Tutorial 6

Aims

- To illustrate the different operating system protection needs and principles
- To show the difference between protecting internal and external resources

Questions

1. An operating system has to protect both internal hardware resources (such as main memory) and external ones (such as a printer).
    (a) Can user-oriented and data-oriented security methods be used in both cases? Explain the two methods and the reason why they are/are not suitable in the two cases.
    (b) Can physical/logical/temporal/cryptographic separation be used in both cases? Explain the methods and the reason why they are/are not suitable in the two cases.

2. Nowadays many external resources are controlled by embedded computers with their own software. Do you need to build some protection between the main computer software and the external resource's software? If yes why, if not why not? Discuss.

3. Virtual memory extends the memory space available for internal use. How does it increase the risk of external interference? What additional security requirements and protection does it necessitate?

4. Storage in the cloud is becoming increasingly popular. What are the security implications of using cloud storage?