

The Mesa system forced the developers to address a number of the practical issues associated with monitors and condition variables. Describe some aspects of the implementation of synchronization primitives in Mesa that were not addressed by C.A.R. Hoare.

*The aspects of the implementation of synchronization primitives in Mesa that were not addressed by C.A.R. Hoare:*

*the semantics of nested monitor calls;*

*the various ways of defining the meaning of WAIT;*

*priority scheduling;*

*handling of timeouts, aborts and other exceptional conditions;*

*interactions with process creation and destruction;*

*monitoring large numbers of small objects.*

*Monitor vs semaphore vs mutex:*

*A monitor is an object that only allow one thread to execute it provided procedures. It is kinda like a simple OS. It can be implemented with a semaphore. A semaphore is an OS implemented low level object that has P and V operations to allow a fix number of processes access a shared resource.*

*A mutex is an OS implemented low level object and only allow one process to access a shared resource at a time. Mutex can implement monitor and monitor can implement mutex.*