

## Mutex (Mutual Exclusion)

- Flag or lock used to allow only one thread to access a section of code at a time.
- It blocks other threads from accessing the code or resource to ensure anything executed in critical section is thread-safe information and not corrupted by other threads.
- Race condition is the exact timing of the sequence of events to perform an action that can change the outcome.
- Locking mechanism is used to prevent more than one thread from executing the read-modify-write sequence at a time.
- Mutex allows mutual exclusions of thread execution in a critical section.
- Mutex is a global binary value that can be accessed automatically.
- It can read and decrement the value without being interrupted by other threads.
- A thread is forced to wait if mutex is not available.
- If a thread sees a mutex cannot be taken, it enters into the block state or it can do other work before checking the mutex again.