

教学模块 2：软件需求工程

教学单元：系统工程概述

例题（题目、解答）

1. Develop some additional rules to extend the principle “Be open to the future”.

A: 建议如下

- Predict the change trend of system hardware in the following years at the beginning of system design;
 - Consider the change possibility of corresponding policy and life habits of people in the future which maybe have great influence on the software system;
 - WebApp projects should note the trend of big data and have full consideration of how to process the big data efficiently both in software and hardware constructing in the systems.
2. Q: Are there any side effects if a software engineer is lured into taking a software-centric view instead of system-centric view in a computer-based system? Please give an example to explain it.

参考解答： If a software engineer is lured into taking a software-centric view instead of system-centric view in a computer-based system rather than system-centric view in a computer-based system, he/she couldn't understand the whole objective and function of the system. He/She may also neglect the interface requirements of other parts of the system and leads to poor system modeling and finally brings on low-quality system product.

3. Software engineers do not need to consider hardware when designing a computer-based system.

解答： False Because hardware is an important element for computer-based systems, the others are software, people, database, documentation, procedure.

4. During business process engineering, three different architectures are examined.
A) applications, data, technology infrastructure

- B) communications, organization, financial infrastructure
- C) network, database, reporting structure
- D) systems, requirements, data structure

解答： A

Three different architectures must be analyzed and designed within the context of business objectives and goals:

Data architecture provides a framework for the information needs of a business or business function.

Application architecture encompasses those elements of a system that transform objects within the data architecture for some business purpose.

Technology infrastructure provides the foundation for the data and application architectures.