Task 30 – Doc – Research Report (for HD)

"Use this task to upload a single document containing all relevant documents for your high distinction research report. If you have any code or data related to this work that is not already in your distinction report, it must be in your repository with a clear link shown in the document."

The purpose of a research report is to clearly communicate to the reader what your research question was, and what you found out. You want the reader to be able to easily follow you along the way. To do this, you should have a good structure and provide all the details they need to understand the significance of what you have achieved and how you did it. A good report does not need to be long. It might only be a few pages – but focus on the task, not the size.

Your reader wants to know the result, so don't keep that a secret – make it clear right from the beginning.

You can select a report structure that you like, however the well-known IMRaD (Introduction, Method, Results, and Discussion - see https://en.wikipedia.org/wiki/IMRAD) is a good start. On the next page is a basic research report structure and guide notes that we recommend:

Concerning a "good" research question, try to identify a question that doesn't have a simple "yes" or "no" answer. This question may have changed from your initial research plan – that's okay. Look for a research question that requires details when you give the answer, such as "why does" or "how can we" and "when should we" … it's a good sign you have an interesting topic and a worthwhile question. It also indicates you will need to present a list of qualities (not just a simple Boolean answers) or quantities to get your quality (summary) results.

Some general report writing tips:

- Tense: the research WORK (what you did, code, created) should be in the past tense, but the WRITING (what you are doing, what you will talk about next etc) is in the present tense.
- As you write - Keep It Simple! (or "focused": do one thing, do it well)
- Keep Bad Results … there is nothing wrong about including them, just talk about it (show what you know) and see if you can explain why they are bad.
- The full data collection, raw data … goes to the back (appendices). Don't dilute the focused good stuff in your results.
- Your "results" are really a "summary" of your data/findings. If you have a chart or table that captures the key outcomes – put it up front! (Then get into the details later. Don't wait!)
- Summaries: Tables, Points, Charts, Graphs, Diagrams … are awesome!
- All tables, figures and equations should be labelled so they can be referred to in your text. If you don't refer to them, they should be included.
- Captions (for figures and tables) are a jolly good idea – provide good ones with real details. It's okay to repeat the details in both the text and a caption
- Avoid referring to the location of things in your text (i.e. "see above" or "in the table below"). Instead use the label ("In Table 3")
- In your discussion section, capture your good ideas – extensions, changes, improvements, advice. You can show a lot of understanding in this section.
- References are a nice thing – we won't be super picky about the reference format to encourage you to include refences, but there are easy standard and tools to help you with this. References might include webpages, articles or blog post, or videos that you have used or that have helped you. You don't need many, but having a few references is a great way to support your work and demonstrate you know what you are talking about!

Suggested Report Structure

Title Page
(with suitable student and unit details)

1. Introduction
Explain what the research question is (and why you were interested) and include the key outcomes. No surprises – get to the good points here.

2. Background and Context
Provide additional details that the reader needs to understand your work. Think of your audience as a student similar to yourself before you started the project. An appropriate picture or graphic here is often a good idea.

3. Technical Detail (optional)
If you are doing a report using the custom program you created, then it is appropriate to refer to that work here. It can be part of the background section, or you might decide to make a separate section for "technical details". This section could also include the programming language and tools details that someone would need to understand or replicate you work. However, you should refer to other artefacts or documents you have created – don't repeat yourself – if there is another document that describes the details, just point to that!

4. Method
Here you provide the details need to "run" your experiment, or collect the data that you are presenting in your results. Try to have the specific details here, and not general background details. Also try to avoid result details. Give enough details that someone else could replicate your work, and collect results in the same way you have.

This can often contain a description of the different experience settings or configurations used. Tables (of configuration details) are good. Definitions (for classifications) can be very useful for your later result presentation and discussion sections.

5. Results
This is the "what" section – clearly show what you found out. Remember that the work (result) is past tense. If you can, present the clearest summary or outcome up front. Then go into more detail if you need to. Large collections of data should be in an appendices if needed. (Or just data in your repo if that suits).

Try to avoid the "so what" (your opinion or ideas) at this point and leave it for the discussion section instead.

6. Discussion
This is the "so what" section – time to give your opinion on the results. You can "interpret" the results (but don't restate them). You probably won't have graphics or images in this section.

It might work well to have subsections here. Start with the results discussion, then your opinion on the method (and how to change or improve it), and finally a subsection for new ideas. There you might state new questions and ideas that you have had while conducting the work.

7. Conclusion
Nothing new – restate the questions and the key results.

(optional) References/Bibliography, Acknowledgments, Appendices (as applicable)