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- https://www.ntnu.no/wiki/display/tdt39/
The framework
Evaluation criteria
# Overview and weighting

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C1: The motivation for the project is firmly developed in form of a practical problem with sources from both literature and media.

- Not so good motivation:
  - We are all obese, therefore we need an exercise app.
  - RQ: How to make an app to eliminate obesity?

- A bit better:
  - We are all obese,
  - Studies [1] and [2] show that obese people used an app and lost weight.
  - Therefore, we need an exercise app.
  - RQ:

- Even better:
  - We are all obese,
  - Study [3] shows that app X managed to eliminate B because...
  - Our hypothesis is that an enhanced app Y can eliminate B and A because...
  - RQ: What is the effect of using app Y on A and B?
    - Or: How do people with A and B use app Y?
C2: A gap in our knowledge about the practical problem is clearly stated with references to relevant research literature.

• Bad:
  – No studies exist that show the effect of app X on obesity.

• A bit better:
  – Studies show that obesity conditions A and B can be addressed using exercise Y....
  – (app X can improve how people do exercise Y)

• Even better:
  – Studies [1] and [2] show how mobile apps are used by obese people. Studies [3] and [4] show how apps are used by chronic disease patients in general. There seems to be a common requirement of....
  – (app X fulfills that requirement).
C3: Major concepts are clearly identified and defined, and belong to IS, SE, or CS.

- Concepts not belonging to IS/SE/CS:
  - Not a good RQ: How can we eradicate obesity?
  - A better RQ: What do we know about how technology X implements interaction technic Y? (through testing on a group of people with obesity because Y is relevant for obesity).

- Concepts not defined clearly:
  - Not so good RQ: How do we develop the best app to eradicate obesity?
  - Better: How does digital nudging in form of SMS-based notifications affect the weekly frequency of short (>1km) walks?
C4: The objective for the research is clearly stated and leads clearly to the research questions.

• Not so good:
  – RQ1: How can we make an app to eradicate obesity?

• Better:
  – Objective: We want to make an app to eradicate obesity!
  – RQ: What do we know about the effect of existing apps for addressing obesity?

• Even better:
  – Objective: We want to know more about the potential of mobile technologies to address obesity.
  – RQ1: How does obesity develop?
  – RQ2: What do we know about digital nudging in form of daily notifications? What do we know about social networks used as motivational channels? Etc.
C5: The research questions are clearly stated and show how the research will address the gap in knowledge.

- **Not so good:**
  - Research questions pop up as a surprise at the end of the purpose section.

- **Better:**
  - The argument in the purpose section leads naturally to the research questions.

- **Even better:**
  - The argument in the purpose section leads naturally to the research questions.
  - All the words/concepts in the RQs are already defined and motivate for.
C6: The deliverables of the research study are clearly stated
• This point is simply related to what you will deliver from your research. Are we talking about a report? A design concept? A product? A scientific paper?
C7: The new knowledge resulting from the deliverables is clearly described related to the knowledge gap and addresses the research questions.

- This is different from C7 in that you need to talk about the **novelty** of what you will deliver.
- Not so good:
  - Just mention what you will deliver without talking about its novelty.
- Better:
  - Relate to what you discussed in the Purpose section and show that what you will deliver is novel.
- Even better:
  - Do a more in-depth review of what else exists out there, and that what you will deliver is really **novel**.
C8: The research strategy is described and argued for, and it is easy to see why your research questions demand such a strategy.

• Not so good:
  – You just describe a strategy without saying why you chose it.

• Better:
  – You describe your strategy and tell us why you chose it.

• Even better:
  – Your argument for choosing a strategy is closely related to your research questions.
C9: Other competing strategies are ruled out with good arguments.

• This is related to C8.
• Not so good:
  – You describe well why you chose a strategy, but don't discuss competing strategies.
• Better:
  – You mention other competing strategies but don't say why they are relevant.
• Even better:
  – You mention one or two other relevant strategies that you did not choose, and describe why.
C10: Data generation methods are described and argued for based on strategy and RQs

• Not so good:
  – You are not clear what data you are collecting and how.

• Better:
  – You describe what data you are collecting.

• Even better:
  – You describe your data generation methods, and why they are adequate for your RQs and strategy.
C11: Data analysis methods are described and argued for, and show that the RQs can be answered

• Not so good:
  – You don't write how you will analyze your data.

• Better:
  – You describe how you will analyze your data.

• Even better:
  – You argue for the specific analysis methods you describe.
C12: Main foreseen threats to internal validity are discussed

• Not so good:
  – You don't discuss internal validity at all.

• Better:
  – You reflect on how valid your results can be based on the strategy and data generation methods you have chosen.

• Even better:
  – You do a systematic analysis of internal validity and address 2-3 common validity threads for your type of research.
C13: Describe all participants and their roles in the research project

• Not so good:
  – You don't mention who will participate in your study.

• Better:
  – You have a list of potential participants.

• Even better:
  – You argue why you need to have them and what role they will play in answering your RQs.
C14: Explain whether/why there is a need to involve non-researcher participants

- This is related to C14 but is specifically focusing on non-researcher participants.
C15: Discuss the ethical issues of involving non-researcher participants and how to address them

• Not so good:
  – You don't discuss ethical issues, both with respect to non-researcher participants and researcher participants.

• Better:
  – You mention ethical issues and say you will address them but don't say how.

• Even better:
  – You show you are aware of ethical issues and have a plan for how you will address them.
C16: Reflect on your own role as researcher in the project, and how it will impact the validity of your results

• Not so good:
  – You don't do the reflection at all.

• Better:
  – You do a cursory reflection, but this is not related to your background and role in the study.

• Even better:
  – You look at 1-2 aspects of yourself (e.g. education, age, personal beliefs) and discuss how these can affect the validity of your results.
C17: Discuss and reflect upon the research paradigm you have employed, and why

• Not so good:
  – You don't have a discussion of your research paradigm.

• Better:
  – You have a discussion of your paradigm, but this is not convincing as it does not relate to your RQs and your study.

• Even better:
  – You have a discussion of the paradigm you use based on the study you have designed and the RQs you want to answer.
C18: Explain how your results could be disseminated beyond your final master thesis

- **Not so good:**
  - You provide the standard answer that the results will be my Master thesis.

- **Better:**
  - You provide other examples of dissemination, e.g. writing a blog or making a YouTube video about your results without saying why and for whom.

- **Even better:**
  - You reflect on who might benefit from your results and what channel/form of dissemination might be used to reach those groups.
C19: Your list of references should be correctly formatted and include all bibliographical data of approximately 7-8 relevant scientific references that are actively used in the text

• Not so good:
  – You don't have a reference list, or the reference list has a lot of missing bibliographic data.

• Better:
  – You have a complete reference list of 7-8 references in your reference list.

• Even better:
  – All the references in your reference list are actively used in your text and it is easy to see why they are relevant.

• Tips for correct formatting: Use a bibliography tools such as BibTeX or Zotero.
Some general observations

• We don't need to know your plans for your autumn project or your master thesis!
  – This is a course about writing research plans in general.

• You tend to jump too early to the conclusion/solution.
  – Do a proper problem analysis and write a good motivation (for your grandfather/grandmother).

• You are not careful about the quality of your sources.
  – Don't use Google. Use Google scholar or Scopus or Web of science.

• You don't spend enough time on searching for, reading and analyzing relevant literature.
Some general observations

• You hide your objectives in form of research questions.
  – Don't be shy about your objective (I want to make an app), but separate it from RQs (what do I need to know before I make an app?).
  – Don't forget to write a good motivation! (Why do I need to make an app?)

• You tend to be absorbed by the practical problem and you forget that you are a computer science researcher!
  – I want to eradicate obesity! I want to save the environment!

• You don't read the book! And as a result, you use generic concepts and text that anyone would have spent five minutes writing it.
Separating the problems from the questions


Problems need solutions
Questions need answers
About version 1.0

Should cover only this part