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CRAI Centre de Recursos per a l'Aprenentatge i la Investigació

Briefing for your Master Thesis

Academic year 2019-20

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Attention

Some of the referenced linked resources are in catalan, due to the lack of an English version.
Feel free to use a reverse web translator when/if needed.

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During the COVID-19 pandemic

- Ask for customized training sessions

- Check the open access e-resources

Contents

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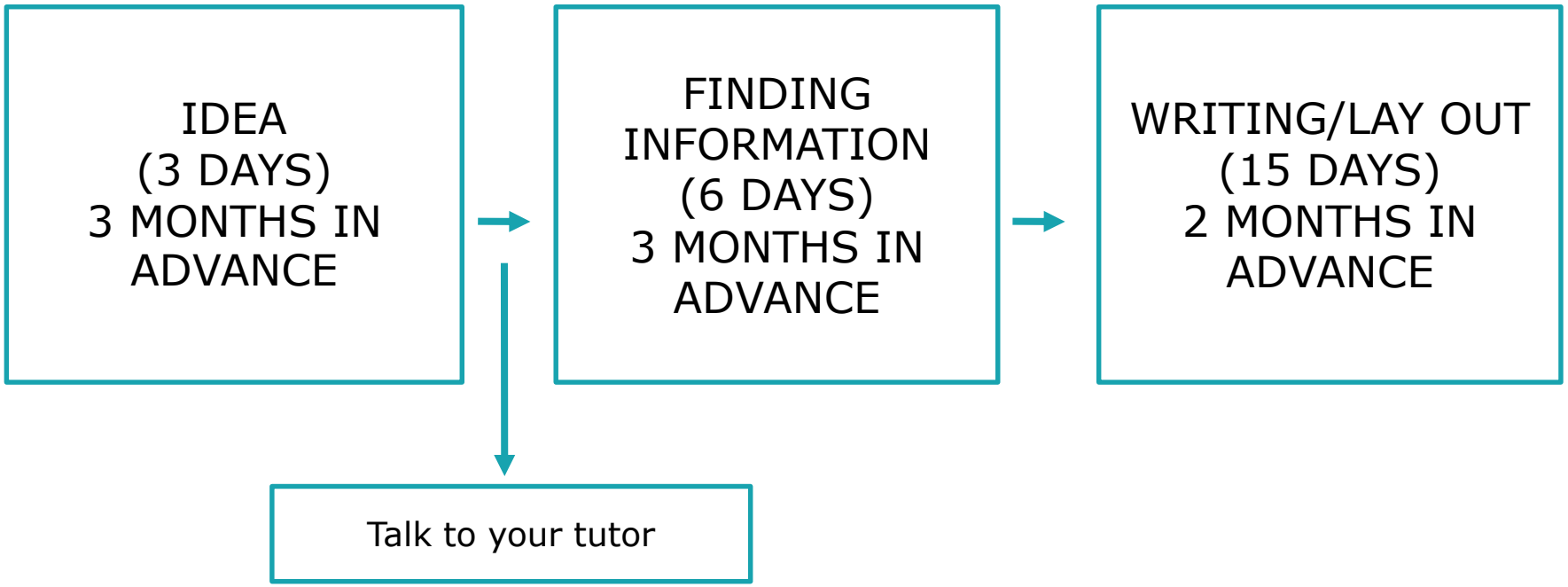
1 What is the aim of this presentation?

- To help you to identify your information needs.
- To set your priorities for developing a plan to look for information.
- To ease the lay out management.

2 Preliminary considerations: work schedule

Suggested chronological sequence



2 Preliminary considerations

Communicating your preliminary work:

- Identify the core idea.
- Be concise.
- Be clear.

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2 Preliminary considerations

- First, you need a core idea. Identify the main concept and be concise when expressing it: detect the key thread. Details are a complement to the basic idea, so use examples if necessary.
- Get focused: Don't tell your life story. If you get lost in an explanation, you're rambling. Use short sentences and specific concepts.
- Know how to express yourself properly: title should summarize in one sentence the contents of the document.

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3

Information search and management

Set a **search strategy** to save time when searching for information

- Bibliographic review: indexed fields -like abstract and keywords- included in articles, or books, etc. will help you find trusted publications. You can also use the indexed concepts to search in accurate sources and find similar items to those you are interested in.

- Critical analysis: Search for different points of view on significant or confusing concepts. You must be capable to make a critical analysis and to to set an unbiased perspective on your work.

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3 Information search and management

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Search strategy

- Keyword analysis.
- Concept analysis.
- Strengths and weaknesses analysis.
- Subject classification.

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3 Information search and management

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Search strategy

Keyword analysis : find related terms for the same subject area.

Term analysis : Draw a conceptual term map from generic specific to stablish your information needs and the level of specificity of the resources. The more specific the terms the more specialized the information.

Strengths and weaknesses analysis : Decide which words you'll use and which ones you'll discard: verbs, polysemous expressions.

Subject classification: The numeric code representing the content and scope of an item can help you locate similar works. The Mathematics Subject Classification and the Computing Classification System are the mostly used classifications.

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3 Information search and management

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Search estrategy

- Be selective AND specific when consulting information resources. Avoid collecting information that you can't read in detail.
- Adjust consulted data/resources to the proper academic level of your work.
- **Log into your personal account** when using Cercabib or the UB Repository to transform them into customized tools.

Access online resources through SIRE proxy service.

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3 Information search and management

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Start to search

- Set a searching syntax.
- Starting: set preferences, settings, etc.
- Manage results: filter and refine.

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3 Information search and management

Start to search

Search engines and databases use the same standardized syntax.

You can change your search options from the preferences / settings menu.

You can try different possibilities: compare outcomes filtering the results before or after your search.

Set preferences **before** starting to search: language, dates, etc.

Apply filters **after**: refine the outcome of your search by subject, publication type, etc.

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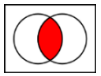
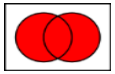
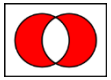
3 Information search and management: HOW?

Search operators * (*Don't leave a blank space between operators and words)

No operator	Intersection (AND). Find items that belong simultaneously to both sets. 
+	Addition (OR). Find the sum of two items or more. 
@	Find email address.
SOLVED	Find solved problems.
#	Find trending topic (hashtags).
-	Search exclusion (NOT). Avoid polysemic words, pull out concepts in your search. 
"	Quotations. Find items in the same order in which they appear between quotes.
*****	Truncation. Find the root of the word and derivatives.
related:	The search item is included within URLs
info:	Information. Find information related to web page source, versions and similar sites, etc.
site:	Find information about a certain domain. Get results of specific addresses.
define	Dictionary. Find word definitions, synonyms, antonyms.
()	Prioritize. Search items in brackets first. To find terms across disciplines building subordinate searches.

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3 Information search and management

Start to search: Where?

As a starting point, provide context on the main subject of your work using the academic generalist search engines. This search will return reference information sources. That is, the results will give you access to: definitions, bibliography, abstracts and generic information, a list of documents or web pages that might contain the information you are looking for. But they will rarely give you access to the full text of an article.

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3 Information search and management

Start to search: Where?

- Google Scholar (Help)
- Microsoft Academic (Help)
- ScienceResearch (Help). Covers E-Print Network
- Wolfram-Alpha: answer engine through dynamic calculations based on integrated data, algorithms and methods.

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3 Information search and management

Start to search: SEEKING vs FINDING

Full text resources

Login required	Cercabib
No login required	DOAJ DIRECTORY OF OPEN ACCESS JOURNALS unpaywall Open Access Button ccSearch Find content you can share, use, and remix

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3 Information search and management

Full text resources

No login required to start to search:

(But log into them to manage loan, bibliographic alerts, etc.)

PUC Préstec de llibres entre les biblioteques del CBUC

DIPÒSIT DIGITAL DE LA UB

dblp computer science bibliography

arXiv.org

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3 Information search and management

Start to search: SEEKING vs FINDING

CRAI Catàleg - Cercabib : is the University of Barcelona CRAI's discovery tool, which allows you to search simultaneously through the entire CRAI collection, regardless of the format, type or location of your chosen item: paper and electronic copies of books, journals, magazine articles, doctoral theses and audio-visual materials, physically located in one of our CRAI libraries or stored on a UB or external server. The tutorial Cercabib: new way to search in... shows you in detail what Cercabib is and how it works: searching, sorting results, interpreting the different interface elements, configuration options, My Account, and all the other features and innovations. (Help)

CSUC PUC: is a catalogue with more than 5 million titles that provides access to over 12 million items. It includes the library collections of the Consortium of the Catalan University Services libraries and other partner libraries. (Help).

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3 Information search and management

Start to search: SEEKING vs FINDING

Dipòsit Digital: Resource that store full text and open access publications resulting from institutional activity by UB community, including Final Degree works. All universities have open digital and searchable repositories (even through Google).

Open Access button: browser extension that searches articles and neat datasets. If you can't find and item, you can use the extension to send an email to the author.

Creative Commons Search: to "find content you can share, use and remix". It's helpful to avoid misunderstandings with exploitation, reproduction and distribution rights.

Arxiv: Self-managed and open access pre-print electronic repository specialized in mathematics, physics, astronomy, computer science, biology, quantitative finance and statistics.

Unpaywall: Legal collector of articles from free access and full text repositories and open data.

DOAJ: Directory of open access and peer-reviewed journals.

DBLP: open access repository specialized in computer science.

Github: a Git repository service. In addition to the source code, it also includes comments, bug reports, role requests, and change history.

3

Information search and management

Start to search: SEEKING vs FINDING

Full text resources:

SIRE Recursos-e CRAI UB	**required to start to search**
Cercabib	Ebooks and ejournals
MathSciNet	zbMATH

- MathSciNet
- Zentralblatt Math

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3 Information search and management

What to consult and what to cite

Consult but not Cite	Consult and Cite
Reference sources (wikipedia)	Items that have helped you to prove and solve
Search engines	Information sources
"Anybody can ask a question - Anybody can answer - The best answers are voted up and rise to the top"	Accredited and well-identified contributors who can prove how they found the answer
Assigned information	Proven information

Talk to your tutor about your concerns

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3 Information search and management

What to consult and what to cite

Maybe you are not sure about the concepts you have to use, and you want to look for definitions; or not sure about the source of specific data; or you may want to compare / expand your knowledge on a subject. The bibliography must include ONLY the documents that helped you solve and demonstrate your thesis, there is no need to cite complementary bibliography you have looked it up. Forums and similar: even though accredited contributors are reliably identified, they give plain answers as they do not give a developed reason on how they have reached the answer. Think about consulting any doubt with your tutor.

Learn to tell the difference between a search engine and a source of information.

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4

Criteria to evaluate information

Follow certain criteria to pick and evaluate the information before using it, In order to tell if it's useful for your work:

- Author.
- Updated information.
- Topics.
- Objectivity.
- Impact.

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4

Criteria to evaluate information

Author: Who is the author? Do they cite their sources? Do they include contact details?
Update: Is it easy to locate a publication or the latest update?
Topics: Who is the intended audience. Is the content relevant and useful for your work? Is it inaccurate? If so, it is not a peer reviewed work, and maybe you should not consider it.
Objectivity: Is the information given unbiased? Does it contain reasoned opinions? Is it verified with references?
Impact: How many downloads, citations, references have the source?

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4

Criteria to evaluate information

IFLA. *How to Spot Fake News*. A: FactCheck.org [2016]. Disponible a: http://www.factcheck.org/2016/11/how-to-spot-fake-news/ [Consultat el 25/1/17]

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5 Dealing with Copyright

Avoid plagiarism: using someone else's intellectual work can be considered plagiarism if there is no mention made of the sources consulted to produce your own production.

Always cite the source when:

- copying fragments, images, graphics, and other items.
- you use information from another author's work or publication.
- paraphrase, rewrite or translate a text.
- reuse previous own work (auto plagiarism).
- you use other people's ideas or words as your own and these are not considered part of general knowledge.

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Dealing with Copyright

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Avoid plagiarism

Your work must be original; however you can take a look at other works to get inspiration to develop yours.
Give credit to the texts reproduced in the body of the TFM:

- Identify texts copied literally in quotes. Cite the source in a footnote.
- Write in your own words.
- Identify used sources including bibliographical references.
- Quote correctly, following a single citation style.

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Dealing with Copyright

Find out about which licences protect the information you have used:

- Copyright
- Copyleft
- Creative Commons
- GPL/GNU

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5
Dealing with Copyright

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Avoid plagiarism

- Reference: finding and identifying.
- Citation: footnote.
- Bibliography: list of references.

Any doubts concerning how to cite, or which citation style to choose? **How to cite and manage the bibliography**

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5 Dealing with Copyright

Reference: a dataset that identifies a document or source of information. It makes it possible to find and identify an item, so others can read the same material.

Citation: an abbreviated form of reference inserted in the text of a work (it gives credit to the texts reproduced in the body of the Thesis). It allows the reader to identify the source of information and helps to avoid plagiarism. It is an indicator of the quality, completeness and accuracy of the work. Usually placed as a footnote in a page, indicating author, year of publication and page number.

Bibliography: a list of references of the items consulted when writing a paper. Usually placed at the end of the work.

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Dealing with Copyright

After deciding which information sources you will include in the bibliography of your work, and before starting to write the references correctly, it will be very useful to arrange them. Bibliography shouldn't be long, but if it is: start by sorting items out by type (monographs, websites, figures, etc.); and then, list items alphabetically by block.

MENDELEY

Reference and citation manager integrated with commercial databases, the UB's institutional repository and the CRAI Cercabib, and can work as a document search engine. It has the characteristics of an advanced social network. (Help)

(Access by using UB e-mail address or ID)

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5
Dealing with Copyright

The University of Barcelona has an institutional repository
-Dipòsit Digital- to collect all the production generated in the institution. Your TFM will be published in the Dipòsit Digital unless you **specifically tell otherwise**.
The materials included in the Dipòsit Digital are freely accessible and searchable.
Whenever possible, they are assigned a Creative Commons license, in accordance with the authors, which allows reusing works, data and information.

Make sure your authorization is properly signed when delivering your Master Thesis.

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5 Dealing with Copyright

Avoid plagiarism: There are currently several programs that automatically detect evidence of plagiarism in a work. The University of Barcelona has subscribed one of these programs, called Urkund, used by many universities and academic institutions around the world. It works integrated into the Virtual Campus and also can be used directly from the web with any browser.

- Plagiarism and academic works: tools for students
- Urkund

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6 Before submission

- Number all pages in your work.
- Include a summary.
- Translate this summary.
- **Check if you have filled in your rights licence properly.**
- **Sign** your rights licence.
- **Check** spelling, vocabulary and syntax.

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7 Remember to

Greater accessibility means greater visibility.

- Make a summary of the contents of your MT. It is a required field in the Digital Repository. If your work doesn't include one, the introduction will be taken as such.

- Review the translation of the summary. Once your work is included in the Univeristy Repository, your TFM will be searchable via Google and freely accessible through the Dipòsit Digital; therefore, available in open access and visible to everyone.

- Pay attention: review your personal details when signing the rights authorization (language, title, etc.).

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7 Remember to

The oral presentation

Oral expository quality and the ability to debate and defend arguments represent 20% of the final grade.

CUB: criteris de la UB: Presentació oral

See the bibliography in the guide for further information sources.

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8

Need help?

- At the UB CRAI web, under CRAI Services, you will find a compilation of resources to help you to write academic papers.

- Take a look to these tutorials complementing the above information:

  How to include bibliography using bibtex

  Plagiarism: how to avoid it

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Need help?

You can request customized training sessions:

- Filling an online form
- Sending us an email.

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Make profit form your MT

- Digital Single Market: European Union (Europe 2020 Strategy).

- If you are registered on GitHub, check the option to upload your curriculum to be considered to be hired.

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10 Examples

On a proper bibliography:
Duran Prats, Joan. Polinomios y series de Ehrhart. UB, 2014.

Salgado Corbillón, Marcos. Análisis real no estándar. UB, 2015.

10 Examples

As said in page 28, check CRAI's webpage to improve your skills on How to cite and manage the bibliography.

Exemples (ISO 690:1987 (UNE 50-104-94))

Book/Monography. Whole. (paper / online)	JULIÀ de Ferran, Olga. *Un Primer curs d'estadística*. Barcelona : Publicacions i Edicions Universitat de Barcelona, 2011. ISBN 9788447534838. (Data de la consulta i URL del recurs si és en línia)
Book chapter (paper / online)	FRANQUESA i Niubò, Carles. Els conjunts de funcions ${0},\Omega, \Theta$. Dins: FRANQUESA i Niubò, Carles. Barcelona : Publicacions i Edicions Universitat de Barcelona, 2013, p. 24-28. (Data de la consulta i URL del recurs si és en línia).
Journal article (paper / online)	MATSUMOTO, Shigenori. Horocycle flows without minimal sets. Journal of Mathematical Sciences. 2016, vol. 23, núm. 3, p. 661-673. (Data de la consulta i URL del recurs si és en línia).
Blog entry / article	Delgado, Manuel. "El mite interminable" . Dins: El cor de les aparences. Bloc de Manuel Delgado. 25 de maig de 2015. Blog. Accés el 27 de gener de 2016.

10 Examples

(ISO 690-2 and MLA)

Web pages, databases and software. Whole.	Wolfram Research Inc. *Wolfram Mathematica v. 11* [amb llicència UB]. Champaign, Illinois: Wolfram Research Inc, 1988 [consulta: 7 de maig de 2016].
Web pages, databases and software. Contributions.	NASA Kennedy Space Center. Frequently Asked Questions. En *The NASA Homepage* [en línia]. 3 de maig de 2015 [consulta: 8 de maig de 2016]. Disponible a: http://www.nasa.gov/centers/kennedy/about/information/faq.html.
Email messages	Gaudí, Antoni. Dubte drets autors. En: antoni.gaudi@alumnes.ub.edu [correu-e]. CRAI. Biblioteca de Matemàtiques i Informàtica. Barcelona, 2016. [Consulta: 26 de gener de 2016].
Online video	Camí de l'èxit en la cerca i ús de la informació científica. 24 de juliol de 2014. [Accés el 28 de maig de 2015. Recuperat de https://www.youtube.com/watch?v=wSs-yPMwjYM] .

10 Examples

(MLA)

Social Media	CRAI UB (crai_ub). "El #CRAIUB ha signat la declaració de @haguedec sobre la cerca i l'extracció de coneixement en l'era digital http://t.co/CPtGnRk5Az". 07 maig 2015, 12:17 pm. Tuit Colomines, Agustí. "Una definició d'un joveníssim Andreu Nin: «Nosaltres som "nacionalistes" perquè la "nació" és per a nosaltres la unitat orgànica "autonomista" de la federació. Ara bé: què és el que determina la "nació"? Són els caràcters etnogràfics, la situació geogràfica, els antecedents històrics? No, sinó la voluntat dels qui la componen, el sentiment de la pròpia personalitat, tan arrelat com dèiem abans en l'ànima de Catalunya» («Els partits polítics espanyols i les solucions autonomistes», «El Poble Català», 2 d'octubre de 1912)". Facebook. 21 de gener de 2015. [Data d'accés: 23 de gener de 2015].

10 Examples

(MLA and ISI)

Libraries, code, programming languages, software packages, etc.	R Development Core Team (2008). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. ISBN 3-900051-07-0, URL http://www.R-project.org. H. Wickham. ggplot2: elegant graphics for data analysis. Springer New York, 2009. [EK13] Eick, B. and Konovalov, A., ModIsom, Computing automorphisms and checking isomorphisms for modular group algebras of finite p-groups, Version 2.1 (2013), (GAP package), http://www.icm.tu-bs.de/~beick/soft/modisom/. CP2K version 2.4 (Development Version), the CP2K developers group (2013). CP2K is freely available from http://www.cp2k.org/.

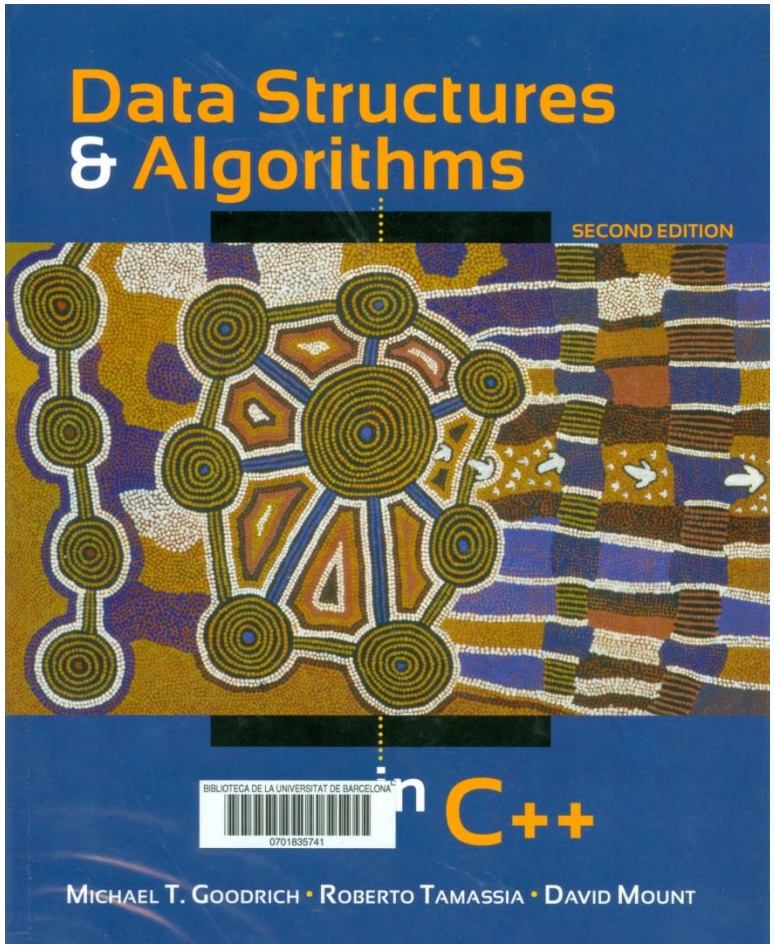
Examples taken from: Jackson, Mike. A: Software Sustainability Institute, 30 de juliol de 2014. URL: https://www.software.ac.uk/blog/2016-09-30-oh-research-software-how-shalt-i-cite-thee. [Consulted on 16/09/2019].

10 Examples

How and why should you reference software?

When quoting code, software, libraries, language, etc. -as a source of information or reference to develop the TFM-, you are offering the possibility of being able to access the correct software version and the appropriate tools and components. This means the possibility to reproduce and / or develop the project and, at the end, validate your work.
Find it out:
https://blocmat.ub.edu/2018/09/25/com-i-per-que-shauria-de-citar-el-programari/

10 Example - Contents



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Thank you!