

Recitation: Eraser

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Pre-Recitation

- What are the goals of Eraser?
 - Eraser is used to detect race conditions in multithreaded programs.
 - It is also designed to be more efficient than prior methods.
 - It is also designed to be more thorough in detection than prior methods of debugging.
- How was it designed to meet those goals?
 - Uses lockset algorithm.
 - Makes sure that every shared variable is protected by some lock.
 - Does so by monitoring all the reads and writes of a program.
 - Eraser takes a binary program and returns a new binary that has added calls to Eraser to implement Lockset algorithm at runtime.
- Why do we need a tool like Eraser? (Or why do the authors believe that we need such a tool?)
 - Race conditions are very hard to find and can take months to track down in a real code base
 - Race conditions often times are hard to find naturally, and only occur in unique conditions that may be very difficult to find/replicate.
 - First dynamic race detection tool applied to production servers.