IoT Project

Report writing guidelines

Reporting

- The report must use the reporting template. Formatting should be the same as in a thesis.
- The report should also use the same guidelines as the thesis to form an academic research report. The report must contain a background (theory) section and distinguish a theoretical framework in the scope of the work. You can use the example (research) reports given in Moodle as examples of what you should be doing.
- There is no formal page limit, but as a guideline aim for about 20 pages.
- The report should consist of the following sections
  - Introduction
  - Background
  - Implementation
  - Discussion and conclusion

Reporting

- The theory in the report should be comprehensive. You should use at least an equal amount of scientific sources (Journal articles, conference proceedings, book chapters from scientific publishers) as other sources (usually web pages or other books). Usually at least 1.5 references per page is required in the theory section. Use at least 7 works as references.
- The implementation section should present your projects technical implementation, and showcase how your prototype solution works. Describe both the hardware and software. Use appropriate diagrams to describe the architecture from both the hardware and software perspective. Also outline how the different components of the prototype communicate with each other. In practice, use at least
  - A class diagram for describing the software components
  - A message sequence diagram for describing the communication between components
  - A flowchart describing the very high-level logic of you prototype

Presenting

- The project you have built must be presented in class. The presentation is also informal; You should demonstrate to your classmates what you have build and how it works. You must reserve a time for the presentation – this will be done in Learn. The reservation is on first-come first-serve basis

Report outline

- Follow the thesis reporting template and its outline

1. Introduction
2. Background
   - Idea, concepts, terminology
   - Theory background
   - Technical background
3. Implementation (details about how to implement your data based service)
4. Discussion
   - Main “results” of your work
   - Discussion about how your prototype is useful, how does it change the world?
   - What limitations do you have to acknowledge?
   - What threats are there to your prototype?

- **Make sure the report answers all the questions presented in the planning phases**!

Introduction

- General introduction of your project
- References to earlier studies
- References to research results of others
- Show the need for the further examination
  - there is a gap in the research / existing services
  - by raising questions
  - objection, criticism
  - one wants to continue the tradition, to extend knowledge
- Present the objective of the report
- Present the hypothesis (what is the value of your prototype?)
- Introduce the subject of your own study and show the necessity of the study
- Present the structure of the report

Background

- Present your theoretical frameworks
  - Present references to literature
  - What is the origin of the data (=measurements) you will use? What can that data be used for?
- Present the tools you will be using
  - Subjects/Respondents/Sample; Design, Materials, Procedures; Measures/Instrument(s) and Statistical Analysis …

Implementation

- Present your IoT prototype using text and graphic material
- Present the most important results/innovations/ideas
  - Present the most important information as a table or a figure

- Comment on the implementation (not just pictures, but explain what the pictures mean…)
  - generalizing based on the implementation / plan
  - explaining what may be the effect of your prototype
  - comparing with the results of related studies

Discussion

- Reference to the purpose or the hypothesis of the study
- Reporting the most important, also unexpected, results
- Comparison of results with earlier research results
- Explanation of results or speculation concerning them
- Limitations of the study, which affect the generalizability of the results
- Generalising of results
- Recommendation proposing further measures or studies

- Generalize the novelty (=value) of the study

Tunne huominen - All for the future.