

Tutorial 5

Aim

To exemplify access control and its use in different areas

Questions

1. Authentication, authorisation and access control relate mainly to secrecy/confidentiality and integrity. What is the connection between them? Explain them and their relation on an everyday, not computing-related example.
2. What are the basic differences between positive and negative access rights? Give examples for both from your everyday life.
3. Access control lists (ACLs) and capabilities
 - (a) File systems use access control lists for security and protection. Why is it more economical in this case than using capabilities?
 - (b) Web servers can also use ACLs. Is it also more economical than capabilities? Are ACLs or capabilities more flexible in this case?
4. You have been asked to implement role-based access control in a
 - (a) medical surgery
 - (b) student result database system
 - (c) library
 - (d) classroom

Would you use mandatory or discretionary access control? Explain it for each case. Define the roles and their access rights, and a plausible way of assigning those rights to roles. What constraints would you apply on roles and access rights, and why?