DeadLock

→ Deadbck is a situation that occurs in OS, when any process enters a waiting state because another waiting process is holding the demanded resource.

Method for Handling Deadlock

1. Deadlock Ignorance

→ Deadlock Ignorance is the most widely used approach among all the mechanism.

→ This is being used by many OSs mainly for end user uses.

→ In this approach, the OS assumes that deadlock never occurs, it simply ignores deadlock.

→ This approach is best suitable for a single end user system where user uses the system only for browsing and all other normal stuff.

→ if the deadlock occurs in Linux and windows simply restart the computer.

2. Deadlock prevention

* Deadlock happens only when Mutual Exclusion, hold and wait, No preemption and circular wait holds simultaneously.
* if it is possible to violate one of the four conditions at any time then the deadlock can never occur in the system.
* The idea behind the approach is very simple that we have to fail one of the four conditions but there can be a big argument on its physical implementation in the system.

3. Deadlock avoidance

* In deadlock avoidance, the OS checks whether the system is in safe state or in unsafe state.
* The process continues until the system is in safe state.
* once the system moves to unsafe state, OS has to backtrack one step
* The OS reviews each allocation so that the allocation doesn't cause the deadlock in the system.

4. Deadlock detection and recovery

- Let the processes fall in deadlock and then periodically check whether deadlock occur in the system or not.
- if it occurs then it applies some of the recovery methods to the system to get rid of deadlock.