

Interthread Communication in Java

Producer-Consumer Problem

Consumer Thread

```
synchronized (lock) {
```

```
    while (!resourceAvailable()) {
```

```
        lock.wait();
```

```
    }
```

```
    consumeResource();
```

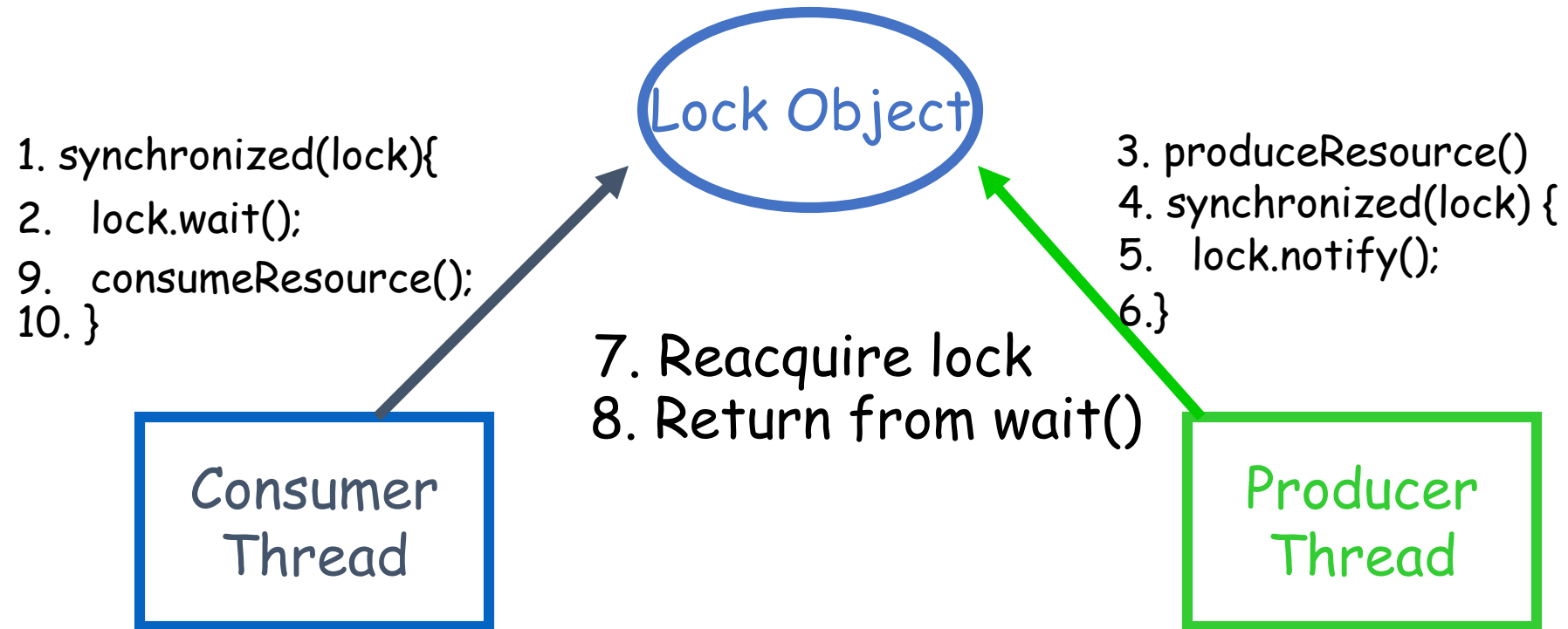
```
}
```

Producer Thread

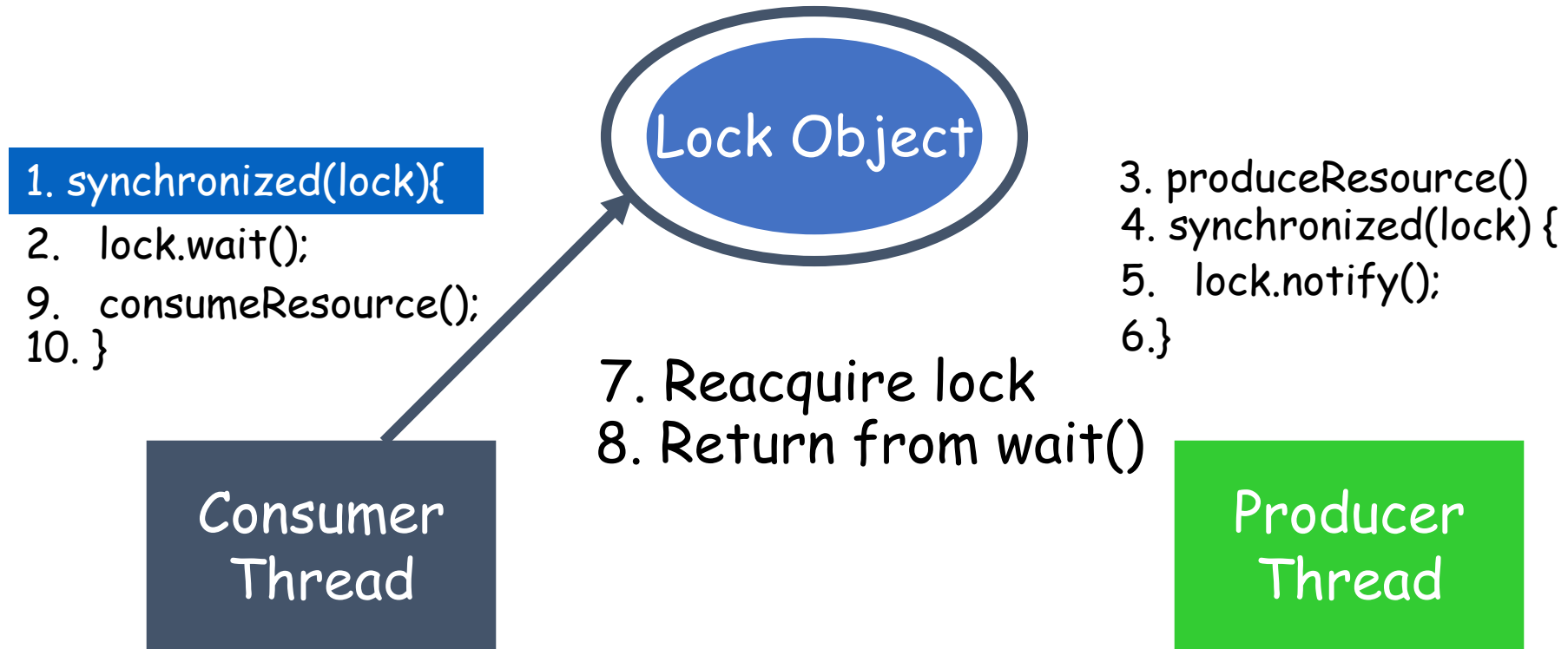
```
produceResource();
```

```
synchronized (lock) {  
    lock.notifyAll();  
}
```

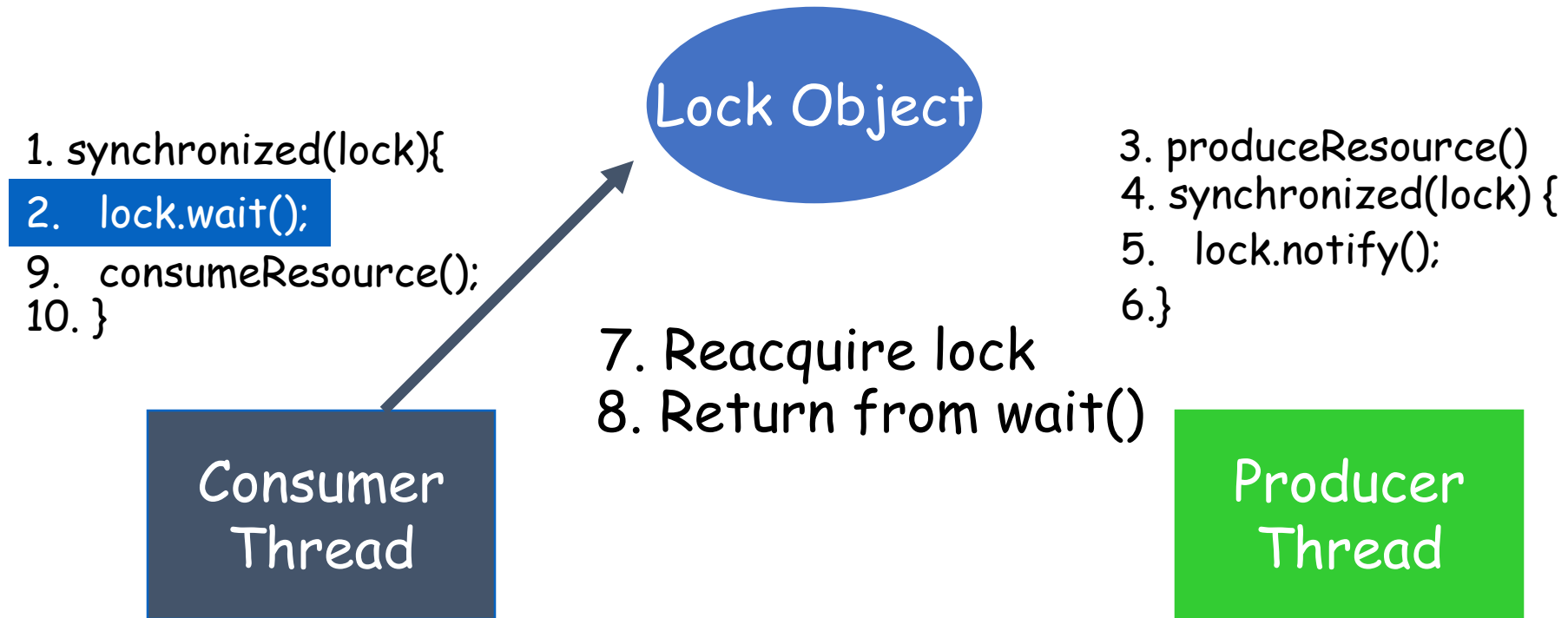
Wait/Notify Sequence



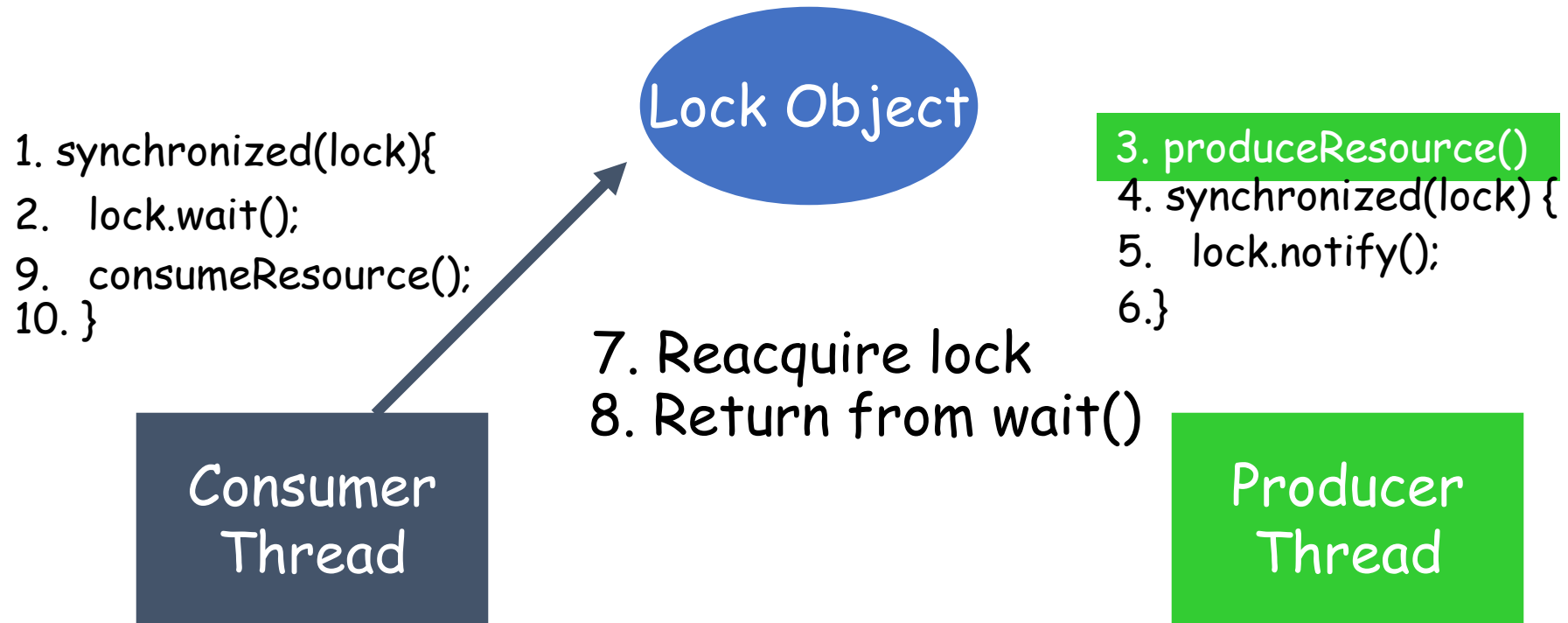
Wait/Notify Sequence



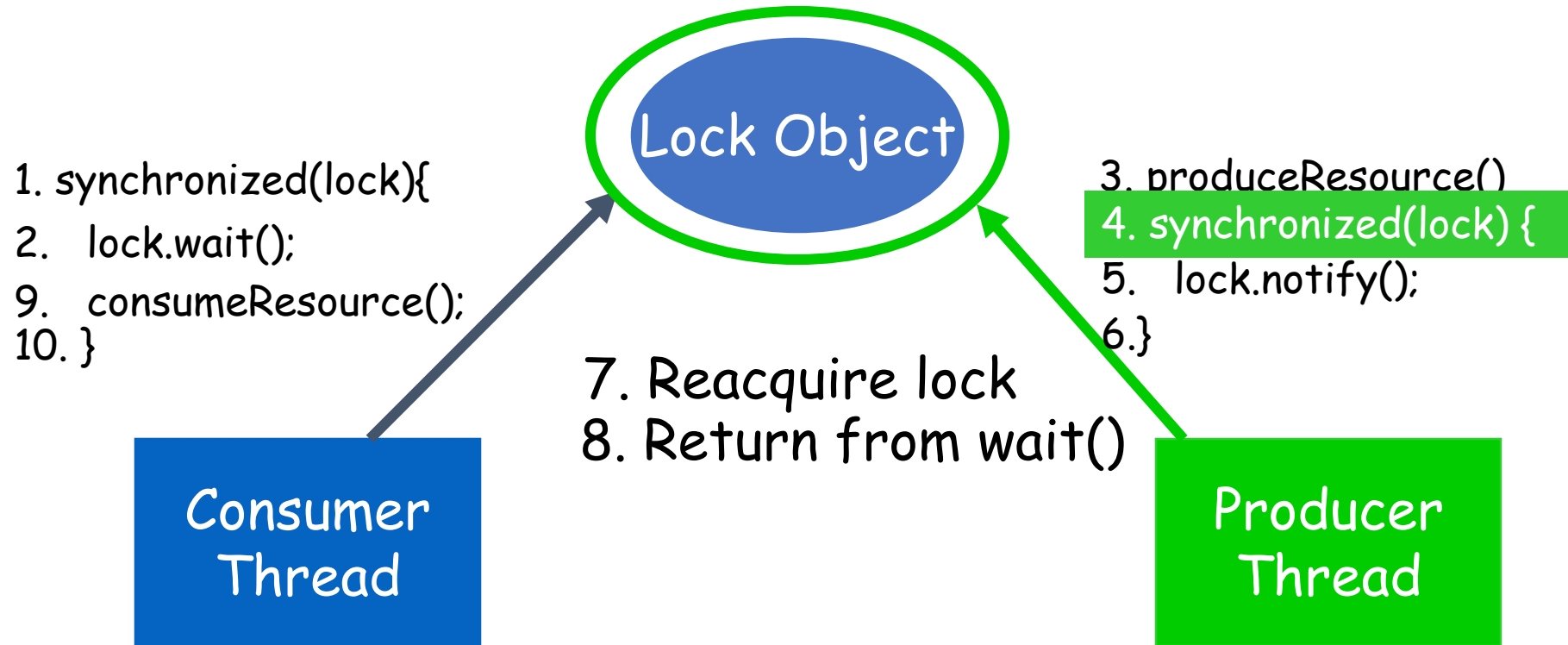
Wait/Notify Sequence



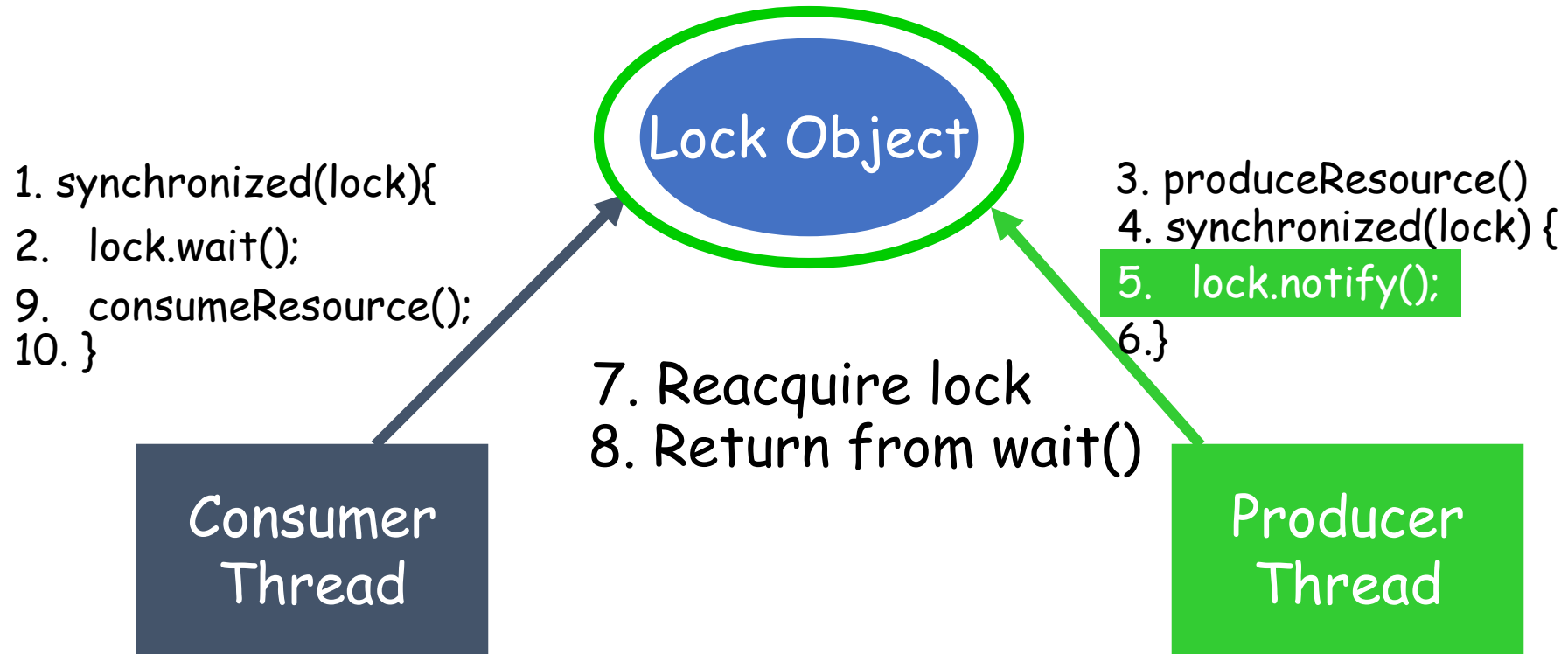
Wait/Notify Sequence



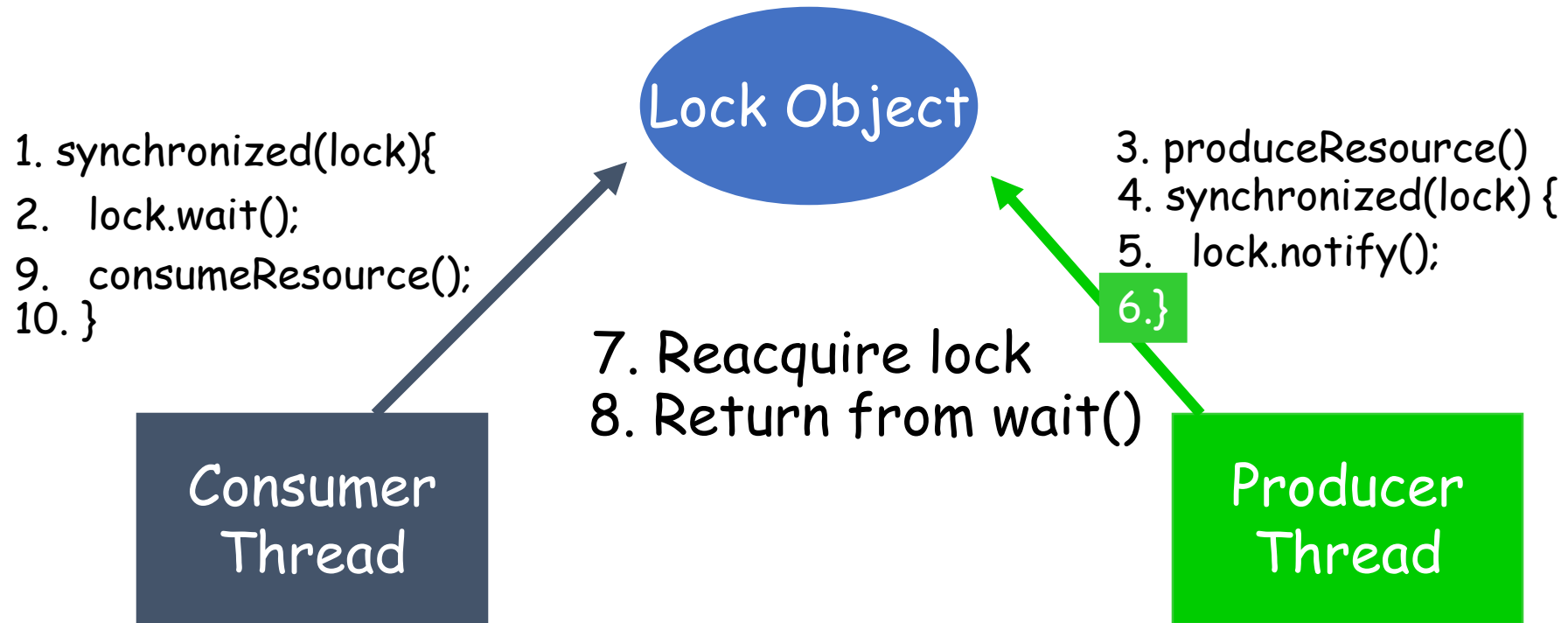
Wait/Notify Sequence



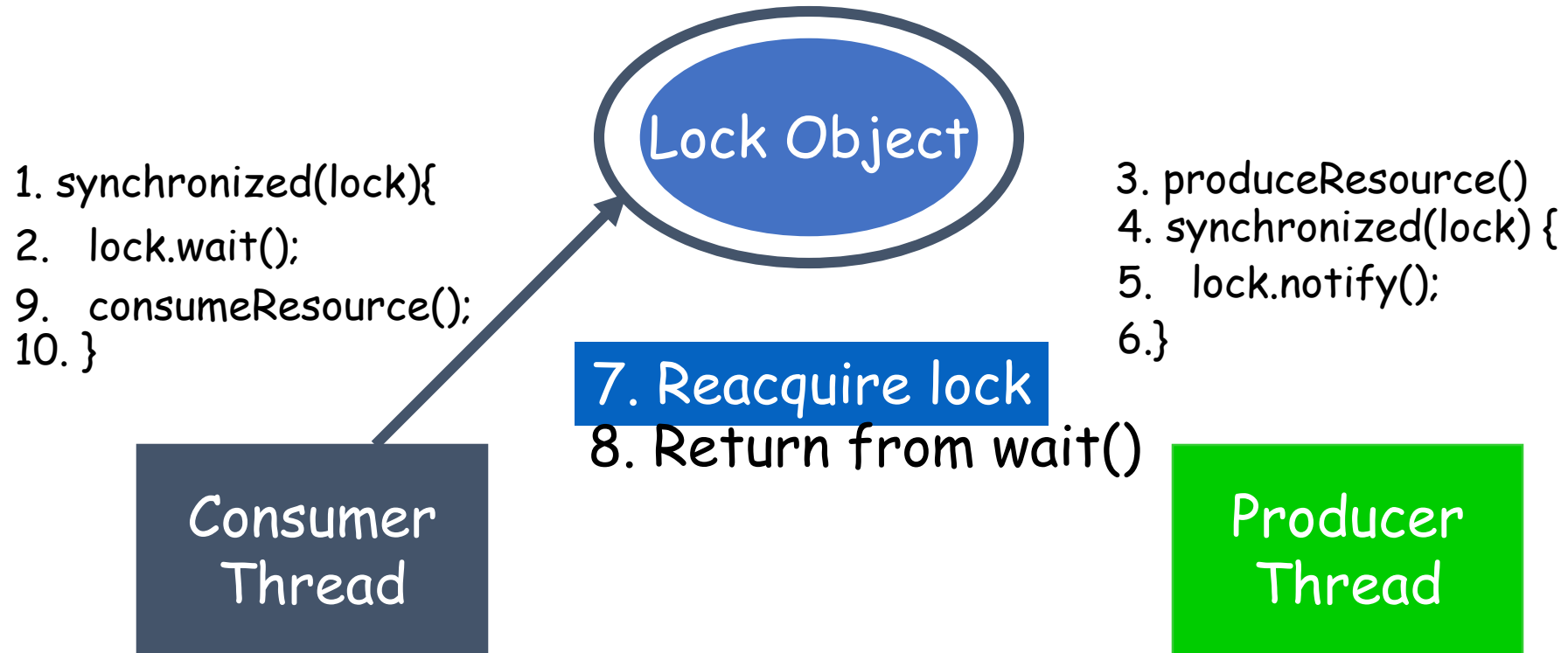
Wait/Notify Sequence



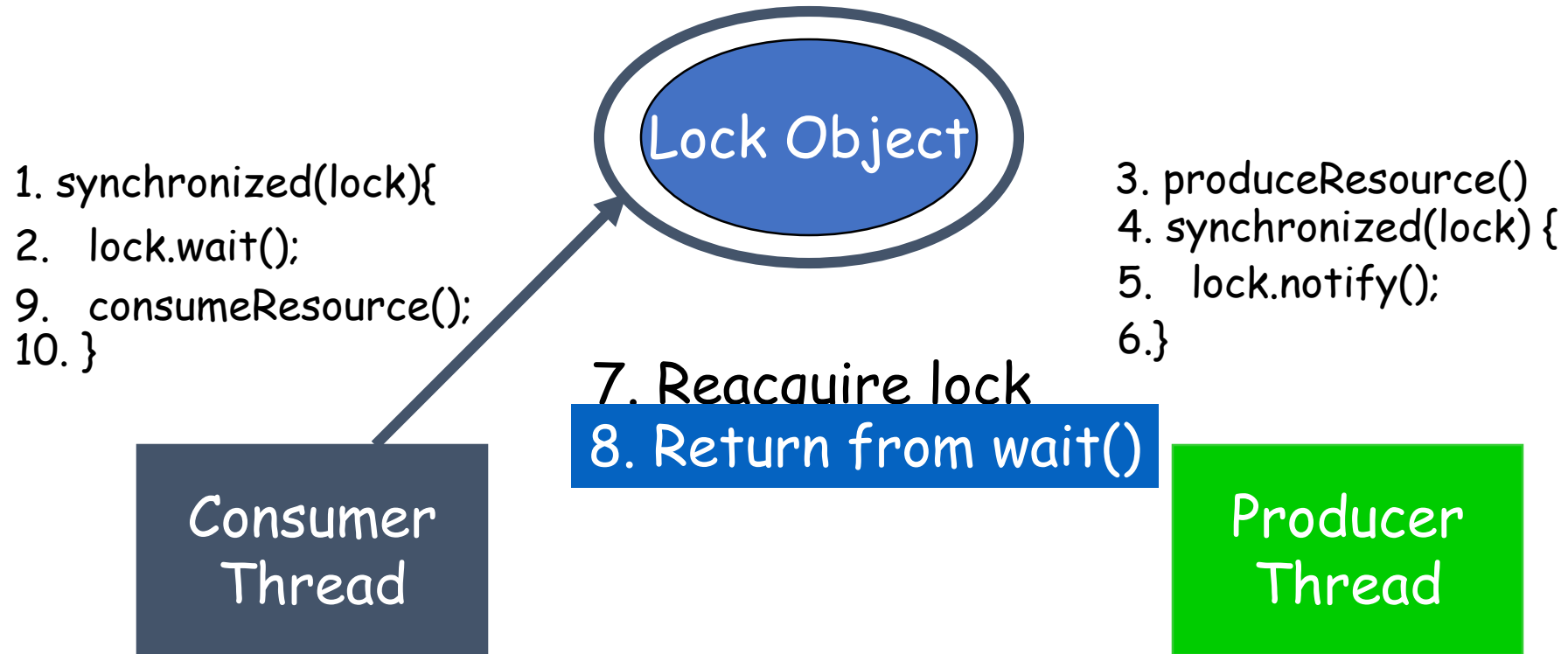
Wait/Notify Sequence



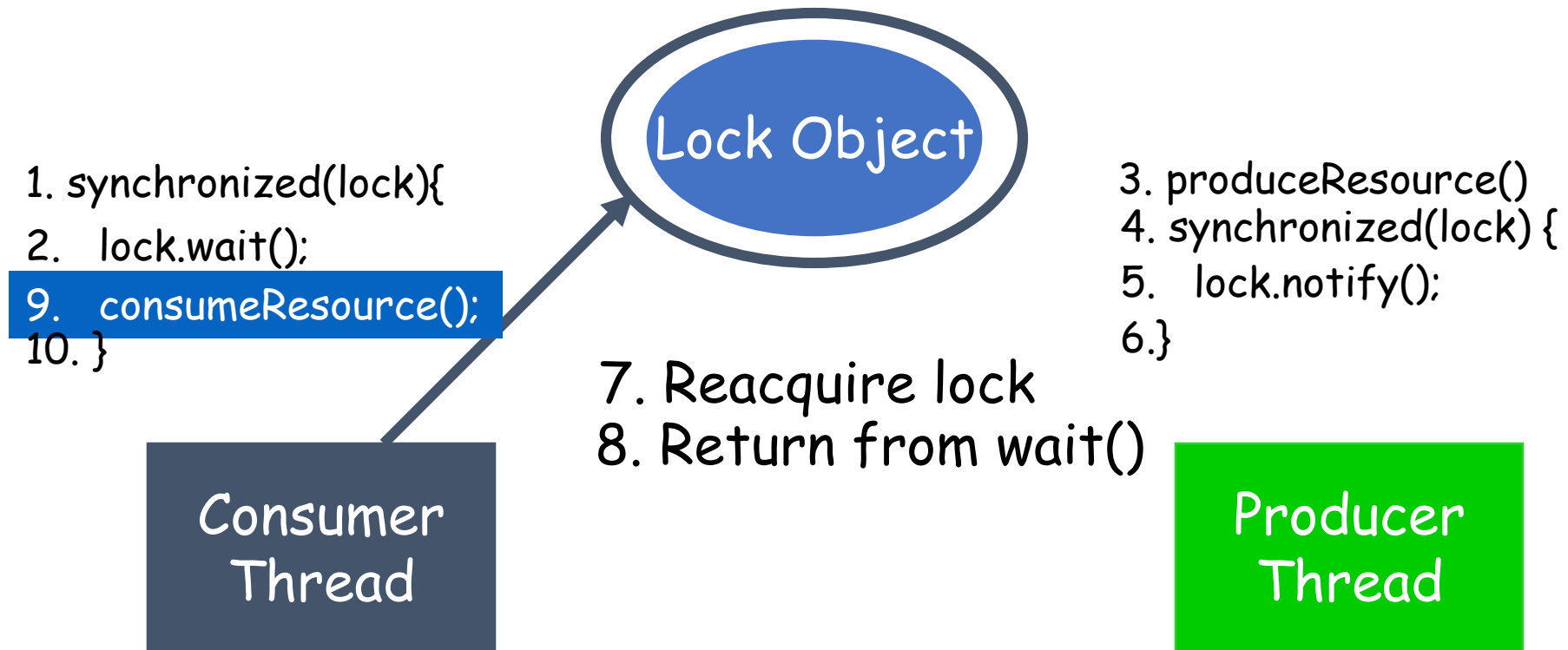
Wait/Notify Sequence



Wait/Notify Sequence



Wait/Notify Sequence



Wait/Notify Sequence

```
1. synchronized(lock){  
2.   lock.wait();  
9.   consumeResource();  
10. }
```

Consumer
Thread

Lock Object

```
7. Reacquire lock  
8. Return from wait()
```

```
3. produceResource()  
4. synchronized(lock) {  
5.   lock.notify();  
6. }
```

Producer
Thread

References

- Schildt, H. (2014). *Java: the complete reference*. McGraw-Hill Education Group..