

# Module Five Introduction and Learning Objectives

## Welcome to the Parallel Processing Module!

Computer architects have long sought the “The City of Gold” (El Dorado) of computer design: to create powerful computers simply by connecting many existing smaller ones. This golden vision is the fountainhead of multiprocessors. Ideally, customers order as many processors as they can afford and receive a commensurate amount of performance. Thus, multiprocessor software must be designed to work with a variable number of processors. Replacing large inefficient processors with many smaller, efficient processors can deliver better performance per joule both in the large and in the small if the software can efficiently use them. Thus, improved energy efficiency joins scalable performance in the case of multiprocessors.

## Learning Objectives

By the end of the module, you will be able to

1. Understand the different levels of parallelism and their application.
2. Learn about the factors that affect the performance and power consumption of multiprocessors.
3. Know the ways of data sharing among processors and related design considerations like memory coherence.

## How to Achieve the Objectives

You can achieve this module's learning objective by accomplishing the following:

### Readings

Chapter 6 of the textbook: [COD\\_Chapter6.pdf](#)

(<https://sjsu.instructure.com/courses/1491749/files/69324384?wrap=1>)

### Lectures

Check the module for the latest lecture slides and recordings.

### Discussions

Module discussion: [Module Five General Discussion](#)

[https://sjsu.instructure.com/courses/1491749/discussion\\_topics/4728255](https://sjsu.instructure.com/courses/1491749/discussion_topics/4728255)

# How You Will Demonstrate Your Achievement of the Learning Objectives

1. In-class problem-solving.
2. Quiz.
3. Extra practice questions.