openwashdata

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

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Global Health Engineering

October 11, 2023

https://openwashdata.org/pages/gallery/slides/

Hello! 

https://openwashdata.org/pages/gallery/slides/

Lars Schöbitz

- Environmental Engineer
- Open Science Specialist at Global Health Engineering
- RStudio certified instructor for Data Science with R

My role - Open Science Specialist

- research data management
- reproducible workflows
- mindset for Open Science
- research communication
- teaching data science tools
- proposal writing

openwashdata community

https://openwashdata.org/pages/gallery/slides/

openwashdata community

Vision

An active global community that applies FAIR principles (Wilkinson et al. 2016) to data generated in the great water, sanitation, and hygiene sector.

Mission

Empower WASH professionals to engage with tools and workflows for open data and code.

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

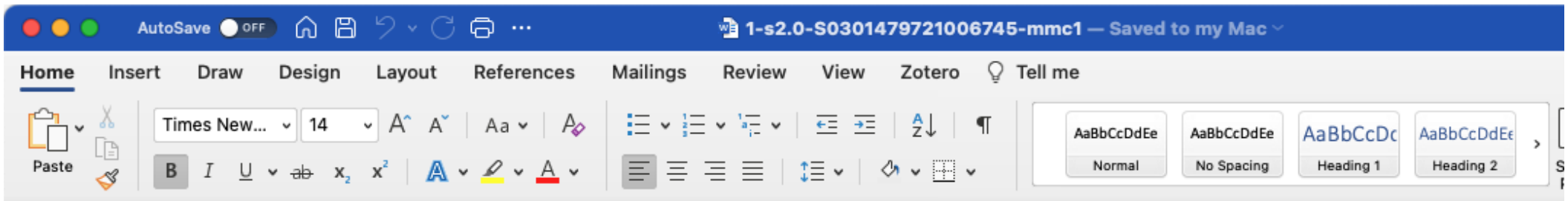

Table 1. The number of onsite sanitation facilities alphabetized by country per Service Type. The Service Type Density is calculated by dividing the population using country population. Thus, the Service Type Density covers users of sewers, onsite facilities, and open defecators. The number of facilities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

	Mechanized				Non-Mechanized				Unemptiable				
Country	No. of Facilities	Service Type Density	Urban	Rural	No. of Facilities	Service Type Density	Urban	Rural	No. of Facilities	Service Type Density	Urban	Rural	No. of Facilities Required
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

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PDF reports

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

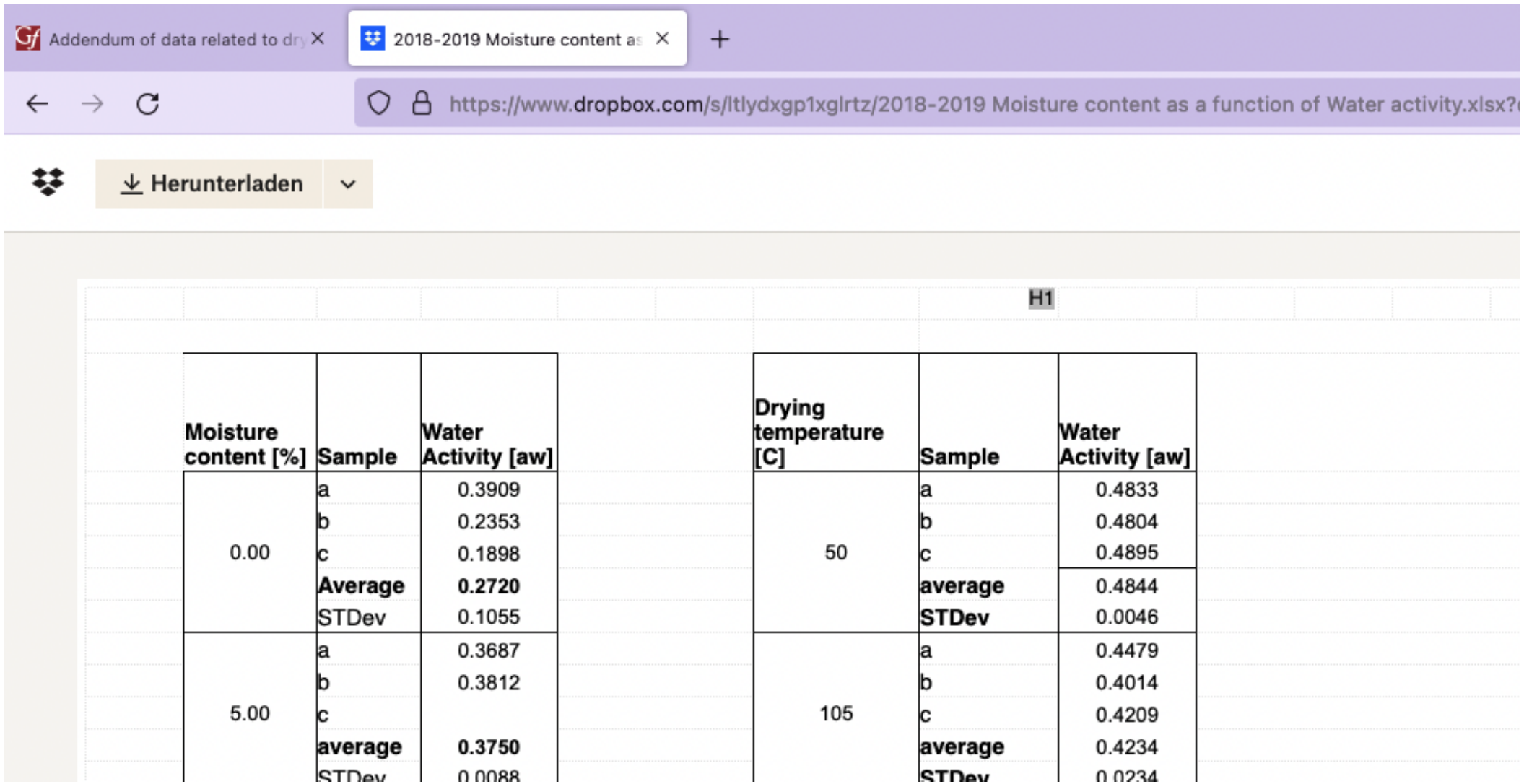
Parameter	Inlet	Outlet
pH	6, 45-7, 88 pH	7, 12-7, 61 pH
Total suspended solids, TSS	340-8933, 33 mg/L	22, 5-84, 29 mg/L
Biochemical oxygen demand, BOD_5	106, 38-646, 82 mg/L	2, 76-69, 79 mg/L
Chemical oxygen demand, COD	687, 9-2780, 37 mg/L	41, 25-127, 67 mg/L
Total organic matter, $KMnO_4$	108, 04-568, 72 mg/L	54, 21-150, 50 mg/L
Ammonia, NH3-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***

General information	
Type of data	Composition
Place of experimentation	Pollution Research Group, University of KwaZulu-Natal (South Africa)
Dates of the experiments	2018-2019
Feedstock	
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



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	
	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

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The Journey

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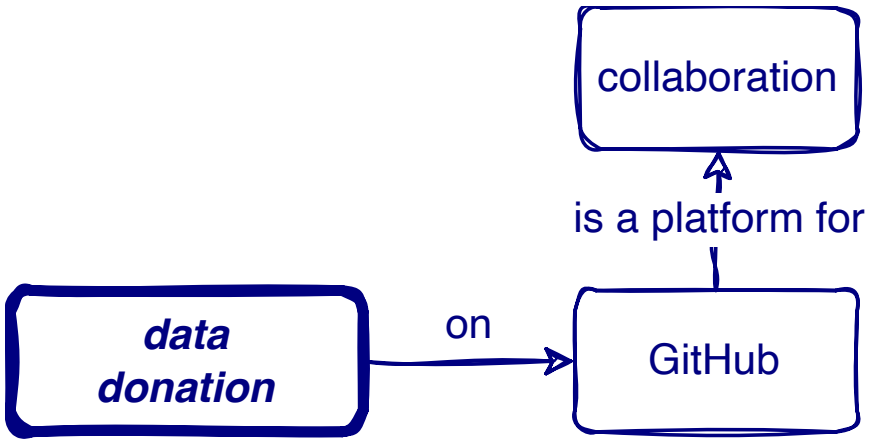
data donation
data publishing
data cleaning
data communication



data publishing

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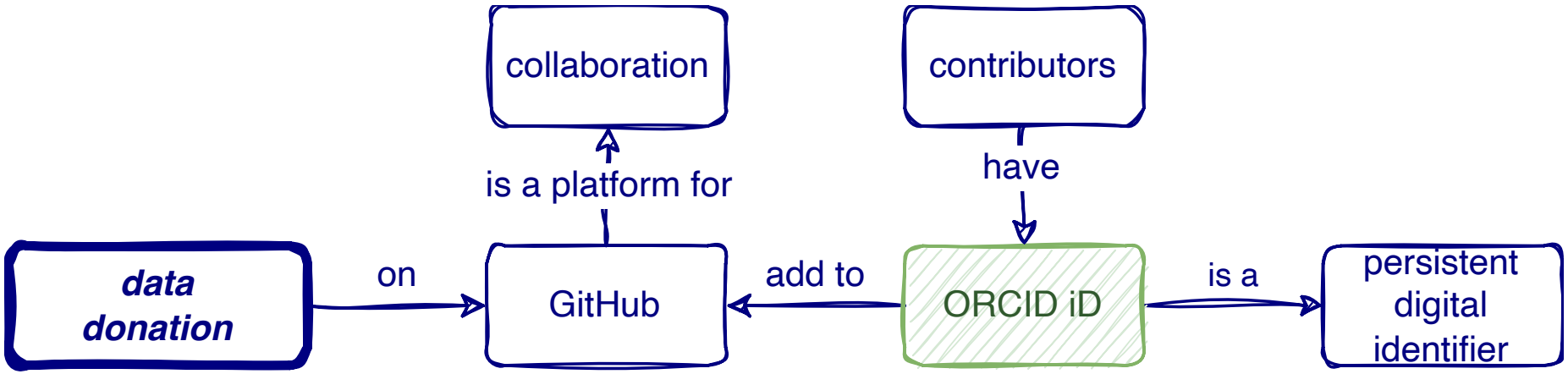

data publishing

data cleaning

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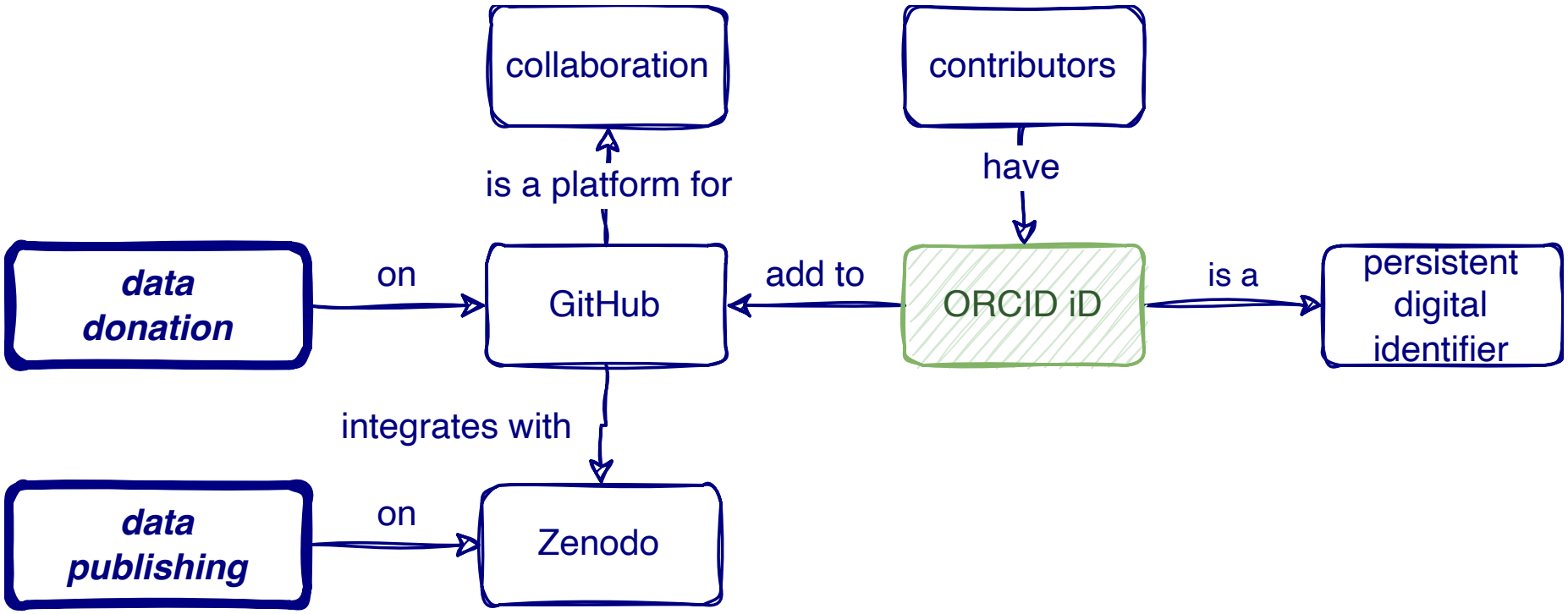
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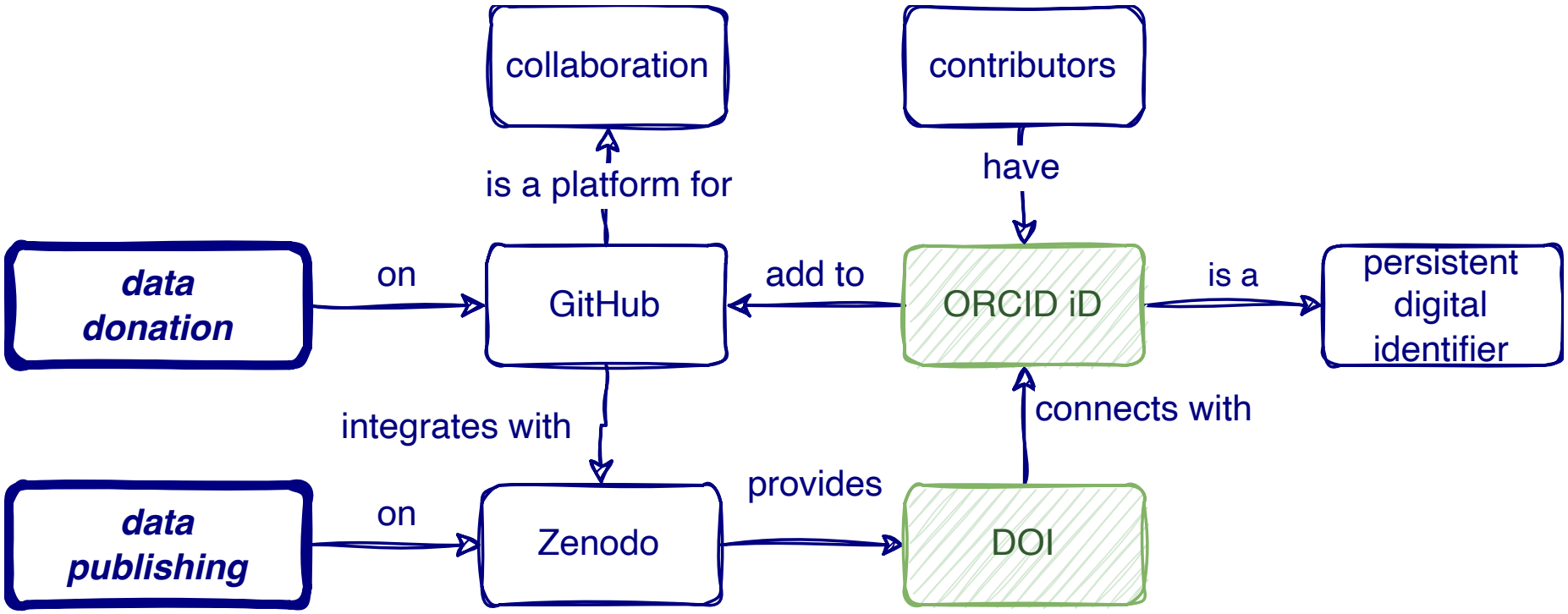
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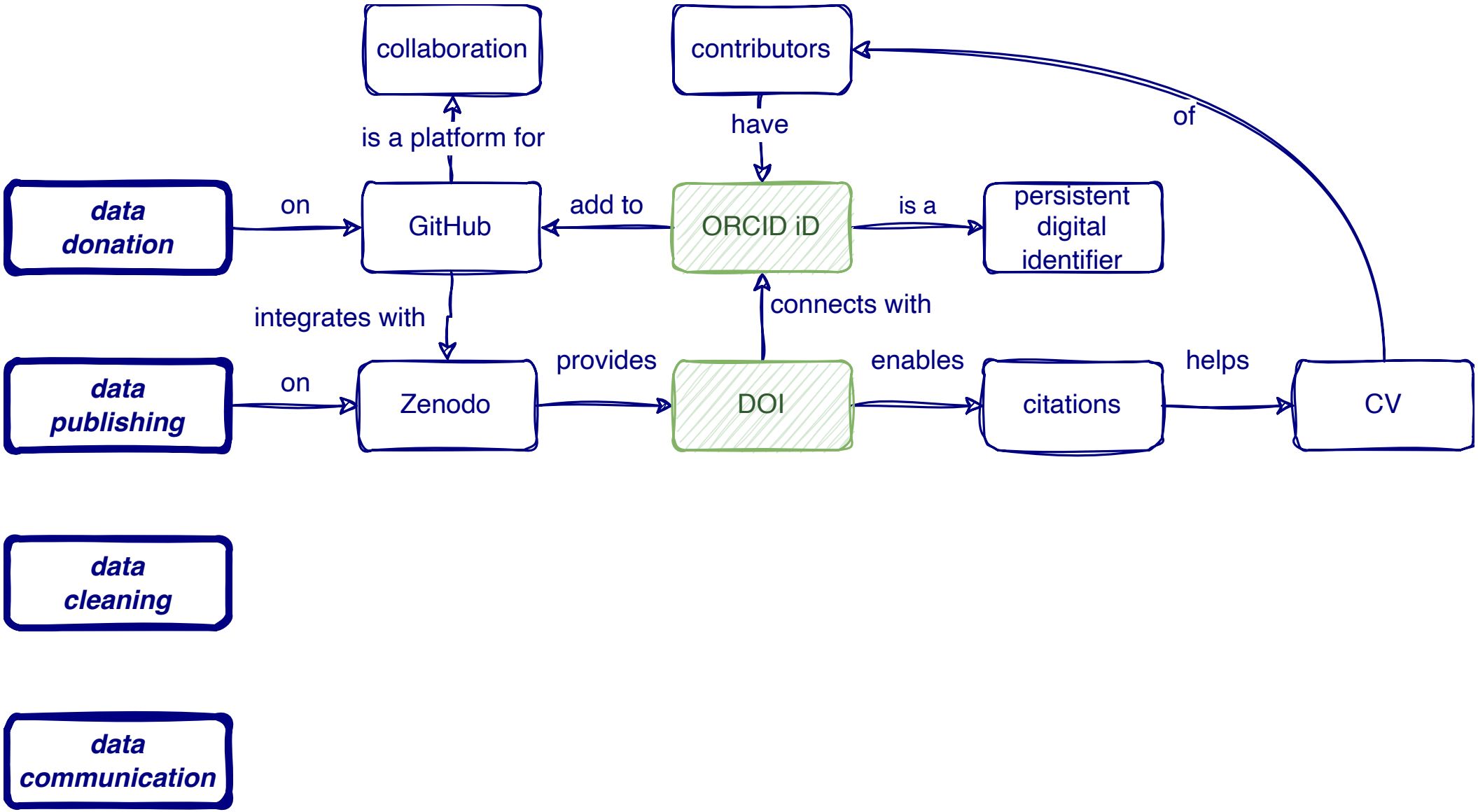
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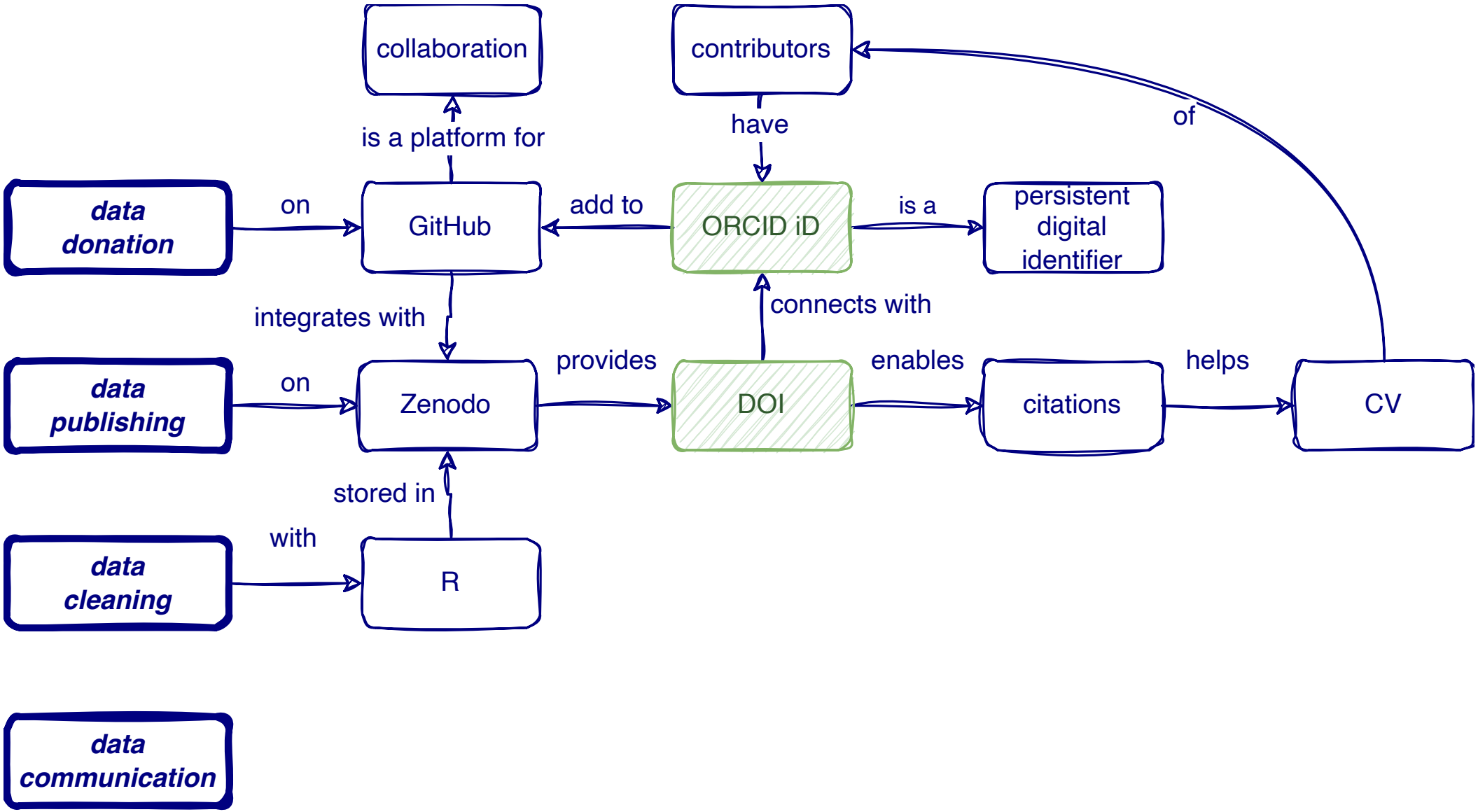
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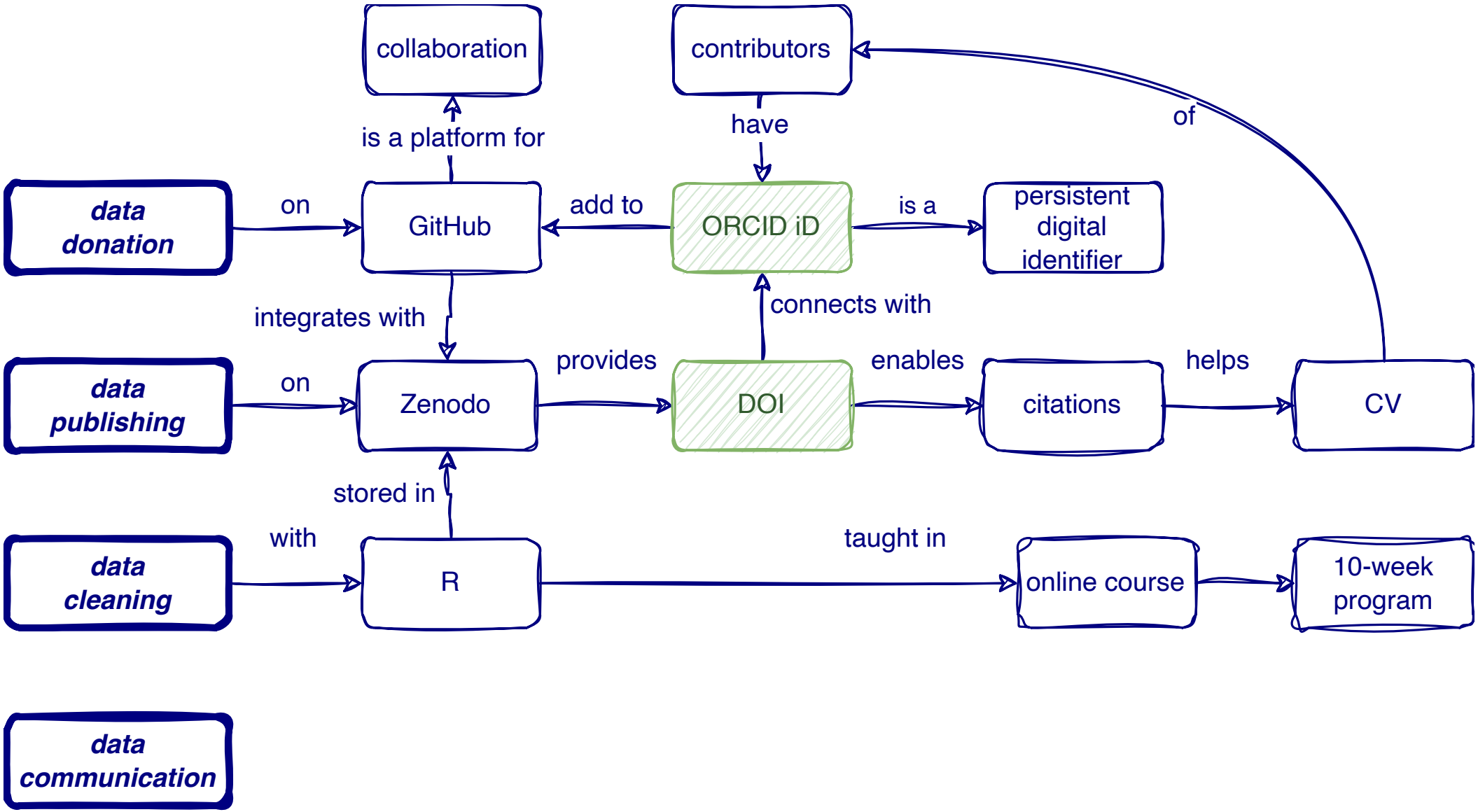
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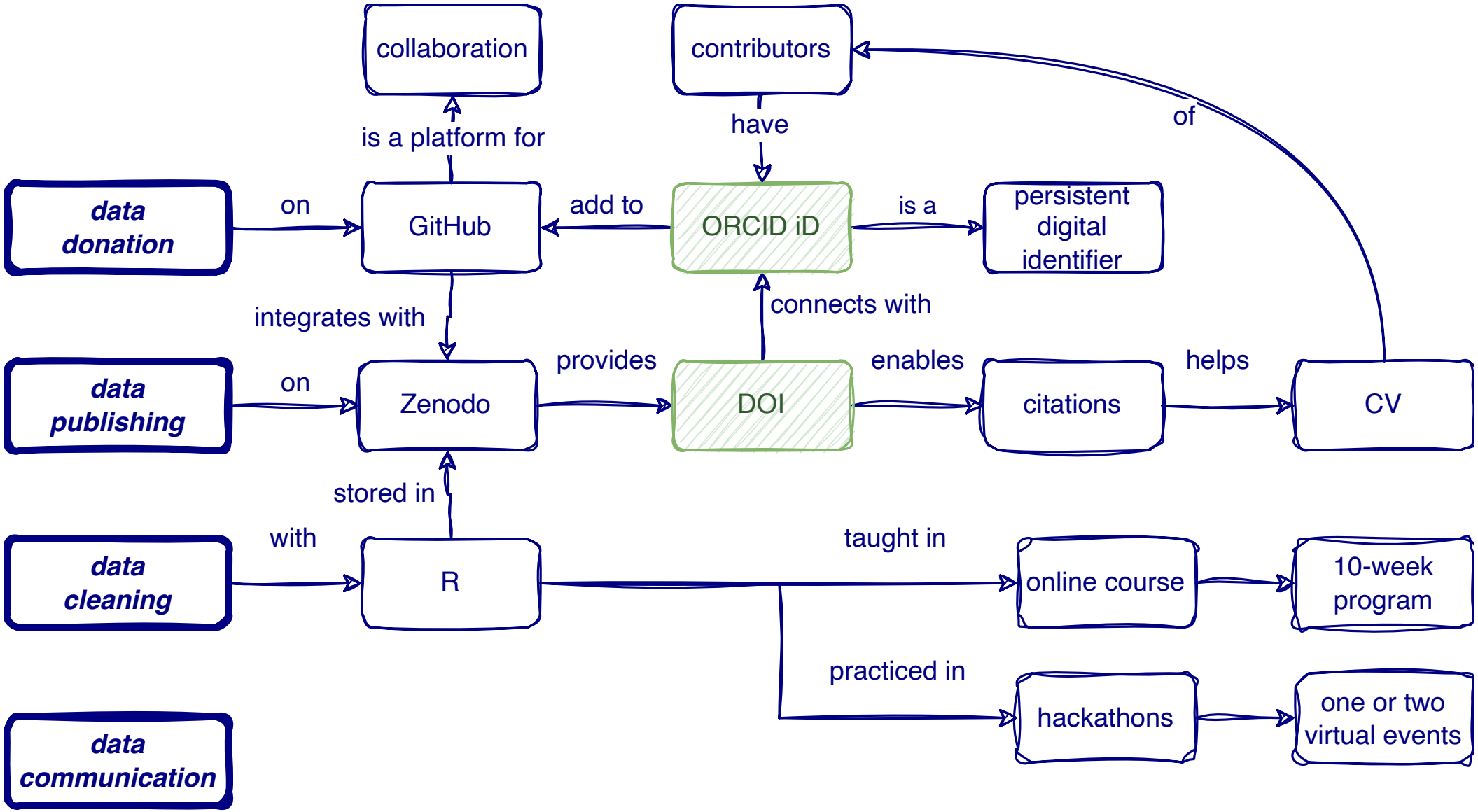
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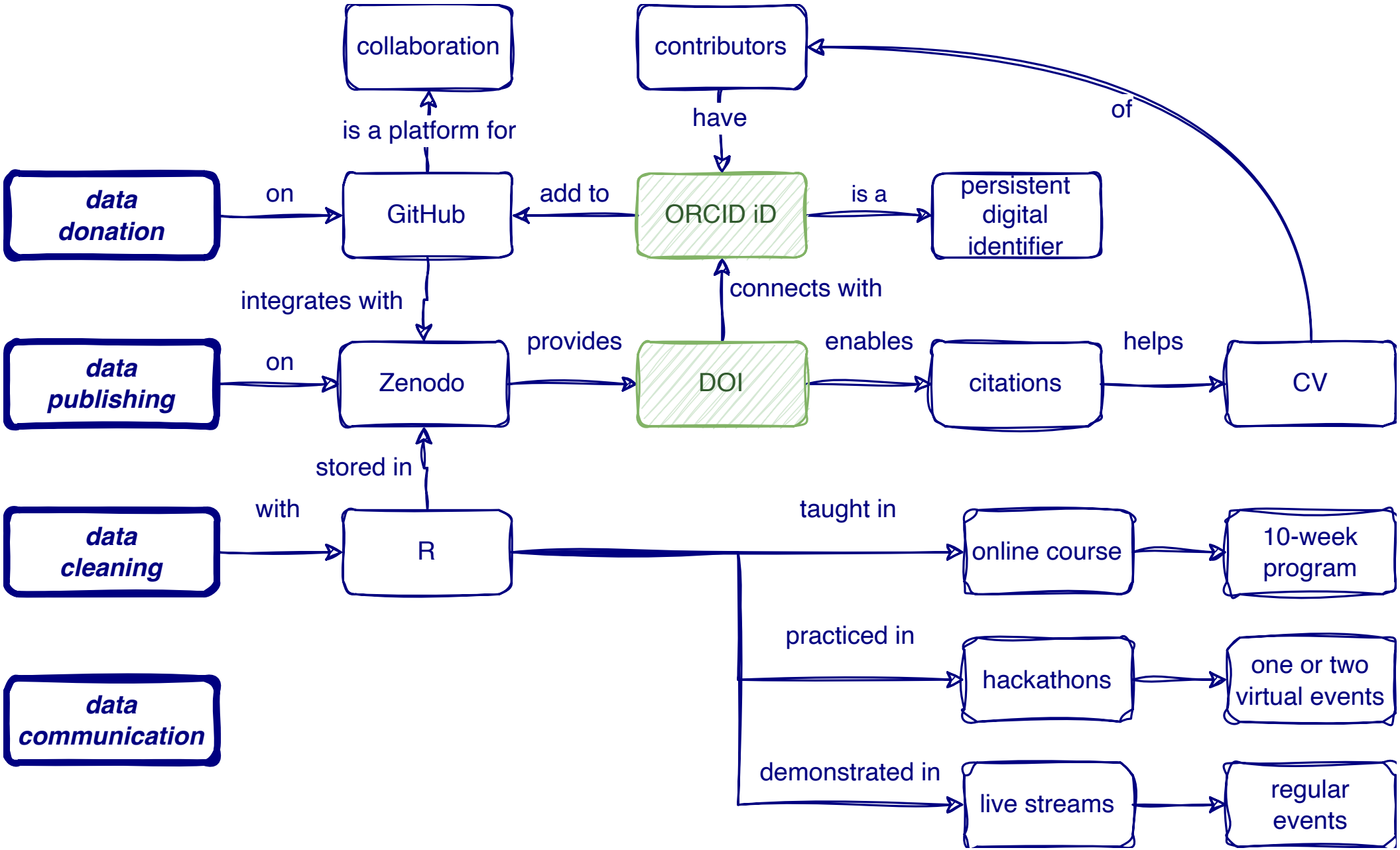
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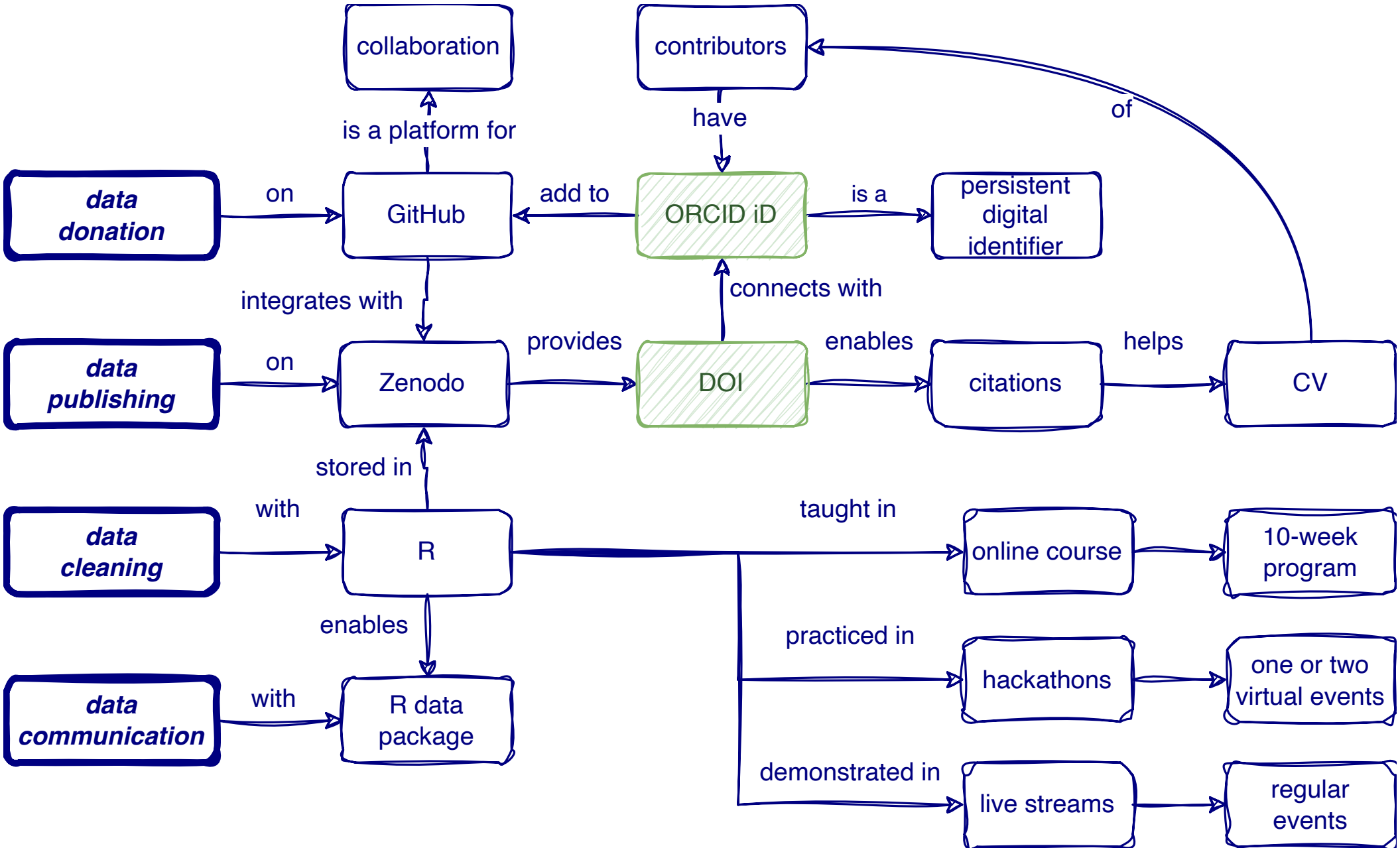
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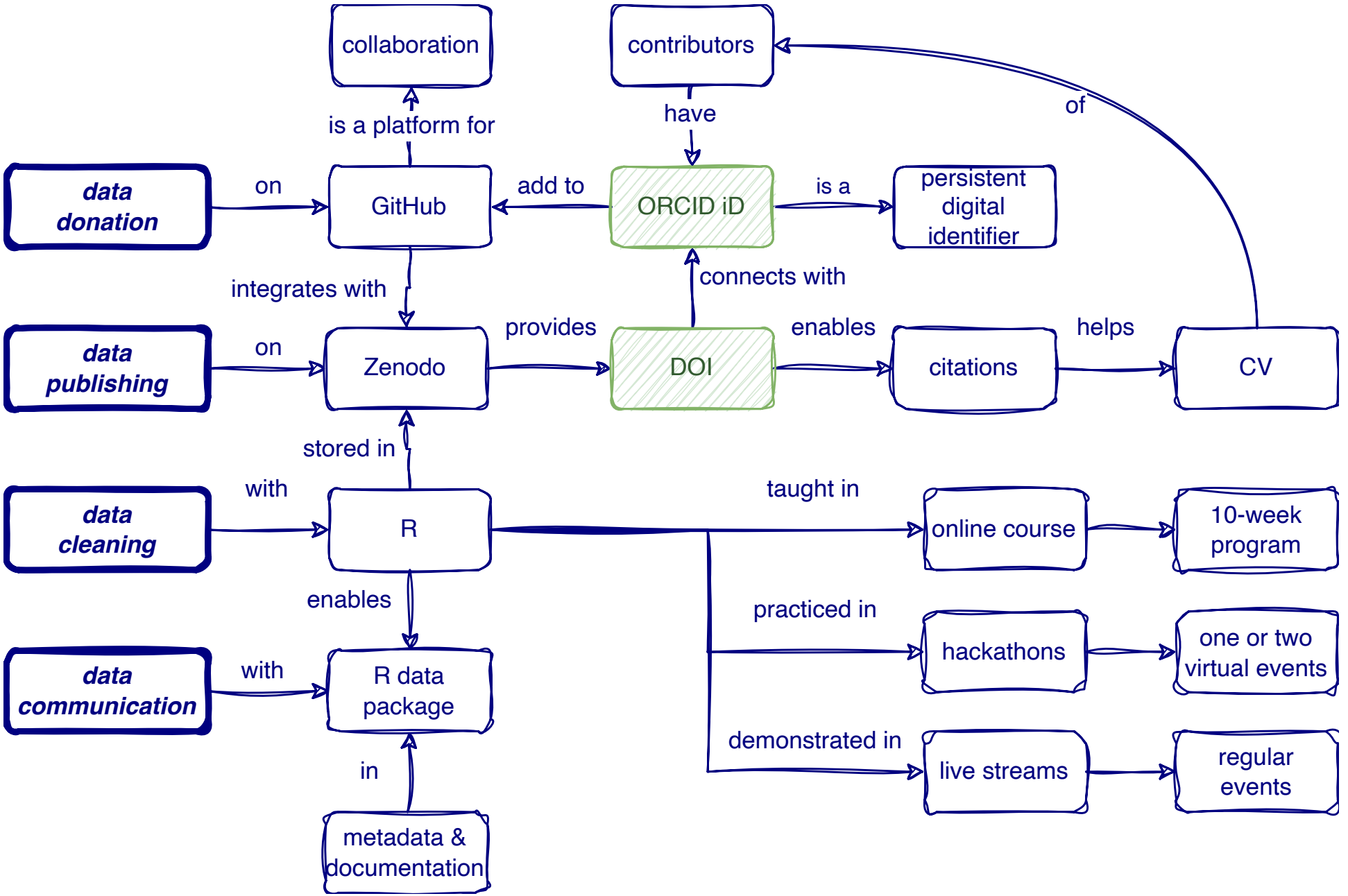

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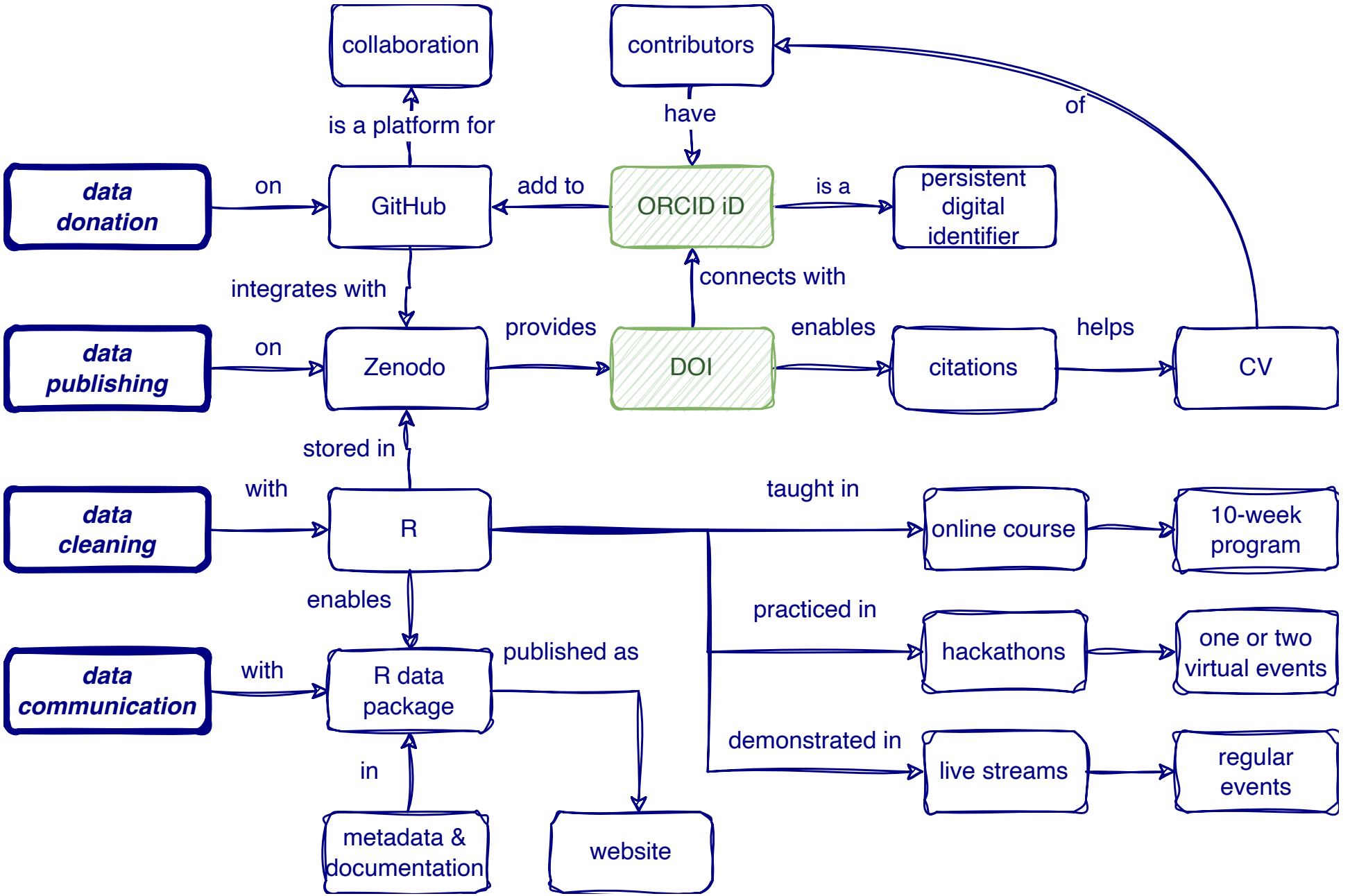

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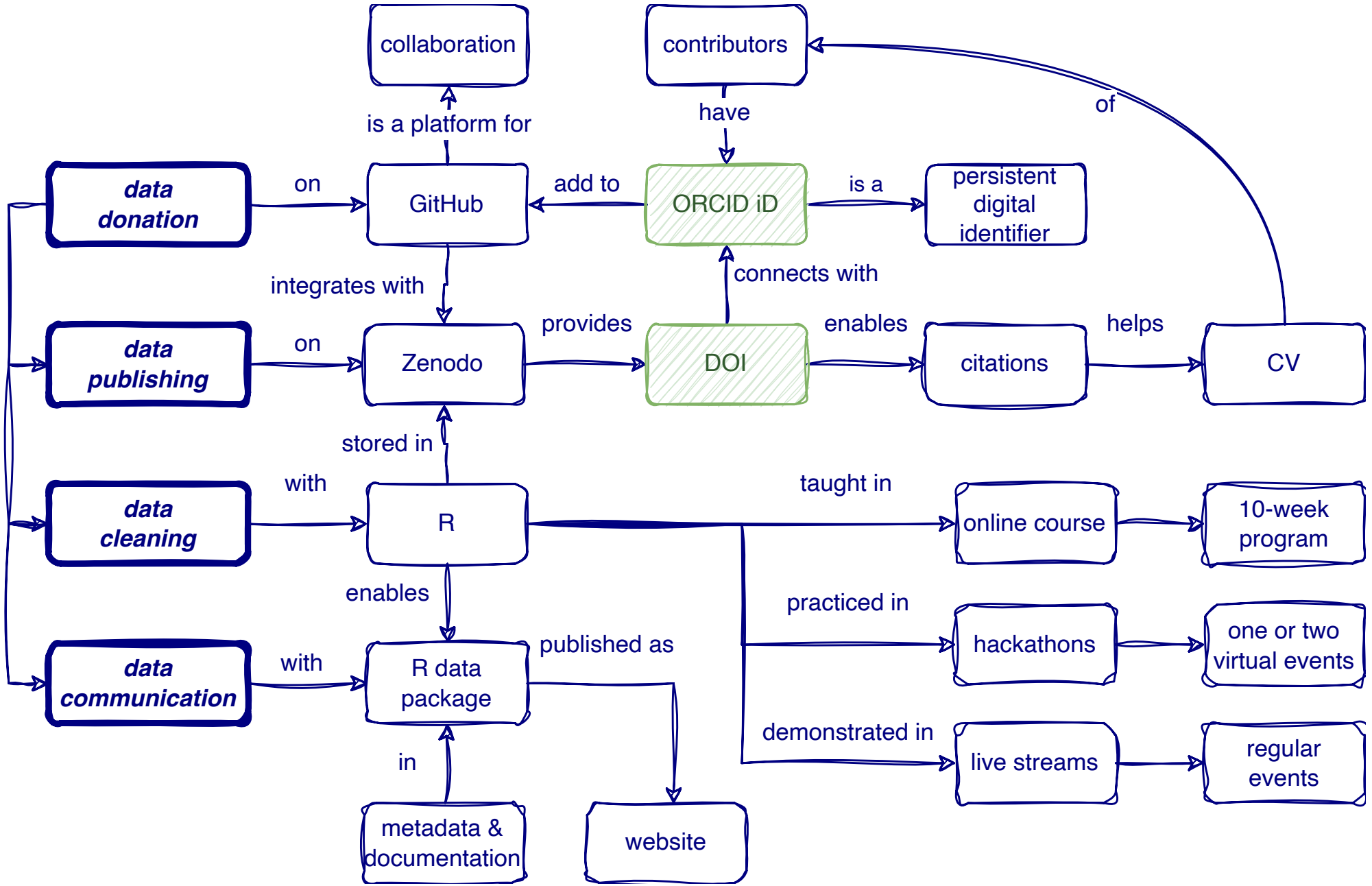

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The Product

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What does final look like?

https://openwashdata.org/pages/gallery/slides/

Locations of Public Waste Skips in B

https://openwashdata.github.io/wasteskipsblantyre/

wasteskipsblantyre 0.0.2 Reference Articles Search for

wasteskipsblantyre

The goal of wasteskipsblantyre is to provide a dataset for research and planning of solid waste management in Blantyre, Malawi. The dataset includes locations of the publicly accessible waste skips in in the city. The data was collected in 2021 and has not been updated since.

Links

GitHub repository

Citation

Citing wasteskipsblantyre

Developers

So *who* does the work?

Mabvuto Yesaya
Author

Limbani Msuku
Author

Lars Schöbitz
Contributor

Elizabeth Tilley
Author

Mian Zhong
Contributor

Sebastian Camilo Loos
Author, maintainer

Thanks all!

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Engage

https://openwashdata.org/pages/gallery/slides/

Our channels

One-way communication

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

Two-way engagement

- Instant messaging: Element base Matrix Chat | openwashdata-lobb ghe-open
- Data donation ideas: github.com/openwashdata/data/
- Social media: Global Health Engineering LinkedIn

course: data science for openwashdata

ds4owd-001.github.io/website/

Zoom for 10 modules over 15 weeks at the following times:

- Start: 31st October 2023 - 2 pm to 4:30 pm CET
- End: 6th February 2024 - 2 pm to 4:30 pm CET

This course is:

- free
- provides participants with a certificate
- using exclusively tools that are free and open source
- offers 1:1 coding support between lectures and beyond the course

Goals

Goals (by August 2024)

- **Newsletter:** 500 subscribers
- **Website:** 30 daily visits
- **Data:** 50 R data packages
- **Course:** 20 participants successfully complete the first course

Funding

ETH ORD Program

https://openwashdata.org/pages/gallery/slides/

- Open Research Data Program of the ETH Board: https://ethrat.ch/en/eth-domain/open-research-data/
- ORD 1st Explore (150k), our funded proposal: https://openwashdata.org/pages/gallery/proposal/
- ORD 2nd Contribute (30k), our funded proposal: https://github.com/openwashdata-dev/proposal-eth-ord-scheme-contribute/blob/main/proposal-eth-ord-scheme-contribute.md
- ORD 2nd Explore (150k) guidelines, due 29th February 2024: https://ethrat.ch/wp-content/uploads/2023/10/Application-Guidelines_TrackA_Explore_2nd_call_FINAL.pdf
- ORD 6th Contribute (30k) guidelines, due 12th December 2023: https://ethrat.ch/wp-content/uploads/2023/10/Application-guidelines_TrackC-Contribute-projects-6th-call-FINAL.pdf

ETH ORD Program

> We draw your attention to the fact that the Contribute calls are suitable for young researchers (PhD and postdoc) who would like to add value to their data within their projects.

Open Science Working Group Email (2023-10-05)

Open Science Tools - HS23

https://openwashdata.org/pages/gallery/slides/

Open Science Tools - HS23

Keen to learn the use of Open Science tool for collaborative scientific writing?

Check out: ost-hs23.github.io/website/syllabus

- Day 1: 17th October 2023 - 08:30 am to 12:30 pm CET
- Day 2: 24th October 2023 - 08:30 am to 12:30 pm CET
- ECTS: 0.5

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

References

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.”

Wilkinson, Mark D., Michel Dumontier, IJsbrand Jan Aalbersberg, Gabrielle Appleton, Myles Axton, Arie Baak, Niklas Blomberg, et al. 2016. “The FAIR Guiding Principles for Scientific Data Management and Stewardship.” *Scientific Data* 3 (1). https://doi.org/10.1038/sdata.2016.18.

Yesaya, Mabvuto, Limbani Msuku, Elizabeth Tilley, and Sebastian Camilo Loos. 2023. “Wasteskipsblantyre: Locations of Public Waste Skips in Blantyre, Malawi.” https://doi.org/10.5281/zenodo.6470427.

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