FAIRsharing content: **databases overview**

Keeping research data safe: for today and for the future

FAIRsharing promotes the **value** of databases, which are a key part of the supporting infrastructure of the **FAIR Principles**

As a trusted source of databases for data and metadata* for all digital objects, incl. datasets, software, and materials across all disciplines, FAIRsharing:

- guides *users* to discover, select and use databases with confidence
- helps *developers* make their databases more visible, more widely adopted and cited
- powers *third party tools* by providing trustworthy content on databases

Databases...

Make (meta)data* management simpler by enabling its **collection**, **preservation**, **sharing** and **access** (in an open or controlled manner) in a **structured** form

Provide services for **humans**, and often also for **machines**, to make data and related descriptors **discoverable** and **searchable**

FAIRsharing categorises databases with three types:

1 Repositories

Also known as primary sources, repositories allow the submission, storage of and access to data

2 Knowledgebases

Also known as secondary databases, knowledgebases synthesise data from a number of other data sources including published literature, often via manual curation

3 Knowledgebases and Repositories

These are resources that have features of both categories

* In FAIRsharing the majority of databases provide **open** access to their content, with various licences and terms of use; a subset offers some kind of **partially open** or **controlled** access, e.g., due to ethical considerations or a paywall

* Where **data** can simply be a piece of information, e.g., observations, a list of measurements, descriptions of certain objects, **metadata** specifies the relevant information about the data, and can be of many types, including descriptive, administrative, and legal

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Find more at
fairsharing.org/educational

FAIRsharing.org
standards, databases, policies

FAIRsharing provides a snapshot of the **dynamic landscape** of databases

1. Tracks their **evolution**
2. Illustrates **relations** with other databases
3. Displays their **implementation** of standards
4. Monitors their **adoption** in data policies and guidelines

Benefits for all

Be familiar with databases at a level appropriate for your needs, e.g.

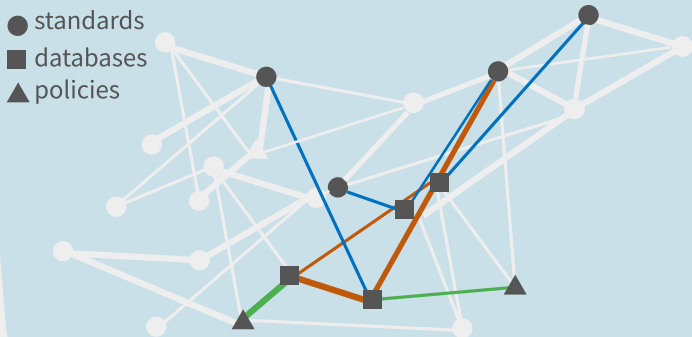
Researchers should have a robust understanding of how to find the right database for accessing relevant data, selecting databases for a Data Management Plan (DMP), and storing their own research data

Trainers, guidance and policy makers should have experience in finding and accessing databases in order to provide examples and appropriate recommendations

Tools and service developers, and data professionals should have a strong grasp of databases as they may need to retrieve data from them to support research projects

FAIRsharing visualises **relationships** among resources, e.g.,

- ***sharing data*** from a primary to a secondary **database** for analysis, data exchange
- ***sharing the same code base*** among **databases** built on the same software
- how **databases** ***implement*** **standards** and are ***recommended by*** **policies**



Navigating the database ecosystem is challenging, high volume of databases in some research areas reflects the dynamic nature of technologies, data types, and needs of the research communities
Discovering a database with the correct combination of attributes for your needs can be difficult, and bear in mind that databases can be:

- **Project-related**: specific for and dependent on project lifespan and funds
- **Institutional**: limited to the work of a particular institute
- **National**: focused on the country's research outputs
- **Global**: available generally for worldwide data
- **Generalist**: for all types of digital objects, from all disciplines
- **Discipline-specific**: for one or more research areas
- **Data-specific**: for one or more types of digital objects

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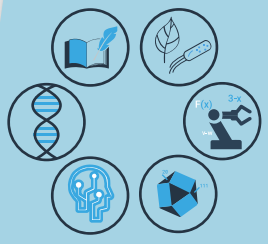
FAIRsharing displays the intended use of each database



Subject tags indicate the specific scientific significance, or domain, e.g., *Neuroscience*, *Linguistics*

Subject agnostic is used to describe standards that are suitable for all research areas

Domain tags indicate the specific relevance to technology or protocol, e.g., *magnetic resonance imaging*, *literature mining*

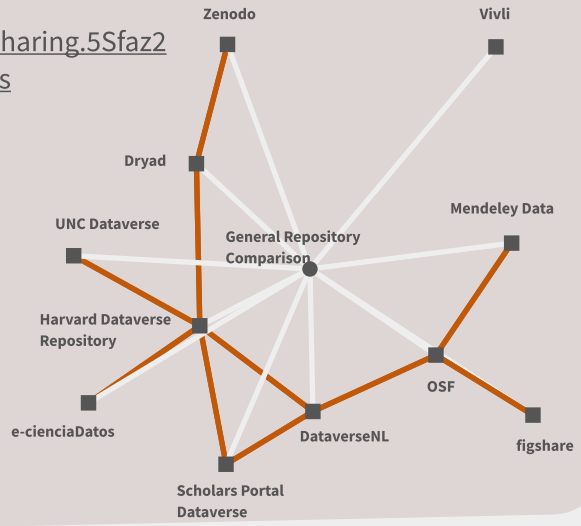
Taxonomy is used to classify organisms, where relevant

FAIRsharing uses indicators to show the life-cycle status of each database

- **Ready** when a resource is considered suitable for use
- **In development** when a resource is being developed and may be used but may also be in a state of flux
- **Deprecated** when the community no longer mandates its use. This status is curated jointly with an explanation and, where available, a link to the database that has superseded it, or been merged with it
- **Uncertain** when curators cannot establish contact with the owners of a resource and believe a resource may have changed status

Examples

Collection of generalist repositories by the
RDA Generalist Repository Comparison Chart Management Group
List: fairsharing.org/3541
Graph: fairsharing.org/graph/3541



A knowledgebase for *Astrophysics and Astronomy*: 10.25504/FAIRsharing.5Sfaz2
A repository that *shares its codebase*: 10.25504/FAIRsharing.t2e1ss
A knowledgebase for *linguistics*: 10.25504/FAIRsharing.429b28
A *subject agnostic* repository: 10.25504/FAIRsharing.132b10

Views of databases by type:
fairsharing.org/databases/repositories
fairsharing.org/databases/knowledgebases
fairsharing.org/databases/knowledgebases_and_repositories

Search databases using different options:
fairsharing.org/#search

FAIRsharing

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