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jw5514@vm-shell12:~/Desktop/Semaphores$ make
g++ -c -o helper.o helper.cc
g++ -Wall -c helper.cc main.cc
g++ -Wall -pthread -o main helper.o main.o
jw5514@vm-shell12:~/Desktop/Semaphores$
```

```
jw5514@vm-shell12:~/Desktop/Semaphores$ ./main 3 2 4 4
producer(4): Job queue full, waiting for space..
producer(3): Produced job with ID 1 and duration of 4 seconds
producer(3): Job queue full, waiting for space..
consumer(1): Processing job ID 1, completing in 4 seconds
producer(2): Produced job with ID 2 and duration of 9 seconds
producer(2): Job queue full, waiting for space..
consumer(2): Processing job ID 2, completing in 9 seconds
producer(1): Produced job with ID 3 and duration of 1 seconds
producer(1): Job queue full, waiting for space..
consumer(3): Processing job ID 3, completing in 1 seconds
producer(4): Produced job with ID 1 and duration of 8 seconds
producer(4): Job queue full, waiting for space..
consumer(4): Processing job ID 1, completing in 8 seconds
consumer(3): Job ID 3 completed
consumer(3): Job queue empty, waiting for new job..
producer(2): Produced job with ID 2 and duration of 1 seconds
producer(2): No more jobs to generate
producer(3): Produced job with ID 3 and duration of 6 seconds
consumer(1): Job ID 1 completed
producer(1): Produced job with ID 1 and duration of 9 seconds
consumer(3): Processing job ID 2, completing in 1 seconds
producer(3): No more jobs to generate
consumer(1): Processing job ID 3, completing in 6 seconds
producer(1): No more jobs to generate
consumer(3): Job ID 2 completed
consumer(3): Processing job ID 1, completing in 9 seconds
producer(4): Produced job with ID 2 and duration of 3 seconds
producer(4): No more jobs to generate
consumer(1): Job ID 3 completed
consumer(1): Processing job ID 2, completing in 3 seconds
consumer(2): Job ID 2 completed
consumer(2): Job queue empty, waiting for new job..
consumer(4): Job ID 1 completed
consumer(4): Job queue empty, waiting for new job..
consumer(1): Job ID 2 completed
consumer(1): Job queue empty, waiting for new job..
consumer(3): Job ID 1 completed
consumer(3): Job queue empty, waiting for new job..
consumer(2): Exiting
consumer(4): Exiting
consumer(1): Exiting
consumer(3): Exiting
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```