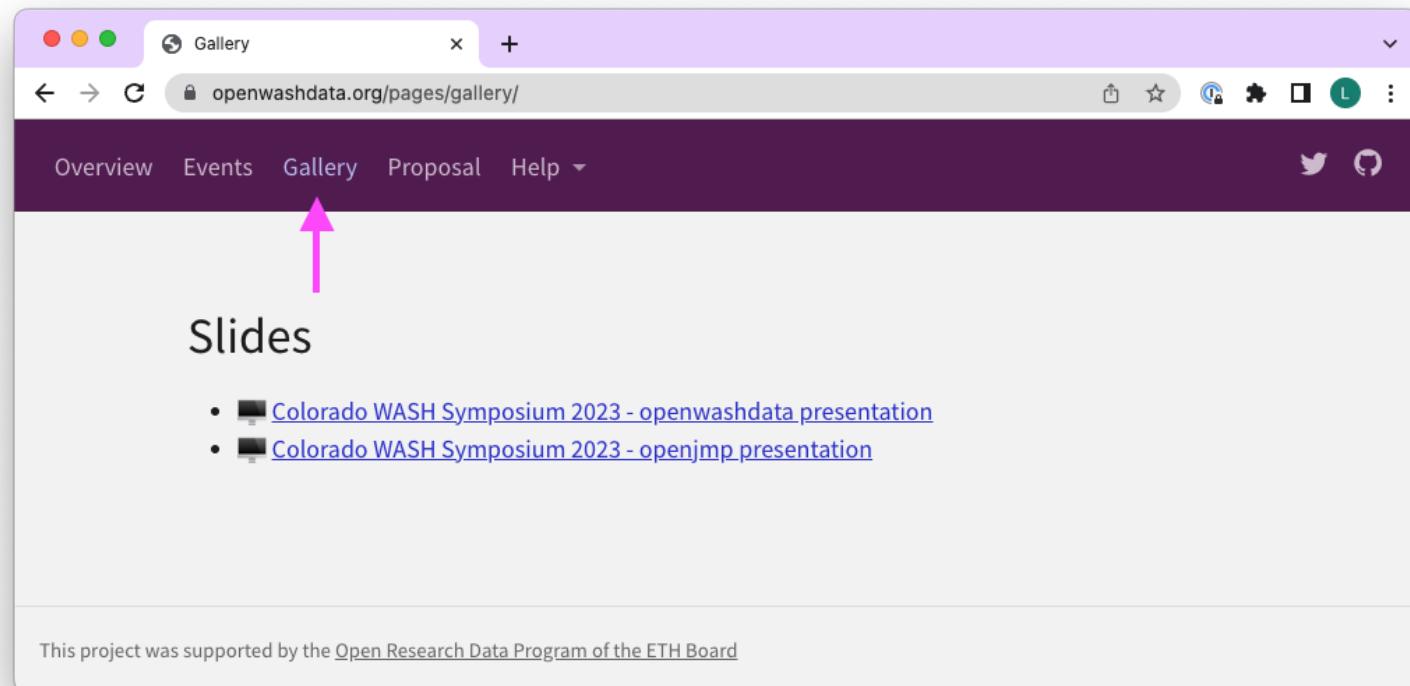
- **Newsletter:** 500 subscribers
- **Website:** 30 daily visits
- **Data:** 50 R data packages
- to be defined

openjmp

openjmp - the data and code the behind the JMP WASH estimates

Group Presentation 7 - Friday, 10th March 01:20 to 02:20 MST

Slides on openwashdata.org



Thanks! ☺

Thanks



This project was supported by the Open Research Data Program of the ETH Board.

The slides were created via revealjs and Quarto:

<https://quarto.org/docs/presentations/revealjs/>

You can view source code of slides on GitHub

Or you can download slides in PDF format

This material is licensed under Creative Commons Attribution Share Alike 4.0 International.

References

- Bergen, Raúl, Lars Schöbitz, Chiara Meyer-Piening, Boynton Lin, Elizabeth Tilley, Marc Kalina, Siphiwe Rakgabale, First Name Last Name, and Global Health Engineering. 2023. *durbanplasticwaste: Durban (South Africa) Plastic Waste Data* (version v0.1.0). Zenodo. <https://doi.org/10.5281/zenodo.7708756>.
- Greene, Nicola, Sarah Hennessy, Tate W. Rogers, Jocelyn Tsai, and Francis L. de los Reyes III. 2021. “The Role of Emptying Services in Provision of Safely Managed Sanitation: A Classification and Quantification of the Needs of LMICs.” *Journal of Environmental Management* 290 (July): 112612. <https://doi.org/10.1016/j.jenvman.2021.112612>.
- Mupinga, Ratidzaishe T, Tanaka M Chatema, Savanna R Perumal, Eva Mary, et al. 2021. “Addendum of Data Related to Drying of Faecal Sludge from on-Site Sanitation Facilities and Fresh Faeces.” *Gates Open Res* 4 (188): 188.
- Soeters, S, P Mukheibir, and J Willetts. 2021. “Treatment Technologies in Practice: On-the-Ground Experiences of Faecal Sludge and Wastewater Treatment.”

