

# OS Assignment 8

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## Objective:

To implement bounded mutual exclusion algorithm for  $n$  threads using compare\_and\_swap (cas) operation. Then compare its performance with the normal unbounded mutual exclusion algorithm which is again implemented using cas operation.

## Input:

Input is a text file which consists of number of threads ( $n$ ), number of CS requests by each thread ( $k$ ), sleep delays ( $t_1, t_2$ ).

## Results:

The performance of both bounded and unbounded waiting time lock algorithms is compared and analyzed as we vary the number of threads ( $n$ ) from 10 to 50 while keeping other parameters same. The number of CS requests by each thread ( $k$ ) is fixed to 10 in all these experiments. Let the average time taken in micro seconds to enter CS be denoted by  $T$ . The sleep delay  $t_1$  and  $t_2$  are both 10 ms.

n	k	T (Bounded)	T (Unbounded)
10	10	344	178
20	10	250	203
30	10	193	162
40	10	283	190
50	10	350	212

Thus, results are obtained for conditions given in the question.

## Graph



