# Checkpoint  Data bases

1. Presenting each of the RDBMS and their functionalities ? :

**relational database** is a digital [database](https://en.wikipedia.org/wiki/Database" \o "Database) based on the [relational model](https://en.wikipedia.org/wiki/Relational_model" \o "Relational model) of data, as proposed by [E. F. Codd](https://en.wikipedia.org/wiki/E._F._Codd) in 1970.[[1]](https://en.wikipedia.org/wiki/Relational_database#cite_note-codd-1) A software system used to maintain relational databases is a [relational database management system](https://en.wikipedia.org/wiki/Relational_database_management_system" \o "Relational database management system) (RDBMS). Many relational database systems have an option of using the [SQL](https://en.wikipedia.org/wiki/SQL) (Structured Query Language) for querying and maintaining the database.[[2]](https://en.wikipedia.org/wiki/Relational_database#cite_note-2)

A DBMS makes it possible for users to create, edit and update data in database files. Once created, the DBMS makes it possible to store and retrieve data from those database files.

More specifically, a DBMS provides the following functions:

* Concurrency: concurrent access (meaning 'at the same time') to the same database by multiple users
* Security: security rules to determine access rights of users
* Backup and recovery: processes to back-up the data regularly and recover data if a problem occurs
* Integrity: database structure and rules improve the integrity of the data
* Data descriptions: a data dictionary provides a description of the data

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| **No.** | **DBMS** | **RDBMS** |
| 1) | DBMS applications store **data as file**. | RDBMS applications store **data in a tabular form**. |
| 2) | In DBMS, data is generally stored in either a hierarchical form or a navigational form. | In RDBMS, the tables have an identifier called primary key and the data values are stored in the form of tables. |
| 3) | **Normalization is not** present in DBMS. | **Normalization is** present in RDBMS. |
| 4) | DBMS does **not apply any security** with regards to data manipulation. | RDBMS **defines the integrity constraint** for the purpose of ACID (Atomocity, Consistency, Isolation and Durability) property. |
| 5) | DBMS uses file system to store data, so there will be **no relation between the tables**. | in RDBMS, data values are stored in the form of tables, so a **relationship** between these data values will be stored in the form of a table as well. |
| 6) | DBMS has to provide some uniform methods to access the stored information. | RDBMS system supports a tabular structure of the data and a relationship between them to access the stored information. |
| 7) | DBMS **does not support distributed database**. | RDBMS **supports distributed database**. |
| 8) | DBMS is meant to be for small organization and **deal with small data**. it supports **single user**. | RDBMS is designed to **handle large amount of data**. it supports **multiple users**. |
| 9) | Examples of DBMS are file systems, **xml** etc. | Example of RDBMS are **mysql**, **postgre**, **sql server**, **oracle** etc. |

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2.A comparison between the three RDBMS ?

## KEY DIFFERENCE

* DBMS stores data as a file whereas in RDBMS, data is stored in the form of tables.
* DBMS supports single users, while RDBMS supports multiple users.
* DBMS does not support client-server architecture but RDBMS supports client-server architecture.
* DBMS has low software and hardware requirements whereas RDBMS has higher hardware and software requirements.
* In DBMS, data redundancy is common while in RDBMS, keys and indexes do not allow data redundancy.