

The concept of **lock** (a.k.a mutex)

- The **lock** supports three operations:
 - **init()**
creates an unlocked mutex
 - **acquire()**
waits until the mutex is unlocked, then locks it to enter the C.S
 - **release()**
unlocks the mutex to leave the C.S, waking up anyone waiting for it

(Bad) Producer Consumer **using a lock**

```
lock := init()
```

```
void producer () {  
    while(1) {  
        item := produce()  
        acquire(lock)  
        write(buffer, item)  
        release(lock)  
    }  
}
```

```
void consumer () {  
    while(1) {  
        acquire(lock)  
        item := read(buffer)  
        release(lock)  
        consume(item)  
    }  
}
```