Spin Locks

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1 Algorithm Explanation

1. **Classes**: Classes to implement various locks:-

   - **Lock**: A simple template class with only two function declarations *lock()* and *unlock()*.
   - **TASLock**
   - **TTASLock**
   - **Backoff**: to implement Backoff
   - **BackoffLock**
   - **ALock**
   - **CLHLock**
   - **MCSLock**
   - **TOLock**

2. **Main Function**

   - Firstly, iterating a loop for each lock
   - Then iterating nested loop for a number of threads will run(1 to N=100).
   - Storing time in microsecond for corresponding lock to number of threads(1 to N).
   - then draw the graph for each lock with X-axis as number of threads and Y-axis as 1000/time.

2 Results: Graphs

1. In these graphs we can see the perfomance of various spin locks:

TASLock perfomance

TTASLock perfomance

BackoffLock perfomance

ALock perfomance

CLHLock perfomance

MCSLock perfomance

TOLock perfomance

Lock perfomance