

Exercise 4 - Tweaking parameters

The program from exercise 3 must be modified, so that the writer loop-time is a user-defined number of microseconds. Test with higher numbers of writer-threads and faster looptime.

Implementation

The source code from exercise 3 is reused for this exercise.

The `sleep(1)` function that gave a 1 second pause is changed to `usleep(userSleep)` so that the user can decide how many microseconds there should be between writer-tests.

```
usleep(userSleep); //changed to usleep from sleep
```

Discussion

Through observations, we see that a small amount of threads with a short sleep time (eg. 10.000) writes a lot of mistakes, while the same amount of threads with a longer sleep time (eg. 500.000) has close to none. The reason behind this is, that while thread 1 is "sleeping," thread 2 has enough time to complete the given task of setting and testing the full size of the vector. This also explains why the failures didn't occur as often in exercise 3, since the sleeper was at one second.

If we however add more threads, we see the amount of failures rise again. The reason for that is, that each thread waits for the same amount of time, but while adding to the amount of threads, the time starts to overlap.