

## Assignment - 01.

The given Problem states that the library decides to transition to a DBMS from file-based system, to handle efficient tasks.

### Key issues:-

- i) Limited capacity.
- ii) Limited functionality.
- iii) Less security.
- iv) Data redundancy & inconsistency.

### Data redundancy:-

There will be duplicate entities over multiple files and there will be a inconsistent updates leading to multiple copies of same data.

### Data Inconsistency:-

Mismatched data entries due to uncoordinated updates. There will be a difficulty in maintaining accurate records.



## Difficulty in Data Retrieval:

Time - consumption in searching through multiple files. Inefficient in data retrieval methods.

## Lack of data integrity:

Inability to enforce data validation rules. If data type is similar, error occurs.

## Security Issues:

Limited access control mechanisms

Increased risk of unauthorized access to sensitive data.

## Main Entities and Attributes:-

### Books :

Book ID (PK)

Title

Author

Publisher

Year Published.

### Members :

Member ID (PK)

Name

Address



Ph  
Email

Transactions :

TransactionID (PK)

MemberID (FK)

BookID (FK)

BorrowDate

DueDate

ReturnDate.

Sample Table :

### BOOKS

BookID	Title	Author	Publisher	Year
101	An Autobiograph of Mirror	C.V.Kewin Wilkins	C.V.Kewin Wilkins	2024
273	Data Base Management System	Dr. John Justin S	C.V. Kewin Wilkins	2024
...	...	...	...	...

### MEMBERS

ID	Name	Address	Ph	Email
1067	Kewin	52/2 Kodaikanal	9087789136	c.v.kewin@gmail.com
7601	Kavya	52/2 Kodaikanal	9751489136	-
...	...	...	...	...

### TRANSACTIONS

TID	MID	BID	B-Date	D-Date	R-Date
176501xxx	1067	101	08.07.2024	24.07.2024	10.07.2024
23578xxx	7601	273	07.07.2024	25.08.2024	
...	...	...	...	...	...



## Advantages of DBMS:

- i) Data Management is better than fbs, and data redundancy and inconsistency is normalized.
- ii) Data Retrieval is Simple, Fast and Efficient due to SQL.
- iii) Data Integrity and Security is maintained.
- iv) Better support for large dataset, and easier to scale as data grows.
- v) Backup can be done.
- vi) Can be controlled Parallely.