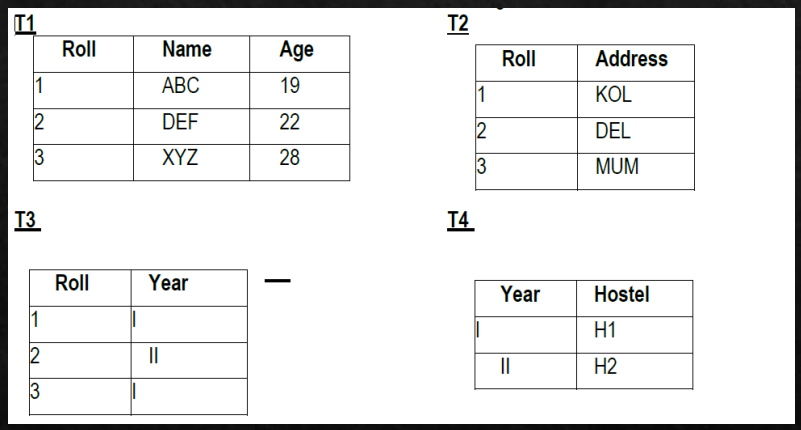

SQL
PROGRAMMIN
G
DEVELOPED FOR
KNOWLEDGE

INTRODUCTION TO DATABASE

- **Data**: Facts, figures, statistics etc. having no particular meaning (e.g. 1, ABC, 19 etc).
- **Record**: Collection of related data items, e.g. in the above example the three data items had no meaning. But if we organize them in the following way, then they collectively represent meaningful information.
- **Table** or **Relation**: Collection of related records.
- The columns of this relation are called **Fields**, **Attributes** or **Domains**.
- The rows are called **Tuples** or **Records**.
- **Database**: Collection of related relations. Consider the following collection of tables:



T1

Roll	Name	Age
1	ABC	19
2	DEF	22
3	XYZ	28

T2

Roll	Address
1	KOL
2	DEL
3	MUM

T3

Roll	Year
1	I
2	II
3	I

T4

Year	Hostel
I	H1
II	H2

INTRODUCTION TO DATABASE MANAGEMENT SYSTEM (DBMS)

- A **database-management system** (DBMS) is a collection of interrelated data and a set of programs to access those data.
- The primary goal of a DBMS is to provide a way to store and retrieve database information that is both *convenient* and *efficient* .
- Database systems are designed to manage large bodies of information. Management of data involves both defining structures for storage of information and providing mechanisms for the manipulation of information.
- In addition, the database system must ensure the safety of the information stored, despite system crashes or attempts at unauthorized access.

It is a repository or a container for collection of computerized data files. The overall purpose of DBMS is to allow he users to define, store, retrieve and update the information contained in the database on demand.

INTRODUCTION TO DATA WAREHOUSE

- A data warehouse architecture is a method of defining the overall architecture of data communication processing and presentation that exist for end-clients computing within the enterprise.
- A data warehouse is a collection of data. It has the following properties:

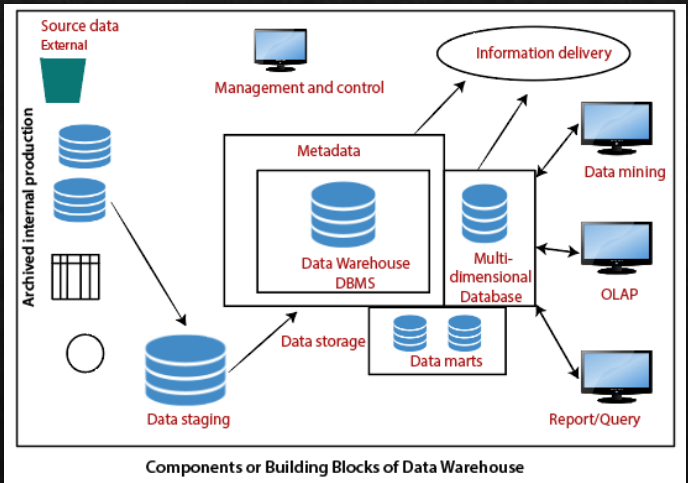
1. **Subject-oriented:** A data warehouse should contain information about a few well-defined subjects rather than the enterprise.
2. **Integrated:** A data warehouse is an integrated repository of data. It contains information from various systems within an organization.
3. **Non-volatile:** The data values in a database cannot be changed without a valid reason.
4. **Time-variant:** A data warehouse contains historical data for analysis.

- Think of yourself as a data analyst working for a company that has the following three departments: Marketing, Sales and Finance. Now, let's assume that each department maintains a separate database.
- This could lead to a situation wherein each department has its own version of the facts. For a question such as 'What is the total revenue of the last quarter?', every department might have a different answer. This is because each department draws information from a different database. This is where a data warehouse can prove to be useful.

A data warehouse would thus be the central repository of data of the entire enterprise.

COMPONENTS OF DATA WAREHOUSE

DEPICTION



Components or Building Blocks of Data Warehouse

Short Notes on each components

- The Source Data component shows on the left.
- The Data staging element serves as the next building block.
- In the middle, we see the Data Storage component that handles the data warehouses data.
- This element not only stores and manages the data; it also keeps track of data using the metadata repository.
- The Information Delivery component shows on the right consists of all the different ways of making the information from the data warehouses available to the users.
- For more explanation click on the link:

https://www.javatpoint.com/data-warehouse-components