Computer Security (COM-301)

Mandatory Access Control

Interactive Exercises

Secret lovers

David and Robert are co-workers. They have started dating and they don't want the people in their office to know about their relationship, including the system administrators that inspect the network traffic and the corporate email server to avoid information leaks. What is a good covert channel to agree on the time for their next date:

(a) Send the meeting time in a message on Dropbox

(b) Write the meeting time on the door of the restroom

(c) Encode the meeting time in whitespaces added to the corporate emails they send to each other for work

(d) Send the meeting time in an encrypted corporate email

Which of the following statements are **true**:

(a) The Chinese wall model is a form of discretionary access control.
(b) For labels Unclassified < Secret < Top Secret:
   Level (S, {Finances, Software}) dominates Level (U,{Hardware})
(a) The Bell-LaPadula (BLP) model is used to protect the confidentiality of objects.
(b) The BIBA model is used to protect the integrity of objects.

You are hired by Migoop, a new supermarket, to build their accounting system.

The system should take in the cash count reported by its cashiers. The reported data is then used by Managers to produce monthly balance reports and by Accountants to audit the daily earnings.

Migoop Managers are worried about malicious cashiers reporting a wrong cash count and ruining their monthly balance.

Explain this scenario in terms of the Biba model and assign security levels to principals and objects. Explain how the Biba rules can prevent the harms that Migoop is worried about.

Hint: Principals are the subjects in the system that can perform actions on objects. Assume that the system only covers elements mentioned in the question.