Mapping your Project to your Report

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Interim Report Suggested Headings

1. Introduction and project outline:
    *   Clearly documents the project aims and objectives.

2. Literature survey:
    *   Review of the literature and the necessary background to the work.

3. Theory:
    *   Present the analytical and technical theoretical aspects of the work.

4. Outline designs:
    *   This should describe progress to date and typically include some detailed designs, describing hardware, software or process related topics, as appropriate for the project.

5. Detailed action plan:
    *   This can be in the form of a Gantt chart for the project, in particular showing all the major tasks and their estimated start date, end date and duration in days.

6. Requirements of facilities and materials.

7. References and sources of information

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How to map your project to report headings 1

- Let's take an example: your project is about IoT – interfacing a device to the cloud via an Edge Gateway

- Let's map this to the Interim Report

- Interim Report Headings
  - Introduction and project outline: Clearly describe your project and the area it is in.
    - What is the IoT? (be brief!)
    - How does your project fit into this?
    - Give main goal and 'big picture' objectives'.
    - Finish by describing structure of rest of report.
  - Literature survey: what is already being done in this field and <u>that is relevant to your project</u>.
    - Now give a fuller (and referenced) overview of IoT, Cloud and Edge Gateways and any similar – to your project - up-to-date work.
    - You are answering the question: 'what is the state of the art?'

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How to map your project to report headings 2

- Theoretical background
  - Here describe the relevant technical aspects that you need to know and apply in implementing your project. In our IoT example, you might include:
    - an overview of the wireless communications protocols used by IoT devices and gateways,
    - some information about available gateways
    - the data protocols that are typically used,
    - the IoT Platforms that are offered by selected cloud providers
- Outline designs
  - Describe your progress to date, if there is a 'design' provide it e.g. system block diagram, what pieces of hardware will you need to order? What protocols, software, tools will you need to learn about?
- Detailed action plan
  - This can be in the form of a Gantt chart for the project, show all the major tasks and estimated start and end date and expected duration.
  - Requirements of facilities and materials (can include above in 'Outline Designs') but not both!
- References and sources of information
  - Make sure this is done properly! i.e., not just web links (see appendices of Project Guidelines)

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How to map your project to report headings 3

Here I exclude aspects of the final report such as title page, table of contents, Acknowledgements, copy of poster, References as the requirements are straightforward to follow.

- In the Final Report you can use material you already developed for the Interim Report, but PLEASE! Not without re-reading it and revising it. Perhaps, you changed tack during the year and some parts are no longer relevant.

- Abstract
    - An **abstract** should identify your project, its broad aims and objectives, then describe the outcome or results and achievements, if there were significant issues they should be mentioned as well and can be explained.
    - Only 200 words – about a paragraph – it has to be informative – imagine if someone was reading it and deciding whether to go on reading your report.
    - WRITE IT LAST! And don't reuse the supervisor's description (if any)- they will notice.

- Appendices
    - Can be used for data sheets, code listings, but don't overdo it, e.g. don't include pages of boilerplate code, have explanations of what is there and why

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A final example for the 'core chapters'

- Example 2: a project using machine learning for a recognition task (e.g., image recognition, speech recognition)

- How to structure the Core chapters

  - **Introduction/Literature Survey** – can still include these from interim report <u>with appropriate revision</u>

  - **Analytical Background** – describe *relevant* aspects of theory for a recognition task with machine learning, e.g. feature extraction, feature selection, types of machine learning algorithms (focus on the ones you're going to use! *Not* neural networks 101 from the internet.)

  - **Specification and Design** –describe your particular implementation e.g. what features are you using (and why), which ML algorithms are you applying, how do you process your data and feed it into the (say) network

  - **Implementation** – how did you build it? Platform used, language used, libraries used, what code did you write yourself?

  - **Results** – facts and figures e.g. how did you test it? Did you use a systematic set of experimental runs? How did you measure the results? Show your results in tables, charts, graphs etc.

  - **Discussion of results** - now talk about 'what worked' & 'why' vs 'what didn't work' & 'why not' and <u>draw your conclusions</u>.

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Thank you

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