# Data Management Plan: (Title of the thesis)

### Author(s) of the thesis:

### Commissioner of the thesis: (organisation / project / person, if any)

## General description of data

A table or list of data that you collect and produce or existing data and its properties (type, file format, rights to use the data, size):

Controlling the consistency and quality of data:

## Personal data, ethical principles and legal compliance

Does the data contain personal data (yes/no); measures related to their processing:

Other legislative and ethical factors in the thesis and related actions:

Rights to use, collect, or continue to use the data, possible confidentiality, and related measures:

## Documentation and metadata

The author of the thesis makes at least his / her own notes on how the data has been processed during the research. Method of implementation:

If the data is saved for further use, where and in what format is the information describing the data saved:

## Storage and backup during the thesis project

Storage and backup of the data:

Controlling access to your data:

## Archiving and opening, destroying or storing the data after the thesis project

Possible archiving and opening of the data and descriptive metadata for reuse:

Data to be destroyed and method of implementation:

Data to be stored for authors and / or the commissioner and storing location:

## Data management responsibilities and resources

Responsibilities and possible resources available:

### Plan prepared (place and time):

(Note: The plan is completed as applicable. You can refer to your thesis plan. Instructions can be found in this document. If a question is not relevant for your thesis, leave blank or briefly explain why. You can remove the instruction pages from the completed plan.)

## **Data management plan template and guidelines for theses at Jamk University of Applied Sciences**

## The following key points will get you started with drawing up the data management plan:

* The plan can be written on the finished template at the beginning of this guide. You can remove the instruction pages from the completed plan.
* Instructions for each section can be found in this document.
* Do not copy the content of the plan from others. Instead, prepare it from the perspective of your thesis. You should personally understand the content of the plan and how it guides your activities.
* Answer at least all the main questions. Not all sub-questions need to be answered separately. If a question is not relevant for your thesis, briefly explain why.

## What are the purposes of research data management and data management plans?

* At Jamk, a data management plan is prepared as an appendix to the thesis plan.
* The data management plan is an indication of your competence as a higher education student. The management of research data and the preparation of a data management plan are part of good scientific practice. Data management planning provides the skills needed in working life related to the management of various data and documents.
* The plan enables you to provide yourself with instructions on how to process data over the course of the thesis process.
* The plan helps you to identify the risks related to data protection, for example. A data management plan prepared in advance reduces the risk of lost or destroyed data.
* It enables you to anticipate and manage the details related to ownership and user rights if you complete the thesis by order of an organisation or as part of a project.
* A plan prepared in advance enables the further use of the data.
* Your research data management practices should follow the FAIR principles, which require that your data will be Findable, Accessible, Interoperable and Re-usable.
* It enables you to anticipate and manage the details related to ownership and user rights if you complete the thesis by order of an organisation or as part of a project.
* A plan prepared in advance enables the further use of the data.

## Principles of the data management plan:

* First, familiarise yourself with all of the questions! Answer the questions in a concise and concrete manner.
* The data management plan assesses risks. Thus, you should demonstrate that you are able to identify, anticipate and manage the risks associated with the data management process (e.g. processing of personal data, secure storage and sharing of data, agreeing on user rights).
* Always ensure that your data management plan complies with Jamk’s and the commissioner’s instructions and requirements. Demonstrate that you are familiar with them.
* The data management plan is an appendix to the thesis plan, and the plans complement each other. Both plans describe the data from different perspectives:
	+ **The thesis plan or research plan** (if relevant) describes the scientific, analytical and methodological processing of the data.
	+ **The data management plan (DMP)** describes the technical and administrative processing of the data.
	+ To avoid overlap, refer to the research plan in the data management plan and vice versa.

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| **1. General description of data** |
| **1.1 Describe, what kinds of data is your research based on? What data will be collected, produced, or reused? What file formats will the data be in?**Briefly describe, for example, the data you use as a table or list and its properties under the following main headings:1. Data whose compilation or generation you participate in.
2. Existing data you intend to (re)use. It is not necessary to describe all sources which you reference, but if you use, for example, sample, survey or interview data collected by someone else, take this into account here.

In your table or list, describe the following from these data:* Data types: for example, text types, images, video or audio recordings, survey data, photographs, measurements, statistics, physical samples or codes.
* State the basis on which you have the right to use data collected/generated by someone else (enabled by a licence or rights of use, rights granted by the commissioner, etc.).
* Describe the file formats you will use. If the volume of the data is large, it is advisable to evaluate the size of/disk space required by the data.

**Tips for best practices*** Examples of file formats: .csv, .txt, .docx, .xslx, .tif
* If you use online materials and data collected from social media platforms, mention these as well.
* When listing the file formats, you will be using, make sure to include any special or uncommon software necessary to view or use the data, especially if the software is coded in your thesis/project.
* The details and processes related to data analysis and research methods are described in the thesis plan.
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| **1.2 How will the consistency and quality of data be controlled?**Briefly describe how to ensure that no data is accidentally changed, and that the original data content is secured over its entire life cycle. How to ensure that data remains of high quality throughout its lifecycle, e.g., when converting or transferring data or files from systems or during analysis.**Tips for best practices*** Always ensure that the original data content is secured when converting data and files. For example, back up the original survey data as a table before you start to analyse it. You can also calculate checksums.
* As aspects related to data analysis, methods and tools are described in the thesis plan (and research plan), there is no need to describe them here.
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| **2. Personal data, ethical principles and legal compliance** |
| **2.1 What ethical and legal issues are related to your data management, for example, the Data Protection Act and other legislation related to the processing of the data?****Identify and tell us if your data contains personal data or if you process** [special categories of personal data](https://tietosuoja.fi/en/processing-of-special-categories-of-personal-data)**. If so, explain how you process personal data, prepare a privacy statement, how the subjects are informed and how you protect privacy, for example by anonymising or pseudonymising the data. Sensitive personal data (special categories) must be processed with particular care.** **Please indicate if there are any other research ethics or legal issues related to your thesis. How are they taken into account and how are the subjects informed? Indicate if an ethics review is required.****Tips for best practices** * First determine whether personal data is processed in your thesis! All data concerning a directly or indirectly identified or identifiable person is personal data. [Further information is provided by the Office of the Data Protection Ombudsman here.](https://tietosuoja.fi/en/what-is-personal-data)
* Read the data protection instructions for theses on the data protection site in the Jamk´s Intranet. The site also contains a privacy statement template.
* If you process personal data, specify which types of personal data you collect. Explain how you inform the data subject and request consent for the processing of personal data. Explain how you protect the subjects’ privacy or anonymise/pseudonymise the data. [Further information about informing the subjects is available in the Data Management Guidelines (by Finnish Social Sciences Data Archive FSD).](https://www.fsd.tuni.fi/aineistonhallinta/en/informing-research-participants.html)
* If you have to apply to an ethical committee for an ethical review in human sciences (Master’s degrees), state this in the data management plan and outline how you will comply with the protocol (i.e. how to remove personal or sensitive information from your data before sharing it to ensure privacy protection).
* Note that the participants of your study must be notified of any archiving of data to a national data archive, or a permit must be requested from them in good time. [Further information on informing the subjects about archiving is available in the FSD´s Data Management Guidelines.](https://www.fsd.tuni.fi/aineistonhallinta/en/informing-research-participants.html#informing-research-participants-about-archiving)
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| **2.2 Data access rights? Is the data confidential?**Describe how you agree on the access rights to research data collected, generated and (re)used in the thesis. Describe, for example, the agreements with the commissioner and the possible need for a research permit. Describe the procedures and confidentiality practices related to any transfer of rights. **Tips for best practices*** Review the organisational principles regarding data ownership and access and distribution rights. Find out and explain whether an agreement on the ownership or use rights of the data must be drawn up with the commissioner, e.g. after the completion of the thesis.
* For example, check whether a research permit is required if your thesis is targeted at an organisation or its members or if you need the organisation’s register or archive data for the thesis. The permission also specifies how you can use the received data. [Instructions for applying for a research permit from Jamk are available here](https://www.jamk.fi/en/research-and-development/research/research-permit).
* If you complete the thesis for a commissioner, take note of its policies at the outset. Make sure that you have received permits for storing and possibly sharing the data.
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| **3. Documentation and metadata** |
| **3.1 How do you document and describe your data?** The thesis worker must be able to describe the different stages of the work. Always take notes about the steps involved in collecting and processing the data. This way, you will have information about the processing and modifications of the data. **If you plan to save the data for further use after completing the thesis**, the description data must be documented with particular care. In this case, explain how and where you save the following information describing the data. The minimum information is the name and the description of the purpose/content of the data, data type, format and location of storage, authors, and access rights to the data (e.g. a CC license). Variable descriptions must be saved for any quantitative data. The description is not given in this plan; it only explains how it will be implemented.**Tips for best practices*** You can take notes for yourself, for example, in a separate text file, which is stored with the data. The descriptions of quantitative data variables are often saved as part of the data.
* If you are considering archiving and further use of the data, save the descriptive data for yourself during the thesis process and include at least the minimum information mentioned above. You will need this information when the data is saved and possibly opened for further use.
* Further information on the minimum requirements of data documentation is available in [the FSD’s Data Management Guidelines, for example](https://www.fsd.tuni.fi/aineistonhallinta/en/data-description-and-metadata.html).
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| **4. Storage and backup during the thesis project** |
| **4.1 Where will your data be stored, and how will it be backed up?**Explain where the data will be stored and whether it will be backed up during the thesis process. If the thesis involves several authors, prepare the plan together and ensure the safe transfer of data between the authors during the thesis process.Demonstrate that you are familiar with your organisation’s storage solutions. Do not simply refer to Jamk’s or the commissioner’s instructions but explain in concrete terms how the data is stored in compliance with the instructions. **Tips for best practices*** It is recommendable to store the data in storage solutions offered by Jamk, and not on a personal account, for example.
* You can find a list of the tools and storage solutions offered by Jamk in the Jamk’s Thesis guide.
* Clearly name the data and its versions. Create clearly named folders to store data.
* [Instructions for the physical storage of research data are provided in the FSD´s Data Management Guidelines.](https://www.fsd.tuni.fi/aineistonhallinta/en/physical-data-storage.html)
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| **4.2 Who will be responsible for controlling access to your data, and how will secured access be controlled?**Information security is essential, especially if the data contains, for example, personal or sensitive data, such as health-related data, politically sensitive data or business secrets. Explain how the access to the data is monitored, who has access to your data, what the persons who have access can do to the data and how you ensure that the data is transferred securely to the thesis commissioner, for example.**Tips for best practices*** As a rule, you can use e-mail to transfer data within Jamk. FileSender is a good tool for sending documents outside the organisation. It is also suitable for large files, but not for sensitive data. In OneDrive, for example, you can manage the access rights but cloud services are not suitable for all data. The personal home directory (H: drive) is also suitable for sensitive information.
* You can find a list of the tools and storage solutions offered by Jamk in the Jamk’s thesis guide (chapter 4.4.5).
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| **5. Archiving and opening, destroying or storing the data after the thesis project** |
| First, consider together with your thesis tutor and possible commissioner whether the data set will be archived and opened for re-use after the thesis has been completed (section 5.1) or whether it will be destroyed systematically or archived justifiably for the authors/commissioner (section 5.2). Based on this, choose which questions to answer. Note! Master's thesis data must always be stored as such for two years before possible disposal. Jamk does not archive thesis data for itself.**5.1 Can some of the data be made openly available and published? Where will the data be published?**Answer this section if you plan to open the data for re-use. In this case, the data can be found in a data research dataset finder (e.g. Etsin), and the user can download it for their own research directly or on a permit basis. The opening enables the re-use of data in other studies in accordance with the principles of open science and research. The opened data is merit to its author.State whether you plan to make your data openly accessible **in full or in part**. Consider the following aspects:* Is the data, that you plan to make openly accessible, reliable and of high quality? In other words, is it suitable for reuse?
* Are there any obstacles to opening the data? For example, protection of privacy or personal data, the commercial utilisation of results and the protection of related rights or compromising operational objectives.
* Is the openness limited by the project’s terms of funding or any agreements?
* Can the data you plan to open for public access be used for commercial purposes? Has the protection of rights already been ensured?
* Are you sure that the data has been anonymised? If not, the data may not be made openly accessible. In the case of master’s theses, the author must also store the original, non-anonymized data for herself/himself for two years.
* Have the participants of the study been informed in time about making the data openly accessible and archiving it?

**Tips for best practices*** If you want to archive and open the data for re-use, first consider whether the data is reliable and of high quality. You can ask about opening opportunities at att(a)jamk.fi.
* If you have collected data in a Jamk project, it can be saved together with the staff in the data storage service, in which case the data is available in the Etsin and Tiedejatutkimus.fi services. **First contact** the personnel or e-mail att(a)jamk.fi.
* It is recommended that the codes and software created in connection with the thesis project be provided for reuse. For this purpose, use a Creative Commons licence, for example. [Instructions for selecting a CC license can be found here.](https://creativecommons.org/share-your-work/)
* Publishing the thesis and any research article based on it is not the same thing as opening the data.
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| **5.2 Where will data be stored, and for how long? How is the data destroyed?**Together with your thesis tutor and commissioner, if any, consider whether the data will be stored for reuse after the thesis project or will it be systematically destroyed. NOTE If it is a master’s degree thesis, the research data must always be saved two years after graduation. After that, it is destroyed or stored anonymized.Briefly describe which parts of your data you intend to store and for how long. Classify your data in accordance with the anticipated retention period:1. Data to be destroyed at the end of the thesis project. Describe which parts of your data will be destroyed in a secure manner after completing the thesis project and how the destruction is implemented. Describe the systematic destruction process.
2. Data to be stored for possible reuse. State where the data is archived and how.

**Tips for best practices*** When you graduate, you must erase the data from the storage media and software provided by Jamk.
* If necessary, discuss the archiving and its grounds with the commissioner. Use a reliable and secure solution.
* Pay attention to the restrictions set by the processing of personal data. In principle, the data must be anonymized. Master’s degree data is anonymized only after two years, unless it is destroyed.
* Read Jamk's thesis author's guide for options for destroying or saving data (chapter 4.4.5).
* [Read the FSD´s Data Management Guidelines for help on destroying the data.](https://www.fsd.tuni.fi/aineistonhallinta/en/physical-data-storage.html#disposal)
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| **6. Data management responsibilities and resources** |
| **6.1 Who will be responsible for specific tasks of data management during the life cycle of the thesis project?**Briefly explain here how the tasks and responsibilities described in the previous answers have been distributed in your thesis (e.g. storing, backing up, writing descriptive information and the sharing and storage/destruction of data after completing the thesis).If you complete the thesis for a commissioner, also describe their role, if any.If separate resources are used to process the data, state it here. Also note the time required for data processing. |

Research data management practices should follow the FAIR principles, which require that your data will be Findable, Accessible, Interoperable and Re-usable.

The structure of this guide is based on the national DMP guidance maintained by the Tuuli-project (funded by the Ministry of Education and Culture). The following sources have been utilized in the guidelines, taking into account the practices of Jamk University of Applies Sciences:

* Tuuli-project (2021). General Finnish DMP guidance (Version 2021). Zenodo. <https://doi.org/10.5281/zenodo.5242629>
* Ethical recommendations for thesis writing at universities of applied sciences. Arene 2020. <https://www.arene.fi/wp-content/uploads/Raportit/2020/ETHICAL%20RECOMMENDATIONS%20FOR%20THESIS%20WRITING%20AT%20UNIVERSITIES%20OF%20APPLIED%20SCIENCES_2020.pdf?_t=1578480382>

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