

The Readers-Writers Problem

No starvation

```
1 semaphore mutex = 1;
2 semaphore noOther = 1;
3 semaphore turnstile = 1;
4 int readers = 0;
5
6 void writer(void)
7 {
8     while (TRUE) {
9         turnstile.wait();
10        wait(&noOther);
11        writing();
12        signal(&noOther);
13        turnstile.signal();
14    }
15 }
1
2 void reader(void)
3 {
4     while (TRUE) {
5         turnstile.wait();
6         turnstile.signal();
7
8         wait(&mutex);
9         readers++;
10        if (readers == 1)
11            wait(&noOther);
12        signal(&mutex);
13        reading();
14        wait(&mutex);
15        readers--;
16        if (readers == 0)
17            signal(&noOther);
18        signal(&mutex);
19        anything();
20    }
21 }
```