Dataverse North Metadata Best Practices Guide

Version 3.0 September 2021

By Dataverse North Metadata Group

Prepared by the Portage Network Dataverse North Metadata Working Group for the New Digital Research Infrastructure Organization (NDRIO)



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Introduction

One of the best features of the Dataverse repository software is the large number of metadata fields it provides for describing research data. Standards-based for interoperability, Dataverse metadata supports both dataset and file-level descriptions and is compliant with the DataCite¹ schema to support DOI registration. It draws principal influence from DDI Codebook² while incorporating metadata standards from other domains, making it well suited for describing data from the social, economic, behavioural, and health sciences; it is also easily adapted for use in the humanities, and in pure, applied, and environmental sciences. However, this flexibility can sometimes make Dataverse metadata seem complicated. This guide provides direction to both the novice and experienced user in creating metadata for datasets in a Dataverse repository.

The Dataverse Project is an open source web application to share, preserve, cite, explore, and analyze research data. It is developed by the <u>Institute for Quantitative Social Sciences (IQSS)</u> at Harvard University, along with many collaborators and contributors worldwide.³

Guide Organization

This guide is organized according to the six metadata blocks available in the current version of the Dataverse software:

- Citation metadata block
 - The core metadata required to publish a dataset.
- Geospatial metadata block
 - Metadata that describes the spatial extent (e.g., location information) of data in a dataset.
- Social Science & Humanities metadata block
 - Metadata that describes survey data and related datasets in the social science and humanities.
- Astronomy & Astrophysics metadata block
 - Metadata specific to astronomical or astrophysical data.
- Life Sciences metadata block
 - Metadata that describes scientific research in multiple domains that focus on the study of living organisms including biology, zoology, microbiology, physiology, biochemistry, and related subjects.
- Journal metadata block

¹ "The DataCite Metadata Schema is a list of core metadata properties chosen for an accurate and consistent identification of a resource for citation and retrieval purposes, along with recommended use instructions" (<u>https://schema.datacite.org/</u>). "DataCite is a leading global non-profit organisation that provides persistent identifiers (DOIs) for research data and other research outputs" (<u>https://datacite.org/mission.html</u>). ²"DDI Codebook was the first version of the DDI specification to be published" (<u>www.ddialliance.org/Specification/DDI-Codebook/</u>). The Data Documentation Initiative (DDI) is an effort to create an international standard for describing data from the social, behavioral, and economic sciences. Expressed in XML (<u>http://www.w3.org/XML/</u>), the DDI metadata specification now supports the entire research data life cycle. DDI metadata accompanies and enables data conceptualization, collection, processing, distribution, discovery, analysis, repurposing, and archiving. The DDI Alliance (<u>http://www.ddialliance.org/</u>) oversees the development of the DDI metadata standard.

³ About | The Dataverse Project – Dataverse.org. See: <u>https://dataverse.org/about</u>

 Metadata used by journals using a Dataverse repository as its data repository. Its fields identify journal volume, issue, and article type information that a dataset is associated with.

Each section of the guide begins by summarizing information specific to the metadata block. This is followed by a table that describes all metadata fields in the block according to the following headings:

- Field
 - The name of the field as it appears in the Dataverse interface.
- Description with tips
 - The definition of the field. This definition is provided by the Dataverse software developers and can be seen by hovering over the field name in the Dataverse interface.
 - Tips and notes that help users better understand the field, its definition or usage. These have been written by the authors of this guide.
- Usage
 - Suggestions based on best practices that help users determine if a field is required, recommended, or optional. More information on usage guidelines are provided below.
- Repeatable
 - An indicator to help users know whether a field can be repeated (e.g., for data that may have multiple authors or keywords) or not.
- Example
 - Text that demonstrates the kind of information entered in this field. These examples are provided to place each metadata field in context.
 - For each metadata block, examples have been included to place each field in context.
 Because of differences between each metadata block, the use of examples is handled slightly differently.
 - Citation block
 The examples are based on a <u>fictitious dataset</u>⁴ available from the Scholars Portal Dataverse demo repository.
 - Geospatial block
 The examples are fictitious but screen shots from actual datasets in the Scholars
 Portal Dataverse repository are included after the table. Edit screens showing how
 the fields look when a dataset is published are also included.
 - Social Science and Humanities block
 There are multiple real examples provided for each field with links to the datasets in the Scholars Portal Dataverse repository so that the examples can be seen in context.
 - Astronomy and Astrophysics block The examples are samples from the IVOA-RM specifications, which are supplemented with real examples from the <u>Harvard Dataverse repository</u>⁵

⁴ <u>https://doi.org/10.5072/FK2/TOXB6Q</u>

⁵ <u>https://dataverse.harvard.edu</u>

Life Sciences block

The examples are fictitious but screen shots from actual datasets in the Harvard Dataverse repository are included.

Journal block
 The examples are from a dataset in the Harvard Dataverse repository.

This guide (version 3.0) corresponds to version 5.1 of the Dataverse software (released December 2020).

Usage

In the tables for each metadata block below, the column *Usage* indicates whether a field is required, recommended, or optional.

- Required [RQ] Required fields have been designated as such by the developers of the Dataverse software, which is configured accordingly out-of-the-box. These fields are Title, Author-name, Contact email, Description-text, and Subject.
- Recommended [R] Recommended fields have been designated as such by the authors of this guide based on their understanding of accepted best practices to improve data discovery and reuse. If a recommended field is not applicable to the dataset being described, it does not need to be included.
- Optional [O] Optional fields can be used to provide additional information about a dataset. In general, it is good practice to provide additional metadata when the fields are applicable and the information is available.

Duplication across metadata fields

It is possible that metadata information may be the same in multiple fields. For example, the author of a dataset may also be the producer. It is important that all relevant fields get filled in even if it does repeat information. Having all possible fields filled in will help with the findability of a dataset because you may not know how users may approach searching.

Fields not designated as required can be made required by changing the settings in the Dataverse installation. This can be done by the Dataverse Administrators. See <u>Dataverse Management</u> in the Dataverse Users Guide for details.⁶

Metadata sources

Dataverse metadata is primarily influenced by the <u>DDI Codebook</u>⁷ while incorporating additional metadata standards to better ensure preservation and interoperability. As with many platforms, the Dataverse software's usage of a metadata standard does not necessarily mean that it implements the full breadth of a standard or that its usage is in full compliance with the standard itself.

⁶ <u>http://guides.dataverse.org/en/latest/user/dataverse-management.html</u>

⁷ <u>https://ddialliance.org</u>

The following table summarizes the Dataverse software's supported metadata schemas, as found in the <u>Metadata References appendix</u> of the *Dataverse Project User Guide*:

Metadata Block	Schemas employed
Citation	Compliant with DDI Lite, DDI 2.5 Codebook, DataCite 3.1, and Dublin Core's DCMI Metadata Terms. Language field uses ISO 639-1 controlled vocabulary
Geospatial	Compliant with DDI Lite, DDI 2.5 Codebook, DataCite, and Dublin Core. Country / Nation field uses ISO 3166-1 controlled vocabulary
Social Science & Humanities	Compliant with DDI Lite, DDI 2.5 Codebook, and Dublin Core
Astronomy and Astrophysics	Mappable to the Virtual Observatory (VO) Discovery and Provenance Metadata, which is an implementation of the International Virtual Observatory Alliance's <u>Resource Metadata for the Virtual Observatory, Version 1.12 (2007)</u> ⁸ specification, referred to as IVOA-RM in this document
Life Sciences	Based on ISA-Tab Specification, along with controlled vocabulary from subsets of the OBI Ontology and the NCBI Taxonomy for Organisms
Journal Metadata	Based on the Journal Archiving and Interchange Tag Set, version 1.2

Controlled vocabularies

A controlled vocabulary is a standardized list of terminology for describing information. Fields that have or require controlled vocabularies are noted in the Definition column of each table. The following list provides information about controlled vocabularies that are either referenced by Dataverse documentation or recommended in this guide.

- <u>ISO 639-1</u>⁹ (Citation language field)
- <u>DDI Alliance Controlled Vocabularies</u>¹⁰ (Social Science & Humanities)
- <u>GeoNames.org</u>¹¹ (Geospatial State / Province and City fields)
- FAST¹² (Citation Keyword and Topical Classification fields)
- <u>RVMFAST¹³</u> (Citation Keyword and Topical Classification fields)

⁸ <u>http://www.ivoa.net/documents/latest/RM.html</u>

⁹ https://www.loc.gov/standards/iso639-2/php/English_list.php

¹⁰ <u>https://ddialliance.org/controlled-vocabularies</u>

¹¹ <u>https://www.geonames.org</u>

¹² <u>http://experimental.worldcat.org/fast/</u>

¹³ <u>https://rvmweb.bibl.ulaval.ca/rvmfast/initMoteurRecherche.do</u>

- ISO 3166-1¹⁴ (Geospatial Country/ Nation field)
- <u>Virtual Observatory (VO) Discovery and Provenance Metadata¹⁵ (Astronomy and Astrophysics)</u>
- <u>Space-Time Coordinate (STC) Metadata Recommendation¹⁶ (Astronomy and Astrophysics)</u>
- <u>OBI Ontology</u>¹⁷ (Life Sciences)
- <u>NCBI Taxonomy for Organisms</u>¹⁸ (Life Sciences)

Language of the metadata

The development of the Internationalization feature (added in January 2019) allows the Dataverse software to be used in multiple languages. The Scholars Portal Dataverse repository, for example, provides a bilingual platform interface with a French/English toggle.

In addition to the platform, users should consider which language to use for the metadata. This decision rests, in most cases, with the dataset owner. It is recommended that the language of the metadata be selected to maximize discovery by the intended audiences. In some cases, it will be beneficial to enter metadata in more than one language, e.g., by taking advantage of the "Alternative Title" field, and using repeatable fields such as Description, Keyword, and Geospatial Coverage. There is no field to indicate the language of the metadata.

Credits

This guide is based on <u>Dataverse Metadata v4+ documentation</u>¹⁹ and the table layout is from the <u>Texas</u> <u>Digital Library</u>.²⁰ Best practice guides were consulted to ensure consistency with existing metadata practices and included the <u>DataCite Schema</u>,²¹ <u><odesi> Best Practices Document</u>,²² and <u>Federated Research</u> <u>Data Repository</u>.²³

Versions

Version 1, April 2019 - general citation metadata block for the Dataverse software, version 4.x (EN - https://doi.org/10.14288/1.0386751)

 Authors: Alexandra Cooper, Ève Paquette-Bigras, Martine Gagnon, Amber Leahey, Laure Perrier, Michael Steeleworthy, Sally Taylor

- 16 http://www.ivoa.net/documents/latest/STC.html
- ¹⁷ <u>http://bioportal.bioontology.org/ontologies/OBI</u>
- ¹⁸ <u>http://www.ncbi.nlm.nih.gov/Taxonomy/taxonomyhome.html</u>

²⁰ <u>https://texasdigitallibrary.atlassian.net/wiki/spaces/TDRUD/pages/493551668/Metadata+Dictionary</u>

¹⁴ https://en.wikipedia.org/wiki/ISO_3166-1

¹⁵ <u>https://perma.cc/H5ZJ-4KKY</u>

¹⁹ <u>https://docs.google.com/spreadsheets/d/13HP-jl_cwLDHBetn9UKTREPJ_F4iHdAvhjmlvmYdSSw/edit#gid=0</u>

²¹ <u>https://schema.datacite.org</u>

²² https://drive.google.com/file/d/0Bxw1dFFWfU7URkgwYUxPYVV2OTg/view

²³ <u>https://www.frdr-dfdr.ca/repo</u>

Version 1.1, June 2019 - general citation metadata block for the Dataverse software, version 4.x; updated to include corrections on the following fields - contact name and affiliation, ID type, ID number, producer name. (EN - <u>https://doi.org/10.14288/1.0386726</u> / FR - <u>https://doi.org/10.14288/1.0386727</u>)

Authors: Alexandra Cooper, Martine Gagnon, Mark Goodwin, John Huck, Amber Leahey, Michael Steeleworthy, Sally Taylor

 Version 2, February 2020 - domain specific metadata blocks for geospatial, and social science and humanities added. (EN - <u>https://doi.org/10.14288/1.0388724</u> / FR https://doi.org/10.14288/1.0388725)

Authors: Teresa Bascik, Philippe Boisvert, Alexandra Cooper, Martine Gagnon, Mark Goodwin, John Huck, Amber Leahey, Michael Steeleworthy, Sally Taylor

• Version 3, October 2021 - domain specific metadata blocks for Astronomy and Astrophysics and Life Sciences added; introduction rewritten to include information about all the metadata blocks and disciplinary information moved to the appropriate block. Each of the previous sections were also reviewed to make sure they complied with changes/improvements made in the new, updated version.

Authors: Teresa Bascik, Philippe Boisvert, Alexandra Cooper, Martine Gagnon, Mark Goodwin, John Huck, Amber Leahey, Kelly Stathis, Michael Steeleworthy

Questions?

Please see Portage Network's library contact at your institution.²⁴

²⁴ <u>https://portagenetwork.ca/tools-and-resources/institutional-rdm-contacts</u>

Citation Metadata

Introduction

The Citation Metadata Block includes the core metadata needed to publish a dataset in a Dataverse repository. The required fields in this section are used to create the citation for the dataset.

The examples used in this section are from a <u>fictitious dataset</u> available from the Scholars Portal Dataverse demo repository.²⁵

According to Dataverse documentation, Citation Metadata fields are compliant with DDI Lite, DDI 2.5 Codebook, DataCite 3.1, and Dublin Core's DCMI Metadata Terms (see .tsv version). The Language field uses ISO 639-1 controlled vocabulary.²⁶

Note: An absolute URL is a complete address including its prefix (https://), as seen in provided examples.

²⁵ <u>https://doi.org/10.5072/FK2/TOXB6Q</u>

²⁶ See: <u>http://guides.dataverse.org/en/latest/user/appendix.html</u>

Citation Metadata Block

Field	Definition with tips	Usage ²⁷	Repeatable	Example	
Title	Full title by which the Dataset is known.	RQ	No	Social Media Use Among Teens, 2015 [Canada]	
Subtitle	A secondary title used to amplify or state certain limitations on the main title. <i>Tip: The subtitle is not included in the</i> <i>auto-generated citation. If you want the</i> <i>subtitle to be included in the citation, then</i> <i>you must add it to the Title field in</i> <i>addition to the Subtitle field. the Subtitle</i> <i>field.</i>	0	No	Main Survey	
Alternative Title	A title by which the work is commonly referred, or an abbreviation of the title. <i>Tip: Acronym, short form, or translation of</i> <i>full title.</i>	0	No	Youth Social Media Survey	
Alternative URL	A URL where the dataset can be viewed, such as a personal or project website.	0	No	https://youthsocialmedia.org	
Other ID	Another unique identifier that identifies this	s Dataset (e	e.g., producer's	or another repository's number).	
Agency	Name of agency which generated this identifier.	0	Yes	Youth Communication Development Project, Education Department, Queen's University	
Identifier	Other identifier that corresponds to this Dataset.	0	Yes	2202	
Author	The person(s), corporate body(ies), or agen	cy(ies) resp	onsible for cre	ating the work.	
Name	The author's Family Name, Given Name or the name of the organizatfion responsible for this Dataset.	RQ	Yes	Doe, Jane	
Affiliation	The organization with which the author is affiliated. <i>Tip: Use the full official name of the</i> <i>organization; avoid abbreviations.</i>	R	Yes	Queen's University	
ldentifier Scheme	Name of the identifier scheme (ORCID, ISNI). Note: This field is a drop-down list; select one.	R	Yes	ORCID	
Identifier	Uniquely identifies an individual author or or organization, according to various schemes.	R	Yes	https://orcid.org/0000-0002-1825- 0097	
Contact	The contact(s) for this Dataset.				
Name	The contact's Family Name, Given Name or the name of the organization.	R	Yes	Doe, Jane	

²⁷ RQ = Required; R = Recommended; O = Optional

Field	Definition with tips	Usage ²⁷	Repeatable	Example
Affiliation	The organization with which the contact is affiliated. Tip: use the full official name of the organization; avoid abbreviations.	R	Yes	Queen's University
E-mail	The e-mail address(es) of the contact(s) for the Dataset. This will not be displayed.	RQ	Yes	jdoe@email.com
Description	A summary describing the purpose, nature,	and scope	of the Dataset	
Text	A summary describing the purpose, nature, and scope of the Dataset. <i>Tip: A good description will identify the</i> <i>content of the dataset and help a user</i> <i>determine if they have the technical</i> <i>ability to use it.</i> ²⁸	RQ	Yes	The Social Media Use Among Teens survey was conducted by the Youth Communication Development Project to understand social media communication behaviours among youth in Canada. The survey collected responses from Canadian youth using an online questionnaire that asks about social media use including, platform type, frequency of use, activity type, and location of use. This information is supplemented with the respondent's demographic and household characteristics.
Date	In cases where a Dataset contains more than one description (for example, one might be supplied by the data producer and another prepared by the data repository where the data are deposited), the date attribute is used to distinguish between the two descriptions. The date attribute follows the ISO convention of YYYY-MM-DD.	0	Yes	2018-01-18
Subject	Domain-specific Subject Categories that are topically relevant to the Dataset.Note: This field is a drop-down list; select all that apply.Tip: Select one or more Subject terms to represent the broad domain or domains the dataset relates to.	RQ	No	Social Sciences
Keyword	Key terms that describe important aspects of	of the Datas	set.	
Term	Key terms that describe important aspects of the Dataset. Can be used for building keyword indexes and for classification and retrieval purposes. A	R	Yes	Social mediaCommunication

²⁸ A set of 5 best practices for writing dataset descriptions have been developed by Smit and Phillips (2021). See: <u>http://doi.org/10.5281/zenodo.4709835</u>

Field	Definition with tips	Usage ²⁷	Repeatable	Example
	controlled vocabulary can be employed. The vocab attribute is provided for specification of the controlled vocabulary in use, such as LCSH, MeSH, or others. The vocabURI attribute specifies the location for the full controlled vocabulary. <i>Tip: The Keyword field is repeatable. Put</i> <i>each keyword in its own field by pressing</i> <i>the "+" button.</i> <i>Tip: In Dataverse metadata, keywords are</i> <i>case sensitive. Use sentence case for free</i> <i>text terms (i.e., capitalize the first word</i> <i>and proper nouns).</i>			
	Tip: Use free-text terms or terms from a controlled vocabulary in this field to represent specific or granular topics associated with the dataset. Think of them like tags. Tip: <u>FAST</u> and <u>RVMFAST</u> are good, general-purpose controlled vocabularies adapted from Library of Congress Subject Headings (LCSH).			
	<i>Tip: Geographic place names should be entered in the Geospatial metadata section.</i>			
Vocabulary	For the specification of the keyword controlled vocabulary in use, such as LCSH, MeSH, or others. <i>Tip: Use this field when the Keyword term</i> <i>is from a controlled vocabulary</i> .	0	Yes	Government of Canada Core Subject Thesaurus
Vocabulary URL	Keyword vocabulary URL points to the web presence that describes the keyword vocabulary, if appropriate. Enter an absolute URL where the keyword vocabulary web site is found, such as <u>http://www.my.org</u> . <i>Tip: Use this field when the Keyword term</i> <i>is from a controlled vocabulary.</i>	0	Yes	https://canada.multites.net/
Topic	The classification field indicates the broad in	nportant to	opic(s) and sub	jects that the data cover. Library of
Classification Term	Congress subject terms may be used here. Topic or Subject term that is relevant to this Dataset.	0	Yes	Society and Culture

Field	Definition with tips	Usage ²⁷	Repeatable	Example
	Tip: The Keyword field is repeatable. Put each keyword in its own field by pressing the "+" button.			
	Tip: In Dataverse metadata, keywords are case sensitive. Use sentence case for free text terms (i.e., capitalize the first word and proper nouns).			
	Tip: Use free-text terms or terms from a controlled vocabulary in this field to represent specific or granular topics associated with the dataset. Think of them like tags.			
	Tip: <u>FAST</u> and <u>RVMFAST</u> are good, general-purpose controlled vocabularies adapted from Library of Congress Subject Headings (LCSH).			
	Tip: Geographic place names should be entered in the Geospatial metadata section.			
Vocabulary	Provided for specification of the controlled vocabulary in use, e.g., LCSH, MeSH, etc. <i>Tip: Use this field when the Topic</i> <i>Classification term is from a controlled</i> <i>vocabulary</i> .	0	Yes	Government of Canada Core Subject Thesaurus
Vocabulary URL	Specifies the URL location for the full controlled vocabulary. <i>Tip: Use this field when the Topic</i> <i>Classification term is from a controlled</i> <i>vocabulary</i> .	0	Yes	https://canada.multites.net/
Related Publication	Publications that use the data from this Dat metadata tab. <i>Tip: Use this field for publications that are b</i>			
Citation	The full bibliographic citation for this related publication.	R	Yes	Doe, Jane. (2017). Teen use of social media: analysis of self-reported communication behaviours. Journal of Social Media Use. Vol 1. Iss. 1, 2017.
ID Туре	The type of digital identifier used for this publication (e.g., Digital Object Identifier (DOI)). Note: This field is a drop-down list; select one.	R	Yes	doi

Field	Definition with tips	Usage ²⁷	Repeatable	Example	
	Tip: Use a persistent identifier where possible (e.g., DOI, handle, ISBN). If only a URL is available, select the type "url" and enter the URL into both the ID Number and URL fields.				
ID Number	The identifier for the selected ID type. Tip: If using ID Type "url", enter the URL into both this field and the URL field.	R	Yes	10.0000/SP/TEST	
URL	Link to the publication web page (e.g., journal article page, archive record page, or other). <i>Tip: This field is only used for display</i> <i>purposes in the Dataverse interface. For</i> <i>interoperability, ensure that the ID Type</i> <i>and ID Number fields are also completed.</i>	R	Yes	https://doi.org/10.0000/SP/TEST	
Notes	Additional important information about the Dataset.	0	Yes	This survey was administered online. Mode of interview has been found to impact results, therefore it is not recommended that these results are compared with other survey results where the interview mode was telephone based.	
Language	Language of the Dataset. Note: This field is a drop-down list; select all that apply.	0	Yes	English	
Producer	Person or organization with the financial or	administra	tive responsibi	ility over this Dataset.	
Name	Producer name.	R	Yes	Youth Communication Development Project	
Affiliation	The organization with which the producer is affiliated.	R	Yes	Queen's University	
Abbreviation	The abbreviation by which the producer is commonly known. (ex. IQSS, ICPSR).	0	Yes	YCDP	
URL	Producer URL points to the producer's web presence, if appropriate. Enter an absolute URL where the producer's web site is found, such as http://www.my.org.	0	Yes	https://youthsocialmedia.org	
Logo URL	URL for the producer's logo, which points to this producer's web-accessible logo image. Enter an absolute URL where the producer's logo image is found, such as http://www.my.org/images/logo.gif.	0	Yes	https://youthsocialmedia.org/image.p ng	
Production Date	Date when the data collection or other materials were produced (not distributed, published or archived).	R	No	2016-01-11	

Field	Definition with tips	Usage ²⁷	Repeatable	Example
	Tip: Date when dataset was finalized and			
	ready for analysis or distribution.			
Production	The location where the data collection	0	No	Kingston, Ontario, Canada
Place	and any other related materials were			
	produced.			
	Tip: Include an institution if relevant.			
	Avoid abbreviations.			
Contributor	The organization or person responsible for e form to the development of the resource.	either colle	cting, managin	g, or otherwise contributing in some
Туре	The type of contributor of the resource.	0	Yes	Researcher
	Note: This field is a drop-down list; select			
	one.			
Name	The Family Name, Given Name or	0	Yes	Doe, Jane
	organization name of the contributor.			
Grant	Grant Information.			
Information				
Grant Agency	Grant Number Agency.	0	Yes	Social Sciences and Humanities
	Tip: The name of the funder or grant			Research Council (SSHRC)
	agency supporting the research.			
Grant Number	The grant or contract number of the	0	Yes	CCB123456
	project that sponsored the effort.			
Distributor	The organization designated by the author of any necessary editions or revisions.	or produce	r to generate c	opies of the particular work including
Name	Distributor name.	0	Yes	Data Services
Affiliation	The organization with which the	0	Yes	Queen's University Library
	distributor contact is affiliated.			
Abbreviation	The abbreviation by which this distributor	0	Yes	QUL
	is commonly known (e.g., IQSS, ICPSR).			
URL	Distributor URL points to the distributor's	0	Yes	https://library.queensu.ca/search/data
	web presence, if appropriate. Enter an			-statistics
	absolute URL where the distributor's web			
	site is found, such as http://www.my.org.			
Logo URL	URL of the distributor's logo, which points	0	Yes	https://www.queensu.ca/encyclopedia
	to this distributor's web-accessible logo			/sites/webpublish.queensu.ca.qencww
	image. Enter an absolute URL where the			w/files/images/l/logo/QueensLogo_col
	distributor's logo image is found, such as			our.png
	http://www.my.org/images/logo.gif.			
Distribution	Date that the work was made available	0	No	2018-01-22
Date	for distribution/presentation.			
	Tip: This field may be the same as the			
	Deposit Date. Use Distribution Date only if			
	data was previously distributed.			
Depositor	The person (Family Name, Given Name)	R	No	Doe, Jane
	or the name of the organization that			
	deposited this Dataset to the repository.			

Field	Definition with tips	Usage ²⁷	Repeatable	Example
	Tip: The name of the person/institution who provided the dataset(s) to the archive (i.e., not necessarily the person preparing the Dataverse repository submission).			
Deposit Date	Date that the Dataset was deposited into the repository. <i>Tip: Deposit Date is pre-populated with</i> <i>the date of upload to the Dataverse</i> <i>repository. It can be edited to reflect the</i> <i>date when the data was received by an</i> <i>external or mediated data repository</i> <i>service.</i>	R	No	2018-01-15
Time Period Covered	Time period to which the data refer. This ite coding or making documents machine-read			
Start	Start date which reflects the time period covered by the data, not the dates of coding or making documents machine- readable or the dates the data were collected.	R	Yes	2015-03-20
End	End date which reflects the time period covered by the data, not the dates of coding or making documents machine- readable or the dates the data were collected.	R	Yes	2015-06-21
Date of Collection	Contains the date(s) when the data were co	llected.	I	·
Start	Date when the data collection started.	R	Yes	2015-03-20
End	Date when the data collection ended.	R	Yes	2015-06-21
Kind of Data	Type of data included in the file: survey data, census/enumeration data, aggregate data, clinical data, event/transaction data, program source code, machine-readable text, administrative records data, experimental data, psychological test, textual data, coded textual, coded documents, time budget diaries, observation data/ratings, process-produced data, or other.	R	Yes	Survey data
Series	Information about the Dataset series.			
Name	Name of the dataset series to which the Dataset belongs.	0	No	Social Media Use Among Teens
Information	History of the series and summary of those features that apply to the series as a whole.	0	No	Established in 2005, the Youth Communication Development Project aims to gather key research and data about youth development and social

Field	Definition with tips	Usage ²⁷	Repeatable	Example
				media use through a series of independent, annual, cross-sectional surveys titled Social Media Use Among Teens. The overall objective of the program is to gather data on youth and social media trends in order to monitor changes in the well-being of young Canadians, and to provide information on specific social policy issues.
Software	Information about the software used to ger	nerate the [Dataset.	
Name	Name of software used to generate the Dataset. Tip: Useful for specialized software or instruments.	0	Yes	SPSS
Version	Version of the software used to generate the Dataset.	0	Yes	24
Related Material	Any material related to this Dataset. Tip: This is secondary materials in relation to the study description, such as technical documentation or a website detailing more information about the study.	0	Yes	Youth Social Media Trends: 2015 Report [Canada]. YCDP, Queen's University, 2016. Access URL: http://dataverse.scholarsportal.info/q ueensu/2016report.pdf
Related Datasets	Any Datasets that are related to this Dataset, such as previous research on this subject. <i>Tip: This would include previous versions</i> <i>of the data (rounds or waves) or other</i> <i>collections generated by the same data.</i>	0	Yes	Social Media Use Among Teens, 2010 [Canada]. YCDP, Queen's University, 2011. DOI. Access URL: http://dataverse.scholarsportal.info/q ueensu/2010data.xhtml
Other References	Any references that would serve as background or supporting material to this Dataset. <i>Tip: This includes documentation such as</i> <i>codebooks, questionnaires, methodology,</i> <i>coding files, etc.</i>	0	Yes	Social Media Use Among Teens: Survey Questionnaire, 2015 [Canada]. YCDP, Queen's University, 2016. DOI. Access URL: http://dataverse.scholarsportal.info/q ueensu/2016questionnaire.pdf
Data Sources	List of books, articles, serials, or machine- readable data files that served as the sources of the data collection.	0	Yes	Statistics Canada. National Household Survey, 2011: Median Household Income by Census Tracts, Census Metropolitan Areas. NHS 2011, Statistics Canada. Access URL: <u>https://www12.statcan.gc.ca/nhs- enm/2011/dp- pd/prof/index.cfm?Lang=E</u>

Field	Definition with tips	Usage ²⁷	Repeatable	Example
Origin of	For historical materials, information about	0	No	National Household Survey, 2011.
Sources	the origin of the sources and the rules			https://www23.statcan.gc.ca/imdb/p2
	followed in establishing the sources			SV.pl?Function=getSurvey&SDDS=5178
	should be specified.			
Characteristic	Assessment of characteristics and source	0	No	
of Sources	material.			
Noted	Tip: Describes noteworthy aspects of the			
	data collected.			
Documentation	Level of documentation of the original	0	No	Open
and Access to	sources.			
Sources	Tip: May be used to explain any			
	restrictions or access to source data			
	documentation.			

Geospatial Metadata

Introduction

Geospatial metadata can describe maps, GIS files, or other location-based data. Any dataset that relates to a location(s) or geographic area(s) (i.e., has a spatial extent) should include geospatial metadata in addition to the general citation metadata block. At a minimum, provide place names to describe locations in your data and use <u>GeoNames.org²⁹</u> to confirm these terms. Alternate names (e.g., in other languages) may be added. If applicable, enter bounding box³⁰ coordinates to allow the data to be findable with map-based search tools.

The examples in this section are fictitious but screen shots from actual datasets in the Scholars Portal Dataverse repository are included after the table. These examples show the edit screen and how the fields look when a dataset is published.

According to Dataverse documentation, Geospatial Metadata fields are compliant with DDI Lite, DDI 2.5 Codebook, DataCite, and Dublin Core. The Country / Nation field uses ISO 3166-1 controlled vocabulary.³¹

²⁹ <u>https://www.geonames.org</u>

³⁰ A bounding box is an area defined by two longitudes and two latitudes. See: <u>https://wiki.openstreetmap.org/wiki/Bounding_Box</u>

³¹ See: <u>http://guides.dataverse.org/en/latest/user/appendix.html</u>

Geospatial Metadata Block

Field	Definition with tips	Usage ³²	Repeatable	Example	
Geographic Coverage	Information on the geographic coverage of the data. Includ <i>Tip: For consistency, use the <u>GeoNames.org</u>³³ database to c</i>			-	
Country / Nation	The country or nation that the Dataset is about. Note: This field is a drop-down list; select one. Tip: Select from drop-down list of names from ISO-3166. If the dataset covers multiple countries, list all of them.	R	Yes	Canada	
State / Province	The state or province that the Dataset is about. Use GeoNames for correct spelling and avoid abbreviations. Tip: If using this field, also include Country to disambiguate.	R	Yes	British Columbia	
City	The name of the city that the Dataset is about. Use GeoNames for correct spelling and avoid abbreviations. <i>Tip: If using this field, also include Country AND, if</i> <i>possible, State/Province to disambiguate.</i>	R	Yes	Vancouver	
Other	Other information on the geographic coverage of the data. Tip: Use for geographical names that are not a country, state/province, or city, e.g., regions, water bodies, astronomy names. If applicable, disambiguate by including City AND/OR State/Province AND/OR Country.	0	Yes	Jericho Beach Park	
Geographic Unit	Lowest level of geographic aggregation covered by the Dataset, e.g., village, county, region. <i>Tip: Use when the lowest geographic level that can be</i> <i>analyzed in the dataset is different from the dataset's</i> <i>entire area (e.g., when a dataset about parks in</i> <i>Vancouver can be faceted by the individual parks).</i>	0	Yes	park	
Geographic Bounding Box	Bounding describes the minimum box, defined by west and east longitudes and north and south latitudes, which includes				

³² R = Recommended; O = Optional

³³ <u>https://www.geonames.org/</u>

Field	Definition with tips	Usage ³²	Repeatable	Example
West Longitude	Westernmost coordinate delimiting the geographic extent of the Dataset. A valid range of values, expressed in decimal degrees, is -180,0 <= West Bounding Longitude Value <= 180,0.	R	Yes	-123.265
East Longitude	Easternmost coordinate delimiting the geographic extent of the Dataset. A valid range of values, expressed in decimal degrees, is -180,0 <= East Bounding Longitude Value <= 180,0.	R	Yes	-123.115
North Latitude	Northernmost coordinate delimiting the geographic extent of the Dataset. A valid range of values, expressed in decimal degrees, is -90,0 <= North Bounding Latitude Value <= 90,0.	R	Yes	49.314
South Latitude	Southernmost coordinate delimiting the geographic extent of the Dataset. A valid range of values, expressed in decimal degrees, is -90,0 <= South Bounding Latitude Value <= 90,0.	R	Yes	49.226

Examples from real datasets

Geographic Coverage: Other

1. In this example, "Other" indicates the Cape Bounty Arctic Watershed Observatory on Melville Island.

Beamish, Alison; Scott, Neal; Wagner, Ioan; Neil, Allison, 2016, "Impact of active layer detachments on carbon exchange in a high-Arctic ecosystem, Cape Bounty, Nunavut, Canada (2010)", <u>https://hdl.handle.net/10864/11825</u>, Scholars Portal Dataverse, V2

Public view

Edit view	
Geographic Coverage 🕢	Canada, Nunavut, Melville Island, Cape Bounty Arctic Watershed Observatory
Geospatial Metadata 🔺	

Geospatial Metadata ٨			
Geographic Coverage 🚱	Country / Nation 🕄	State / Province 😔	
	Canada	 Nunavut 	+
	City 🚱	Other 🕄	
		Melville Island, Cape Bounty Arctic Wate	

2. In this example, "Other" indicates the specific district of Mapo-gu within the city of Seoul.

Da In Choi, 2015, "Korean War Interviews, 2015", <u>https://hdl.handle.net/10864/11174</u>, Scholars Portal Dataverse, V5

Public view



Edit view

Geospatial Metadata ٨				
Geographic Coverage 🔞	Country / Nation 🔞		State / Province 🕄	
	Korea, Republic of	-		+
	City 🕄		Other 🚱	
	Seoul		Mapo-gu	

3. In this example, "Other" indicates a specific health clinic where the study occurred.

Wilson, Rosemary A.; VanDenKerkhof, Elizabeth G.; Duggan, Scott; Gilron, Ian; Good, Mary Anne; Henry, Richard; Carley, Meg, 2018, "Chronic Pain Surveillance at Queen's, 2013-2017", <u>https://doi.org/10.5683/SP2/GAPNRM</u>, Scholars Portal Dataverse, V1

Public view

Geospatial Metadata 🔺	
Geographic Coverage 🕄	Canada, Ontario, Kingston, Chronic Pain Clinic, Kingston Health Sciences Centre, Jeanne Mance 3, Hotel Dieu Hospital

Edit view

Geographic Coverage 📀	Country / Nation 🕢		State / Province 🕄	
	Canada	•	Ontario	+
	City 🕄		Other 🕢	
	Kingston		Chronic Pain Clinic, Kingston Health Sci	
eographic Unit 9				+
Geographic Unit 😡				+
Geographic Unit 🕢	West Longitude 😡		East Longitude 😔	+
				+
	West Longitude 🕢		East Longitude 🕢	

Geographic Unit

In this example, the Forward Sortation Area (FSA) is the lowest level of geographic aggregation covered by the Dataset.

Hird, Myra J.; Lougheed, Scott C.; Kuyvenhoven, Cassandra; Rowe, R. Kerry, 2016, "Perspectives on Municipal Waste Management in Kingston, Ontario, 2012", <u>https://hdl.handle.net/10864/11926</u>, Scholars Portal Dataverse, V1

Geospatial Metadata 🔺	
Geographic Coverage 📀	Canada, Ontario, Kingston
Geographic Unit 📀	Forward Sortation Area (FSA)

Geographic Bounding Box

1. In this example, the two longitude and two latitude coordinates define the geographic extent of the dataset.

Anderson, Lauren; Beasley, Barb; Flumerfelt, Sidney-Rae; Fox, Caroline; Friesen, Sarah; Macfarlane, Gemma; McKay, Taesagh, 2019, "Replication data for: Long-term monitoring in Barkley Sound: a temporal analysis of intertidal biodiversity on Wizard Islet, British Columbia from 1997 to 2017", <u>https://doi.org/10.5683/SP2/C8G480</u>, Scholars Portal Dataverse, V1, UNF:6:mBVVVVwtuVbcT4h2Au8RXQ== [fileUNF]

Public view

Geospatial Metadata 🔺	
Geographic Coverage 🕢	Canada, British Columbia, Wizard Islet
Geographic Bounding Box 🚱	-125.160843 -125.158203 48.8592 48.857391

Edit view

Geospatial Metadata 🔨				
Geographic Coverage 🕄	Country / Nation 🕄	State / Provi	ince 🕄	
	Canada	 British Colu 	umbia	
	City 🚱	Other 🕄		
		Wizard Isle	et	
Geographic Unit 🕄				
Geographic Unit 🕄 Geographic Bounding Box 🕄	West Longitude 🕄	East Longitu	ude 🚱	
	West Longitude 3 -125.160843	East Longitu		
	_		03	

Social Science and Humanities Metadata

Introduction

The Social Science and Humanities block describes data that falls within the domain of social science and the humanities. Multiple real examples of datasets are provided for each field with links to datasets so that examples can be seen in context. According to Dataverse documentation, Social Science & Humanities Metadata fields are compliant with DDI Lite, DDI 2.5 Codebook, and Dublin Core (see <u>.tsv version</u>³⁴).³⁵

Controlled vocabularies

The DDI Alliance has created a <u>set of controlled vocabularies</u>³⁶ that can be used with some fields within the Social Science and Humanities section. The DDI Alliance is continually adding to this set.

³⁴ <u>https://github.com/IQSS/dataverse/blob/master/scripts/api/data/metadatablocks/citation.tsv</u>

³⁵ See: <u>http://guides.dataverse.org/en/latest/user/appendix.html</u>

³⁶ <u>http://www.ddialliance.org/controlled-vocabularies</u>

Social Science and Humanities Metadata Block

Field	Definition with tips	Usage ³⁷	Repeatable	Example
Unit of Analysis	Basic unit of analysis or observation that this Dataset describes, such as individuals, families/households, groups, institutions/organizations, administrative units, and more. For information about the DDI's controlled vocabulary for this element, please refer to the DDI web page at <u>http://www.ddialliance.org/controlled- vocabularies</u> .	R	Yes	 Individual Family Household
Universe	Description of the population covered by the data in the file; the group of people or other elements that are the object of the study and to which the study results refer. Age, nationality, and residence commonly help to delineate a given universe, but any number of other factors may be used, such as age limits, sex, marital status, race, ethnic group, nationality, income, veteran status, criminal convictions, and more. The universe may consist of elements other than persons, such as housing units, court cases, deaths, countries, and so on. In general, it should be possible to tell from the description of the universe whether a given individual or element is a member of the population under study. Also known as the universe of interest, population of interest, and target population.	R	Yes	 Canadians aged 12-30 (Source: <u>https://doi.org/10.5683/SP/HY2H1A</u>) Queen's University 2nd year medical students who were part of the 2016 Critical Enquiry Course in the School of Medicine and agreed to participate in the study. (Source: <u>https://doi.org/10.5683/SP/D6NISS</u>)
Time Method	The time method or time dimension of the data collection, such as panel, cross-sectional, trend, time- series, or other.	0	No	LongitudinalTime seriesLongitudinal: Panel
Data Collector	Individual, agency or organization responsible for administering the questionnaire or interview or compiling the data.	R	No	 Trained student interviewers, both anglophone and francophone. (Source: <u>https://hdl.handle.net/10864/ZJ17A</u>)
Collector Training	Type of training provided to the data collector.	0	No	• The interviews were conducted by professional interviewers under the supervision of the Institute for Social Science Research.

³⁷ R = Recommended; O = Optional

Field	Definition with tips	Usage ³⁷	Repeatable	Example
				 (Source: <u>https://doi.org/10.7910/DVN/SRVIO4</u>) From the documentation: "Each staff member was thoroughly trained prior to beginning work on the survey. Interviewers received about three days of classroom training plus self- training materials. Additional study materials and classroom training were planned throughout the interviewing period. Quality control measures, such as editing returns, observing interviews and re-interviewing selected households were employed throughout the survey." (Source: <u>https://doi.org/10.7910/DVN/YT09KD</u>)
Frequency	If the data collected includes more than one point in time, indicate the frequency with which the data was collected; that is, monthly, quarterly, or other.	0	No	 Annual Hourly Data was collected at baseline and at one month follow-up. (Source: https://doi.org/10.7939/DVN/10889)
Sampling Procedure	Type of sample and sample design used to select the survey respondents to represent the population. May include reference to the target sample size and the sampling fraction.	R	No	 Canadian adults randomly selected from Angus Reid Forum panel members. (Source: <u>https://hdl.handle.net/10864/11510</u>) Probability (Source: <u>https://ddialliance.org/Specification/D</u> <u>DI-CV/SamplingProcedure 1.1.html</u>)
Target Sample Size	Specific information regarding the target sam	ple size, act	ual sample siz	e, and the formula used to determine this.
Actual	Actual sample size. <i>Tip: The research study's actual sample size</i> <i>may be stated in this numeric field for</i> <i>reference purposes.</i>	0	No	• 1015
Formula	Formula used to determine target sample size. Tip: A plain-text, general description of a sample size formula may be stated here for	0	No	 Eligible employees who lived within the following FSAs: K6V, K7A, K7C, K7G, K7H, K7K, K7L, K7M, K7N, K7P,

Field	Definition with tips	Usage ³⁷	Repeatable	Example
	reference purposes. This may include particular methodologies, practices, and outcomes from existing scholarly literature.			К7R, K8N, K8P, K8R, K8V, K0E, K0G, K0H, K0K.
Major Deviations for Sample Design	Show correspondence as well as discrepancies between the sampled units (obtained) and available statistics for the population (age, sex-ratio, marital status, etc.) as a whole.	0	No	 The suitability of Ohio as a research site reflected its similarity to the United States as a whole. The evidence extended by Tuchfarber (1988) shows that Ohio is representative of the United States in several ways: percent urban and rural, percent of the population that is African American, median age, per capita income, percent living below the poverty level, and unemployment rate. Although results generated from an Ohio sample are not empirically generalizable to the United States, they may be suggestive of what might be expected nationally. (Source: https://ddialliance.org/Specification/D DI-Codebook/2.5/XMLSchema/field_level_documentation_files/schemas/codebook xsd/elements/deviat.html) Oversample of persons 50 and older Source: https://ddi.org/10.7910/DVN/FGTJGO
Collection Mode	Method used to collect the data; instrumentation characteristics (e.g., telephone interview, mail questionnaire, or other).	R	No	 Interview Paper and online questionnaire Coded from psychiatric hospital files, court records, and police agencies. (Source: https://hdl.handle.net/10864/12053)
Type of Research Instrument	Type of data collection instrument used. Structured indicates an instrument in which all respondents are asked the same questions/tests, possibly with precoded answers. If a small portion of such a questionnaire includes open-ended questions, provide appropriate comments. Semi-structured indicates that the research instrument contains mainly open-ended	R	No	 Questionnaire Structured Technical instrument: Static Chamber, Vaisala Humicap HM70 relative humidity/ temperature probe, Vaisala Carbocap GMP343 infrared analyzer, Hobo Pro v2 U23-003 temperature logger, Kestrel 3500 weather meter, Taylor 9878 thermometer.

Field	Definition with tips	Usage ³⁷	Repeatable	Example
	questions. Unstructured indicates that in- depth interviews were conducted.			(Source: https://hdl.handle.net/10864/12053)
Characteristics of Data Collection Situation	Description of noteworthy aspects of the data collection situation. Includes information on factors such as cooperativeness of respondents, duration of interviews, number of call backs, or similar.	0	No	 There were 1,419 respondents who answered questions in telephone interviews lasting approximately 35 minutes each. Clarifications to survey questions were limited and respondents were directed to provide a response based on the information provided as to not allow interviewer bias/assumptions to influence the survey results. (Source: <u>https://hdl.handle.net/10864/ZJ17A</u>)
Actions to Minimize Losses	Summary of actions taken to minimize data loss. Include information on actions such as follow-up visits, supervisory checks, historical matching, estimation, and so on.	0	No	 Reminder e-mails were distributed to target population. (Source: <u>https://doi.org/10.5683/SP/L1H3SS</u>) Cards reminding parents about the follow-up visit were given out. (Source: <u>https://doi.org/10.7939/DVN/10889</u>)
Control Operations	Methods to facilitate data control performed by the primary investigator or by the data archive.	0	No	 Field validation is built into REDCap data collection forms. (Source: <u>https://doi.org/10.7939/DVN/10907</u>) Blinded double data entry and third person cross-validation were used. (Source: <u>https://doi.org/10.7939/DVN/10900</u>)
Weighting	The use of sampling procedures might make it necessary to apply weights to produce accurate statistical results. Describes the criteria for using weights in analysis of a collection. If a weighting formula or coefficient was developed, the formula is provided, its elements are defined, and it is indicated how the formula was applied to the data.	R	No	 Rim weighting is used with this file. By region, the file was weighted to census targets on sex (wtsex), age (Wtage), and education (Wtedu) using the 2011 census. For this file, a religion weight (wtreligion) was also included based on the 2011 National Household Survey (NHS). The wtg2 variable includes all of these weights within it. (Source: https://doi.org/10.5683/SP/78RONJ) The final sample obtained for each area is not proportional to the Alberta

Field	Definition with tips	Usage ³⁷	Repeatable	Example
				 population it makes up. For instance, Edmonton is over-sampled as shown by TABLE 1. Edmonton makes up only 24% of the Alberta population but has 43% of the interviews. Therefore, in order to combine the samples for a provincial sample weighting is necessary. The weighting factors used for the 1987 survey are as follows: Edmonton 0.558439, Calgary 1.151521, and Other Alberta 1.471173. (Source: https://doi.org/10.7939/DVN/10567) wtx used to correctly weight respondents against Stats Canada Alberta population estimates (Source: https://doi.org/10.7939/DVN/10813)
Cleaning Operations	Methods used to clean the data collection, such as consistency checking, wildcode checking, or other.	0	No	 For income data, all respondents are matched to the tax data file unless they refuse to have their information linked. Data obtained from the tax file are complete and do not require imputation. Income figures are imputed only in the absence of tax data. Donor imputation by the nearest neighbour method is generally used and is performed primarily with Statistics Canada's Census Edit and Imputation System (CANCEIS). However, amounts received through certain government programs such as the universal childcare benefit and child tax benefits are derived from other information (e.g., number of children in the household) using a deductive imputation method. (Source: http://hdl.handle.net/11272/10619) Physiological data was reviewed for outliers. Individual breaths with tidal volume (VT), respiratory rate (RR) or

Field	Definition with tips	Usage ³⁷	Repeatable	Example
				minute ventilation (VE) that lay outside the 95% confidence interval for all infants were removed as outliers; 99.7% of all measured breaths were included in the final analyses. (Source: <u>https://doi.org/10.7939/DVN/10910</u>)
Study Level Error Notes	Note element used for any information annotating or clarifying the methodology and processing of the study.	0	No	 The computerized questionnaire contains many features designed to maximize the quality of the data collected. Many edits are built into the questionnaire to compare the reported data with unusual values and detect logical inconsistencies. When an edit fails, the interviewer is prompted to correct the information (with the respondent's help, if necessary). Once the data are transmitted to Head Office, a comprehensive series of processing steps are undertaken for the purpose of detailed verification of each questionnaire. Invalid responses are corrected or flagged for imputation. Edits were applied at a micro level. Deterministic edits and consistency edits were also performed at the micro level. Data was checked for outliers and extreme values and were corrected at a micro level when required. (Source: http://hdl.handle.net/11272/10619)
Response Rate	Percentage of sample members who provided information.	R	No	 Based on 100km radius, the survey response rate is 1874/3994 (46.9%), and the survey completion rate is 1732/3994 (43.4%). Based on FSAs for locations served by Kingston Transit, the survey response rate is 1469/3151 (46.6%), and the survey completion rate is 1356/3151 (43.0%).

Field	Definition with tips	Usage ³⁷	Repeatable	Example		
				(Source: <u>https://doi.org/10.5683/SP/CNXSVN</u>) • At one-month follow-up: 60.2% (n=136/226). (Source: <u>https://doi.org/10.7939/DVN/10889</u>)		
Estimates of Sampling Error	Measure of how precisely one can estimate a population value from a given sample. <i>Tip: Examples include confidence intervals,</i> <i>non-response, response bias.</i>	R	No	 In SFS 2016, the 95% confidence interval for the average net worth of Canadian families had a width of \$38,500. (Source: <u>http://hdl.handle.net/11272/10619</u>) + or - 2.5%; design effect of weighting not calculated (Source: <u>https://doi.org/10.7910/DVN/FGTJGO</u>) 		
Other Forms of Data Appraisal	Other issues pertaining to the data appraisal. Describe issues such as response variance, nonresponse rate and testing for bias, interviewer and response bias, confidence levels, question bias, or similar.	0	No	 OSBD is subject to interpretation since it is an indirect behavioral measure of perceived distress. (Source: https://doi.org/10.7939/DVN/10841) 		
Notes	General notes about this Dataset. Tip: Includes notes related to fields in the Social Science and Humanities section.					
Туре	Type of note.	0	No	Processing note		
Subject	Note subject.	0	No	Variable corrections		
Text	Text for this note.	0	No	 Info (Misc) v2 note: Corrections were made to variables: PAS1MRG1, PAS1MRG2, PASRDPO1, PASRDPO2, PASRDPO3, PASRDPO4, PASRDPO5 and VERDATE. (Source: http://hdl.handle.net/11272/10619) 		

Astronomy and Astrophysics Metadata

Introduction

The fields in this block allow for description of astronomical or astrophysical data. Within the research communities of astronomy and astrophysics, there exist domain-specific repositories, sometimes associated with major observatories, for depositing and sharing data, including the <u>Hubble Legacy</u> <u>Archive</u>,³⁸ <u>CFHT Science Archive</u>³⁹, and <u>VLA Data Archive</u>.⁴⁰ Motivations for depositing astronomical or astrophysical data in a multi-disciplinary repository like a Dataverse repository may include achieving broader dissemination of the data or greater visibility for it.

Source of the metadata fields

Most of the metadata fields in this block are based on the <u>Virtual Observatory (VO) Discovery and</u> <u>Provenance Metadata⁴¹</u> recommendation, an implementation of the International Virtual Observatory Alliance's <u>Resource Metadata for the Virtual Observatory</u>, <u>Version 1.12 (2007)</u>⁴² specification, which is referred to as IVOA-RM in this document. Fields that are not part of IVOA-RM are noted in the table below.

While Dataverse documentation indicates that the Astronomy and Astrophysics metadata fields "can be mapped or exported to the International Virtual Observatory Alliance's (IVOA) VOResource Schema format⁴³ (i.e., IVOA-RM), it is not possible to export directly from a Dataverse repository in this format. To generate IVOA-RM records, it would be necessary to create a mapping from one of the two export formats that include the fields (JSON and OAI-ORE) to IVOA-RM and transform the metadata.

Examples in this section are taken from the IVOA-RM specification and are supplemented with real examples from the Harvard Dataverse repository.

Following the main table are:

- a table of terms and definitions for the Type controlled vocabulary,
- additional examples taken from datasets found in the Harvard Dataverse repository, and
- additional fields from the IVOA-RM sample record for context.

³⁸ https://hla.stsci.edu

³⁹ https://www.cadc-ccda.hia-iha.nrc-cnrc.gc.ca/en/cfht

⁴⁰ https://science.nrao.edu/facilities/vla/archive/index

⁴¹ http://perma.cc/H5ZJ-4KKY

⁴² http://www.ivoa.net/documents/latest/RM.html

⁴³ See: <u>http://guides.dataverse.org/en/latest/user/appendix.html</u>

Astronomy and Astrophysics Metadata Block

Field	Definition with tips	Usage ⁴⁴	Repeatable	Examples ⁴⁵
Туре	The nature or genre of the content of the files in the dataset. Note: This field is a drop-down list; select all that apply. Most of the types originate in the <u>Virtual</u> <u>Observatory (VO) Discovery and Provenance</u> <u>Metadata⁴⁶ specification. For type definitions, see the table below.</u>	R	No	Survey, Catalog See also examples 1-7 below.
Facility	The observatory or facility where the data was obtained. <i>Tip: For theoretical data, identify the computational</i> <i>facility where it was obtained. Repeat the element</i> <i>when naming more than one facility.</i>	R	Yes	Apache Point Observatory, Sloan 2.5-m Telescope See also examples 1-7 below.
Instrument	The instrument used to collect the data. <i>Tip: Identify a specific instrument or an instrument</i> <i>type for observational data. Provide the name of the</i> <i>computer code for theoretical data.</i>	R	Yes	Five-band clocked CCD camera See also examples 2-7 below.
Object	Astronomical Objects represented in the data (Given as SIMBAD recognizable names preferred). Note: The <u>SIMBAD database</u> ⁴⁷ provides a concordance for different name schemes. For the non-specialist, it is somewhat difficult to use.	R	Yes	HD 1234 (or <u>GEN#</u> +1.00001234) See also examples 1-4 and 6- 7 below.
Spatial Resolution	The spatial (angular) resolution that is typical of the observations, in decimal degrees.	R	No	0.00028 See also examples 2-7 below.
Spectral Resolution	The spectral resolution that is typical of the observations, given as the ratio $\lambda/\Delta\lambda$. Tip: The spectral resolution may also be given as the difference between velocities Δv , calculated by using the Doppler effect, that can be distinguished in a line of the spectrum.	R	No	5000 Given here as $\lambda/\Delta\lambda$ 0.15 km/s Given here as Δ v See also examples 2, 3 and 5 below.
Time Resolution	The temporal resolution that is typical of the observations, given in seconds.	R	No	120

⁴⁴ R = Recommended; O = Optional

⁴⁵ The examples are mainly drawn from the sample record included in the <u>IVOA-RM specification</u> (see <u>Section 6: Example</u>). Other fields from this record (including the title and description) are included in the <u>IVOA-RM Example</u>' table on page 40.

⁴⁶ <u>https://perma.cc/H5ZJ-4KKY</u>

⁴⁷ http://simbad.u-strasbg.fr/simbad

Field	Definition with tips	Usage ⁴⁴	Repeatable	Examples ⁴⁵	
Bandpass	Conventional bandpass name. Tip: Specific bandpass names include: optical bandpasses (U, V, B, R, I); and narrow line filters (H- alpha, [OIII]).	R	Yes	u', g', r', i', z' U, B, V, JHK, 450 See also example 4 below.	
Central Wavelength (m)	The central wavelength of the spectral bandpass, in meters. Note: This is not an IVOA-RM element.	R	Yes	See example 5 below.	
Wavelength Range	The minimum and maximum wavelength of the spectra	l bandpass.			
Minimum (m)	The minimum wavelength of the spectral bandpass, in meters.	0	Yes	400.e-9	
Maximum (m)	The maximum wavelength of the spectral bandpass, in meters.	0	Yes	850.e-9	
Dataset Date Range	Time period covered by the data. Tip: When using this field, best practice is to supply a date range that includes date and time, and, in addition, to supply the date range again in the 'Time Period Covered' field in the Citation block.				
Start	Dataset Start Date. Tip: Provide a date or date/time (preferred) in ISO 8601 format (e.g., YYYY-MM-DDTHH:MM:SSZ).	R	Yes	1999-12-25 2020-01-08T15:16:23Z See also examples 4, 6 and 7 below.	
End	Dataset End Date. Tip: Provide a date or date/time (preferred) in ISO 8601 format (e.g., YYYY-MM-DDTHH:MM:SSZ).	R	Yes	2001-07-15 2021-03-09T19:26:00+05:00 See also examples 4, 6 and 7 below.	
Sky Coverage	The sky coverage of the data object. Note: Follow the syntax found in the <u>Space-Time</u> <u>Coordinate (STC) Metadata Recommendation</u> . ⁴⁸	R	Yes	PositionInterval FK5 145.17 – 1.25 235.9 1.25 PositionInterval FK5 250.71 52.15 267.0 66.29 PositionInterval FK5 350.43 – 1.25 359.99 1.17 PositionInterval 0.0 –1.25 56.37 1.17 See also examples 1-5 and 6-	

⁴⁸ http://www.ivoa.net/documents/latest/STC.html

Field	Definition with tips	Usage ⁴⁴	Repeatable	Examples ⁴⁵
				7 below.
Depth Coverage	The (typical) depth coverage, or sensitivity, of the data object in Jy. <i>Tip: This is the faintest flux of energy that can be perceived (units: Jensky (Jy)).</i>	R	No	3.e-6
Object Density	The (typical) density of objects, catalog entries, telescope pointings, etc., on the sky, in number per square degree. <i>Tip: Objects could be stars, galaxies, planets, star</i> <i>clusters, asteroids, etc.</i>	0	No	6.e4
Object Count	The total number of objects, catalog entries, etc., in the data object. <i>Tip: Objects could be stars, galaxies, planets, star</i> <i>clusters, asteroids, etc.</i>	Ο	No	2.e7
Fraction of Sky	The fraction of the sky represented in the observations, ranging from 0 to 1.	0	No	0.01
Polarization	The polarization coverage. Note: This is not an IVOA-RM element.	R	No	
RedshiftType	RedshiftType string C "Redshift"; or "Optical" or "Radio" definitions of Doppler velocity used in the data object. Note: This is not an IVOA-RM element. Tip: The light coming from an object moving away from you is redshifted (Doppler effect), which means that the frequency of that light is shifted to a lower value. The speed of an object can be computed by measuring the shifts in frequencies of peaks in its spectra. Since the Universe is expanding, the more distant an object is, the more it is redshifted. For that reason, redshift is used as a unit of distance for the most distant objects. This field RedshiftType serves to indicate which part of the spectra was used to measure the redshift.	0	No	
Redshift Resolution	The resolution in redshift (unitless) or Doppler velocity (km/s) in the data object. Note: This is not an IVOA-RM element.	0	No	
Redshift Value	The value of the redshift (unitless) or Doppler velocity (km/s) in the data object. <i>Consists of 2 subfields</i> .			
Minimum	The minimum value of the redshift (unitless) or	0	Yes	

Field	Definition with tips	Usage ⁴⁴	Repeatable	Examples ⁴⁵
	Doppler velocity (km/s) in the data object. Note: This is not an IVOA-RM element.			
Maximum	The maximum value of the redshift (unitless) or Doppler velocity (km/s) in the data object. <i>Note: This is not an IVOA-RM element.</i>	0	Yes	

Type definitions

Туре	Definition (from VO 2012, where applicable)
Image	One or more 2-D images
Mosaic	Mosaic of multiple 2-D images
EventList	One or more event lists
Spectrum	One or more 1-D spectra
Cube	One or more 3-D data cubes
Table	Table of values; at least two columns
Catalog	Collection of derived data, primarily in tabular form
LightCurve	One or more 1-D light curves
Simulation	Theoretical simulation or model
Figure	
Artwork	Artists' renderings of astronomical phenomena or objects
Animation	Animation clips of astronomical phenomena
PrettyPicture	
Documentation	
Other	A data object not described by any of the above types.
Library	Collection of published materials (journals, books, etc.)
Press Release	
Facsimile	Digitized facsimile of (historical) document
Historical	Historical information about astronomical objects.
Observation	Collection of data objects (files) associated with one or more observations
Object	Collection of data objects (files) associated with one or more celestial objects
Value	Single value
ValuePair	Keyword-value pair
Survey	Collection of observations covering substantial and contiguous areas of the sky

Supplemental examples from real datasets

All examples are taken from the Harvard Dataverse repository.

Example 1: <u>https://doi.org/10.7910/DVN/10.1088</u>

Astronomy and Astrophysics Metadata 🔺			
Туре 😧	Cube		
Facility 🕄	SMA;		
Object 🚱	ophasm1;		
Dataset Date Range	2007-07-29T07:33:38.007 2007-07-29T07:33:38.007		
Sky Coverage 🚱	(246.614992908 -24.3986103898);		

Example 2: https://doi.org/10.7910/DVN/SDHQRP

Astronomy and Astrophysics Metadata 🔺		
Туре 🚱	Image	
Facility 🕄	Green Bank Telescope	
Instrument 🕢	K-band Focal Plane Array	
Object 🚱	Serpens South	
Spatial Resolution 🕄	32"	
Spectral Resolution 🚱	0.15 km/s	
Sky Coverage 📀	(277.541666667 -2.0)	

Example 3: <u>https://doi.org/10.7910/DVN/B7TAFU</u>

Astronomy and Astrophysics Metad	ata 🔨
Туре 🕄	Cube
Facility 🕄	GBT
Instrument 😯	W-band receiver
Object 🚱	W49; W51
Spatial Resolution 🕄	10"
Spectral Resolution 🕢	0.25 km/s
Sky Coverage 🚱	(287.5588 9.103852777777778); (287.5069149505811 9.160234421054046); (290.9310703578097 14.50682269941492); (290.8599951721404 14.55345161586474); (290.92472916666666 14.513191666666667)

Example 4: <u>https://doi.org/10.7910/DVN/K4GWMI</u>

Astronomy and Astrophysics Metadata 🔺			
Туре 🚱	Image		
Facility 🚱	JCMT		
Instrument 🕢	SCUBA		
Object 🕄	SCUBA Galactic Centre Survey (450um)		
Spatial Resolution 🕄	-4.3301961938407E-4		
Bandpass 🕢	450		
Dataset Date Range 🕄	1998-04-07 1998-04-07		
Sky Coverage 🕄	(266.41720833332 -29.007938888886972)		

Example 5: <u>https://doi.org/10.7910/DVN/X4PQ1Z</u>

Astronomy and Astrophysics Metadata 🔺			
Туре 🕢	Cube		
Facility 🕄	Arecibo Observatory		
Instrument 🕄	ALFA		
Spatial Resolution 🕢	4'		
Spectral Resolution 🕄	0.184 km/s		
Central Wavelength (m) 📀	1420.405		

Example 6: <u>https://doi.org/10.7910/DVN/28977</u>

Astronomy and Astrophysics Metadata 🔺			
Туре 🕢	Image		
Facility 🚱	ESO-NTT; ESO-VLT-U1		
Instrument 🕄	SOFI; ISAAC		
Object 😯	Flat Fielded; L2; L6; L1; L4; L5; L3		
Spatial Resolution 🚱	2.97409421611617E-8 - 1.96286967956165E-5		
Dataset Date Range	2000-03-14T00:14:58 2000-03-14T00:14:59.200 2002-10-10T06:49:07 2002-10-10T06:49:07.110 2002-12-19T06:07:31 2002-12-19T06:07:31.110 2002-10-10T05:48:56 2002-10-10T05:48:56.110 2002-10-12T06:47:06 2002-10-12T06:47:06.110 2002-10-14T08:34:35 2002-10-14T08:34:35.110 2002-10-12T05:48:41.173 2002-10-12T05:48:41.283		
Sky Coverage 🕢	(85.4366666666667 -1.906991666666667); (83.8304690978601 -5.39957831315445); (83.8040205175233 -5.40392302994954); (83.8290803234773 -5.37912292534363); (83.7832586106861 -5.36222589662728); (83.8056282744872 -5.38764313485259); (83.8479212323983 -5.39678424213229)		

Example 7: https://doi.org/10.7910/DVN/2HV60F

Astronomy and Astrophysics Metadata 🔺			
Туре 🚱	Image		
Facility 🔞	Gemini-South		
Instrument 🕄	GMOS-S		
Object 🕄	SPT-CLJ2118-5055		
Spatial Resolution 🚱	-4.051449E-54.051262E-5		
Dataset Date Range	2011-04-11T09:23:26.000 2011-04-11T09:24:36.498 2011-04-11T09:27:38.009 2011-04-11T09:31:48.504		
Sky Coverage 🕄	(319.727907 -50.931761); (319.727949 -50.931731)		

IVOA-RM Example

The examples in the main table are mainly drawn from the sample record included in the <u>IVOA-RM</u> <u>specification</u> (see section 6). Additional fields from the sample record are given below for context.

	IVOA-RM example value
Title	Sloan Digital Sky Survey
Author	Sloan Digital Sky Survey Consortium
Keyword/Term	galaxies, quasars, stars, CCD photometry, spectroscopy, redshift, sky surveys
Description/Text	The Sloan Digital Sky Survey is using a dedicated 2.5 m telescope and a large format CCD camera to obtain images of over 10,000 square degrees of high Galactic latitude sky in five broad bands (u', g', r', i' and z', centered at 3540, 4770, 6230, 7630, and 9130 Å, respectively). Medium resolution spectra will be obtained for approximately 106 galaxies and 100,000 quasars. The early data release (EDR), on June 2001, includes searchable catalogs of images and spectra, images for display and scientific purpose in both 2-D FITS and JPEG formats, and spectra in both 1-D FITS and GIF formats. The EDR covers about 460 square degrees of sky. The next data releases will occur every 18 months or so.

Life Sciences Metadata

Introduction

Life sciences metadata describes scientific research in multiple domains that focus on the study of living organisms including biology, zoology, microbiology, physiology, biochemistry, and related subjects.

The life sciences metadata block includes six fields with drop-down lists. Each of these fields are supplemented by a free text field that may be used when "Other" is selected from the primary field's drop-down list.

The examples in this section are fictitious but screen shots from actual datasets in the Harvard Dataverse repository are included after the table.

According to Dataverse documentation, Life Sciences Metadata fields are based on <u>ISA-Tab Specification</u>,⁴⁹ along with controlled vocabulary from subsets of the <u>OBI Ontology</u>⁵⁰ and the <u>NCBI Taxonomy for</u> <u>Organisms</u>.^{51 52} For more information, including the full list of vocabulary terms, see the documentation for the <u>life sciences metadata block</u>.⁵³

⁴⁹ <u>https://isa-specs.readthedocs.io/en/latest/isamodel.html</u>

⁵⁰ <u>http://bioportal.bioontology.org/ontologies/OBI</u>

⁵¹ <u>http://www.ncbi.nlm.nih.gov/Taxonomy/taxonomyhome.html</u>

⁵² See: <u>http://guides.dataverse.org/en/latest/user/appendix.html</u>

⁵³ <u>https://docs.google.com/spreadsheets/d/13HP-jI_cwLDHBetn9UKTREPJ_F4iHdAvhjmlvmYdSSw/edit#gid=2</u>

Life Sciences Metadata Block

Field	Definition	Usage ⁵⁴	Repeatable	Example
Design Type	Design types that are based on the overall experimental design. Note: This field is a drop-down list; select all that apply. If there is no appropriate option, select Other and use the Other Design Type field.	R	No	 Case control Randomized controlled trial Technological design
Other Design Type	If Other was selected in Design Type, list any other design types that were used in this Dataset.	0	Yes	
Factor Type	Factors used in the Dataset. Note: This field is a drop-down list; select all that apply. If there is no appropriate option, select Other and use the Other Factor Type field.	Ο	No	AgeDisease stateStrain
Other Factor Type	If Other was selected in Factor Type, list any other factor types that were used in this Dataset.	0	Yes	
Organism	The taxonomic name of the organism used in the Dataset or from which the starting biological material derives. Note: This field is a drop-down list; select all that apply. If there is no appropriate option, select Other and use the Other Organism field.	R	No	Homo sapiensMus musculusOryza sativa
Other Organism	If Other was selected in Organism, list any other organisms that were used in this Dataset. Terms from the <u>NCBI Taxonomy</u> ⁵⁵ are recommended.	0	Yes	
Measurement Type	A term to qualify the endpoint, or what is being measured (e.g., gene expression profiling; protein identification). Note: This field is a drop-down list; select all that apply. If there is no appropriate option, select Other and use the Other Measurement Type field.	R	No	Cell countingHematologyTargeted sequencing
Other Measurement Type	If Other was selected in Measurement Type, list any other measurement types that were used. Terms from <u>NCBO Bioportal</u> ⁵⁶ are recommended. <i>Tip: NCBO Bioportal is a searchable registry of</i> <i>hundreds of ontologies. Users can select an ontology</i> <i>and download the most recent version to see terms.</i> <i>New users may wish to either seek further guidance or</i>	0	Yes	

⁵⁴ R = Recommended; O = Optional

⁵⁵ <u>https://www.ncbi.nlm.nih.gov/taxonomy</u>

⁵⁶ <u>http://bioportal.bioontology.org/ontologies</u>

Field	Definition	Usage ⁵⁴	Repeatable	Example
	disregard this recommended registry.			
Technology Type	A term to identify the technology used to perform the measurement (e.g., DNA microarray; mass spectrometry). Note: This field is a drop-down list; select all that apply. If there is no appropriate option, select Other and use the Other Technology Type field.	R	No	 DNA microarray Flow cytometry Gel electrophoresis
Other Technology Type	If Other was selected in Technology Type, list any other technology types that were used in this Dataset.	0	Yes	
Technology Platform	The manufacturer and name of the technology platform used in the assay (e.g., Bruker AVANCE). Note: This field is a drop-down list; select all that apply. If there is no appropriate option, select Other and use the Other Technology Platform field.	R	No	 Affymetrix AQI Biosciences BD BACTEC MGIT 320
Other Technology Platform	If Other was selected in Technology Platform, list any other technology platforms that were used in this Dataset.	0	Yes	
Cell Type	The name of the cell line from which the source or sample derives. <i>Tip: Terms from <u>Cell Ontology</u>⁵⁷ are recommended.</i>	0	Yes	 Collar cell Scleral cell Unimodal nocireceptor

⁵⁷ https://www.ebi.ac.uk/ols/ontologies/cl

Examples from real datasets

Farhat, Maha, 2015, "genetic variation", <u>https://doi.org/10.7910/DVN/AQ5LH5</u>, Harvard Dataverse, V2, UNF:6:SDP+kyIqLcAbXLu6wA+xnw== [fileUNF]

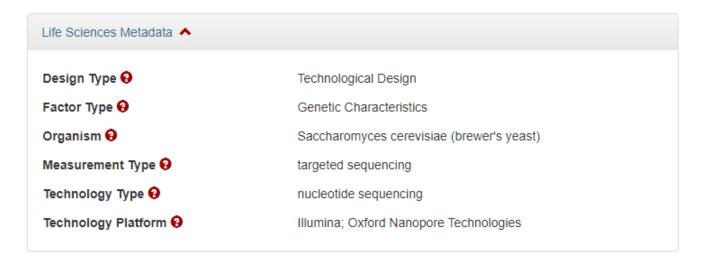
Life Sciences Metadata 🔺	
Design Type 🕄	Case Control
Factor Type 📀	Drug Susceptibility
Organism 🕄	Mycobacterium tuberculosis
Measurement Type 📀	genome sequencing
Technology Type 📀	nucleotide sequencing
Technology Platform 📀	Illumina

Collins, Adam, 2018, "Images from screening plates", <u>https://doi.org/10.7910/DVN/YB2L5A</u>, Harvard Dataverse, V1.

Note that version 5.1 of the Dataverse software introduced a free text field for Other Technology Type, which may be used in combination with the Technology Type field (as Measurement Type and Other Measurement Type are used in the example below).

Life Sciences Metadata 🔺				
Factor Type 🕄	Treatment Type			
Organism 😮	Escherichia coli; Homo sapiens			
Measurement Type 🕢	Other			
Other Measurement Type 🕢	Immunofluorescence microscopy			
Technology Type 🕄	Other			
Сеll Туре 🕄	HeLa			

Buchmuller, Benjamin C; Herbst, Konrad; Meurer, Matthias; Kirrmaier, Daniel; Sass, Ehud; Levy, Emmanuel D; Knop, Michael, 2019, "Pooled clone collections by multiplexed CRISPR-Cas12a-assisted gene tagging in yeast [Dataset]", https://doi.org/10.11588/data/L45TRX, heiDATA, V2



Journal Metadata

Introduction

The Journal Metadata Block is to be used only by journals using a Dataverse repository as its data repository. This block will identify the journal volume, issue, and article type that a dataset is associated with. The fields in this metadata block help describe the journal's content that is linked to the data as opposed to the dataset itself.

Note: The Journal Metadata Block should not be confused with the Citation Metadata Block's *Related Publications field* and *sub-fields*. These fields identify all known publications related to a dataset, whereas the Journal Metadata Block is reserved for Journals choosing to house copies of data directly associated with its publication.

The example used in this section is from the Harvard Dataverse repository.

According to Dataverse documentation, Journal Metadata fields are based on the <u>Journal Archiving and</u> <u>Interchange Tag Set</u> (JATS), version 1.2.

Field	Definition	Usage ⁵⁸	Repeatable	Example
Journal	Indicates the volume, issue and date of a journal, which this Dataset is associated with.			https://doi.org/10.7910/DVN/XKMNAO
Volume	The journal volume which this Dataset is associated with (e.g., Volume 4).	0	Yes	113
lssue	The journal issue number which this Dataset is associated with (e.g., Number 2, Autumn).	0	Yes	2
Publication Date	The publication date for this journal volume/issue, which this Dataset is associated with (e.g., 1999). <i>Tip: The date attribute follows the ISO</i> <i>convention of YYYY-MM-DD</i>	0	Yes	2019
Type of Article	Indicates what kind of article this is, for example, a research article, a commentary, a book or product review, a case report, a calendar, etc. (based on JATS). Note: This field is a drop-down list; select one article type.	0	No	research article

Journal Metadata Block

 $^{^{58}}$ R = Recommended; O = Optional

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Example Datasets

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