

# Shared Queue Parallel Pizza-Eating Algorithm (with Barrier and Leader-Worker)

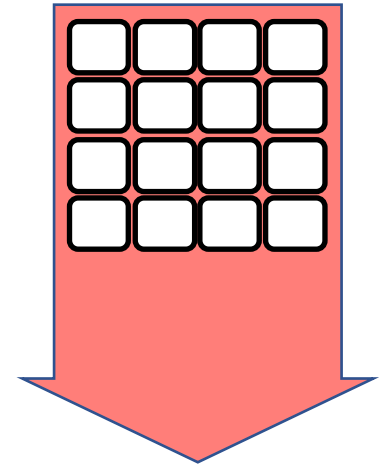
1. Define N: How many slices of pizza?
2. Define P: How many people?
3. Define LEADER (a value from  $0..P-1$ ).
4. Get your own personal, unique id number ( $0..P-1$ ).
5. If  $id == LEADER$ :
  - Create an empty, shared queue  $q$ , capacity N
  - While the pizza box is not empty:
    - a. Get a slice of pizza from the box
    - b. Append that slice to the queue  $q$ .
6. BARRIER (wait here until all PEs arrive).
7. While  $q$  is not empty:
  - a. Try to remove a slice of pizza from  $q$
  - b. If successful, eat that slice.

N: 16

P: 4

LEADER: 0

id: 0 1 2 3



q: [16 colored squares in a queue]