Producer Process

```
while (true) {
    // produce an item
    wait (empty);
    wait (mutex);
    // add item to
              buffer
    signal (mutex);
    signal (full);

}
```

```
while (true) {
    // produce an item
    wait (empty);
    wait (mutex);
    // add item to
              buffer
    signal (mutex);
    signal (full);

}
```

Consumer process:

```
while (true) {
    wait (full);
    wait (mutex);

    // remove item from
              buffer
    signal (mutex);
    signal (empty);

    // consume the
       removed item

}
```

```
while (true) {
    wait (full);
    wait (mutex);

    // remove item from
              buffer
    signal (mutex);
    signal (empty);

    // consume the
       removed item

}
```

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Reader   Writer

mutex = 1
wrt = 1
Read cont = 0

Writer

   wait (wrt):
    ⋮
   writing is performed
    ⋮
   signal (wrt)

Writer

   wait (wrt)
    ⋮
   writing is performed :
    ⋮
   signal (wrt)

Reader
while (true) &
   wait (mutex) ;
   read count ++ :

   'if (read count == 1)
      wait (wrt);

   signal (mutex) :
    ⋮
   reading is performed
    ⋮
   wait (mutex) :
   readcount -- ;

   if (readcount == 0)
      Signal (wrt):

   signal (mutex) ;
}

Reader
while (true) &
   wait (mutex) :
   read count ++ :

   if (read count == 1)
      wait (wrt):

   signal (mutex) :
    ⋮
   reading is performed
    ⋮
   wait (mutex) :
   read count -- :

   if (read count == 0)
      signal (wrt):

   signal (mutex)
}

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