**Week1 Questions**

1. What are the three main purposes of an operating system?
2. What is the main difficulty that a programmer must overcome in writing an operating system for a real-time environment?
3. In a multiprogramming and time-sharing environment, several users share the system simultaneously. This situation can result in various security problems.
   1. What are two such problems?
   2. Can we ensure the same degree of security in a time-shared machine as in a dedicated machine? Explain your answer.
4. What is the purpose of interrupts? How does an interrupt differ from a trap? Can traps be generated intentionally by a user program? If so, for what purpose?
5. Define the following: multiprogramming, multitasking, and multiprocessing
6. Distinguish the terms: interrupt, trap (system call), and mode bit.