"Relational processing entails treating whole relationships as operands. Its primary purpose is loop-avoidance, an absolute requirement for end users to be productive at all, and a clear productivity booster for application programmers."

- E. F. Codd

- **Database:**
  - A database is a collection of related data.
  - A database is an electronic system that allows data to be stored, easily accessed, manipulated and updated.
  - Databases are common platform to store, manage data. You can use them to read, modify, and learn on data.
    - Good databases support scaling, they are fast and stable.
- **Data:**
  - Data is known facts that can be recorded and that have implicit meaning.
  - Data is any sort of information which is stored in computer memory. This information can later be used for a website, an application or any other client to store for future purpose.
    - The most common information is User information in the form of user personal, address and banking information.
    - E.g. let's consider Facebook, it stores our personal data, images, posts, comments and many more things. Banking application also stores user data, their transaction details, fund summary etc. All this information is data, but when it put together and store in a structural way, it becomes informational data.
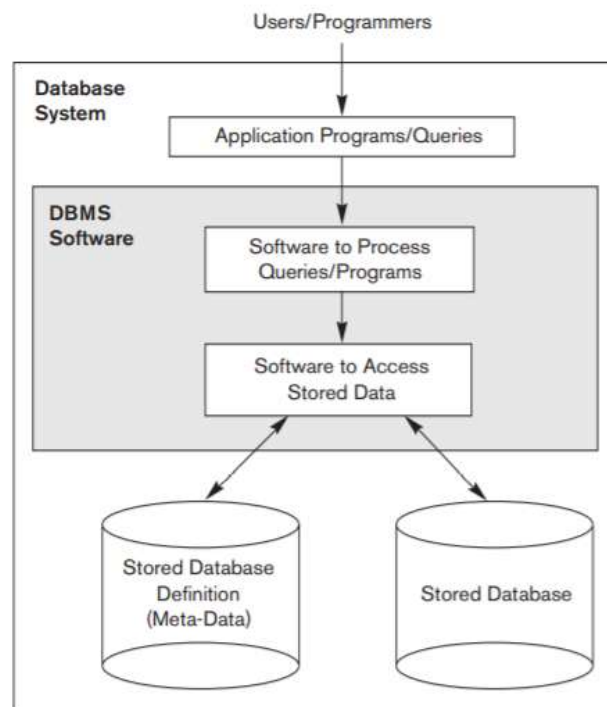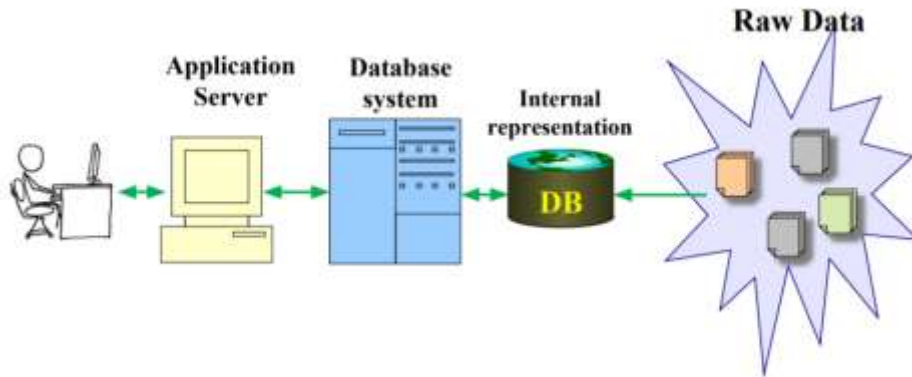   - **But, how do these applications or websites get data?**
    - When you post a status on Facebook, perform a banking transaction online or upload a selfie on Instagram, you are actually sending data to the site or to be precise their server. So, we can say any information transmitted or transferred is actually data. Server filters out the necessary data and stores it in Database.
  - One more example: consider the names, telephone numbers and addresses of the people you know. You may have recorded this data in an indexed address book or you may have stored it on a hard drive, using a PC and software such as MS Access or Excel. **This collection of related data with an implicit meaning is a database.**

- **Database Management System (DBMS):**
  - A DBMS is a collection of programs that enables users to create and maintain a database.
  - The DBMS is a general-purpose software system that facilitates the processes of defining, constructing, manipulating and sharing databases among various users and applications.
- **A Simplified Database System Environment:**

  - Defining a particular database in terms of its data types, structures and constraints.
    - The database definition or descriptive information is also stored by the DBMS in the form of a database, catalog or dictionary which is called meta data.
  - Construct of load the initial database contents on a secondary storage medium (i.e. hard drives)

- Manipulate the database:
  - Retrieval: Querying, generating reports
  - Modification: Insertions, deletions and updates to its content
- Processing and sharing by multiple concurrent users and application programs- yet, keeping all data valid and consistent.