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Assignment 2

Output with no lock:

```
Northerner #1 can cross the bridge
Northerner #1 traveling on the bridge

Southerner #1 can cross the bridge
Southerner #1 traveling on the bridge

Southerner #1 has left the bridge

Southerner #2 can cross the bridge
Southerner #2 traveling on the bridge

Northerner #1 has left the bridge

Northerner #2 can cross the bridge
Northerner #2 traveling on the bridge

Southerner #2 has left the bridge

Southerner #3 can cross the bridge
Southerner #3 traveling on the bridge

Northerner #2 has left the bridge

Northerner #3 can cross the bridge
Northerner #3 traveling on the bridge

Southerner #3 has left the bridge

Southerner #4 can cross the bridge
Southerner #4 traveling on the bridge

Northerner #3 has left the bridge

Northerner #4 can cross the bridge
Northerner #4 traveling on the bridge

Southerner #4 has left the bridge

Southerner #5 can cross the bridge
Southerner #5 traveling on the bridge

Northerner #4 has left the bridge

Northerner #5 can cross the bridge
Northerner #5 traveling on the bridge

Southerner #5 has left the bridge

Southerner #6 can cross the bridge
Southerner #6 traveling on the bridge

Northerner #5 has left the bridge
```

Output with lock:

```
Northerner #1 can cross the bridge
Northerner #1 traveling on the bridge
Northerner #1 has left the bridge

Southerner #1 can cross the bridge
Southerner #1 traveling on the bridge
Southerner #1 has left the bridge

Northerner #2 can cross the bridge
Northerner #2 traveling on the bridge
Northerner #2 has left the bridge

Southerner #2 can cross the bridge
Southerner #2 traveling on the bridge
Southerner #2 has left the bridge

Northerner #3 can cross the bridge
Northerner #3 traveling on the bridge
Northerner #3 has left the bridge

Southerner #3 can cross the bridge
Southerner #3 traveling on the bridge
Southerner #3 has left the bridge

Northerner #4 can cross the bridge
Northerner #4 traveling on the bridge
Northerner #4 has left the bridge

Southerner #4 can cross the bridge
Southerner #4 traveling on the bridge
Southerner #4 has left the bridge

Northerner #5 can cross the bridge
Northerner #5 traveling on the bridge
Northerner #5 has left the bridge

Southerner #5 can cross the bridge
Southerner #5 traveling on the bridge
Southerner #5 has left the bridge
```

In my code, I use pthread mutex threads to synchronize the threads.

There is an equal number of northern and southern threads, so depending on what numbers I

set, we will create processes for northern and southern threads based on that. In my code, I

had each thread run up to 10 times, so I have a total of 20 processes forked.