CS3.301: Operating Systems and Networks

IIIT Hyderabad

Quiz 7

1. How do “RAID Level 3” and “RAID Level 4” improve reliability and disk throughput? What are the advantages of each option?
2. Explain the notion of “i-node”. Explain why a Read operation to file results in several block-level write operations on DISK.
3. Consider three sets of users, professor, TA and student. There exist folder marks to which only the professor can write, and the student and TA can only read. There exists another folder called course material which can be written to by the professor and TA, and students can only read from it. Use the Access Control Matrix to determine a protection policy for this criteria.
4. Why do we want the files and devices to have a unified interface?
5. Briefly explain the importance of “quality of service” and “admission control”.
6. Briefly explain the following consistency semantics with positive and negative points.
   a. UNIX semantics
   b. session semantics
7. Identify whether the following statements are TRUE or FALSE. If the statement is FALSE, correct it and justify the corrected sentence. If the statement is TRUE, justify it. Restrict the justification to a few (less than five) sentences. “In UNIX, the system administrator (root) can know the passwords of users”.
8. What file allocation method (Contiguous/Linked/Indexed) would you choose to maximise efficiency in terms of speed of access, use of storage space, and ease of updating (adding/deleting/modifying) when the data are
   a. updated infrequently and accessed frequently in random order?
   b. updated frequently and accessed in its entirety relatively frequently?
   c. updated frequently and accessed frequently in random order?