Readers and Writers: Monitor Solution

Variables:

```
Lock lock;
int num_readers = 0
Condvar wait_on_readers CV
int num_writers = 0
Condvar wait_on_writers CV
```

① writers wait if threads are reading
② readers wait if threads are writing
③ writers wait if threads are writing

read(){

```
lock->acquire()
while (num_writers > 0)
    wait_on_writers->wait()
num_readers ++
lock->release()
<read>
lock->acquire()
num_readers --
if (num_readers <= 0)
    wait_on_readers CV->signal()
lock->release()
}
```

write(){

```
lock->acquire()
while(num_readers > 0)
    wait_on_readers CV->wait()
num_writers ++
<write>
num_writers --
if(num_writers > 0)
    wait_on_reader_CV->signal()
else
    wait_on_writers->broadcast()
lock->release()
}
```