

Bookwork 2Question 1

There are a couple of things that

we can do. 1) we can look at the protocol that is used for the application. We might want to use a connectionless protocol that uses less bandwidth. 2) we consider how we can scale the operation. There is two schools of thought.

- 1) we can add bandwidth by vertically scaling the hardware but light can only travel so fast.

- 2) at a later time the focus is to scale horizontally to increase capacity to add more nodes (servers) to the network in order that the work load can be shared. This is a very broad topic and our focus of the course this semester.

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Question 2

Vertical Distributed Systems - It when we place logical different component on different machines. This has become a feature of NoSQL type distributed databases where column data can be split by columns and placed on different machine. The main idea is you can split logical part such as databases or user interface, processing component on a different machines.

Horizontal Distributed Systems

It is the number of the number of servers client counts. The difference is that

The servers and client are split up into equivalent part but each part operates on its own share of the work, meaning load balancing. Example is peer-to-peer systems.

Yes you can for example database layer of vertical distribution system can be distributed across multiple machines.

(3)

Question 3

I can think of the cars breaking system all four wheels can work / Break independently or the car apply certain level of breaking together that requires them to work together.

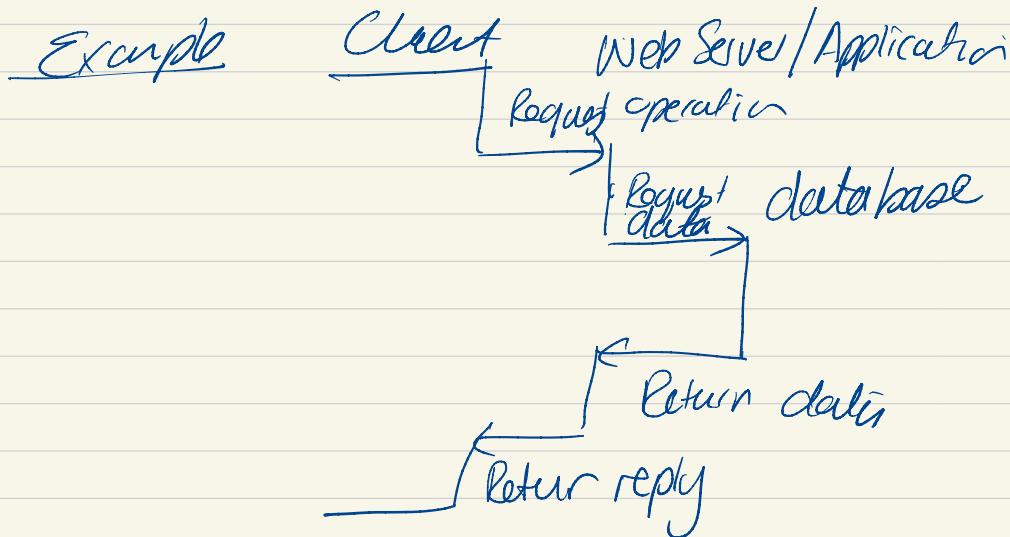
Characteristics

- 1) each break need to autonomous
- 2) the driver sees it as one system he/she only applies the break
- 3) information is shared
- 4) Fault-tolerance is surely part of such a critical system

Question 4

Three-tiered architecture based on the Client Server architecture. Sometimes we forget that the server might act as a client. A typical use of three-tiered architecture is used in transaction processing. One example is a web site.

The client connects to web server which in turn connects to a database or an application server and then back to the client with



Question 5

Inceptor is software construct that will break the normal flow of control and allow other code to be executed.

Inceptors are primary means for adapting middleware to the specific needs of an application.

To implement Inceptors is not always an easy task and take some effort. Therefore it can be difficult to change intercept if the target application were changed. as the environment is keep on changing.

A solution to this is the construction of adaptive software. The idea is the the middleware to adapt but also to change it without bring it down.

In Inceptors we may want to change software component at runtime.