

Mutual Exclusion

Companion slides for
The Art of Multiprocessor
Programming
by Maurice Herlihy & Nir Shavit

(Abridged version. Original at <http://booksite.elsevier.com/9780123705914/?ISBN=9780123705914>)

Locks (Mutual Exclusion)

```
public interface Lock {
```

```
    public void lock();
```

acquire lock

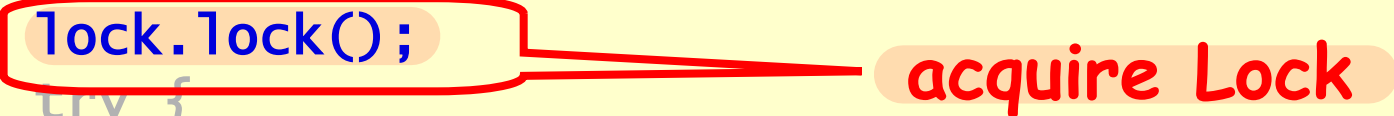
```
    public void unlock();
```

release lock

```
}
```

Using Locks

```
public class Counter {  
    private long value;  
    private Lock lock;  
    public long getAndIncrement() {  
        lock.lock();  
        try {  
            int temp = value;  
            value = value + 1;  
        } finally {  
            lock.unlock();  
        }  
        return temp;  
    }  
}
```



acquire Lock

Using Locks

```
public class Counter {  
    private long value;  
    private Lock lock;  
    public long getAndIncrement() {  
        lock.lock();  
        try {  
            int temp = value;  
            value = value + 1;  
        } finally {  
            lock.unlock();  
        }  
        return temp;  
    }  
}
```



Release lock
(no matter what)

Using Locks

```
public class Counter {  
    private long value;  
    private Lock lock;  
    public long getAndIncrement() {  
        lock.lock();  
        try {  
            int temp = value;  
            value = value + 1;  
        } finally {  
            lock.unlock();  
        }  
        return temp;  
    }  
}
```

*porque modifica
valores/variables*

**Critical
section**