

Introduction: =)

Networks of computer's are everywhere. The internet is one, as are the many networks of which it is composed. Mobile, phone networks, corporate networks, factory networks, campus networks, home networks, in-car networks, all of these, separately and in combination, share the essential characteristics that make them relevant subjects for study under the heading distributed system.

1.2 Features of Distributed Systems

Although distributed systems are to be found everywhere, their design is quite simple and there is still a lot of scope to develop more ambitious services and applications.

1.1.1 Concurrency

Both services and applications provide resources that can be shared by clients in a distributed system. There is therefore a possibility that several clients will attempt to access a shared resource at the same time.

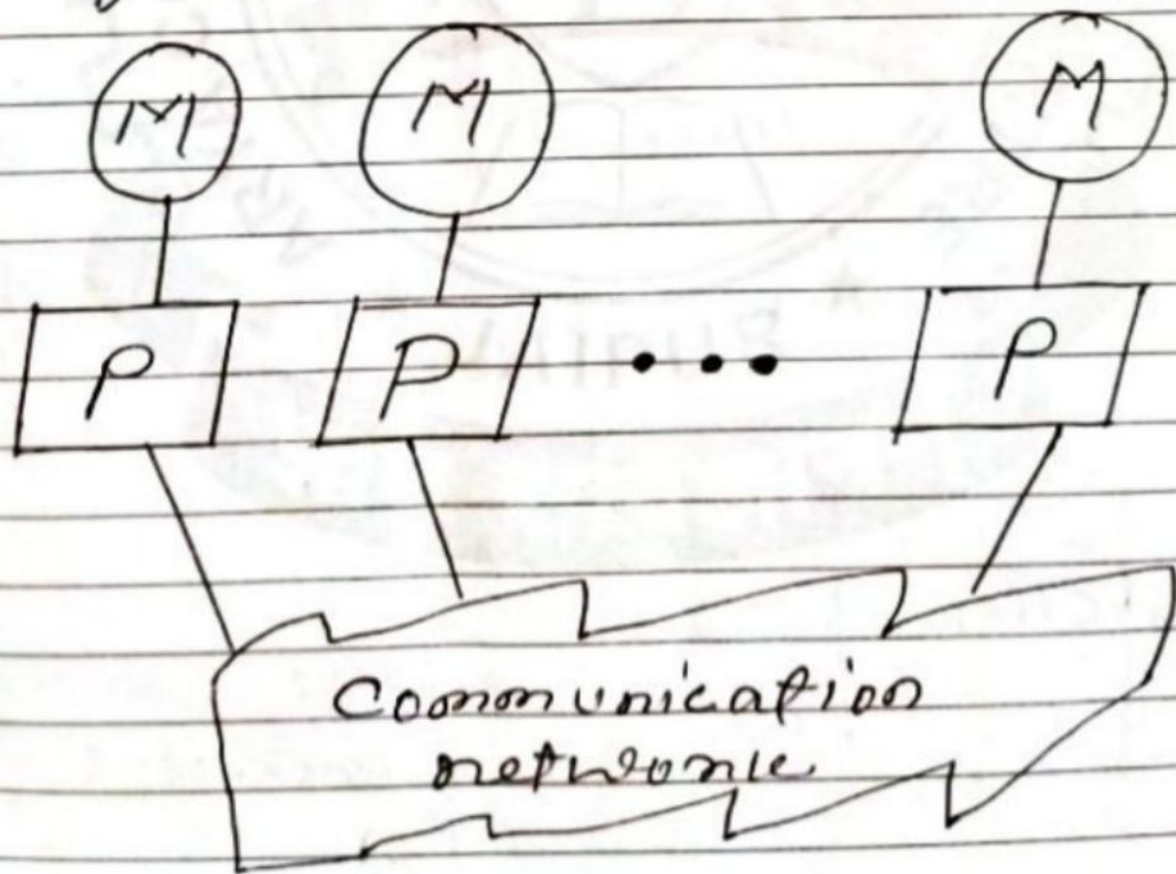
For example, a data structure that records bids for an auction may be accessed very frequently when it gets close

1.3 Distributed computing paradigms

The architecture of a system is its structure in terms of separately specified components.

1.3.1 Message-passing paradigm

- Many instances of sequential paradigm considered together.
- Programmer imagines several processes each with own memory, and writes a program to run on each processor.
- Processes communicate by sending messages to each-other.

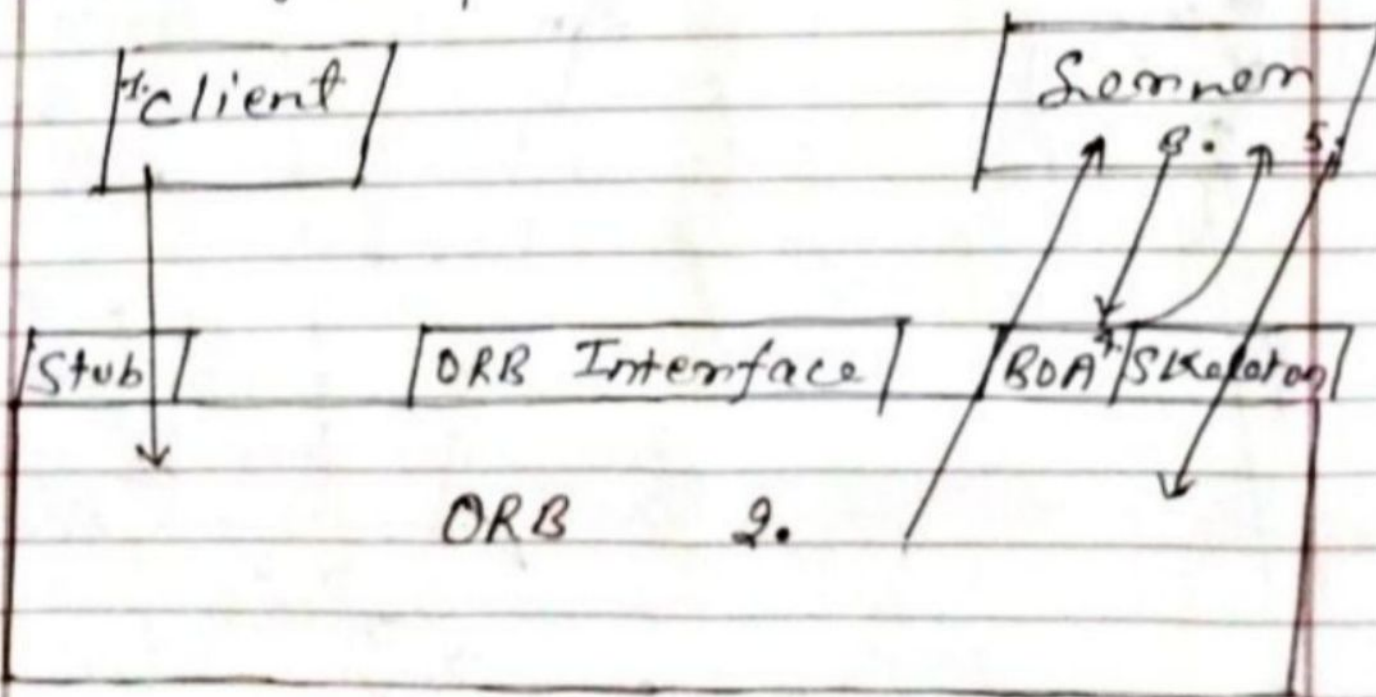


M - Message
P - Processor

- The hardware capacity and OS functionality of today's desktop computers exceeds that of yesterday's servers and majority are equipped with always-on broadband network connection.

1.3.4 Distributed Object Paradigm
 This paradigm exploits the benefits of object-oriented technology and use the internet and its communications infrastructure as a vehicle for the delivery of a wide range of sophisticated value-added distributed services.

COBA :- Common Object Request Broker Architecture



Client Server object interactions in CORBA

1.4 Model of Distributed System

1.4.1 Work station Model

- The distributed computing based on the work station model consists of several workstations inter-connected by a communication network. A company's office and department has the work station scattered throughout the campus.
- It has been often found that in such an environment, at any one time a significant proportion of the workstations are idle.

4.6 Disadvantages of Distributed Systems:-

- a) Difficulties of developing distributed software: How should operating systems, programming language and application develop.
- b) Networking Problems: Several problems are created by the network infrastructure which have to be dealt with: loss of messages, overloading.
- c) Security Problem: Sharing generates the problem of data security.

1.5 Types of Operating System

1.5.1 Network Operating System

User's awareness of multiplicity of machines. Access to resources of various machines is done by:

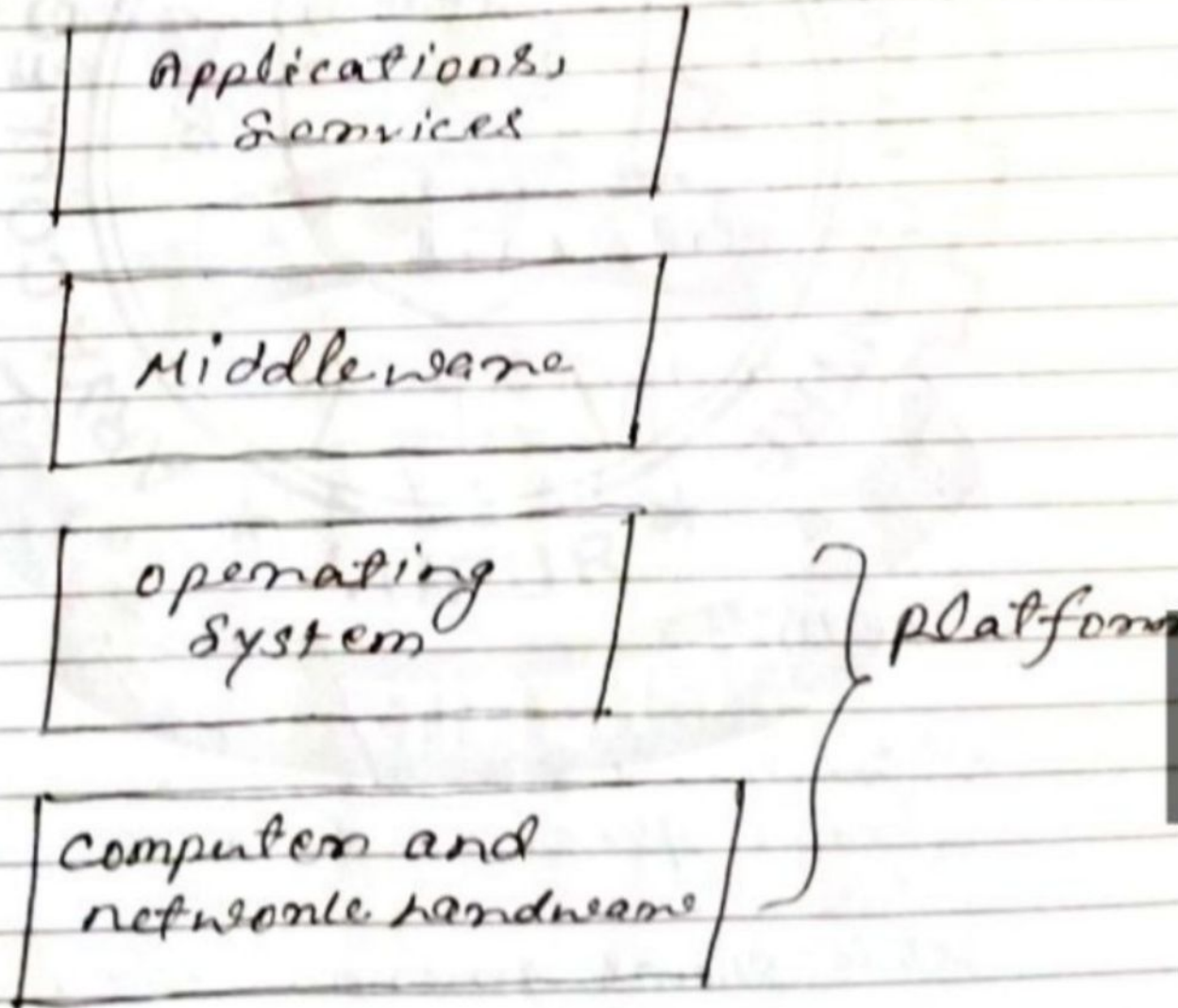
- Remote logging into the appropriate remote machine.
- Transferring data from remote machines to local machines, via the FTP mechanism.

1.8

Architecture Models

1.8.1 Distributed System Architectures

The architecture of a system is its structure in terms of separately specified components. The overall goal is to ensure that the structure will meet present and likely future demands on it.



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