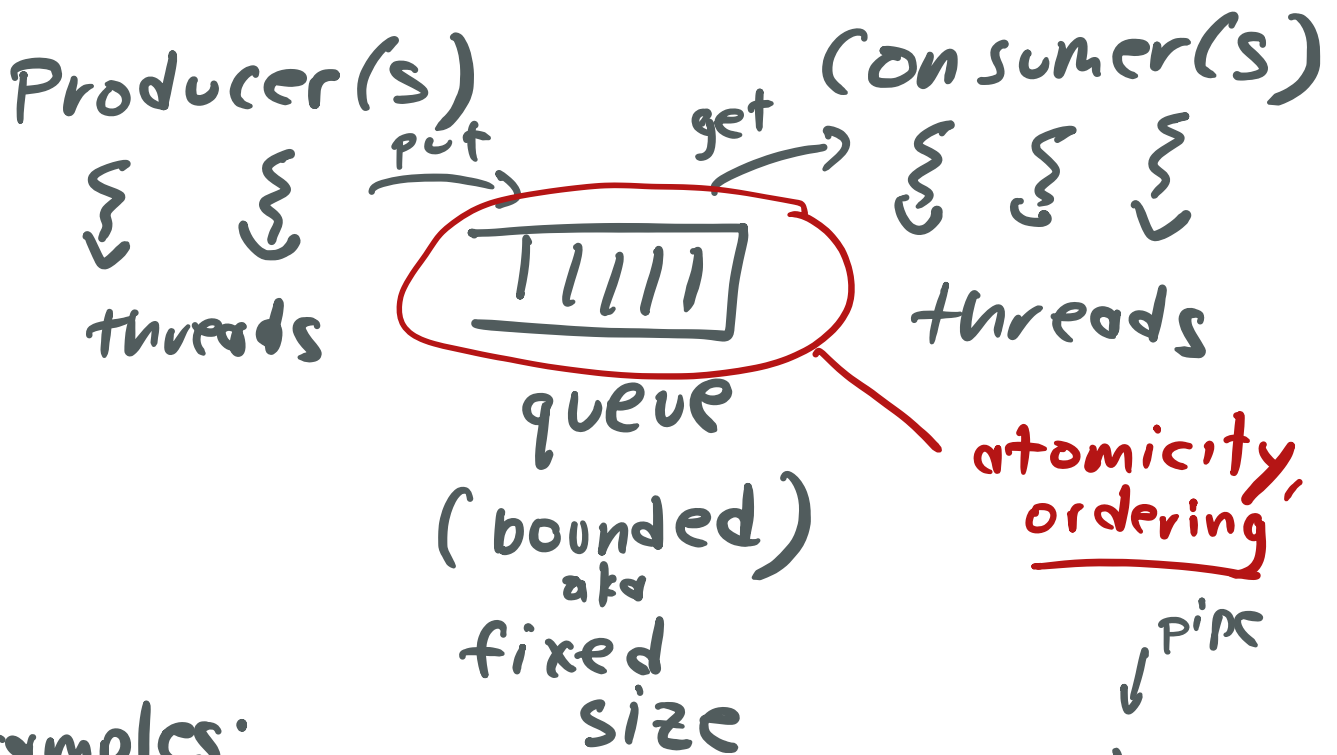


Condition Variables and Thread Ordering

⇒ Fork / Join ✓

(parent waits for child)

⇒ Producer / Consumer or Bounded Buffer



examples:

unix pipe,
MT web server
(multi-threaded),
etc.

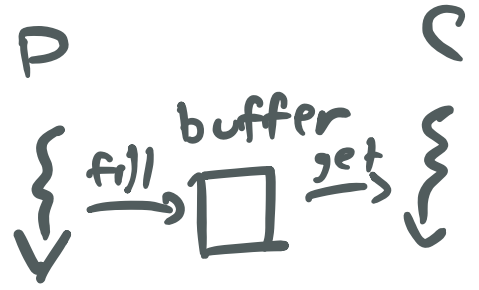


Solution v1

start "analysis":

1 producer,
1 consumer,

max = 1



Producer

Producer

Consumer

p1

p2

p4

p5

p6

p7

p2

~~(BLOCKED)~~

READY

p3 (wait)

max=2



~~numfull=2~~
0

c1

c2

c4

c5 (signal)

c6

"v2"

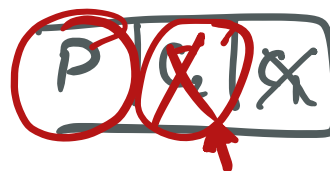
1 producer

v2

[1 producer,
2 consumers]

wait queue

CV



consumer₁ consumer₂ producer

c₁
c₂
c₃ (wait)

c₁

c₂

c₃ (wait)

p₁

p₂

p₄

p₅ (signal)

p₆

p₁

p₂ (full)

p₃ (wait)

[now READY]



c₂

c₄ (get)

c₅ (signal)

READY

⋮