Chapter 6: Architectural design

Your name: Mai Long Thành

Answer all questions. 1 mark per question

1. What are the advantages of explicitly designing and documenting a software architecture?

   ● A design plan for the negotiation of system requirements.
   ● Improved stakeholder communication.

2. What are the two ways in which an architectural model of a system may be used?

   ● Facilitating discussion on system design
   ● Document an architecture

3. List 4 fundamental questions that should be addressed in architectural design?

   ● Is there a generic application architecture that can act as a template for the system?
   ● How will the system be distributed across a number of processors?
   ● What will be the fundamental approach used to structure the system?
   ● How will the architecture of a system be documented?

4. What are the fundamental architectural views proposed in Krutchen's 4+ 1 model?

   ● Depositing data
   ● Distributed (Central repository).

5. What is an architectural pattern?

   ● Is a stylized abstract description of good design practice, which has been tried and tested in different environments.

6. What is the fundamental characteristic of a repository architecture?

   ● All data in a system is managed in a central repository that is accessible to all system components.

7. What is the most important advantage of a client-server architecture?

   ● That servers can be distributed across a network.

8. Briefly describe pipe and filter architecture?

   ● Data flows from one filter to another and is transformed as it moves through

the sequence.

9. What are transaction-processing applications?

- They are organized so that transactions cannot interfere with each other and the integrity of the database is maintained
- Database-centered applications that process user requests for information and update the information in the database

10. What are the principal functions of the 4 layers in a generic information system architecture?

- User interface
- User communications, authentication and authorization
- Information retrieval and modification
- Database and transaction management