

TASK -8

Data Flow Diagrams

Aim:

The aim is to implement Data Flow Diagrams (DFD) to perform the data modeling with Level 0, Level 1, and Level 2 analysis for the Online Banking System.

Data Flow Diagram

A Data Flow Diagram (DFD) represents how data moves through the Online Banking System. It shows how information is input, processed, stored, and output. DFDs provide insight into the system's data handling without involving control flow, loops, or decision rules.

Notations in DFD:

- Process: Represents a function or activity (e.g., Fund Transfer, Account Login).
- Data Flow: Indicates the direction of data movement.
- Data Store: Represents data storage (e.g., Database).
- External Entity: Represents sources or destinations of data (e.g., Customer, Admin).

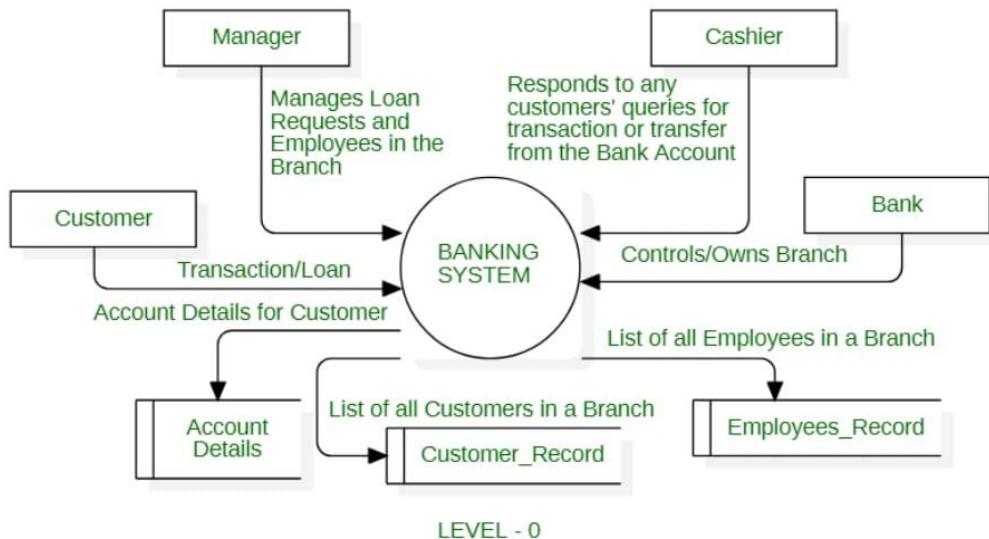
Levels of DFD:

The Online Banking System DFD is represented in hierarchical levels to ensure clarity and transparency.

- 0-Level DFD: Represents the entire banking system as one process, showing interactions between the customer, admin, and the system.
- 1-Level DFD: Depicts major modules such as *Login/Registration*, *Account Management*, *Fund Transfer*, and *Transaction History*.
- 2-Level DFD: Shows internal operations of each module — for instance, *fund transfer verification*, *balance deduction*, *transaction logging*, and *confirmation generation*.
- 3-Level DFD: (Optional) Represents detailed data flow within each function, showing data validation, API requests, and database updates.

Level 0 DFD:

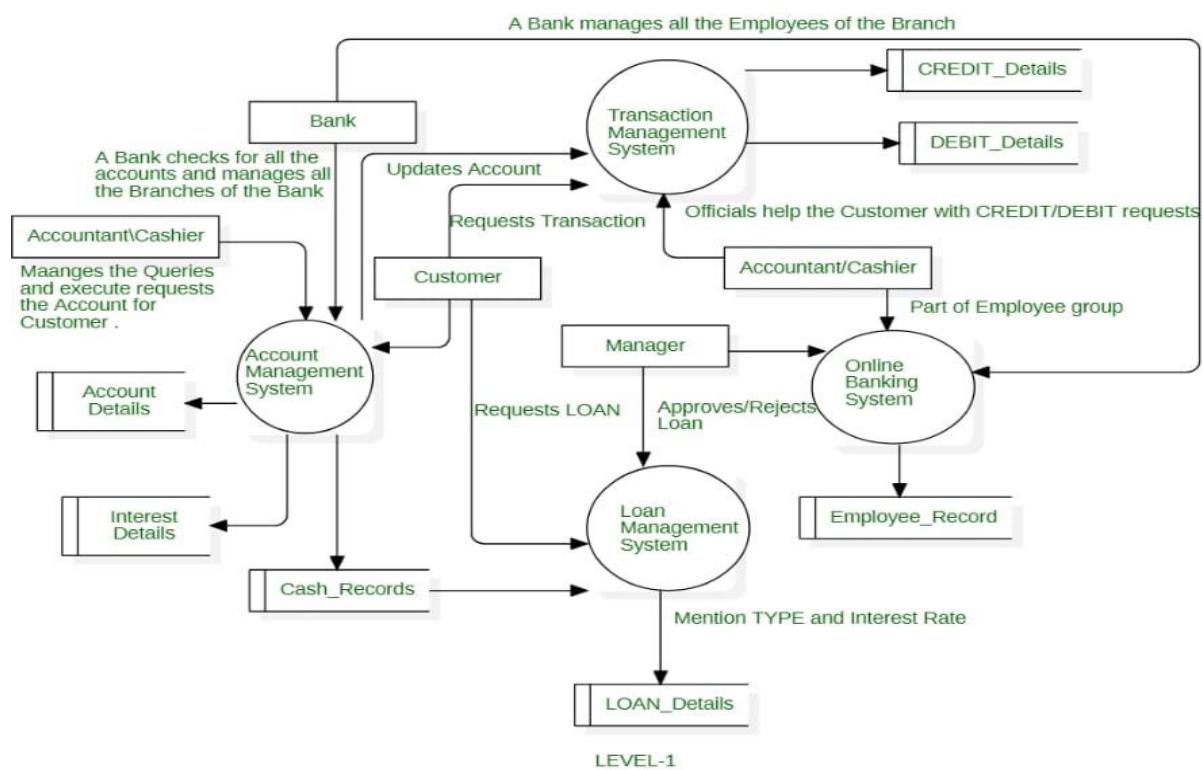
The customer interacts with the Online Banking System to perform transactions. The system accesses the database and returns the requested data such as account balance, transaction details, or payment confirmation.



Level 0 DFD

Level 1 DFD:

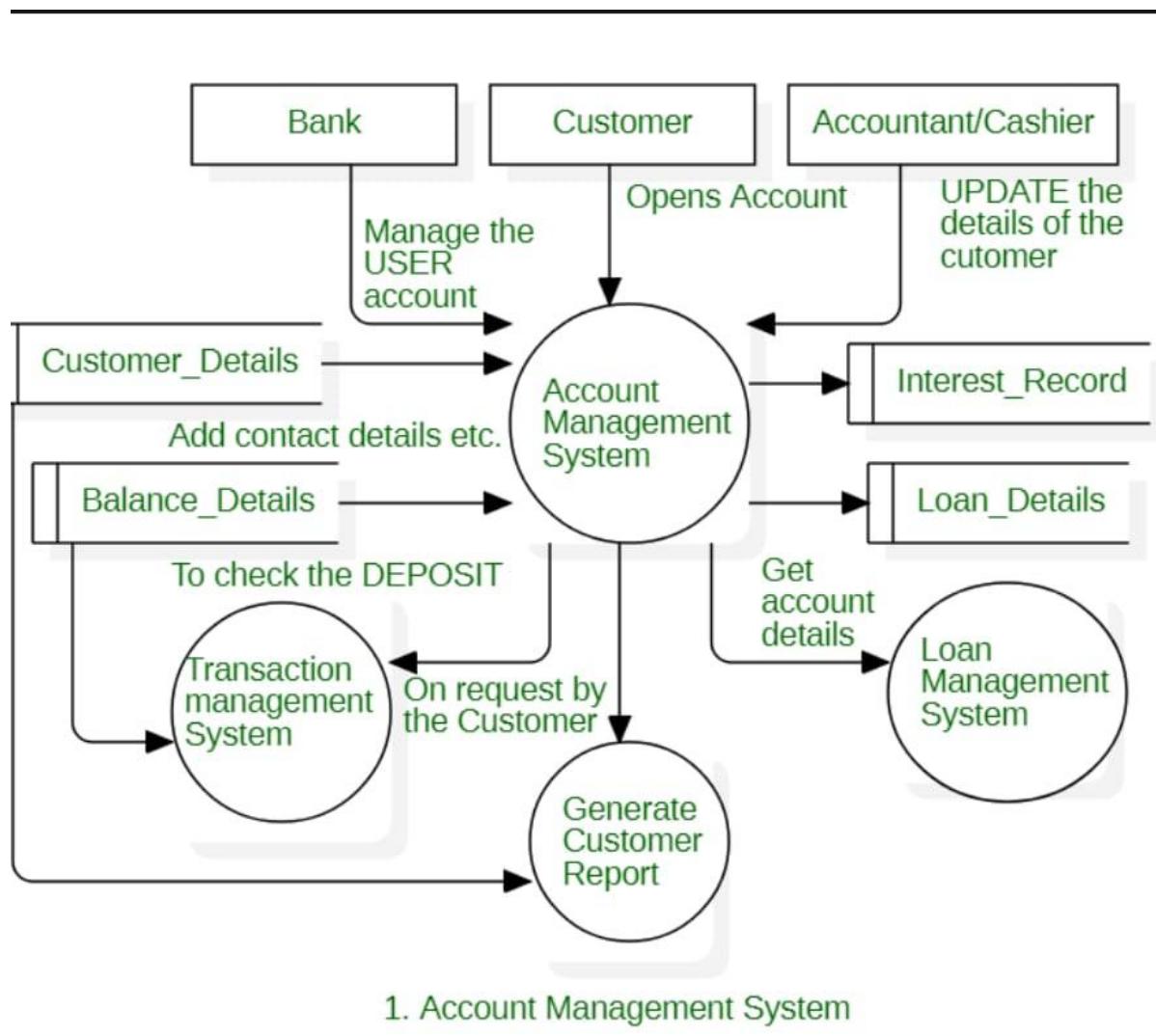
Breaks the system into main processes — *User Authentication*, *Fund Management*, *Account Details Retrieval*, and *Transaction Handling*. Each process interacts with the Bank Database for data validation and updates.



Level 1 DFD

Level 2 DFD:

Further elaborates each main process. For example, *Fund Management* includes steps such as verifying balance, deducting amount, recording transaction, and notifying both sender and receiver.



LEVEL 2 DFD

Result:

Thus, the Data Flow Diagrams for the Online Banking System have been successfully designed up to Level 2, representing the detailed flow of data between users, processes, and the database.