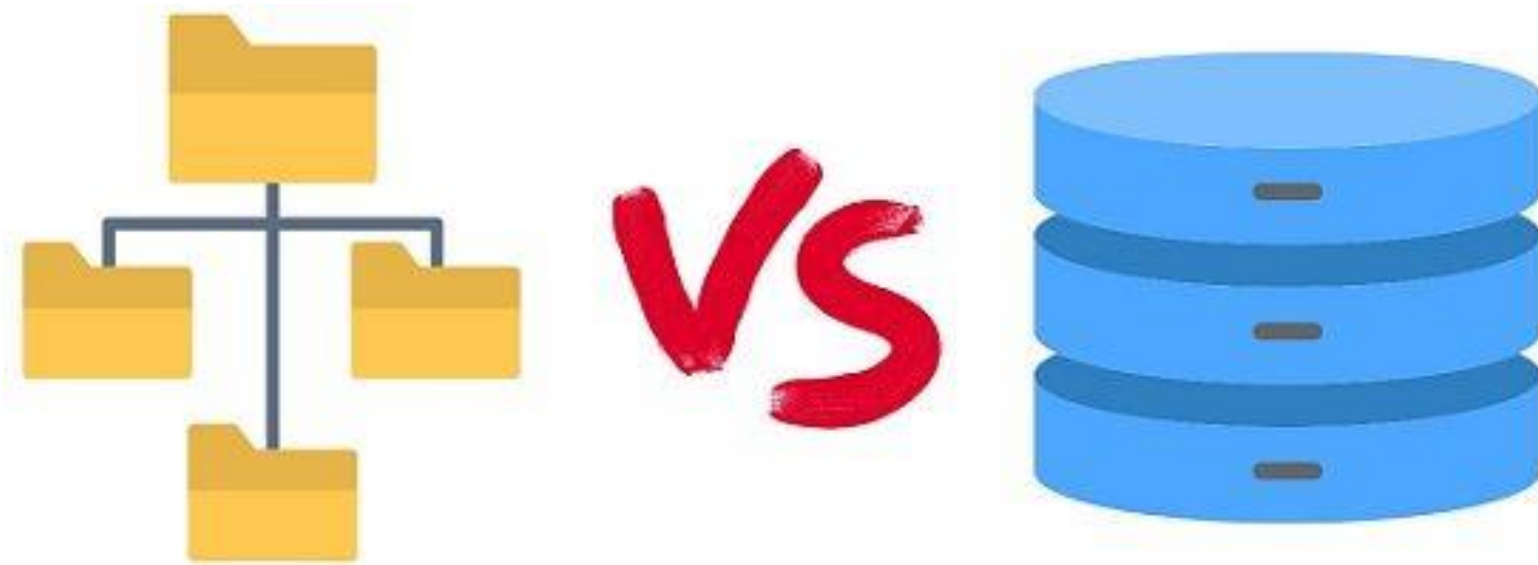# SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)
Re-accredited by NAAC with A+ grade, Accredited by NBA(CSE, IT, ECE, EEE & Mechanical)
Approvedy by AICTE, New Delhi, Recognized by UGC, Affiliated to Anna University, Chennai

FILE SYSTEM VERSUS A DBMS

COURSE : 23CAT- Database Management System
UNIT I   : Introduction
CLASS   : I Semester / I MCA

❑ Store the data of an organization in group of file

❑ Each file independent of other files

❑ Less flexible and many limitations

❑ Difficult to maintain file process system

❑ Any change in one file affects all the files

❑ Files are called flat files, store the data in plain text format and columns are delimited by comma/ space/any special symbols
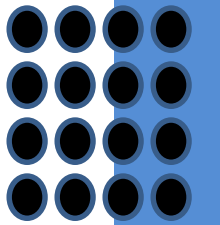
File System

DBMS

Limitations

- ❑ Separated and isolated data
- ❑ Duplication of data
- ❑ Data dependence
- ❑ Data redundancy
- ❑ Data integrity
- ❑ Data inconsistency
- ❑ Simple design of file processing
- ❑ Easy customization
- ❑ Concurrency issue
- ❑ Transactional problem
- ❑ Poor data modeling of world

Advantages

- ❑   Simple to operate
- ❑   Better local control
- ❑   Data dependence
- ❑   Data redundancy
- ❑   Data integrity
- ❑   Data inconsistency
- ❑   Simple design of file processing
- ❑   Easy customization
- ❑   Concurrency issue
- ❑   Transactional problem
- ❑   Poor data modeling of world

Databases

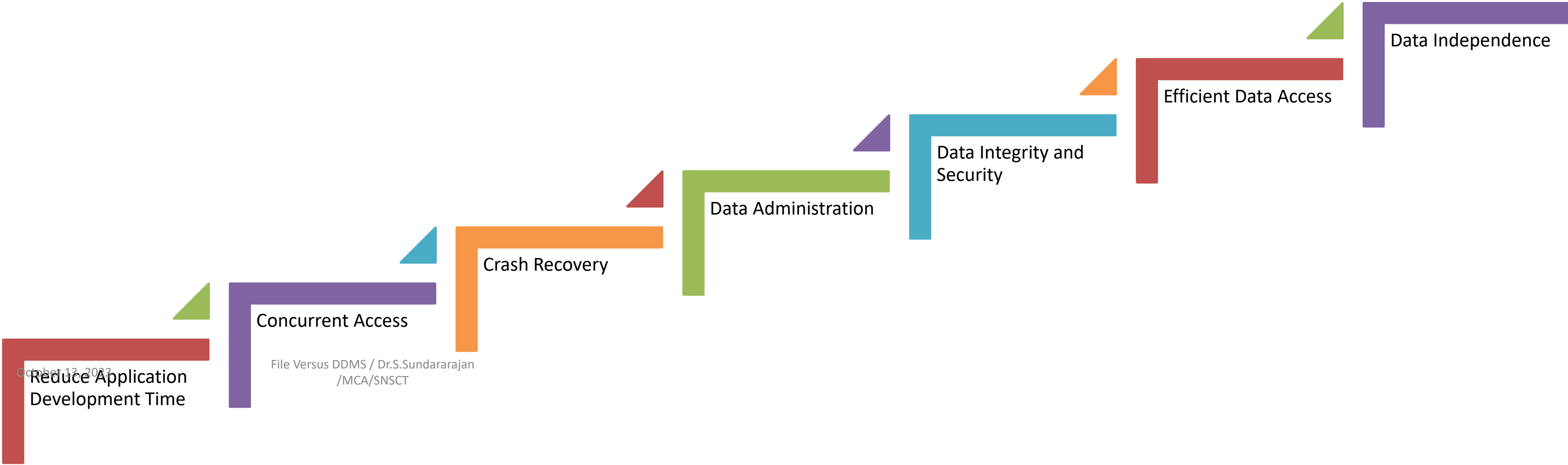It is a collection of data, typically describing the activities of one or more related organizations

File Versus DBMS / Dr.S.Sundararajan /MCA/SNSCT

Entities such as students, faculty, courses, and classrooms

Relationships between entities, such as students' enrollment in courses, faculty teaching courses, and the use of rooms for courses

Data Independence

Efficient Data Access

Data Integrity and Security

Data Administration

Crash Recovery
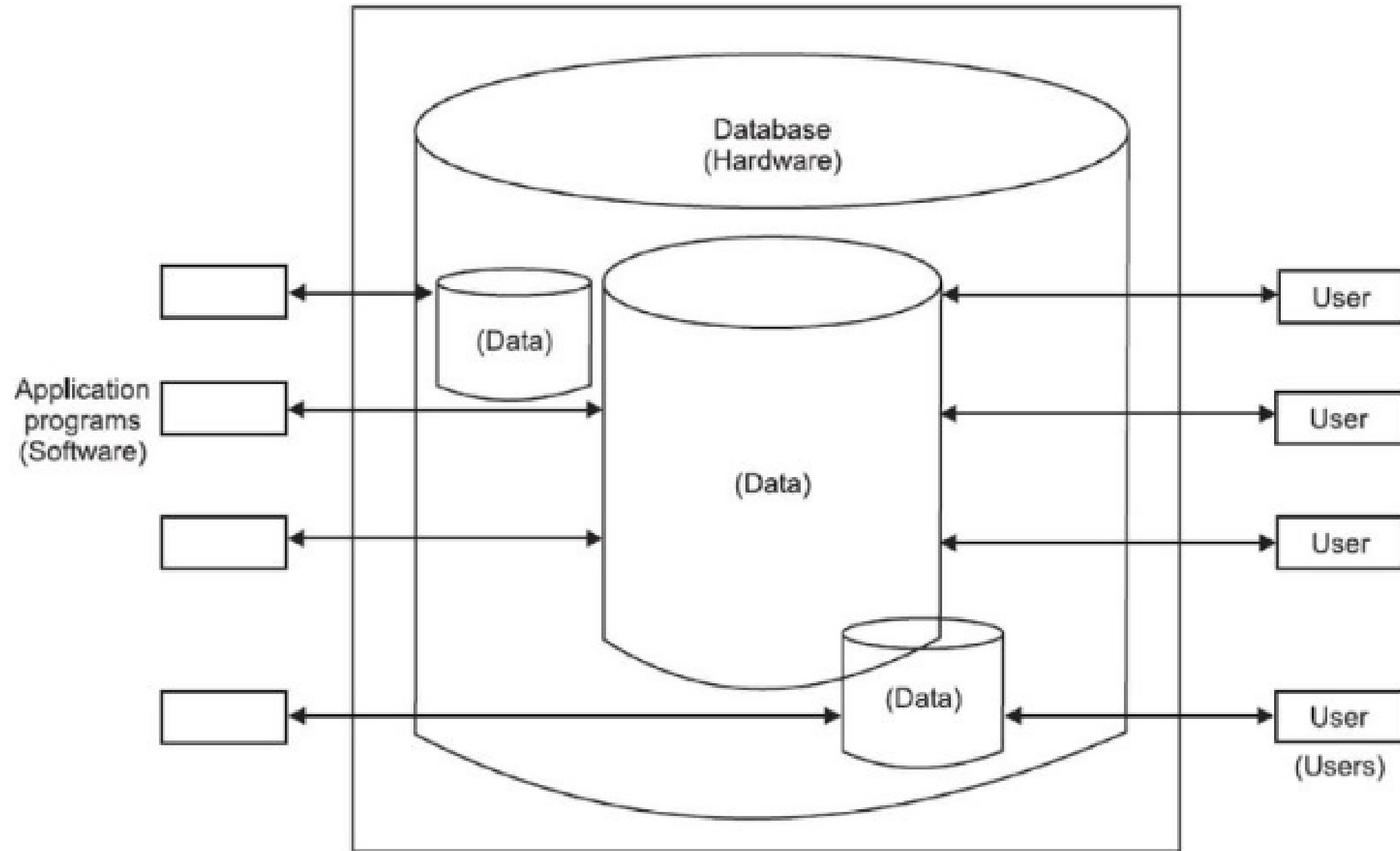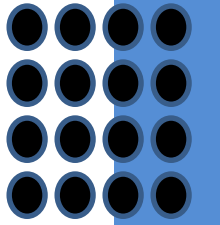
Concurrent Access

Reduce Application Development Time

October 13, 2023

File Versus DDMS / Dr.S.Sundararajan /MCA/SNSCT

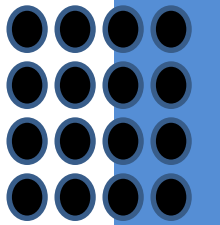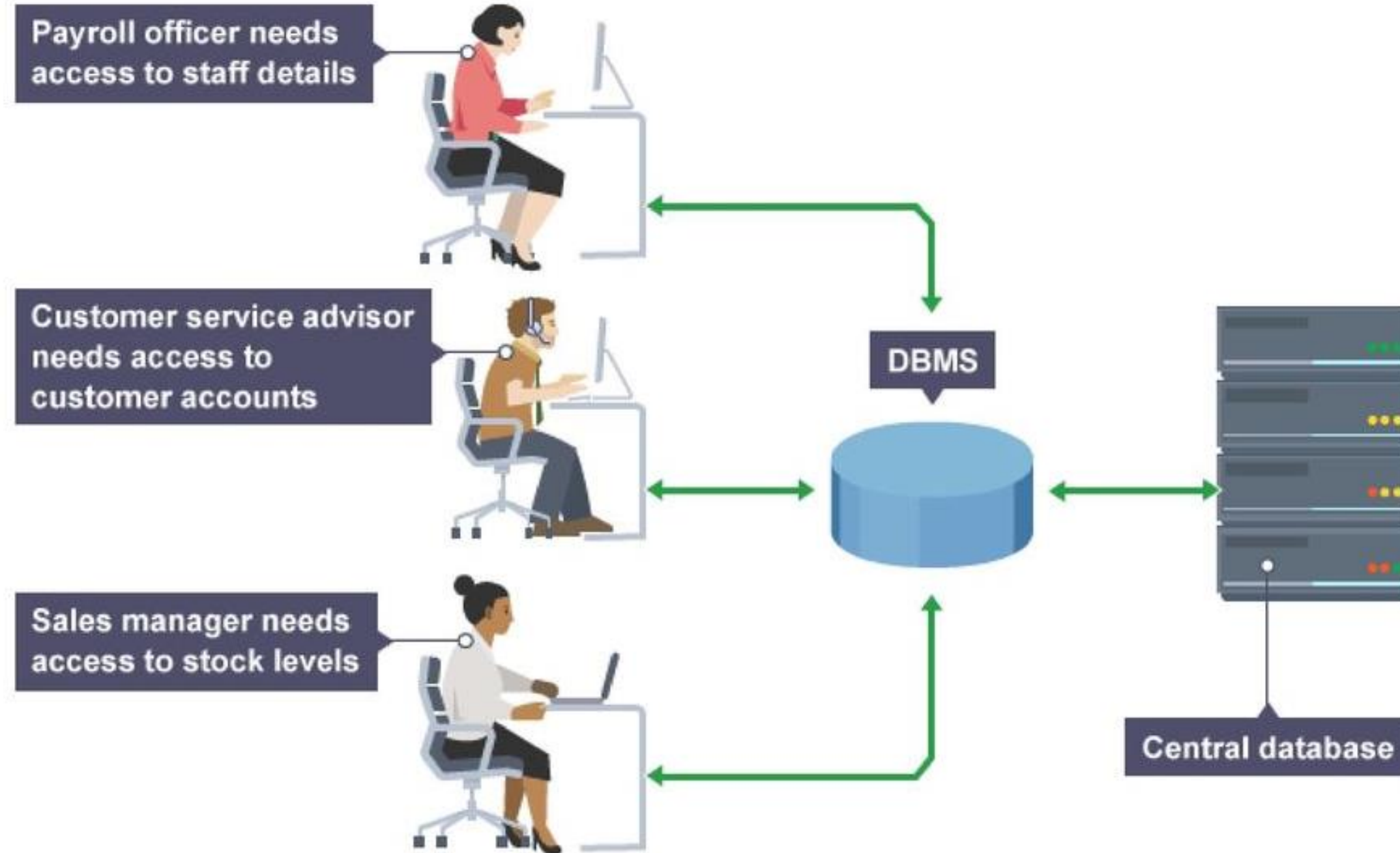# Database Management System

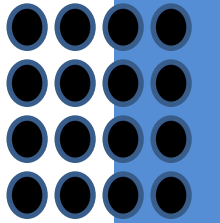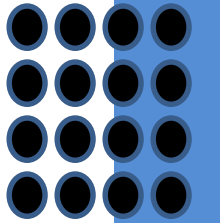❑ **User Access Data**

DBMS: Example

DBMS: Advantages

- Program - Data independence
- Sharing of data
- Data consistency
- Improved data integrity
- Data inconsistency
- Controller redundancy
- Simple design of file processing
- Improved security
- Concurrency control
- Economical to scale
- Increased programmer's productivity

- High data quality
- Good data accessibility
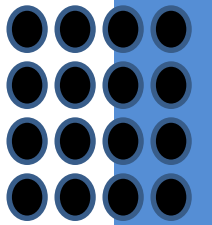- Minimal program maintenance

DBMS: Disadvantages

❑   Complexity increases

❑   Cost of investment (software and hardware)

❑   Backup and recovery

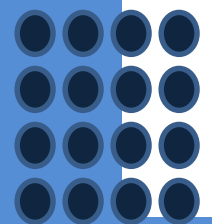❑   Human resources

❑   Management cost

Comparison

FILE SYSTEM	DBMS
Organize the files stored in the storage unit of the computer	A software to store and retrieve the user's data
Redundant data may be present	No presence of redundant data
Query processing is not so efficient	Query processing is efficient
Data consistency is low	Due to the process of normalisation, the data consistency is high
Less complex, does not support complicated transactions	More complexity in managing the data, easier to implement complicated transactions
Less security	Supports more security mechanisms
Less expensive in comparison to DBMS	Higher cost than the File system
Does not support crash recovery	Crash recovery mechanism is highly supported

Reference

1. https://www.guru99.com/difference-between-file-system-and-dbms.html
2. https://www.javatpoint.com/dbms-vs-files-system

THANK YOU