Mutual Exclusion

Companion slides for

The Art of Multiprocessor Programming

by Maurice Herlihy & Nir Shavit

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Locks (Mutual Exclusion)

```
public interface Lock {

 public void lock();

 public void unlock();
}
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acquire lock

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acquire lock

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;
  }}
```

Using Locks

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    lock.unlock();
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Release lock
(no matter what)

Using Locks

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  private long value;
  private Lock lock;
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   try {
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Critical section