Department Of Business Administration
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BBA Sem -5

DBMS

Recent developments in databases

The recent developments in database technology are
(a) Distributed databases
(b) Client server architecture
(c) Object oriented databases
(d) Multi media databases

(a) **Distributed databases** : A distributed database is a database distributed over single or multi vendor computer hardware located in different geographic areas. Some examples are network of libraries, network of corporate offices in the country etc. The distributed databases have become popular because of two main reasons. First, in the earlier days, many organizations created individual databases for different applications such as payroll, personnel data, employee benefits etc Unfortunately, many of these databases could not communicate with each other because they were created on different systems. Distributed databases provide a way to overcome this problem. Second, the business units of an enterprise may be geographically dispersed and the information needs and demands of each location may be different. Distributed databases help to store the data where it is most needed or used, and help to customize the data to meet the needs of individual business units.

(b) **Client server architecture database** :

The basic architecture of all Internet connection is based on client – server relationship. A client application on user`s computer requests information from a server already connected to the Internet. A server is a powerful computer, generally containing a large hard disk, which acts as a shared storage resource. In addition to containing stored files, a server may also allow access to program and data from other computer.
To make this relationship work there are major components:
_ **Telecommunication connection-** This connection is the physical electrical connection between our computer and the sever computer. This connection is used to pass requests and data between our computer and the server.

_ **Server-**The server in an Internet connection is usually a service provider or Internet access provider. The server provider is the company that owns and operates the particular network to which we are going to connect our computer.
_ **Client –**The client in an internet connection is one or more software programs that run on our computer and interact directly with the server provider or route their date request to and from the Internet through the service provider`s network.

A computing paradigm based on client server architecture makes it possible to inter operate among different database management systems, among a network of heterogeneous hardware and software platform. Here the load is optimally distributed among clients and servers. Typically, servers are high end performance machines supporting heavy transaction processing processes called server processes, the clients are likely to be low end PC class machines with rich graphical user interface and end user driven. With client server architecture, a network user can initiate several client

processes in many windows among many servers; they could be heterogeneous hardware and a software running on machines that are geographically dispersed. Yet the user feels that he is being served by all the servers.

(c) Object oriented databases :

Object-oriented model represents an entity as a class. A class represents both object attributes as well as the behavior of the entity. For example a book class will have not only the book attributes such as ISBN, Title, Author, Publisher, Year of Publishing, Distributor Price, etc. but also procedures that imitate actions expected of a book such as Update price, etc.

Instances of the class - object - corresponds to individual books. Within an object, the class attributes takes specific values, which distinguish one book from another. However the behavior patterns of the class is shared by all the objects belonging to the class.

The object-oriented model does not restrict attribute values to the small set of native data *types* usually associated with databases and programming languages, such as integer, numeric, character, etc. Instead the values can be other objects. For example, one of the attributes of a book can be distributor and the value of that attribute can be a distributor object corresponding to the distributor who is distributing the book

(d) **Multimedia databases** : The traditional databases were limited to a few data types like numeric (integer and real) and character string. However, the increasing complexity of database applications calls for handling more complex data objects like scanned images (maps, pictures, photographs etc), audio and video images. Databases to handle such complex data objects are known as multimedia databases. Until recently, databases were limited to hold ASCII data only. Most of the real life applications however need an ability to handle information, which is rich, such as images, audio images, video clippings etc.

A new generation of databases is being built to accommodate multimedia. OOP is a promising technique to handle multimedia databases

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