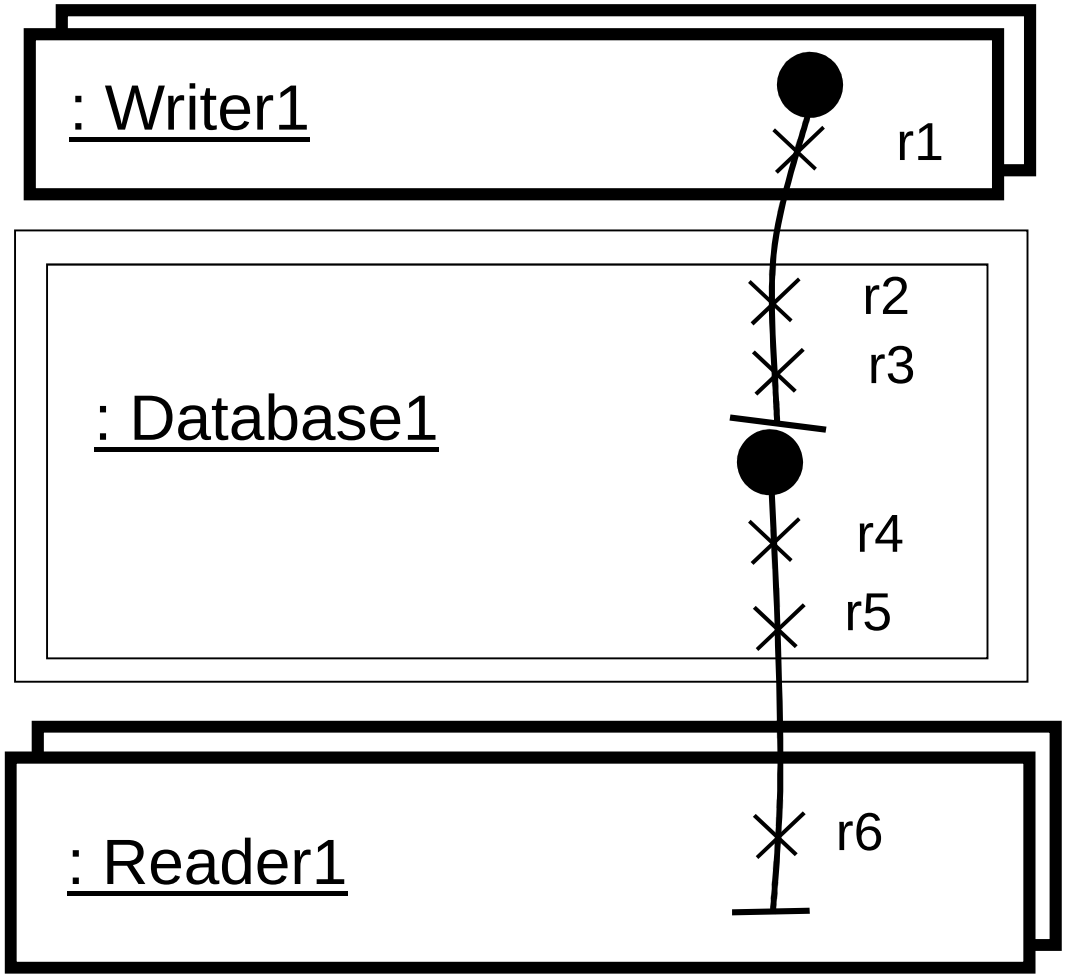
SYSC 3303 Real-Time Concurrent Systems

Assignment #2
Sample Solutions

Part 1 UCM

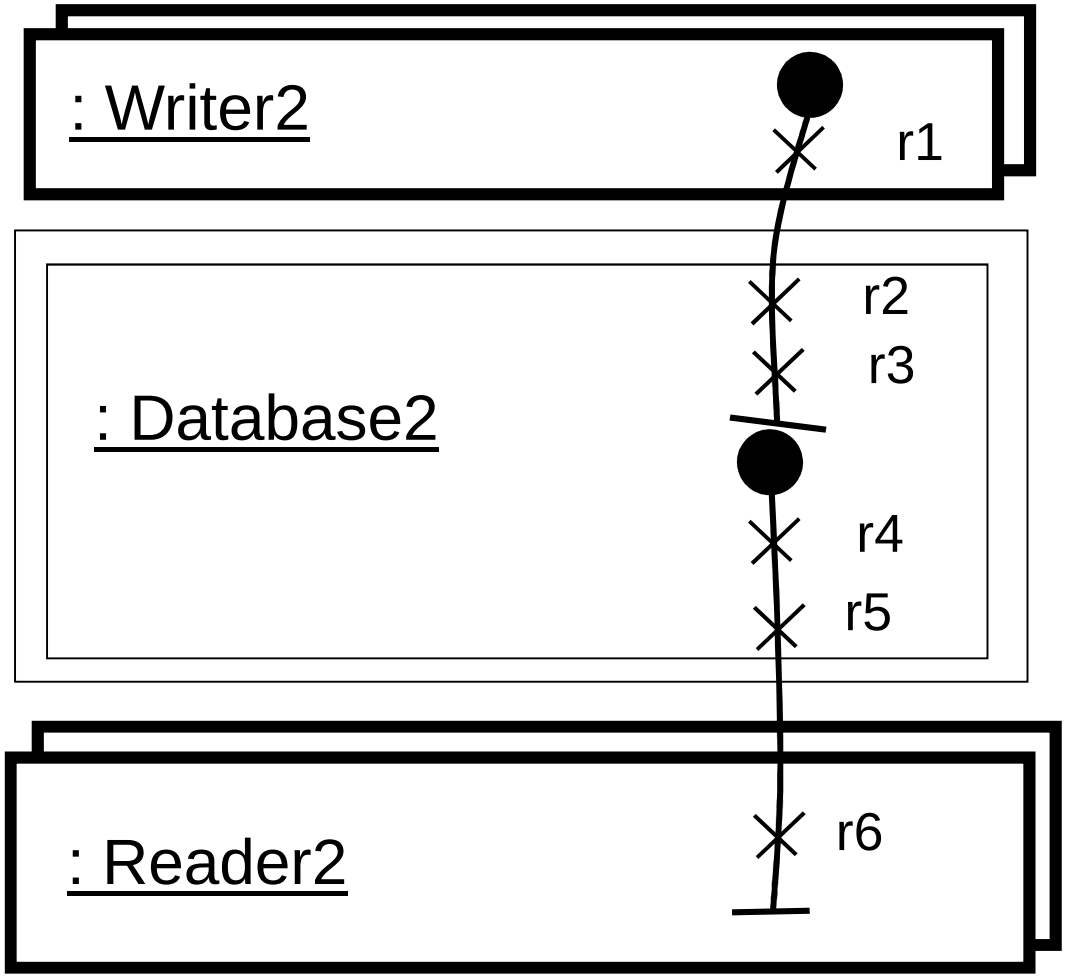


Note that multiple readers may proceed simultaneously (writers may starve)

Responsibilities:

r1 – produce item
r2 – start writing to database
r3 – finish writing to database
r4 – start reading from database
r5 – finish reading from database
r6 – consume item

Part 2 UCM



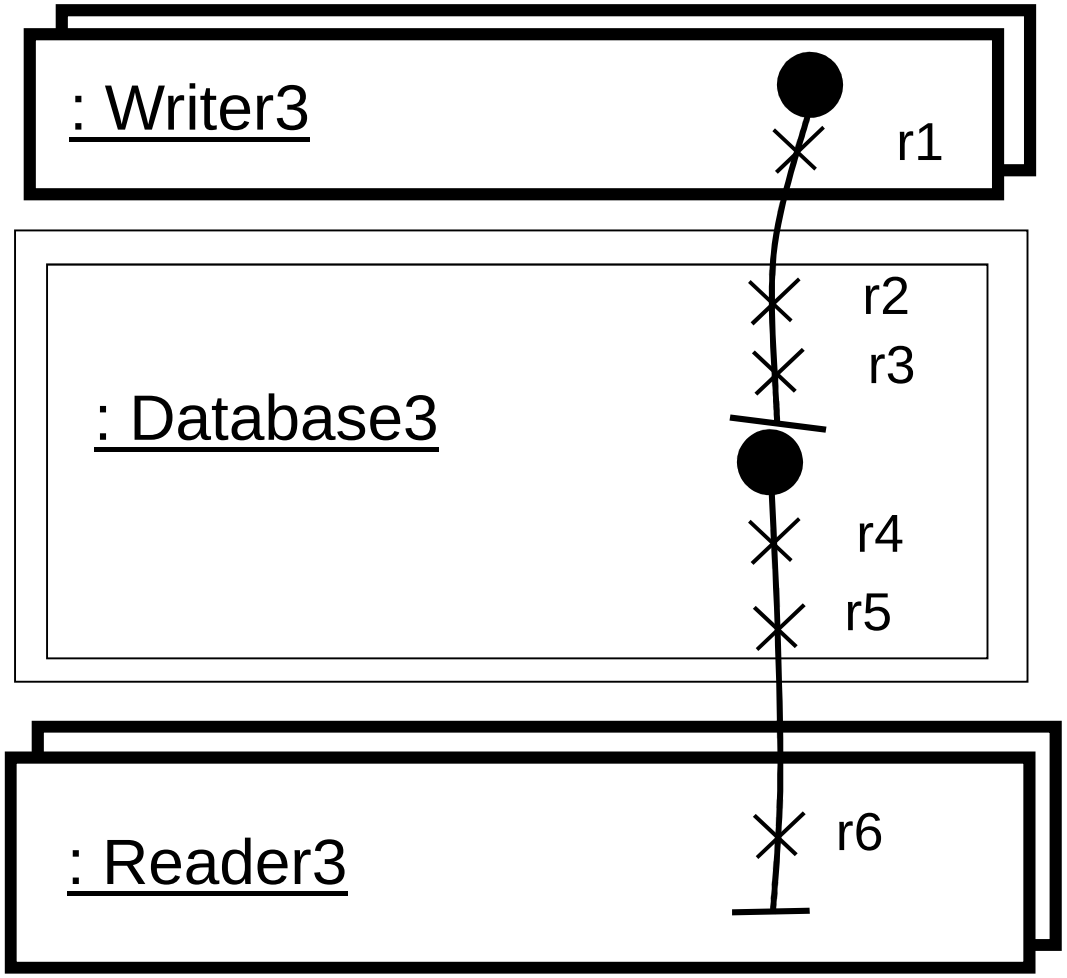
Note that writers cannot be kept waiting (readers may starve)

Note that multiple readers may proceed simultaneously

Responsibilities:

r1 – produce item
r2 – start writing to database
r3 – finish writing to database
r4 – start reading from database
r5 – finish reading from database
r6 – consume item

Part 3 UCM



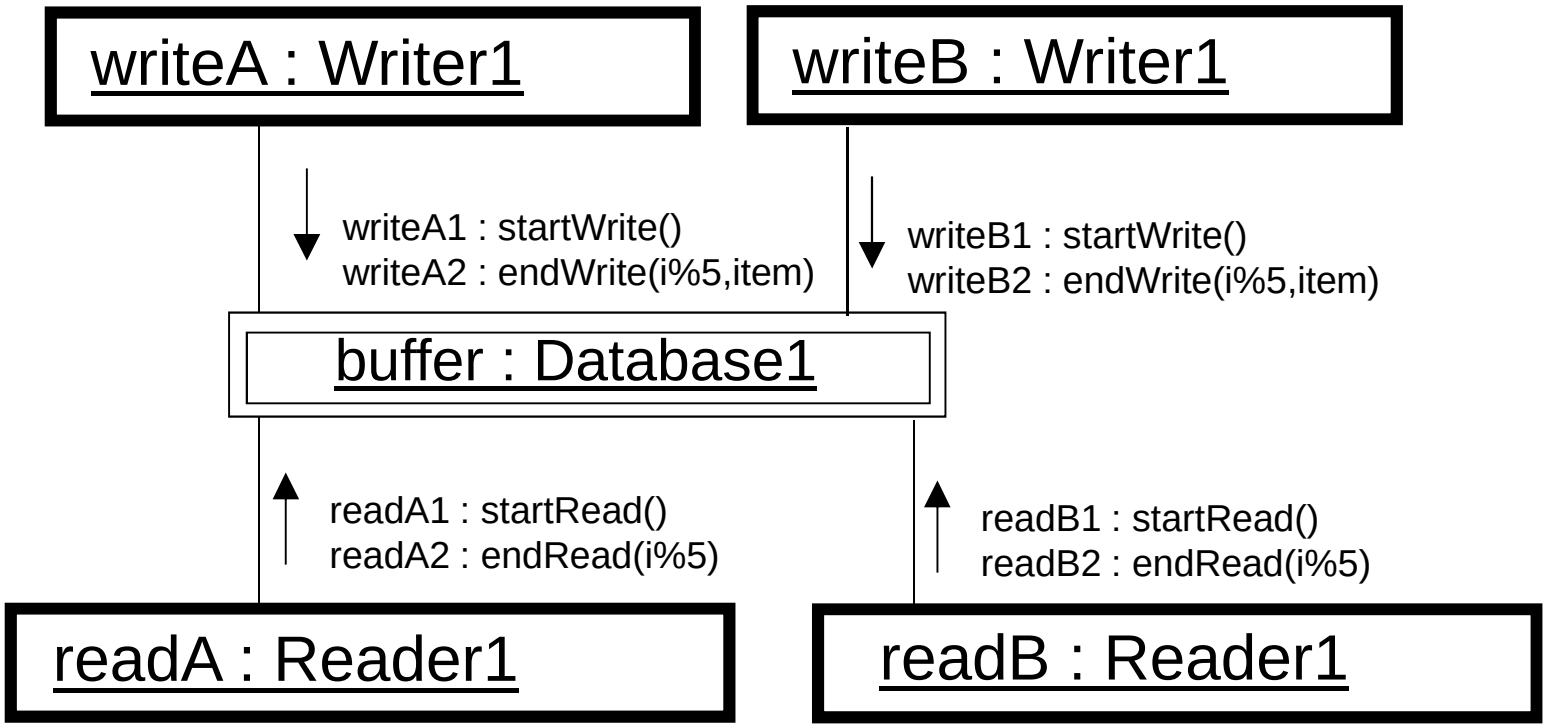
Note that neither readers nor writers can starve

Note that multiple readers may proceed simultaneously

Responsibilities:

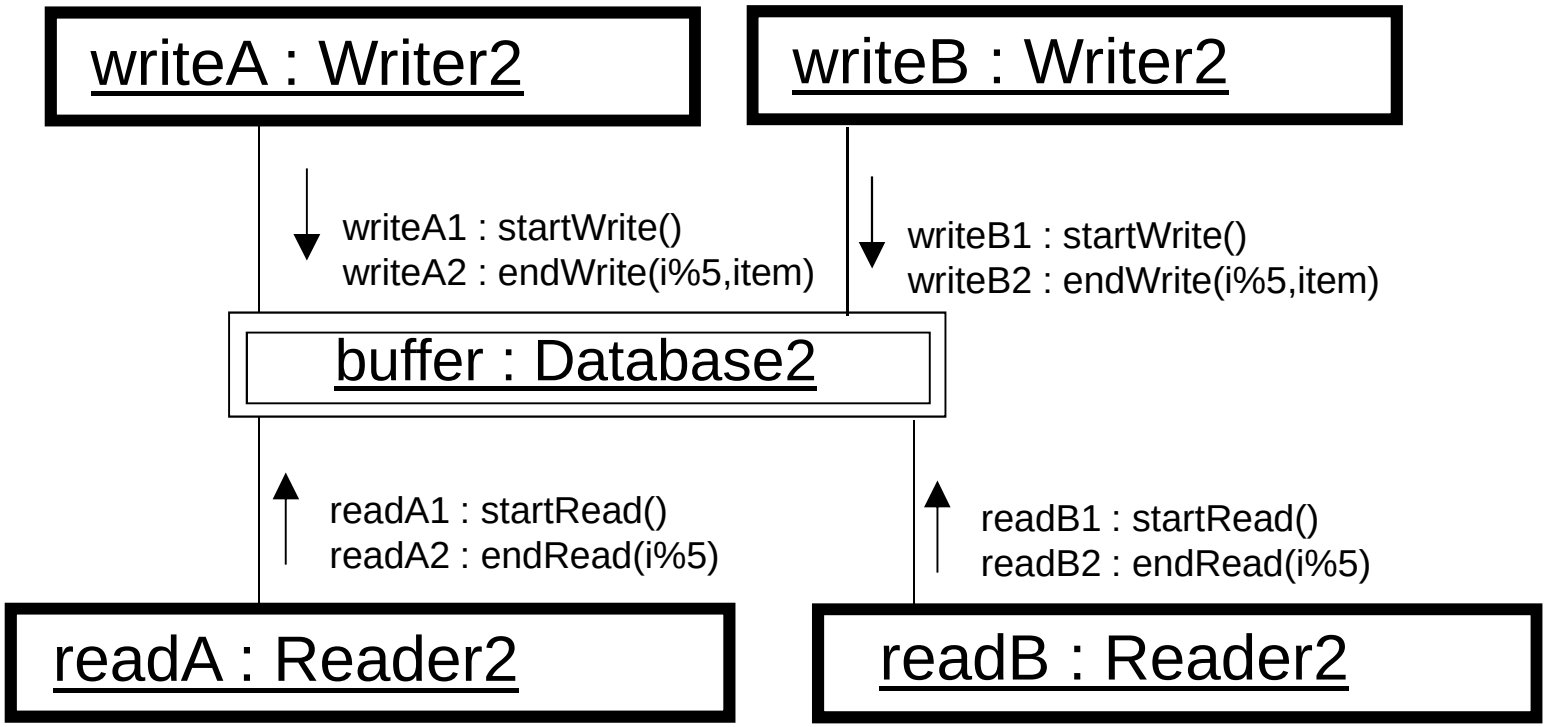
r1 – produce item
r2 – start writing to database
r3 – finish writing to database
r4 – start reading from database
r5 – finish reading from database
r6 – consume item

Part 1 UML Collaboration Diagram



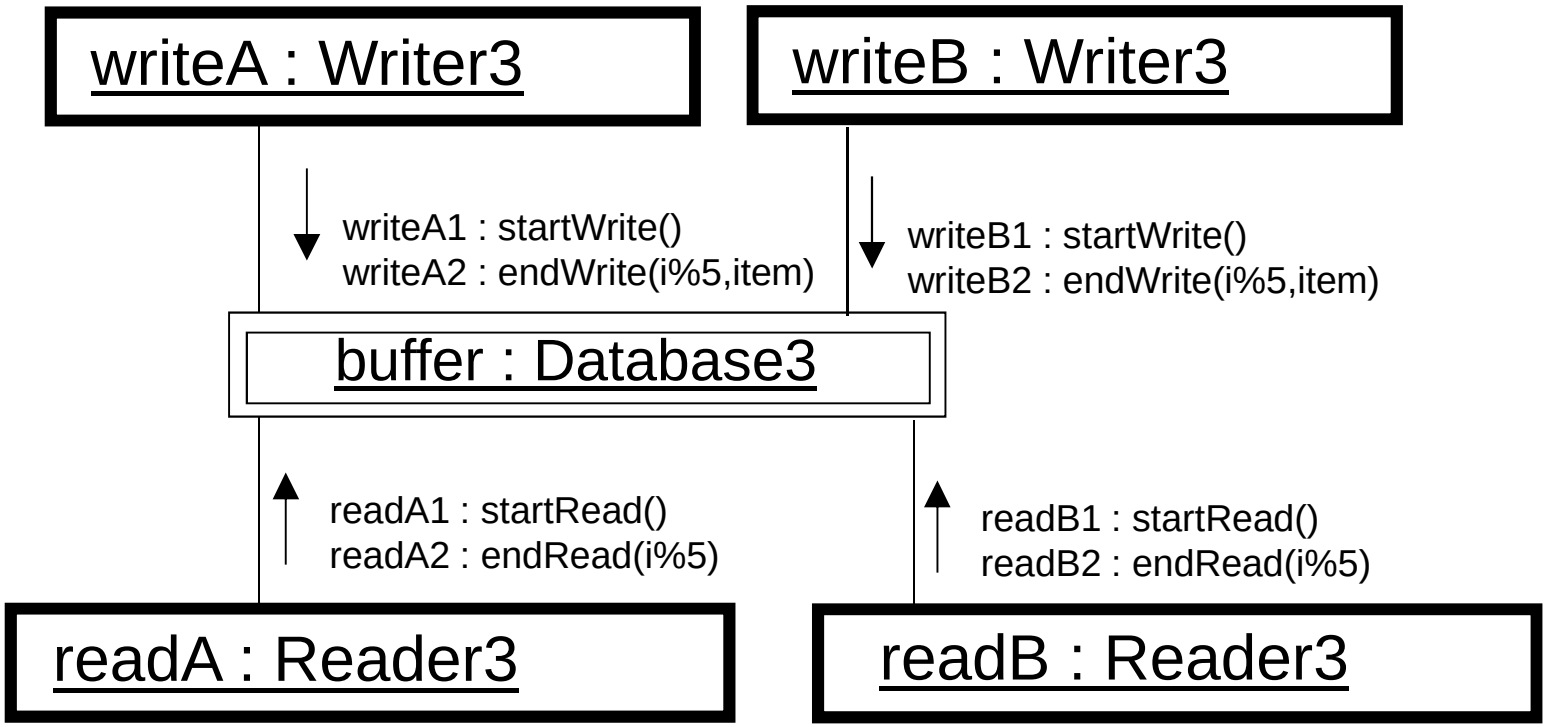
For all readers / writers steps 1 and 2 iterate 10 times.

Part 2 UML Collaboration Diagram



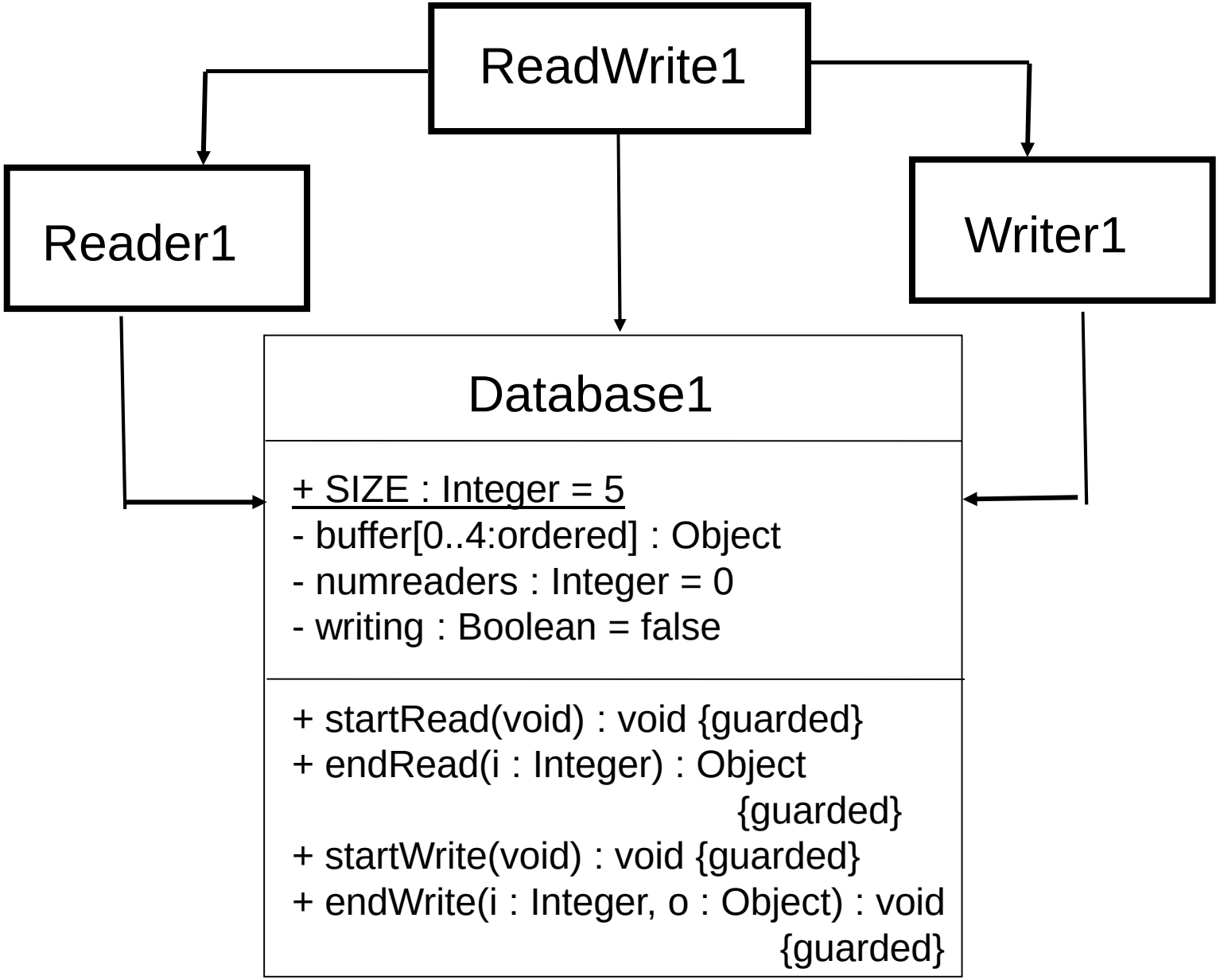
For all readers / writers steps 1 and 2 iterate 10 times.

Part 3 UML Collaboration Diagram

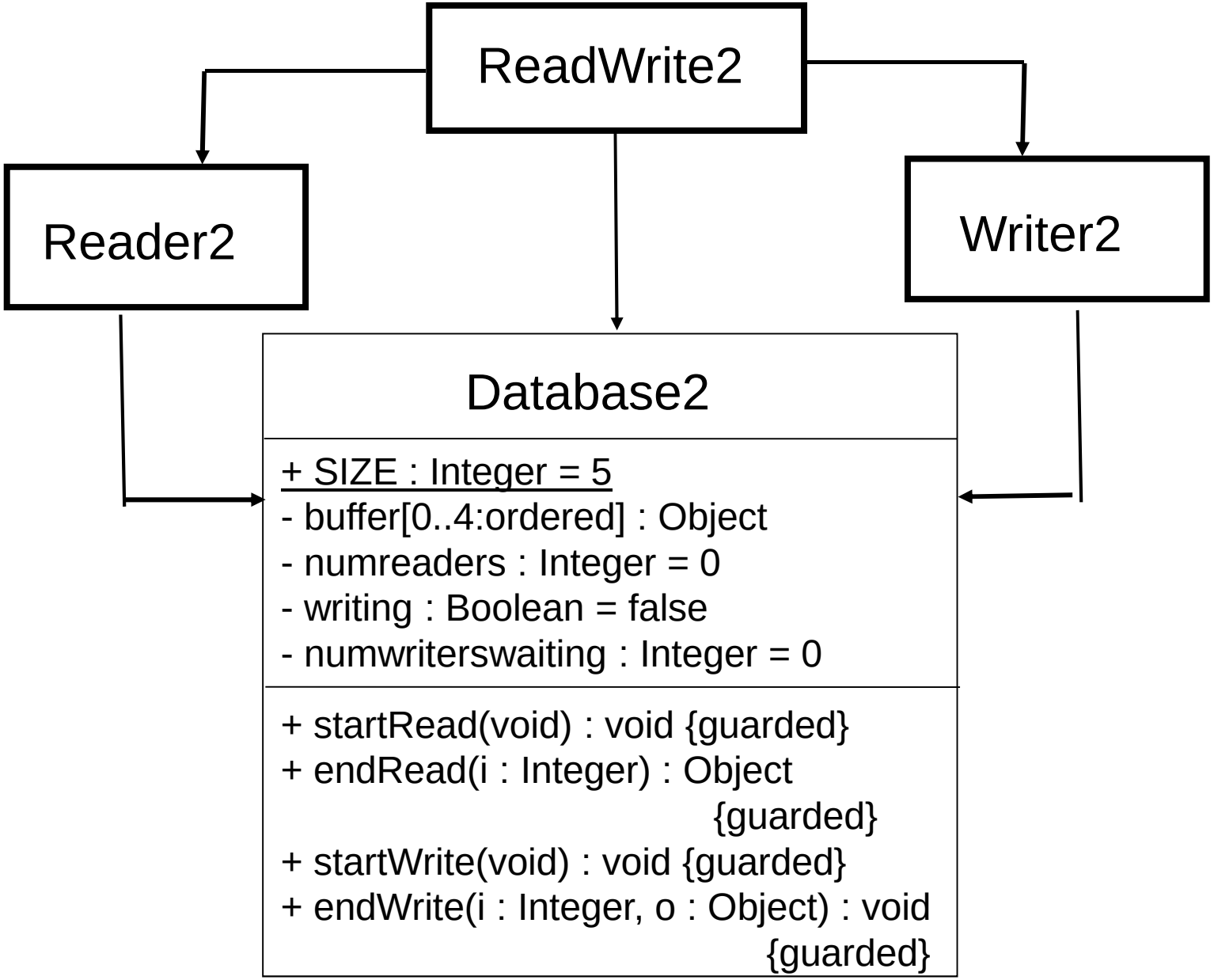
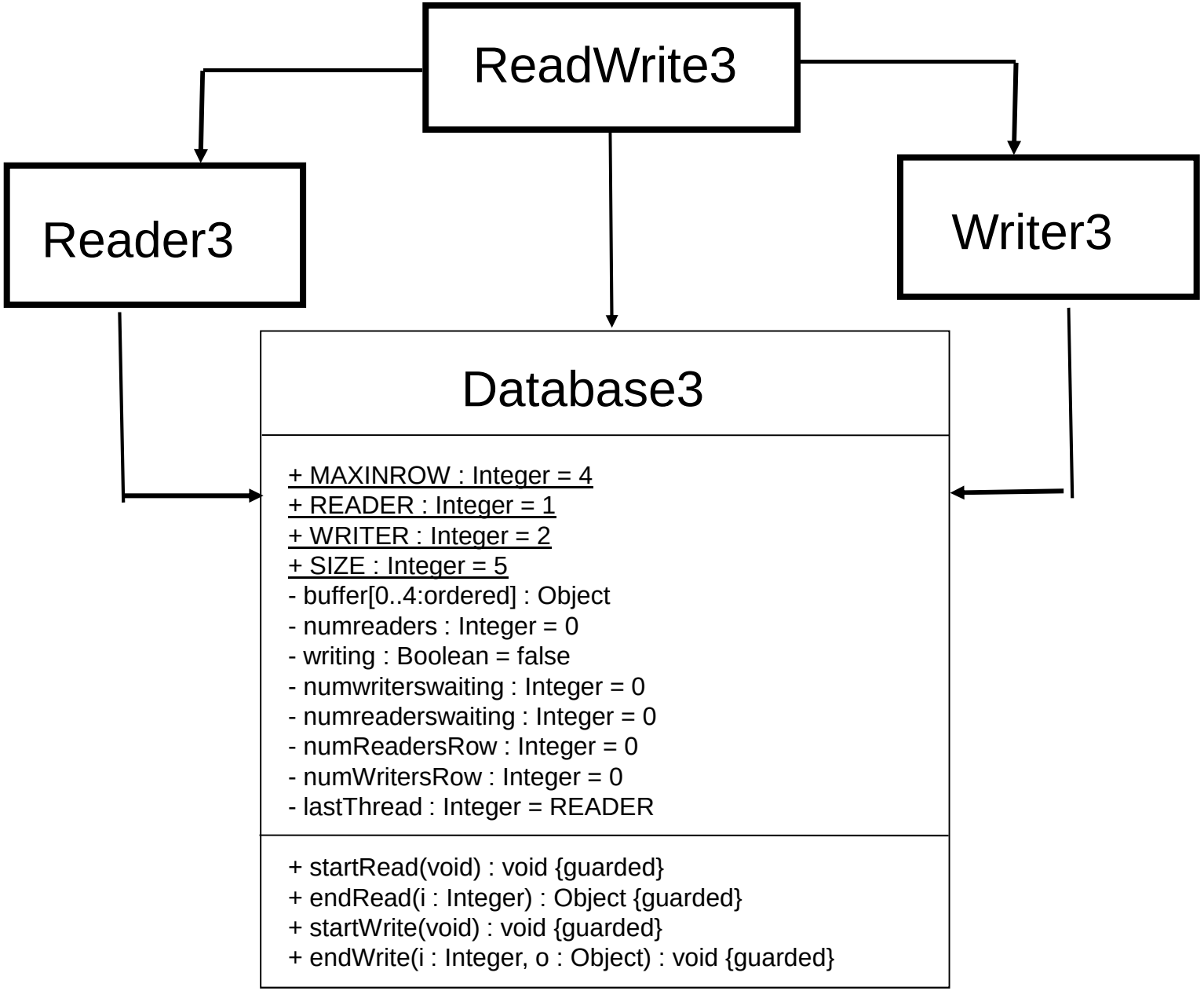


For all readers / writers steps 1 and 2 iterate 10 times.

Part 1 Class Diagram



Part 2 Class Diagram



Part 3 Class Diagram