

BOOKWORK 1

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QUESTION 1

Middleware are software that is place on top of the respective operating system of the computer that is part of the system. The middleware provide the distributed application a single interface to communicate with each other. At the same time it hides the implementation of the different hardware. The middleware acts as an operating system does for a computer. Is manage resources across the network. Furthermore, it also offer the following functions:

1. inter application communications
2. security services
3. accounting services
4. masking of and recovery from failures

QUESTION 2

The system appears as a single coherent system

Transparency	Description
Access	Hides the differences in data structure
Location	Hides where data is located
Relocation	Hides if data is moved
Migration	Hides when data is moved
Replication	Hides objects are replicated
Concurrency	Hides that objects might be shared
Failure	Hides failure and recovery

QUESTION 3

Same failures are hard to distinguish, for example, dead process and a very painfully slow responding one. Other failures are by it own nature unavoidable and you can't recover from them.

QUESTION 4

There exit two techniques:

1. Simply improving capacity - increasing memory, upgrading CPU; called scaling up
2. By using distributed systems, using multiple computers/machines; called scaling out

QUESTION 5

We will see more sensors being built into cellphones and other smart devices such as watches. All of these devices will be connected together to enhance features such as health information. Furthermore, these will migrate virtual reality.

However, I see that in the next 10 years more of these devices will make their way into the human body as these devices get smaller, enhancing the human's capabilities. These devices will integrate with each other in a distributed manner to take leverage of each device's own feature but work in unison.