IS53012B/A Computer Security

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Part I

Homework

Week 7 Workshop Homework Answers I

1. Examples in slides.
2. The indefinite postponement can occur when one task holds a resource begin waited for by a second task, and the second holds a resource being waited for by the first. Because each is waiting for the other, neither will ever release its resource and allow the other to proceed.
3. Consider an airline booking system.
4. Consider the use of a shared printer among n users.
5. A password file can be protected using a one-way function f :
   - The system receives a username and password x from the user
   - It uses the one-way function on the password to transform it into a set of characters $y = f(x)$
   - The system does not store the password but instead stores y indexed by the username
   - To verify a user, the system asks for the username and password x_0 and computes $y_0 = f(x_0)$

Week 7 Workshop Homework Answers II

- If the value of y indexed by the username is the same as y_0 then the user is authenticated
6.
   i. No because no individual student is associated with an amount of money.
   ii. No because no amount of money is specified.
   iii. Yes because the combination of the two lists can reveal the amount for an individual student if only one student received financial supports.
   iv. She/he would have to track all information previously disclosed and all inferences that could be drawn from that information. The possible inferences can grow exponentially.
7.
   i. Agree/Disagree with coherent justifications. e.g. Disagree because the difficulties are due to the requirements of more sophisticated access control.
   ii. Agree/Disagree with coherent justifications.
   iii. Agree/Disagree with coherent justifications.