LAB 1
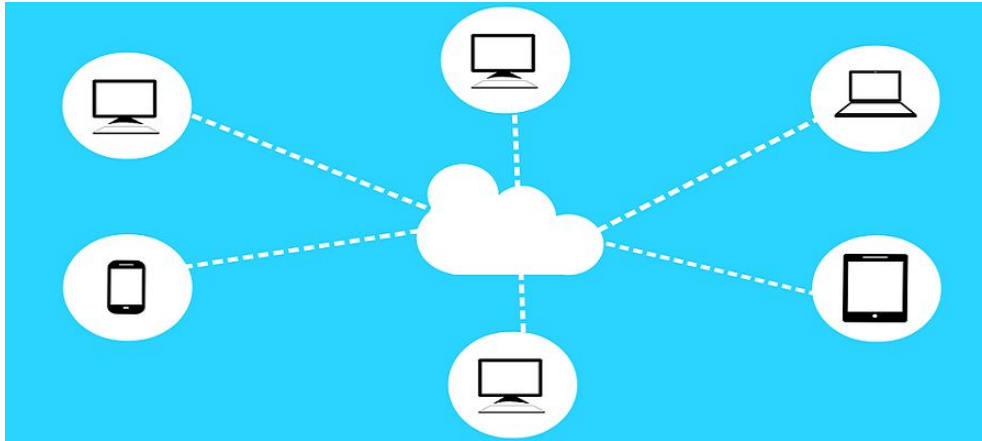
DISTRIBUTED SOFTWARE SYSTEMS

SCENARIO

As a distributed file storage system developer I hope users to access to their stored files as easily as if they were in his local disk.

That's what we call location transparency.

TECHNIQUES

Distributed file naming:

The distributed system is responsible for assigning a unique logical name to the file and registering the file in the physical location of the service.

Besides the user simply uploads the file and accesses it without knowing anything about locations.

TECHNIQUES

Mapping logical files to physical locations:

Mapping consists of associating logical names or file identifiers with the physical locations where these files are stored in the distributed system.
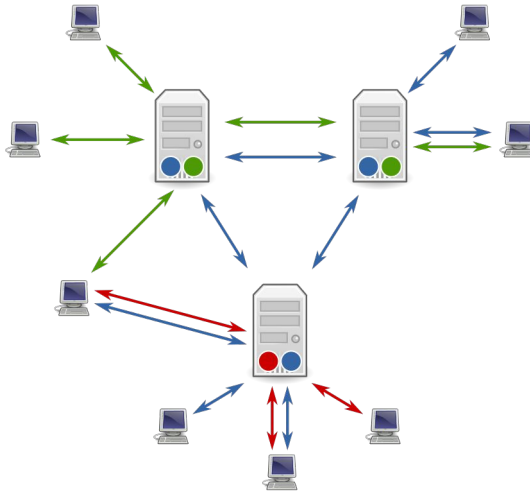
SOME ACHIEVED REQUIREMENTS

Location Transparency: The user doesn't know the physical location of the files.

SOME ACHIEVED REQUIREMENTS

Scalable system: If the number of users and files increases bottlenecks can be avoided.
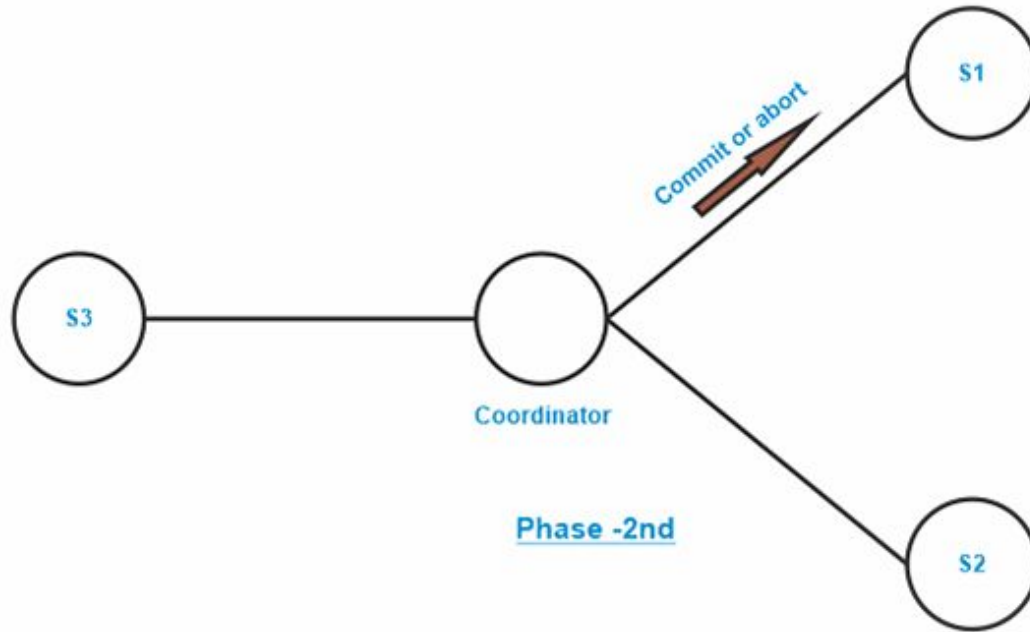
SOME ACHIEVED REQUIREMENTS

Fault tolerance: Using a replicable system for example.

SOME ACHIEVED REQUIREMENTS

Data consistency: Using 2PC for example.

NOT ACHIEVED REQUIREMENTS

Network Latency:

In a distributed system, queries mapping logical names to physical locations may involve communication over the network which introduces additional latency.

Single Point of Failure:

If the centralized mapping service fails or becomes inaccessible, it can cause serious problems in file access as users and applications cannot find the physical location of the files.