LEARNING OBJECTIVE

Client Server Architecture

INTRODUCTION

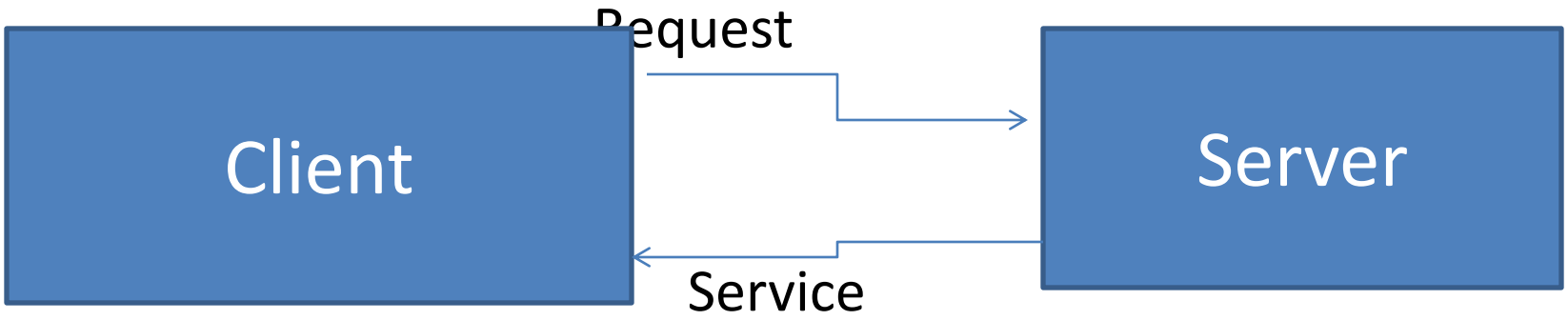
A client is basically a consumer of service and

Server is a provider of services . A client requests

some service from the server and the server provides the required services to the client.

Client and server are usually software components running on independent machines.Even a single machine can sometimes acts as a client and at other times a server depending on the situtations.

FIG. OF CLIENT-SERVER MODEL



CLIENT SERVER ARCHITECTURE.....

- The client server architecture is based on hardware and software components that interacts to form system. This includes three components:
- Client
- Server
- Communication middleware

CLIENT SERVER ARCHITECTURE…

- Client:

The client is any computer process that requests

Services from the server. The client is also known as the front-end-application, reflecting the fact that the end user usually interacts with the client process.

CLIENT SERVER ARCHITECTURE….

- Server:

The server is any computer process providing services to the clients . The server is also known as the back-end-applicaion , reflecting

The fact that the server process provides the background services for the client process.

CLIENT SERVER ARCHITECTURE…

- Communication middleware:

It is any computer process through which clients and servers communicate . The communication middleware , also known as middleware or the communications layers,

Is mode up of several layers of software that aid the transmission of data and control information between clients and servers.

POPULAR MIDDLEWARE

- Two popular middleware standards are:
- CORBA(Common Object Request Broker Architecture)
- COM/DCOM

POPULAR MIDDLEWARE.....

- CORBA is being promoted by Object Management Group(OMG),a consortium of a large num. of computer industries such as IBM,HP,Digital etc.Actually OMG is not a standards body,they only try to promote de facto standards.They just try to popularize good solutions with the hope that if they become highly Popular they would automatically become standard.
- COM/DCOM is being promoted by Microsoft alone.

EXAMPLE

- A man was visiting his friend’s town in his car.

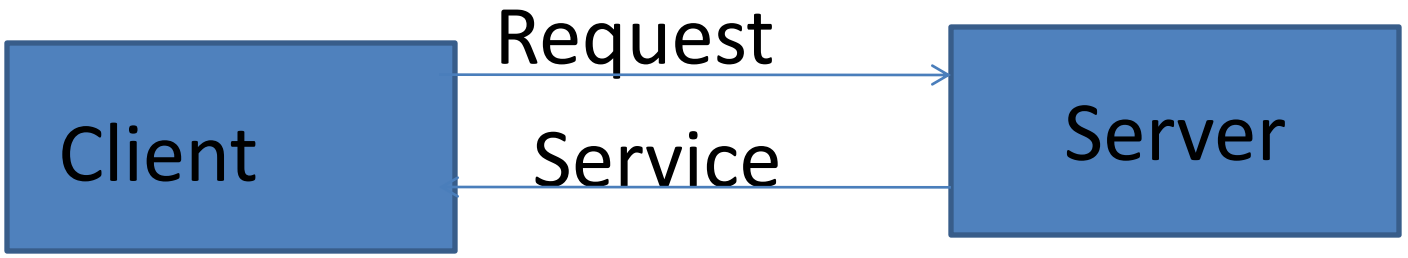
The man had a handheld computer(client).

He knew his didn’t know his friend’s address. So he sent a wireless message(request) to the nearest “address server” by his handheld computer to enquire his friend’s address. The message first came to the base station . The base station forwarded that message through landline to area network where the server is located. After some processing , LAN sent back that friends address(service) to the man.

ONE-TIER CLIENT SERVER

- One tier architecture involves putting all of the reuired components for the software application or technology on a single server or platform. One-tier architecture is also known as single tier architecture.

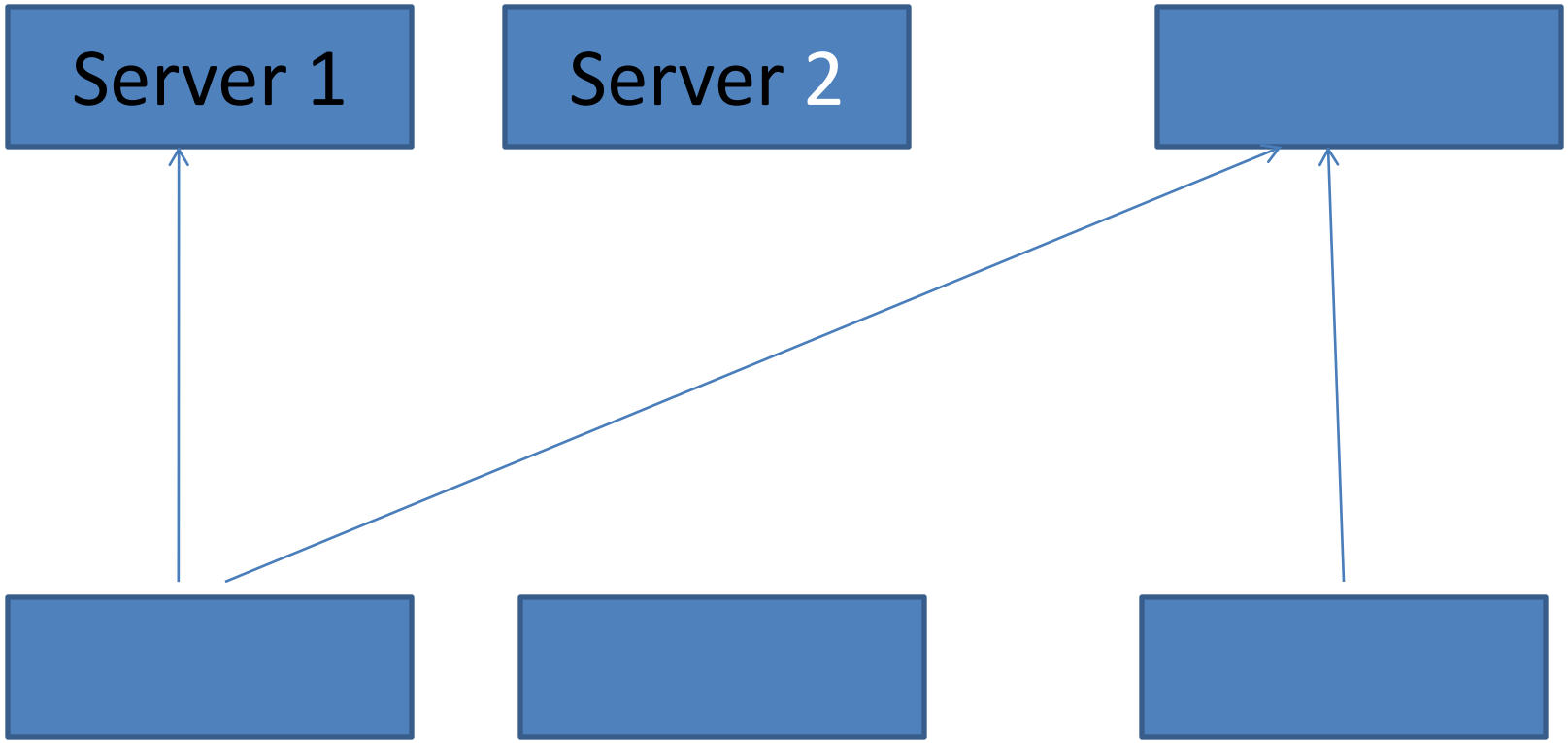
FIG. OF ONE-TIER ARCHITECTURE



TWO-TIER CLIENT SERVER ARCHITECTURE

- The simplest way to connect clients and servers is a two-tier architecture as shown in fig. in a two-tier architecture,any client can get service from any server by initating a request over the network.With two-tier client-server architecture,the user interface is located in the user's desktop and the services are usually supported by a machines that can service many clients.

FIG. OF TWO-TIER ARCHITECTURE



THREE-TIER CLIENT SERVER ARCHITECTURE

- The three-tier architecture overcomes the imp. limitations of the two-tier architecture .In the three-tier architecture,a middleware was added between the user system interface client environment and the server environment as shown in fig.The middleware keeps track of all server locations.It also translate clients requests into server understandable.

ADVANTAGES OF CLIENT-SERVER

- The cliet-server software arhitecture is a versatile,message-based and modular infrastructure that is intended to improve usability, flexbility, interoperability and scalability as compared to centralized,mainframe,time sharing computing.

DISADVANTAGES OF CLIENT SERVER

- Security-In a monolithic application,implementation of security is very easy.But in a client server based development a lot of flexbility is provided and a client can connect from anywhere.This makes it easy for hackers to break into the system.Therefore,ensuring security in client-server system is very challenging.
- Server can be bottlenecks because many clients might try to connect to a server at

DISADVANTAGES OF CLIENT SERVER.....

- the same time .This problem aries due to the flexbility given that any client can connect any time required.
- Compatibility-Clients and servers may not compatible to each other since the client and server components may be manufactured by different.
- Inconsistency-Replication of servers is a problem as it can make data inconsistent.

REFERENCE:

- Peter B. Galvin
- wikipedia

THANK YOU!!