Assignment 3
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Screenshots of Outputs:

a. not using the lock

```
tableleaf@Marinas-Laptop hw3 % ./hw
North Tunbridge #1 farmer can cross the bridge
North Tunbridge #1 is traveling on the bridge...
South Tunbridge #1 farmer can cross the bridge
South Tunbridge #1 is traveling on the bridge...
North Tunbridge #2 farmer can cross the bridge
North Tunbridge #2 is traveling on the bridge...
South Tunbridge #2 farmer can cross the bridge
South Tunbridge #2 is traveling on the bridge...
North Tunbridge #3 farmer can cross the bridge
North Tunbridge #3 is traveling on the bridge...
South Tunbridge #3 farmer can cross the bridge
South Tunbridge #3 is traveling on the bridge...
North Tunbridge #1 farmer has left the bridge
South Tunbridge #1 farmer has left the bridge
South Tunbridge #2 farmer has left the bridge
North Tunbridge #3 farmer has left the bridge
North Tunbridge #2 farmer has left the bridge
South Tunbridge #3 farmer has left the bridge
tableleaf@Marinas-Laptop hw3 % 
```

b. using the lock

```
tableleaf@Marinas-Laptop hw3 % ./hw
North Tunbridge #1 farmer can cross the bridge
North Tunbridge #1 is traveling on the bridge...
North Tunbridge #1 farmer has left the bridge
South Tunbridge #1 farmer can cross the bridge
South Tunbridge #1 is traveling on the bridge...
South Tunbridge #1 farmer has left the bridge
North Tunbridge #2 farmer can cross the bridge
North Tunbridge #2 is traveling on the bridge...
North Tunbridge #2 farmer has left the bridge
South Tunbridge #2 farmer can cross the bridge
South Tunbridge #2 is traveling on the bridge...
South Tunbridge #2 farmer has left the bridge
North Tunbridge #3 farmer can cross the bridge
North Tunbridge #3 is traveling on the bridge...
North Tunbridge #3 farmer has left the bridge
South Tunbridge #3 farmer can cross the bridge
South Tunbridge #3 is traveling on the bridge...
South Tunbridge #3 farmer has left the bridge
tableleaf@Marinas-Laptop hw3 % 
```

1. What type of lock your code is using?

The type of lock I'm using is Pthread mutex lock because it stops multiple threads from accessing shared resources at the same time.

2. How many processes does your program fork? Are there equal number of North and South processes?

My program has three threads each farmer and there are two villages so in total there are six threads. There are equal number of North and South threads.