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# COS70008-Technology Innovation Project

## Seminar 2 – Software Development/Cloud Computing/Information Systems

Semester 1 2025



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# Acknowledgement of Country

We respectfully acknowledge the Wurundjeri People of the Kulin Nation, who are the Traditional Owners of the land on which Swinburne's Australian campuses are located in Melbourne's east and outer-east, and pay our respect to their Elders past, present and emerging.

We are honoured to recognise our connection to Wurundjeri Country, history, culture, and spirituality through these locations, and strive to ensure that we operate in a manner that respects and honours the Elders and Ancestors of these lands.

We also respectfully acknowledge Swinburne's Aboriginal and Torres Strait Islander staff, students, alumni, partners and visitors.

We also acknowledge and respect the Traditional Owners of lands across Australia, their Elders, Ancestors, cultures, and heritage, and recognise the continuing sovereignties of all Aboriginal and Torres Strait Islander Nations.

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# Overview

Problem identification (what and why)

Who should be contacted in problem identification

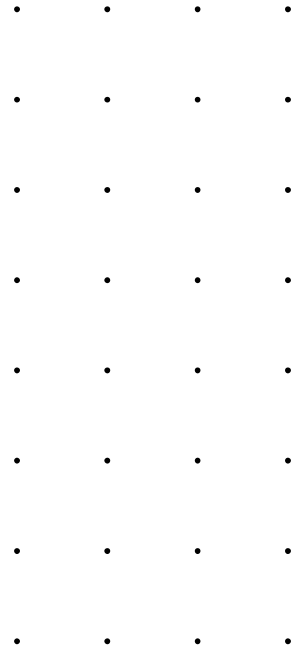
Root cause analysis

Problem statement

Requirements gathering

Project planning

Individual Assignment 1



# Problem identification

Purpose: develop a clear and straightforward problem statement

It consists of two steps:

1. Perform **root cause** to understand problem
2. Draft a **problem statement**

Importance:

1. Well-defined problem helps in true identification of business needs
2. Helps in exploring potential solutions for business
3. Easy and straightforward problem solving



# Who should be contacted

## Stakeholder's identification

Who should be contacted and why

Techniques used:

- Organisational charts
- Perform job analysis

## Group and prioritise stakeholders

Develop power-interest grid

## Getting the required support from stakeholder

Identify motivation and priorities



# How to perform root cause analysis?<sup>1</sup>

## 1. SWOT analysis

- Stands for Strength, Weakness, Opportunities and Threats
- Identify the business areas you are good and bad at
- Explore opportunities
- Existing issues and threats



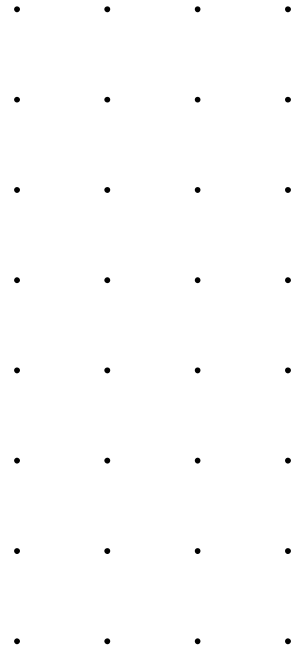
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2. Conduct Market Research<sup>1</sup>

- Plays a significant role in product / service development
- Helps you understand the market and business
- Identify target audience (clients and customers)
- How to connect with audience
- Audience perception about business
- Facilitate in decision making

<https://www.thehartford.com/business-insurance/strategy/market-research/business-market-research>

Root cause analysis(cont.)



### 3. Refer case studies<sup>1</sup>

- Review existing literature and case studies
- Understand problem from multiple aspects
- Identify different ways to solve a problem



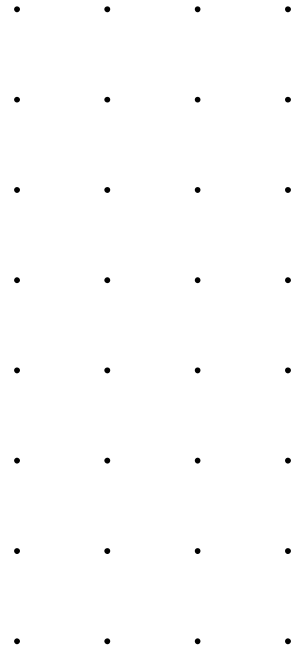
Root cause analysis(cont.)

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4. Discussion with team members and mentors <sup>1</sup>

- Look for similar and different solutions
- Use team’s experience
- Try considering their advice
- Goal: for quick and efficient problem solving

Root cause analysis(cont.)



## 5. Be creative<sup>1</sup>

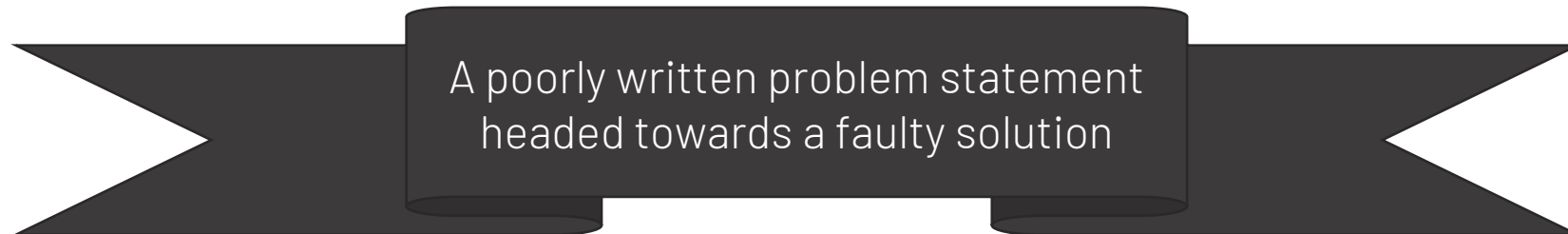
- Explore different solutions
- Be innovative
- Analyse the situation from different perspective

## 6. Track the progress<sup>1</sup>

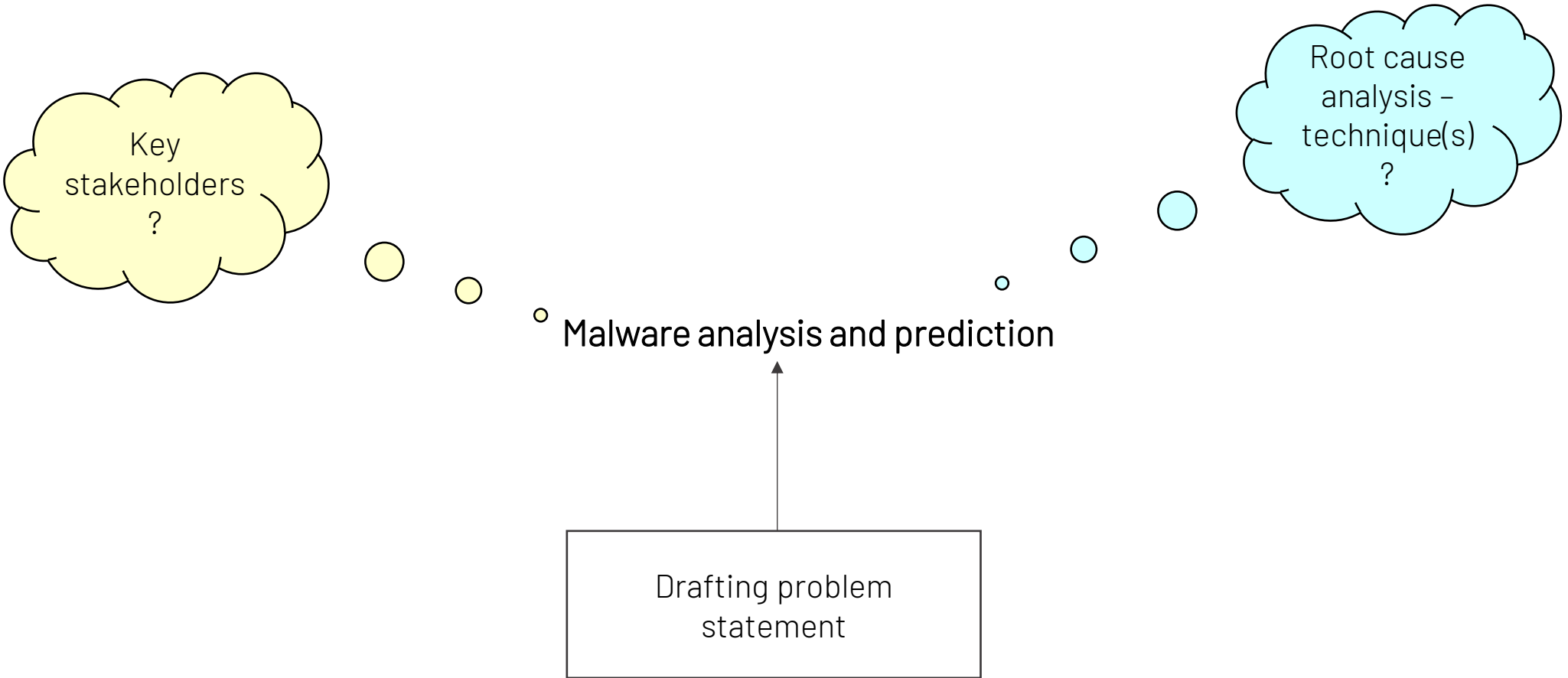
- Create analysis plan
- Review the work done
- Find ways for optimisation

# Problem statement

- A brief statement of the problem/issue to be addressed or improved
- Provides information about the business environment and processes, issues/problems in existing processes, opportunities for improvement, and user impact
- Define goals and objectives
- Helps stakeholders in getting approval
- Facilitate stakeholders in setting project scope



# Problem identification – Malware analysis and behavioural prediction system



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# Requirements gathering

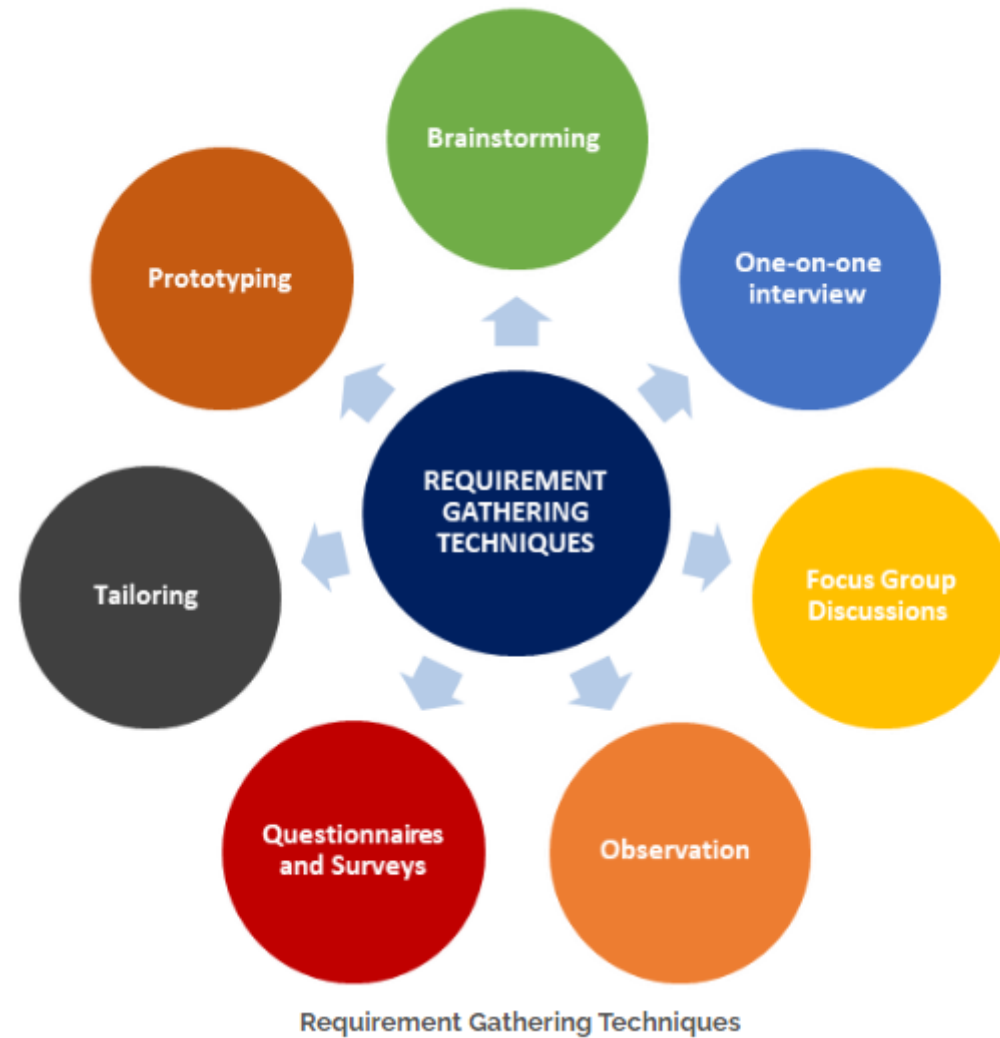
**Requirements** – a condition/capability that should be present in a product/service

## Types of requirements

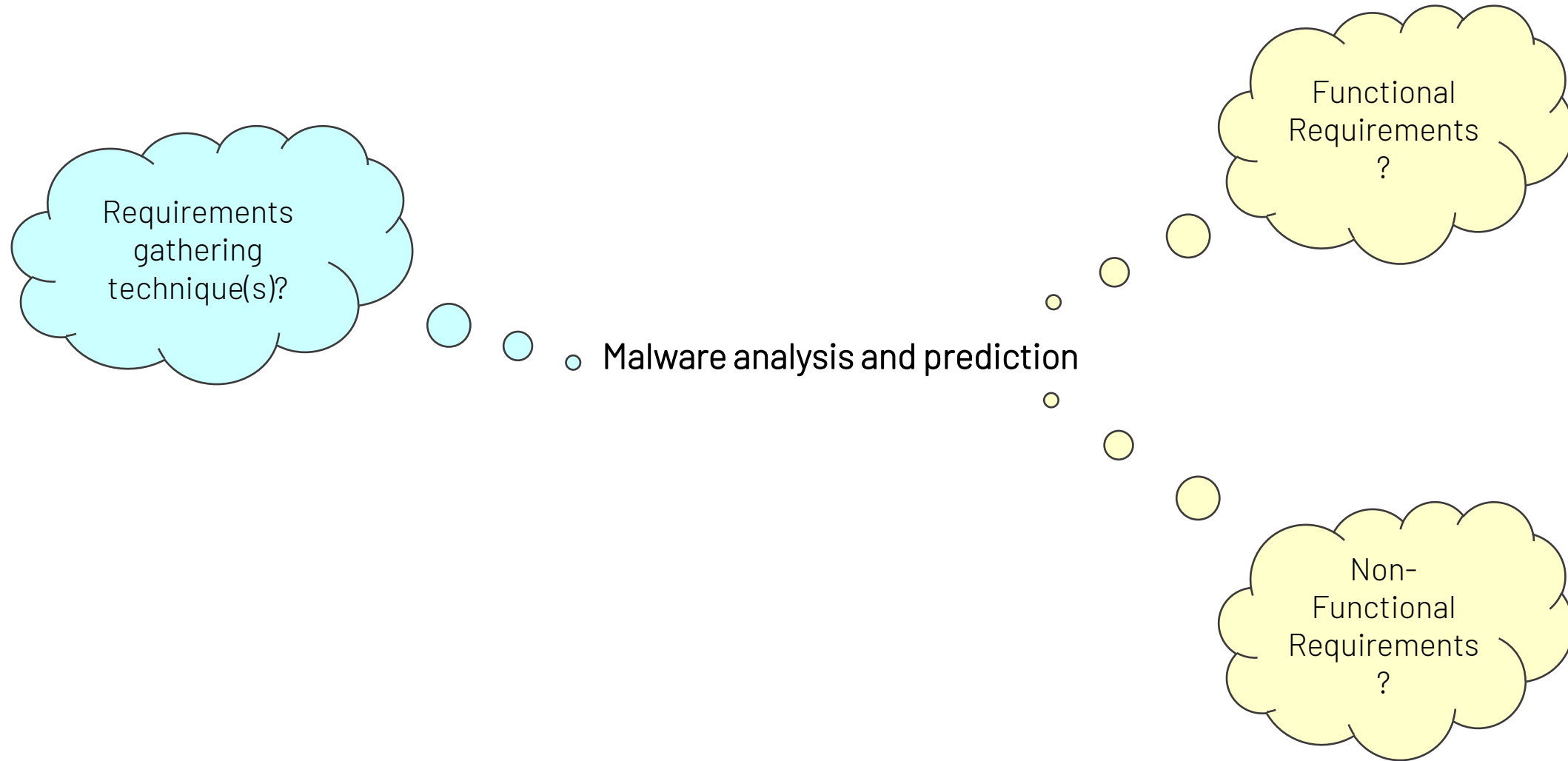
1. **Business requirements** – high-level needs
2. **Stakeholder requirements** – needs of stakeholders
3. **System requirements** –
  - Functional – capabilities/features
  - Non-functional – availability/security/performance..



## REQUIREMENT GATHERING TECHNIQUES



# Requirements gathering



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# Plan project



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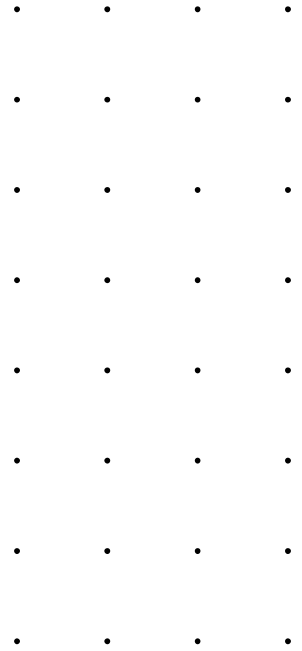
# Important update about technical implementation

## Machine learning models

- Anaconda and Python, only

## Web-system development

- Any platform / programming languages



# Individual Assignment 1: Research Paper Review and Ethics Practices

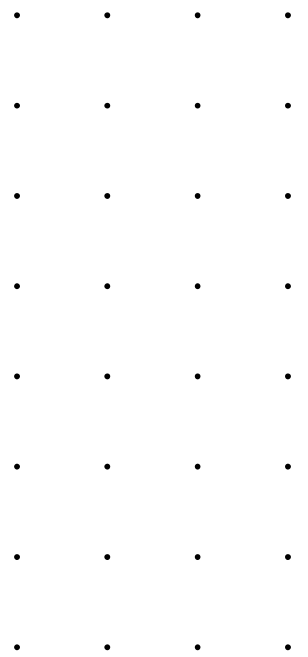
**Task:** Research Paper Review and Ethics Practices

**Due date:** 21<sup>st</sup> March 2025 23:59

**Mark Allocated:** 10% of your final mark.

**Recommended Word-Count Range:** 1500 words

**Overview:** The aim of this task is to demonstrate your ability to find useful resources regarding current research in an area of professional interest to you, as well as your ability to convey information in a written form about those resources and structure a short report along with an Ethics review including referencing



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## Part A

1. Research the literature and compare viewpoints and arguments, and identify gaps in knowledge-generating innovation concepts on topics/project in your chosen specialisation (major)
  - Find journals, conference papers and/or reports regarding your topic
  - Summarise what others have done
  - Briefly explain their proposed solutions
  - Look for missing aspects
  - Identify knowledge gap
  
2. For the method review part,
  - Identify and explain the research method(s) that have been applied in the area you are investigating.
  - Reference existing studies that applied such methods, but you will also need to reference at least one textbook that explains how the methods should be designed and executed in practice.
  - Critically evaluate the differences in viewpoints.

**Note: At least FIVE or more articles must be reviewed.**

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## Part B

1. Describe the practices used in real-world research including legal, commercial and ethical frameworks and apply an evidence-based approach to technology innovation on topics/project in your chosen specialisation (major)
2. In this assessment, you are required to:
  - Read the six core 'ACS Code of Ethics' and its associated requirements
  - Read the 'ACS Code of Professional Conduct Case Studies'
  - Search for a real-life case scenario aligns to your project where there was a dilemma of ethical value in the ICT industry or profession.

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### 3. Provide the following information about the incident of interest:

- Description of the incident (aligns to your project)
- Must also include references to the sources of information
- What was the ethical issue?
- What ICT profession or activity was involved within the incident/project?
- What ACS code of Ethics and their associated requirements can be applied to the situation similar to your project (major) in this semester? Make reference to the ACS Code of Ethics document provided.

*Refer Canvas for formatting and referencing style and submission criteria.*

# Client briefing-1

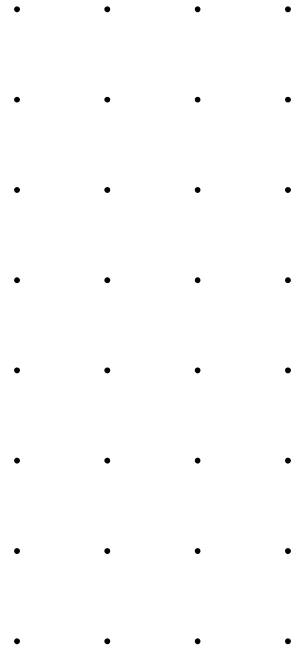
**Date:** Monday, 17<sup>th</sup> March 2025

**Time:** 2.30 – 3.30 pm

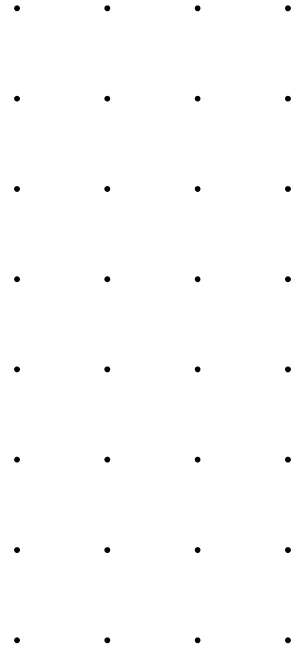
**Mode:** Collaborate Ultra (during the weekly seminar time)

## Expectations:

- Bring your questions
- Clarify any doubts
- Ask for client's expectation



Questions???



Thank you

