Second Readers-writers Problem

• 1\textsuperscript{st} RW problem: readers-preference.
  – A writer can get into the critical sections until there is no request from readers.

• 2\textsuperscript{nd} RW problem: writers-preference.
  – A writer will no longer wait the following readers.
Second Readers-writers Problem

integer readcount, writecount ; (initial value = 0)
semaphore mutex 1, mutex 2, mutex 3, w, r ; (initial value = 1)

READER
P(mutex 3) ;
P(r) ;
P(mutex 1) ;
readcount := readcount + 1 ;
if readcount = 1 then P(w) ;
V(mutex 1) ;
V(r) ;
V(mutex 3) ;

... reading is done

... P(mutex 1) ;
readcount := readcount - 1 ;
if readcount = 0 then V(w) ;
V(mutex 1) ;

WRITER
P(mutex 2) ;
writecount := writecount + 1 ;
if writecount = 1 then P(r) ;
V(mutex 2) ;
P(w) ;

... writing is performed

... V(w) ;
P(mutex 2) ;
writecount := writecount - 1 ;
if writecount = 0 then V(r) ;
V(mutex 2) ;