**Experiment No 5**

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**Aim : Data Flow Diagram**

A Data Flow Diagram (DFD) is a visual representation of how data moves within a system. It shows where data comes from, where it goes, and how it is processed. DFDs are often used in software engineering to help understand and design systems.

**Key Components of a DFD:**

**1. External Entities:** These are sources or destinations of data outside the system. For example, a user or another system.

**2. Processes:** These represent actions or transformations that happen to the data. For example, logging in, processing orders, etc.

**3. Data Stores:** These are places where data is stored within the system, like databases or files.

**4. Data Flows:** These show the movement of data between entities, processes, and data stores.

**How DFDs Work:**

**- Level 0 DFD (Context Diagram):** This is a high-level view of the entire system, showing all the major external entities and the overall system as a single process.

**- Level 1 DFD:** This breaks down the main process into sub-processes to show more detail.

**- Level 2 and beyond:** If necessary, further levels can be created to show even more detail.

**Why Use DFDs?**

**- Simplify Complex Systems:** DFDs make it easier to see how data moves through a system, breaking down complex processes into simple steps.

**- Improve Communication:** They help developers, designers, and stakeholders understand the system in a clear and visual way.

**- Identify Weaknesses:** By seeing how data flows, potential issues like data bottlenecks or inefficiencies can be spotted early.

