CSE Recitation-3 20161012

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Question1：According to the lockset algorithm, when does eraser signal ...

- If C(v) becomes empty this indicates that there is no lock that consistently protects v. The reason is that locks_held(t) is the set of locks held by thread t and C(v) is the set of all locks, if C(v) ∩ locks_held(t) == NULL then it means that no lock are protecting the variable.
- And when it comes to Initialization and Read-Sharing, it uses four states and race will only be reported when a write access from a new thread changes the state from Exclusive or Shared to the Shared-Modified state because simultaneous reads of a shared variable by multiple threads are not races, there is also no need to protect a variable if it is read-only, and it reports races only after an initialized variable has become write-shared by more than one thread.

Question2：Under what conditions does Eraser report a false ...

- False Positive: The Eraser will do a good job only if the test case causes enough shared variable reads to follow the corresponding writes.
- False Negatives: If a thread t1 reads v while holding lock m1, and a thread t2 writes v while holding lock m2, the violation of the locking discipline will be reported only if the write precedes the read.

Question3：Typically, instrumenting a program changes the intra ...

- Eraser’s testing is not very sensitive to the scheduler interleaving because because the paths violate the locking discipline any variable regardless of the interleaving produced by the scheduler.

Question4：Please raise at least one question of your own for ...

- How locks of different granularity are used in a computer system？