Week 5-6

1 Please read the Chapter 5 of Operating System Concepts.

2 you should have an idea about synchronization, race condition, mutual exclusion, semaphores and monitors.

3 you should understand how the synchronization question are solved including hardware atomic operations, locks, semaphores monitors.

4 You must be familiar with the solutions using binary semaphores and counting semaphores that can solve synchronization, mutual exclusion and complex synchronization questions.

5 You should know the problems such as deadlock and starvation when you use semaphores incorrectly.

6 You need to know how the classic synchronization problems are solved such as the bounded-buffer problem, the readers-writers problem and the dining-philosophers problem.

Understand the terms:

1 atomic operation

2 critical section

3 race condition

4 deadlock

5 starvation

6 mutual exclusion

7 progress

8 bounded waiting

9 lock

10 semaphore

11 wait operation and signal operation (P and V operation)

12 binary semaphore

13 counting semaphore

14 busy waiting

15 monitor

16 condition variable