

The Readers-Writers Problem

Constraint: no process may access the shared data for reading or writing while another process is writing to it.

```
1 semaphore mutex = 1;
2 semaphore noOther = 1;
3 int readers = 0;
4
5 void writer(void)
6 {
7     while (TRUE) {
8         wait(&noOther);
9         writing();
10        signal(&noOther);
11    }
12 }
```

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

Starvation The writer could be blocked forever if there are always someone reading.