Student’s name: Doan Cao Thanh Long

Student ID: 20162513

Class: ICT.02-K61

Class Exercies

Module: Distributed System

Chapter 1: Overview of distributed system

Question 1: What is the role of middleware in a distributed system?

In a distributed system, the role of middleware is to strengthen distribution transperency and to facilitate communication among components in either the same system or a network environment.

Question 2: Explain what is meant by (Distribution) transparency, and give examples of the different types of transparency?

The meaning of distribution transparency is the distribution aspects of a system are hidden from its users and application

Types of distribution transparency:

Access transparency

Location transparency

Migration transparency

Relocation transparency

Replication transparency

Concurrecy transparency

Failure transparency

Persistence transparency

Question 3: Why is it sometimes so hard to hide the occurrence and recovery from failures in a distributed system?

It is hard to hide the occurance and recovery from failures in a distributed system because the consequences from the failures is easily noticeabe (Example: slow connection/ cant connect to the server)

Question 4: Why it is not always a good idea to aim at implementing the highest degree of transparency posible?

Because there is a trade off between degree of transparency and system performance. The higher the transparency degree, the more considerable loss of performance.

Question 5: What is an open distributed system and what benefits does openess provide?

An open distributed system is a system that offers service according to standard rules that describe syntax and semantic of those service.

The benefits of openess:

Abilities of components to co-work and co-exist by merely counting on the common rules

Abilities of components to be added, replaced or to work on different systems without modification

Question 6: Describe precisely what is meant by a scalable system

A scalable system is a system that scalable in size (add more users/resources), geographical size (user/ resource may lie far apart) or administraitve size (system span many independent administrative organization) without suffer an unacceptable loss of performance.

Question 7: Scalability can be achieved by applying different techniques. What are these techniques?

The techniques that can be applied to achive scability is

Distribution

Replication

Caching

Asynchronous communication