

# Problem Set 9

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## **(10 Points) Cohort Question 1:**

Recall GDesktop.java from Week 9. Improve the program by parallelizing the crawl method with the help of a thread pool.

## **(10 Points) Cohort Question 2:**

Given DiningPhil.java, modify it so as to demonstrate the deadlock.

## **(10 Points) Cohort Question 3:**

Given DLExample.java, explain whether it is possibly deadlocking.

## **(10 Points) Cohort Question 4:**

Fix DiningPhil.java by making it deadlock-free.

## **(10 Points) Cohort Question 5:**

Given BoundedBufferTest.java, write two more test cases and document what you are testing for.

## **(10 Points) Cohort Question 6:**

Complete TestThreadPoolSample.java so as to test that a thread pool indeed created a given number of threads which is less than or equal to the maximum thread pool size.

## **(10 Points) Cohort Question 7:**

Design and implement a test program to compare the performance of

- BoundedBuffer
- ArrayBlockingQueue
- LinkedBlockingQueue