

# SIT103/SIT772: Database Fundamentals



## 3.2HD: Research Report and Presentation

### Overview

In this task, you will research on a concept, technology or issue/challenge related to database and/or data management and prepare a research report. The main aim of this task is to make you think and explore beyond the scope of this unit. You will choose a topic from the list of potential topics below or choose one yourself that is related to database and data management. ***Note that if you decide to choose a topic that is not in the given list below, please discuss the topic with your unit chair or tutor to make sure if it is okay to research on before you start working on this task.***

#### ***List of potential topics***

1. Distributed databases
2. NoSQL Databases
3. Machine Learning
4. Blockchain
5. SQL Injection
6. Database Access Control
7. Database Concurrency Control
8. Database Transaction Management
9. Hadoop MapReduce Architecture for big data processing
10. Database as a Service (DBaaS)
11. Privacy and ethical concerns around managing personal data

### Tasks to do

Select one topic from the above list or choose one yourself (remember to discuss it with the unit chair or your tutor for their approval first if it is not from the above list) and do your own research. You are required to prepare a research report on the selected topic with 2500 to 3000 words (+/- 10%, remember we are not strict in terms of words count if the quality of the report is good) and do a short presentation to communicate your findings.

Your research must focus on understanding the topic in more detail, how/why it is related/important to database and data management, explaining how the idea/concept works or what can be done about it, what approaches/solutions are out there in the market or literature, what you see as opportunities/benefits and limitations/challenges/threats of the idea/concept, etc. Note that these are just guides and everything may not be relevant to your chosen topic. Please feel free to organize your report as it suits your topic. The expectation here is you will explain the concept/topic with reasonable details to someone who is new to it. Someone reading your report and listening to your presentation must understand the idea/concept with sufficient details on how it is done, what solutions are available and where more work is needed (gap in the solutions). It is an opportunity for you to learn more about the topic and demonstrate your excellence.

Because it is an open-ended task and students can choose any topic, it is difficult for us to provide you a structure or template for report and presentation. Report structure, headings and subheadings depend on the topic you chose. So please feel free to use a format that suits best to your topic. You can use figures, tables, diagrams, charts, maps etc. as required. Remember if you are using diagrams from other sources, you need to provide proper in-text citation including the page number on the original source.

We expect all **research report** to have:

- *Abstract* - where you briefly summarize your topic and research findings (no more than 300 words)
- *Introduction or Background* - Introducing the topic and/or providing background/context (about 500 words)
- *Main Body* – where you provide more details about the concept/topic from your research, you can subdivide it into sections and subsections using appropriate headings/subheadings (about 1500-2000 words)
- *Conclusions* – a summary of important findings from your research (about 500 words)

You need to read them both academic peer-reviewed literature and industry reports/manuals to understand the idea and then explain it in your own words with in-text citations and bibliographic list of references at the end. Deakin recommends Australian Harvard style referencing but, in this unit, we are okay if you want to use other style as long as you are consistent across the document. It is okay to read blogs/wikis (e.g., Wikipedia and Stack overflow) to understand the concept, but they **must not be used as references in academic writing**, you need to find more authentic sources like peer-reviewed academic papers or reports/manuals by well-known companies and business firms. You are expected to use **at least 10 reference materials** from reliable sources. You can get more help on academic writing, literature review and referencing in the following

Deakin University Study support pages.

<https://www.deakin.edu.au/students/studying/study-support/academic-skills>

<https://www.deakin.edu.au/students/studying/study-support/academic-skills/literature-review>

<https://www.deakin.edu.au/students/studying/study-support/referencing>

In addition to the written report, you are required to **record a short presentation of your research findings** using 5-7 powerpoint slides.

- Introduction/Background of your topic – 1 slide
- Key findings of your research – 3 to 5 slides
- Concluding remarks – 1 slide

You can record your presentation using powerpoint or any other recording tools. Help on presentation recording using powerpoint is available on the following link.

<https://support.microsoft.com/en-us/office/record-a-presentation-2570dff5-f81c-40bc-b404-e04e95ffab33>

**Your recorded presentation should not be more than 10 minutes long.** Please upload the presentation on DeakinAir or Youtube and **provide the link to the video presentation on the OnTrack Chat Message Box** for the task. **Please do not forget to change the access setting of the uploaded video to grant view permission to someone with the link.** You do not have to make it public if you do not want.

### **ADDITIONAL TASK FOR SIT772 STUDENTS ONLY**

In addition to everything discussed above, in 500-700 words, discuss the relevance of the topic you have chosen to the business organization you have selected for your Mini-Project (Tasks 4.2C and 7.2C). Your discussion should include how this concept/idea is relevant to the company you selected, how they can use it, what benefit it offers, what challenges it brings, etc. Please include this discussion at the end of your report after the list of references. This does not have to be covered in the recorded presentation.

### **Submission Requirements:**

Submit one PDF/WORD report and provide the link to the recorded presentation on the message box via OnTrack for Task 3.1P.

## Submission Due

Unlikely Pass tasks which are due in two weeks, you have more time to work on this HD task. Please check the OnTrack task information for the exact due date.

**Note: This is an HD task, it is not acceptable if you just explain what the concept/idea is. It must be more detail and critical review of the concept supported by good research.**