Project: System call for Spin Lock
Section: BCS-4E
Course: Operating Systems

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Introduction:

Spin lock is a synchronization mechanism that is widely used in operating systems to ensure mutual exclusion. In a multi-core system, spin locks are used to protect shared data from concurrent accesses by different threads.

Spin locks are implemented as busy waiting loops, which means that the thread that is waiting for the lock continuously checks whether the lock is available. If the lock is not available, the thread keeps spinning until the lock becomes available.

The implementation of spin locks is critical for efficient and reliable operation of operating systems.

Objective:

The objective of this project is to implement a spin lock system call in an operating system.

The system call will be responsible for acquiring and releasing a spin lock. The implementation of the spin lock system call will be done in the Linux kernel.

Methodology:

The project will involve the following steps:

1. Study of the Linux kernel and spin lock implementation in the kernel.
2. Implementation of the spin lock system call using the Linux kernel programming interface.
3. Testing of the spin lock system call using a multi-threaded program.