CS457: Advanced OS

Assignment 2

Objective

- Learn and practice Deadlock detection algorithms
- Get hands-on experience on configuring and using of LockDep Kernel Module

Setup

1. Assignment deadline is 30 April
2. The assignment should be delivered in a group of 4.

Task 1

- Use your lab development environment to configure and build linux kernel with lockdep module enabled to validate lock correctness
    - To do so you will need to build another linux kernal with different config to enable lockdep using (make menuconfig) in your linux source files directory, search how to do
    - You could refer to the deadlock Lecture in your coursework

Task 2

- Generate an example application or applications that you intentionally use locks incorrectly inside it to generate a deadlock.
- The application must be written in C.
- After the deadlock is detected by the lockdep module it will produce dmsg errors, if this doesn't show up this means you didn't do it correctly.

Deliverables

You need to deliver the following as an archive with the group ids that contains the following:

- You need to deliver the kernel configuration file to enable the lockdep module.
- Source code of your example application or applications.
- Screenshot from your system dmsg logs for such warnings/errors.