

# CS3211 Project 1

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## Part 1

### Hardware

Machines	Number of cores	Clock Speed (GHz)	Total Memory (GB)	L1 cache (kB)	L2 cache (kB)	L3 cache (kB)
CS3211 Lab Intel i7-2600	8	3.4	16	64	256	8192
Tembusu Cluster Intel Xeon E5-2620	24	2.4	64	64	256	15260

Table 1: Hardware specifications

### Lab1: Speedup

#### Task 3

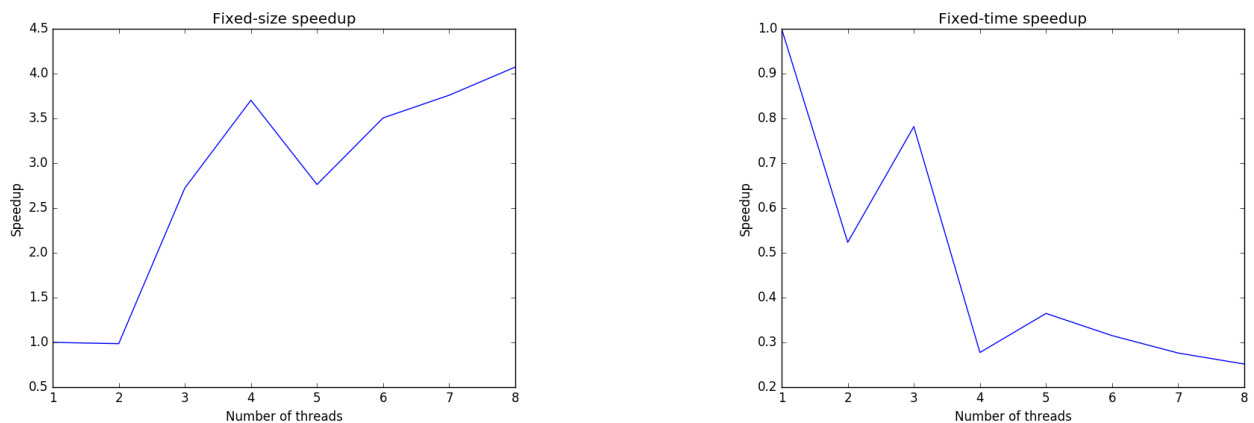
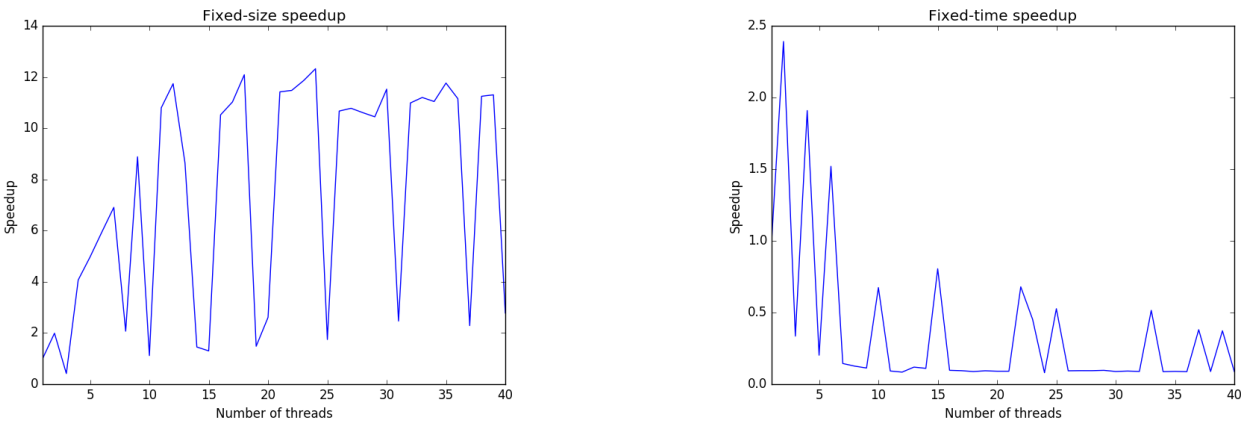


Figure 1: Comparing Fixed-size speedup and Fixed-time speedup

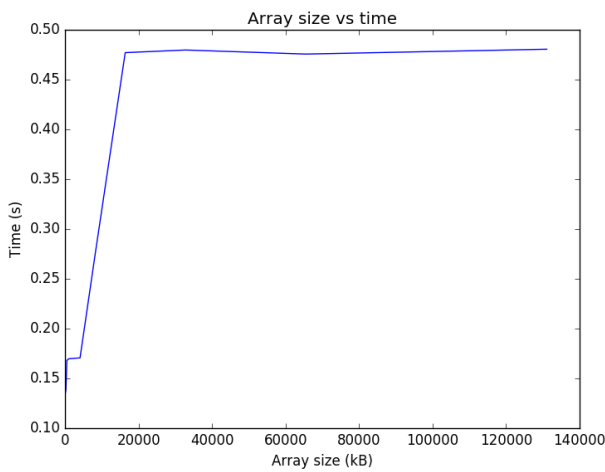
**Task 4**



**Figure 2:** Comparing Fixed-size speedup and Fixed-time speedup

**Lab1: Memory effects**

**Task 6**



**Figure 3:** Relationship between array size and time

## Lab 2: Accuracy

### Task 1

Number of 1s	Sum
500000	500000.0
1000000	1000000.0
18000000	16777216.0
18500000	16777216.0
19000000	16777216.0
19500000	16777216.0

**Table 2:** Adding 1 to 0 accuracy problem

### Task 2

Number of 1s	Sum
500000	500000.3
1500000	1500000.2
3500000	3500000.2
4000000	4000000.2
6000000	6000000.0
6500000	6500000.0
7000000	7000000.0
7500000	7500000.0
9500000	9500000.0

**Table 3:** Adding 1 to 0.3 accuracy problem

### Task 3

Order	Sum
Sum from 20 to 1	584.660156
Sum from 1 to 20	584.660156

**Table 4:** Adding pseudo random numbers in different orders

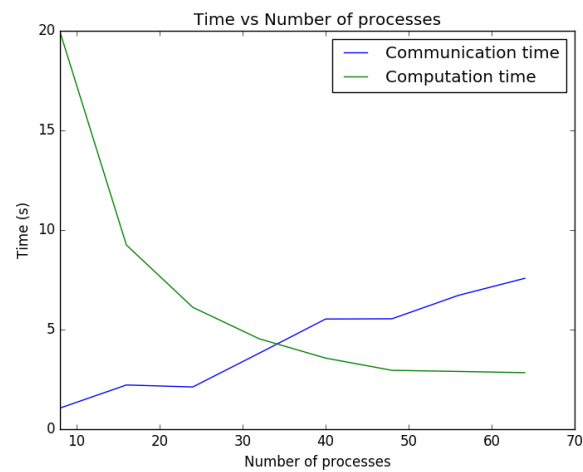
## Task 4

Trial	Sum
1	3056623.750000
2	3056623.750000
3	3056623.750000
4	3056623.750000
5	3056623.750000
6	3057561.000000
7	3057560.750000
8	3057560.750000
9	3057561.000000
10	3057561.000000

**Table 5:** Adding 10000 psudo random numbers using 24 threads

## Lab 2: Communication, speedup

### Task 7



**Figure 4:** Number of processes vs Communication time and Computation time

## 1 Part 2

### 1.1 Tabulation

### 1.2 Discussion

### 1.3 Conclusion