Database

File-Based Storage System/File Based Database Management System:

A file-based storage system is a database management system where data is stored in the form of files. This system allows access to a single file at a time. It is a collection of flat files(single tables stored in one file) that do not carry any correlation with other files in the system.

Example: Microsoft NTFS(New Technology File System), Hierarchical File System of Apple.

Challenges of File-Based Storage System

This storage system has multiple disadvantages like:

1. Data Redundancy:
   In a traditional file management system, redundancy occurs because the same data is stored at different places. If the data is updated or replaced at someplace and not updated at other places, the same data would have multiple copies with differences and it would be difficult to find out the latest data. This causes a threat to data security and integrity. This can cause multiple data anomalies like delete anomaly, insert anomaly and read anomaly. This also causes data inconsistency.
2. Poor data security:
   Because of data redundancy, multiple copies of the same data are present in the system which causes a possibility of data breaches by unauthorised users. Therefore, it is a serious threat to data security.
3. Slow:
   The traditional file management system is not very quick because it needs a lot of ad-hoc queries and more extensive programming comparatively for report generation. Therefore, only programmers can deal with this storage system easily.
4. Not so efficient data retrieval:
   While incorporating this file-based management system in today's applications, there would be multiple performance issues and the speed is very slow. Due to these challenges, data retrieval is not very efficient.

To solve these problems, a new database management system was introduced known as RDBMS(Relational Database Management System) to solve these problems.