

Centralized Barrier Alg

```

struct bar_type {
    int counter;
    struct lock_type lock;
    int flag = 0;
} bar_name;

BARRIER (bar_name, p) {
    LOCK(bar_name.lock);
    if (bar_name.counter == 0)
        bar_name.flag = 0; /* reset flag if first to reach*/
    mycount = bar_name.counter++; /* mycount is private */
    UNLOCK(bar_name.lock);
    if (mycount == p) { /* last to arrive */
        bar_name.counter = 0; /* reset for next barrier */
        bar_name.flag = 1; /* release waiters */
    }
    else while (bar_name.flag == 0) ; /* busy wait for release */
}
    
```

← Watch
turn
cond.

Working Centralized Barrier sense reversal

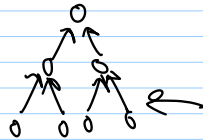
```

BARRIER (bar_name, p) {
    local_sense = !(local_sense); /* toggle private sense variable */
    LOCK(bar_name.lock);
    mycount = bar_name.counter++; /* mycount is private */
    if (bar_name.counter == p) {
        UNLOCK(bar_name.lock);
        bar_name.counter = 0;
        bar_name.flag = local_sense; /* release waiters */
    }
    else {
        UNLOCK(bar_name.lock);
        while (bar_name.flag != local_sense) ;
    }
}
    
```

Improved Alg. is tree org.



$O(p)$



$O(\log p)$

still direct time on bus