



FIT3143 Assignment 1 V1.0

Lecturers: ABM Russel (MU Australia) and Vishnu Monn (MU Malaysia)

PARALLEL COMPUTING

OVERVIEW:

1. Literature Survey

As a group of two members, your task is to communicate summary of total 4 peer reviewed academic publications (such as conference, journals and books etc.) that cover two of the topic areas listed below. You will also demonstrate a proof of concept from the selected papers.

This assignment comprises two deliverables: i) **Presentation Video** and ii) **Proof of Concept Demonstration**.

2. Instructions and Grading Method

You need to produce a video which communicates a specific piece of research in Parallel and Distributed Computing. You should choose any of the **two** related topics from the following list to construct a presentation video and demonstrate proof of concept.

- Physical and logical clocks
- Message passing system
- Distributed Mutual Exclusion
- Deadlock detection, prevention, and avoidance
- Atomic transactions
- Distributed consensus
- Distributed data structures
- Distributed communication
- Broadcasting, multicasting, and ordered message delivery
- Distributed consistency models
- General Purpose Computing on Graphic Processing Units
- Vector processors
- Parallel debugging
- Asynchronous programming
- Any other topic as approved by Lecturer

PRESENTATION VIDEO:

- Literature survey presentation must not exceed 15 mins including proof of concept implementation.
- Both members must appear in the video rather voice over.

PROOF OF CONCEPT DEMONSTRATION AND INTERVIEW:

- Could be implemented in any language of your choice
- Could use PThreads/OpenMP/OpenMPI etc. as introduced in this unit

SUBMISSION AND DEMONSTRATION

You will be given the opportunity to show your interim work to your tutor during the lab sessions or during the consultation times. This will give you an opportunity to fix issues and improve.

The assignment 1 (Presentation Video and the Proof of Concept Demonstration) submission is due in Moodle in Week 8 (Monday 10am). All demo interviews must be completed in Week 8.

MARKING GUIDE

Introduction and conclusions	2 marks
Literature search & references (coherence between papers)	2 marks
Clarity and depth of explanation (topic 1)	2 marks
Clarity and depth of explanation (topic 2)	2 marks
Proof of concept implementation	2 marks
Quality of delivery (volume, eye contact, speed etc.) (Individually marked)	2 marks
Proof of concept demonstration Interview in Week 8 (Individually marked)	3 marks