ASSIGNMENT

UITS University of Information Technology and Sciences -

Course Title: Client Server Programming

Course Code: IT-325

Submitted By:

Name**:** Mohammad

ID**:** 1814355023

Department**:** IT

Batch**:** 43

Submitted To:

Md. Ishtiaq Iqbal

Lecturer**,**

Department of IT**,** UITS

Date of Submission: 10/01/2021

QUESTION: **DISTRIBUTED CLIENT/SERVER DATABASE SYSTEMS.**

ANSWER:

DATA Distribution:

Distributed data and distributed processing are terms used widely in the word of Client/Server computing**.** The differences in these two can be easily understood by the two figures 1**.**01 and 1**.**02**.**
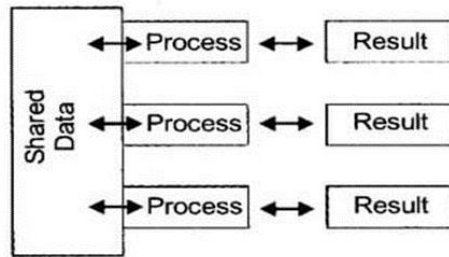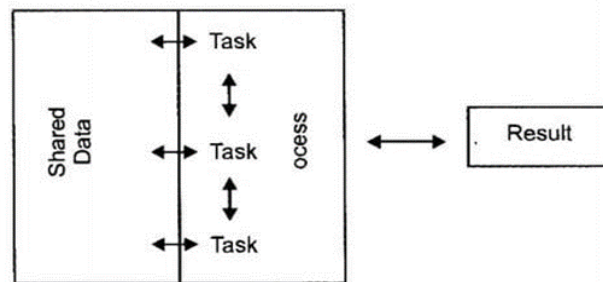

Fig**:** 1.01 (Distributed data)

Fig**:** 1.02 (Distributed Processing)

Distributed data refers to the basic data stored in the server**,** which is distributed to different members of the work team. While distributed processing refers to the way different tasks are organized among members of the work team.

Distributed Client/Server database system must have some characteristics that are discussed in this section. The location of data is transparent to the user. The data can be located in the local PC, the department server, or in a mainframe across the country. The data can also be distributed among different locations and among different database using the same or even the different data models.

Fig: Data Replication

Data can be accessed and manipulated by the end user at any time in many ways. Data accessibility increases because end users are able to access data directly and easily, usually by pointing and clicking in their GUI-based system. End user can manipulate data in several ways, depending on their information needs.

The processing of data (retrieval, storage, validation, formatting, presentation and so on) is distributed among multiple computers. For example, suppose that a distributed Client/Server system is used to access data from three DBMSs located at different sites. If a user requests a report, the client front-end will issue a SQL request to the DBMS server. The database server will take care of locating the data; retrieving it from the different locations, assembling it, and sending it back to the client. In this scenario, the processing of the data access and retrieval.

DISTRIBUTED DBMS:

Client/Server database is commonly known for having distributed database capabilities. But is not necessarily able to fulfil the entire required Client/Server characteristics that are in need of a particular system. Client/Server architecture refers to the way in which computers interact to form a system.

The DBMS must provide distributed database transparency features like:

- ➢ Distribution transparency.
- ➢ Transaction transparency.
- ➢ Failure transparency.
- ➢ Performance transparency.
- ➢ Heterogeneity transparency

Interaction between client and server might proceed as follows during the processing of an SQL query:

- ➢ The client passes a user query and decomposes it into a number of independent site queries. Each site query is sent to the appropriate server site
- ➢ Each server process the local query and sends the resulting relation to the client site.
- ➢ The client site combines the results of the subqueries to produce the result of the originally submitted query.

 In this approach, the SQL server has also been called a transaction server or a Database Processor (DP) or a back-end machine, whereas the client has been called Application Processor (AP) or a front-end machine. The interaction between client and server can be specified by the user at the client level or via a specialized DBMS client module that is part of DBMS package.