

# COMS3008A Assignment – Report

Put your name, student number here

Put your submission date here

## 1 Problem 1: Parallel Scan

- Given a set of elements,  $[a_0, a_1, \dots, a_{n-1}]$ , the scan operation associated with addition operator for this input is the output set  $[a_0, (a_0 + a_1), \dots, (a_0 + a_1 + \dots + a_{n-1})]$ .
- For example, the input set is  $[2, 1, 4, 0, 3, 7, 6, 3]$ , then the scan with addition operator of this input is  $[2, 3, 7, 7, 10, 17, 23, 26]$ .

## 2 Problem 2: Parallel Bitonic Sort

The bitonic sort is based on the idea of sorting network. The bitonic sorting algorithm is suitable for parallel processing, especially for GPU sorting. **However, in this problem, you are requested to implement parallel bitonic sorting of integers using OpenMP and MPI, respectively.**

Another paragraph starts ...

## 3 Problem 3: Parallel Graph Algorithm

An example figure is given in Figure 1.

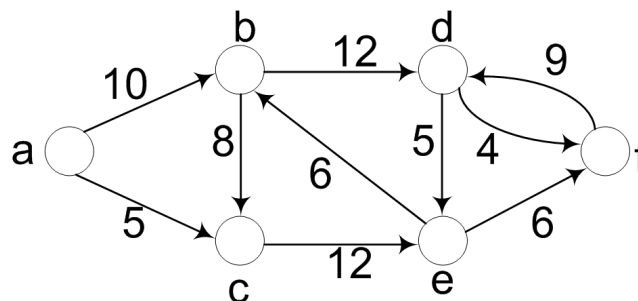


Figure 1: A directed graph

An example of table is given Table 1.

Table 1: An example of a table					
No of vertices	64	128	256	384	512
Serial	0.1	0.2	0.3	0.4	0.5
Parallel					
Sppedup	2	3	4	5	6