Writing a mini-project

The lab report should contain the following sections:

1. Title and participants
2. Abstract
3. Introduction
4. Methods
5. Results
6. Discussion
7. References
8. Learning outcome

These sections of the report should be no longer than 2 pages. However, when including relevant figures and a reference list the final report may exceed this limitation. That is reference list and figures are not counted in.

A typical mini-project is made by 3-4 students, and serve as an entry point for a discussion of the topic at the exam, as such the report itself is not counted in the exam, however, it might be easier to engage in a discussion about the topic given a well-organized and -written report. At the exam you are expected to be familiar with the topic of your mini-project and should be able to give a short summary.

Title and participants

Write a title for your report and specify the names and student ids of all group members.

Abstract

The abstract is a brief summary at the beginning of a manuscript. It helps the reader ascertain the paper's purpose and should be a self-contained text. It is useful to structure the abstract by writing exactly five sentences that cover the following points:

Motivation	Why do we care?
Problem	What problem will we solve? What have others done, and why is that not enough?
Approach	What is our big idea? What research, analysis, and experiment did we do?
Results	What is the answer to our questions?
Conclusions	What are the implications of our findings?

Introduction

- The purpose of this section is to introduce the reader to the topic and provide the necessary overview.
- Why was the study undertaken?
- What was the research questions you would like to answer?
- Which hypotheses did you have prior to the study?

Methods

This section should describe the experiment in full detail, such that it would be possible for the reader to reproduce it. This section should be written in past tense.

- When, where, and how was the study done?
- Materials and software used?
- How was the experiment designed?
- What was the experimental procedure?
- Which methods were used to analyze the results?

Results

This section should report and summarize the data that was collected and the statistical analyses that were performed. This section should be written in past tense.

- What did the study find?
- What answer was found to the research questions?
- Did you find evidence to confirm your hypotheses?

The goal is to present the results without any subjective interpretation.

Discussion

In this section you interpret your findings and describe why they are important and how they fit in with other research. You can also mention ways your study could have been improved and future areas of research.

- What might the answer imply, and what does it matter?
- How does it fit in with what other researchers have found?
- What are the perspectives for future research?

References

In this section you list all the sources you have used in researching your topic. Documenting your sources is important because it helps the reader to find the information, and gives credit to the original work.

Learning outcome

The learning outcome summary is a reflective report of your learning experience: A record of what you have learned, experienced, and reflected upon. The learning outcome summary is a personal report that cannot be right or wrong. It should help you to

- record and structure your experience and learn from it
- support and represent your understanding through reflection
- aid you in planning and developing your own learning
- develop critical thinking
- communicate with your teachers about your learning experience

In the learning outcome summary you should write about

- What new knowledge and skill you have gained.
- What you think about the topics we have worked with.
- What your own understanding is so far.
- What you find puzzling, difficult, or contradictory.
- What you need to know more about, and how you can find out.
- What resources have helped you, that you might want to share.

The above was heavily inspired by the “Lab Reports” document by Mikkel Schmidt so you should be very familiar with the contents.