

# What type of mathematician are you?

with respect to research data



Let's start simple:

How much research data do you produce per year?

less than 1 GB and 10k Lines of Code  
more than 1 GB or 10k Lines of Code  
none

MaRDI defines research data as all digital and analog objects that are generated or handled in the process of doing research.

For mathematics this includes papers, proofs, formulae, domain-specific research-software packages and libraries, programmes, scripts, collections of mathematical objects, mathematical models, ...

Whenever you create or edit any of these, you are producing mathematical research data!

okay, let me rethink  
I really don't

How long would it take you to reuse research data you created half a year ago?

less than 1 hour  
between one hour and one day  
more than 1 day

Do you augment your research data with meta-data and do you document your code?

yes  
no  
my documentation is intended only for me

Do you assign licences to your research data?

yes  
no

How confident are you that you can continue like this?

very  
not very

Do you publish your research data in a trustworthy repository or database?

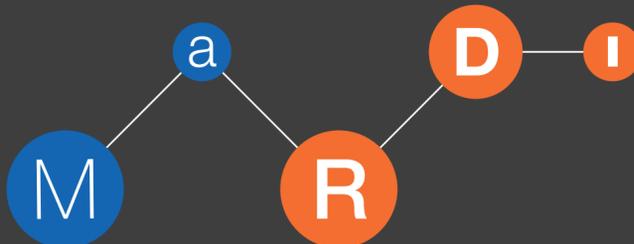
yes  
no  
what do you mean by that?

Trustworthy repositories and databases for mathematics

Research-data repositories and databases are places to store and publish your research data. Ideally, these are hosted by a trustworthy institution, provide long-term storage, require adequate documentation, and can issue permanent identifiers like DOI enabling findability and citation. In general, subject databases are ideal for data that are structured with math specific data and meta-data formats and repositories used for data that is unstructured. Look out for the CoreTrustSeal and mentioning of the FAIR Principles as good indicators of a trustworthy repository. An exemplary choice is Zenodo, the open and generic repository hosted by CERN. Check your institution's own repositories as well.

Why not?

I have no time  
I have my own system  
I don't have to



Mathematical Research Data Initiative

Now is a good time to start.

Guardian of the Data Vault

You produce a moderate amount of research data that seems in pretty good shape. But as long as you do not publish all of your material with a licence attached, others won't know whether (and how) they are allowed to reuse your results. Licences are not as complicated as you might think they are; in most cases, an open licence like Creative Commons for research data, the MIT licence for code in particular work well.

Only a Genius can master Chaos

Just so you know there is a MaRDI helpdesk to address your questions concerning mathematical research data, if chaos does overwhelm you eventually.

For educational purposes, we are also very happy to collect your research-data scary tales to share with the community. You are most welcome to tell us more about your approach via email [community@mardi4nfdi.de](mailto:community@mardi4nfdi.de).

Living on an Island

You found a solution that works for you, and that's great. But wouldn't it be nice if doing research did not feel like having to reinvent the wheel over and over again? To painstakingly develop niche solutions with no general approach? Metadata standards and guidelines are currently being developed to facilitate the hand-over of knowledge and research data in mathematics. Check out our newsletter to learn more about MaRDI results and topics.

Research Data Lover

It seems you take good care of your research data already, that's amazing!

Check out MaRDI's events to find a community of like-minded people and subscribe to our newsletter to stay up-to-date with the latest developments.  
[mardi4nfdi.de/events](http://mardi4nfdi.de/events)

Research Data Management Newbie

Until now you haven't spent too much time thinking about research data or about why you need to manage these. Technological progress makes mathematics more and more digital, and the community relies on well documented algorithms, proof assistants, and online libraries to bring the field further ahead. In order to keep an overview and make your own research comprehensible to others, it is a good idea (and good scientific practice according to DFG) to actively manage your research data right from the start of a project. Guidelines on how to do this are currently being collected and developed by MaRDI!

MaRDI is a DFG-funded initiative rooted in the mathematical community, together with you we develop services for all types of research-data mathematicians. Visit our website and sign up to our newsletter.