```
wl419@ray16:cw_cp$ make
g++ -Wall -c helper.cc main.cc
g++ -Wall -pthread -o main helper.o main.o
wl419@ray16:cw_cp$ emacs main.cc
wl419@ray16:cw_cp$ ./main 5 5 2 3
Producer(2): Job id 1 duration 4
Producer(1): Job id 2 duration 8
Consumer(1): Job id 1 executing sleep duration 4
Consumer(2): Job id 2 executing sleep duration 8
Producer(1): Job id 3 duration 4
Consumer(3): Job id 3 executing sleep duration 4
Producer(2): Job id 4 duration 7
Producer(1): Job id 5 duration 10
Consumer(1): Job id 1 completed
Consumer(1): Job id 4 executing sleep duration 7
Producer(1): Job id 1 duration 3
Consumer(3): Job id 3 completed
Producer(2): Job id 2 duration 1
Consumer(3): Job id 5 executing sleep duration 10
Producer(1): Job id 3 duration 4
Consumer(2): Job id 2 completed
Consumer(2): Job id 1 executing sleep duration 3
Producer(1): No more jobs to generate
Producer(2): Job id 4 duration 1
Consumer(1): Job id 4 completed
Consumer(2): Job id 1 completed
Consumer(1): Job id 2 executing sleep duration 1
Consumer(2): Job id 3 executing sleep duration 4
Consumer(1): Job id 2 completed
Consumer(1): Job id 4 executing sleep duration 1
Producer(2): Job id 5 duration 3
Consumer(1): Job id 4 completed
Consumer(1): Job id 5 executing sleep duration 3
Producer(2): No more jobs to generate
Consumer(2): Job id 3 completed
Consumer(3): Job id 5 completed
Consumer(1): Job id 5 completed
Consumer(2): No more job left
Consumer(3): No more job left
Consumer(1): No more job left
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Producer(2): Job id 1 duration 4
Producer(1): Job id 2 duration 8
Consumer(1): Job id 1 executing sleep duration 4
Consumer(2): Job id 2 executing sleep duration 8
Producer(1): Job id 3 duration 4
Consumer(3): Job id 3 executing sleep duration 4
Producer(2): Job id 4 duration 7
Producer(1): Job id 5 duration 10
Consumer(1): Job id 1 completed
Consumer(1): Job id 4 executing sleep duration 7
Producer(1): Job id 1 duration 3
Consumer(3): Job id 3 completed
Producer(2): Job id 2 duration 1
Consumer(3): Job id 5 executing sleep duration 10
Producer(1): Job id 3 duration 4
Consumer(2): Job id 2 completed
Consumer(2): Job id 1 executing sleep duration 3
Producer(1): No more jobs to generate
Producer(2): Job id 4 duration 1
Consumer(1): Job id 4 completed
Consumer(2): Job id 1 completed
Consumer(1): Job id 2 executing sleep duration 1
Consumer(2): Job id 3 executing sleep duration 4
Consumer(1): Job id 2 completed
Consumer(1): Job id 4 executing sleep duration 1
Producer(2): Job id 5 duration 3
Consumer(1): Job id 4 completed
Consumer(1): Job id 5 executing sleep duration 3
Producer(2): No more jobs to generate
Consumer(2): Job id 3 completed
Consumer(3): Job id 5 completed
Consumer(1): Job id 5 completed
Consumer(2): No more job left
Consumer(3): No more job left
Consumer(1): No more job left
wl419@ray16:cw_cp$
```