**Basic Database Concepts**

The database system is an excellent computer-based record-keeping system. A collection of data, commonly called a database, contains information about a particular enterprise. It maintains any information that may be necessary to the decision-making process involved in the management of that organization. It can also be defined as a collection of interrelated data stored together to serve multiple applications, the data is stored so that it is independent of programs that use the data. A generic and controlled approach is used to add new data and modify and retrieve existing data within the database. The data is structured so as to provide the basis for future application development.

## ****Purpose of Database****

The intent of a database is that a collection of data should serve as many applications as possible. Therefore, a database is often thought of as a repository of information needed to run certain functions in a corporation or organization. It would permit only the retrieval of data but also the continuous modification of data needed for the control of operations. It may be possible to search the database to obtain answers to questions or information for planning purposes.

In a typical file-processing system, permanent records are stored in different files. Many different application programs are written to extract the records and add the records to the appropriate files. However, this scheme has several major limitations and disadvantages, such as data redundancy (duplication of data), data inconsistency, maladaptive data, non-standard data, insecure data, incorrect data, etc. A database management system is an answer to all these problems as it provides centralized control of the data.

## ****Database Abstraction****

A major purpose of a database is to provide the user with only as much information as is required of them. This means that the system does not disclose all the details of the data, rather it hides some details of how the data is stored and maintained. The complexity of databases is hidden from them which, if necessary, are ordered through multiple levels of abstraction to facilitate their interaction with the system. The different levels of the database are implemented through three layers:

1. **Internal Level(Physical Level):**The lowest level of abstraction, the internal level, is closest to physical storage. It describes how the data is stored concretely on the storage medium.
2. **Conceptual Level:** This level of abstraction describes what data is concretely stored in the database. It also describes the relationships that exist between the data. At this level, databases are described logically in terms of simple data structures. Users at this level are not concerned with how these logical data structures will be implemented at the physical level.
3. **External Level(View Level):**It is the level closest to users and is related to the way the data is viewed by individual users.

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