

# Introduction to Parallel Computing

Tuesday, August 21, 2018 11:37 AM

cpts 411  
parallel

Parallel Computing → tightly coupled  
Distributed Computing → loosely coupled

top500.org ⇒ FLOPS (floating point operations per sec.)  
IOPS

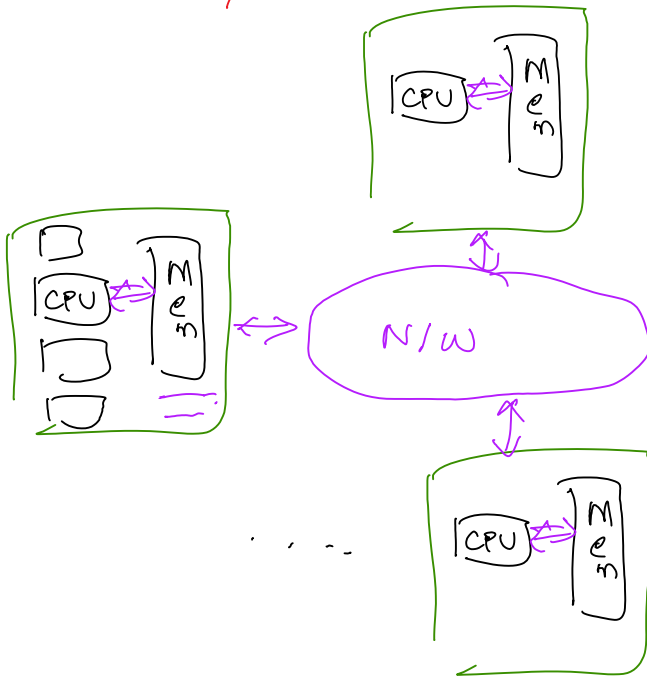
LINPACK

## Parallel Computing Models

"multithreading"  
⇒ shared address space

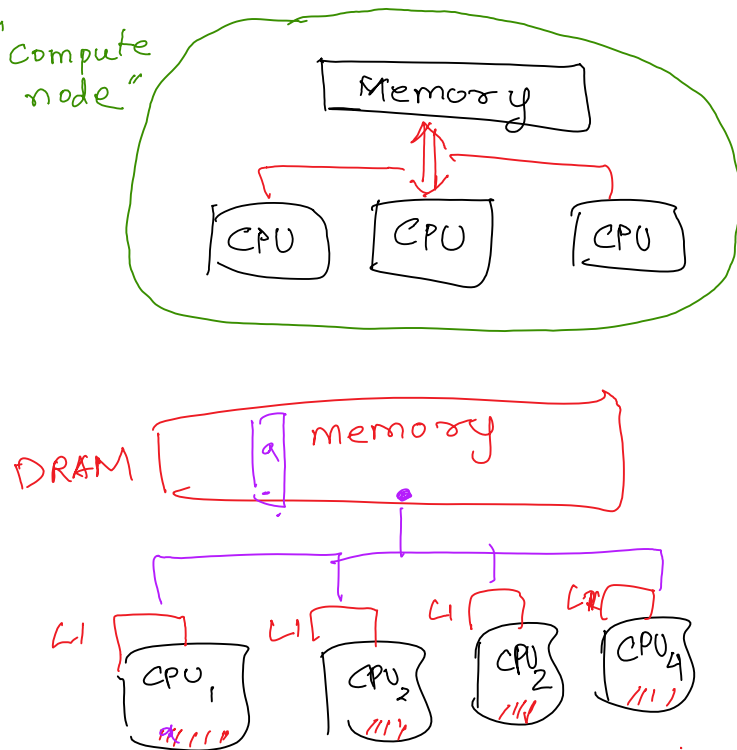
→ Distributed Memory Architecture

"Process" ⇒ multiprocessing w/ distributed address space



→ Shared Memory Architecture

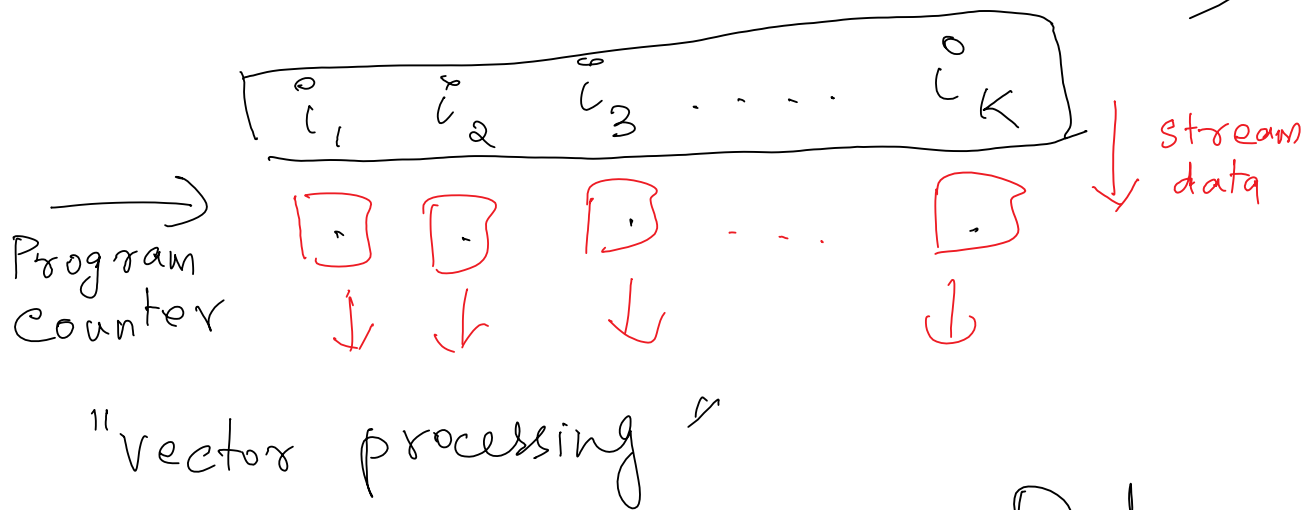
"compute node"



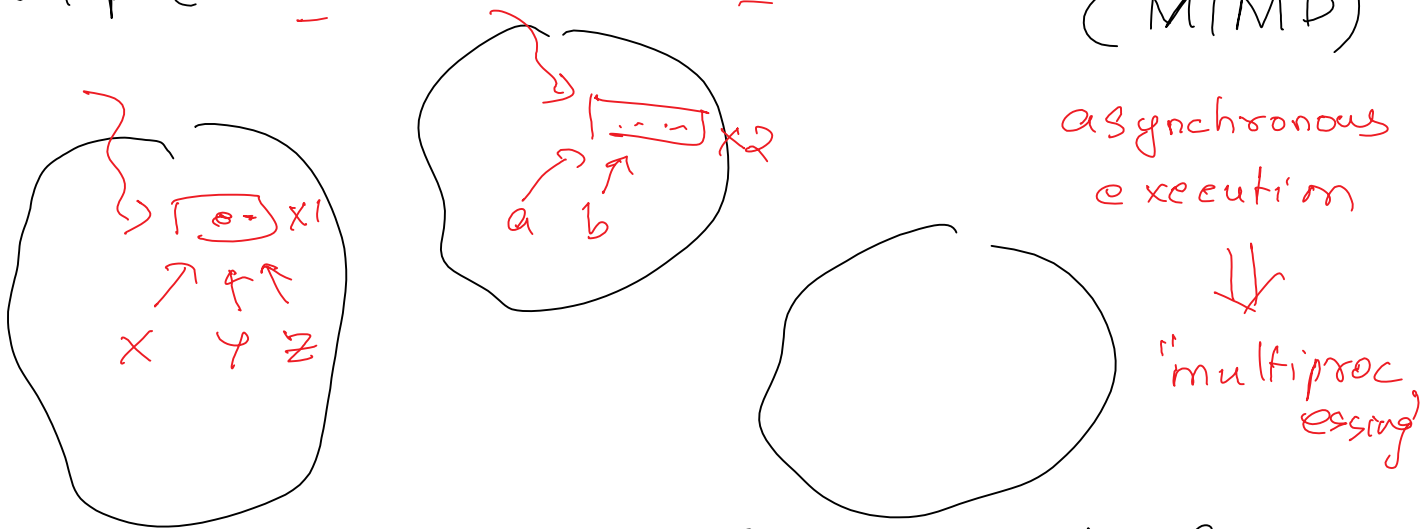
# Parallel Programming Models

1) Single Instruction Single Data (SISD)  
(inherently serial)

2) Single Instruction Multiple Data (SIMD)

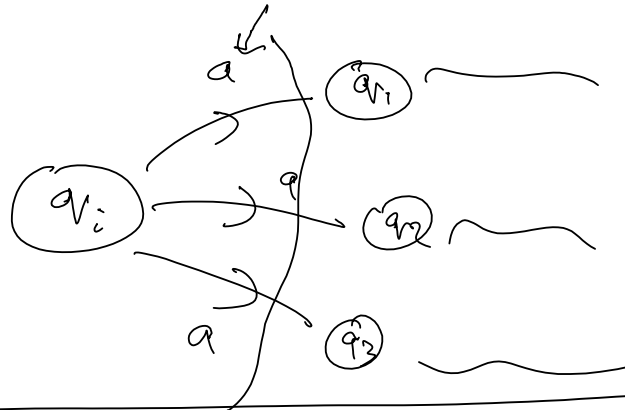


3) Multiple Instruction Multiple Data (MIMD)

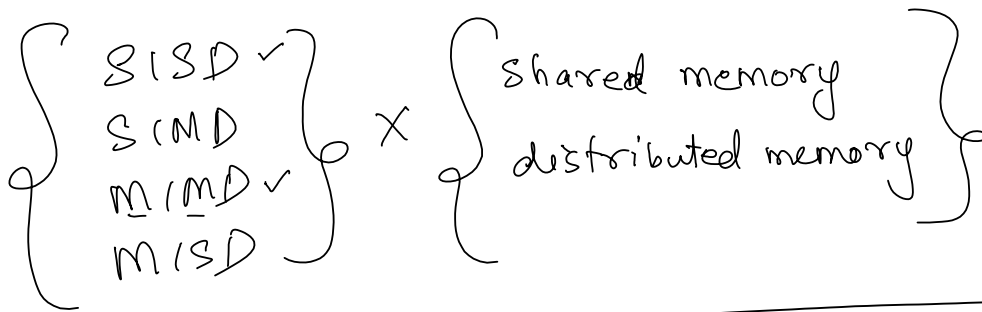


4) Multiple Instruction Single Data (MISD)

# Micron Automata Processor (NFAs)



(example where an MISD can be applied)



Process vs. Thread

Chapter 1)

Basic Concepts

↓  
next class reading

