

EXPERIMENT - 10

Aim: To perform and study Data Flow Diagrams.

(a) Level 0, 1 and 2 DFD of

Theory: Data Flow Diagrams are visual representations that depict the flow of data within a system or process. They provide a clear and structured way to understand how information moves between different components of a system, such as inputs, processes, outputs and data stores.

Notations of DFD's:

- (i) Process - It represents activities or transformations performed on data within the system. They are depicted by rectangles with curved edges with a top section that have the name and level of process.
- (ii) Data Flow - Represents movement of data between 2 components. They are represented by lines with arrowhead.
- (iii) External Entity - These are sources or destinations of data that interact with the system but are outside of its boundaries. Represented by squares or rectangles.
- (iv) Data Store - It represents repositories or databases where data is stored. Represented by 2 parallel lines with a small section on left.

Levels of DFD

- (i) Level-0 DFD - Also known as context diagram, represents the highest level view of the system. It provides an overview of the system boundaries and its interaction with external entities.
- (ii) Level-2 DFD - It breaks down the processes of Context diagram into more detailed subprocesses. Each process in the Level 2 DFD

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Corresponds to a major activity or transformation within system.

- (vii) Level-2 DFD — It provides further decomposition of Level-1 processes. Each Level-1 process is broken down into more detailed subprocesses, revealing the internal operations and data flow within each process.

Example:-

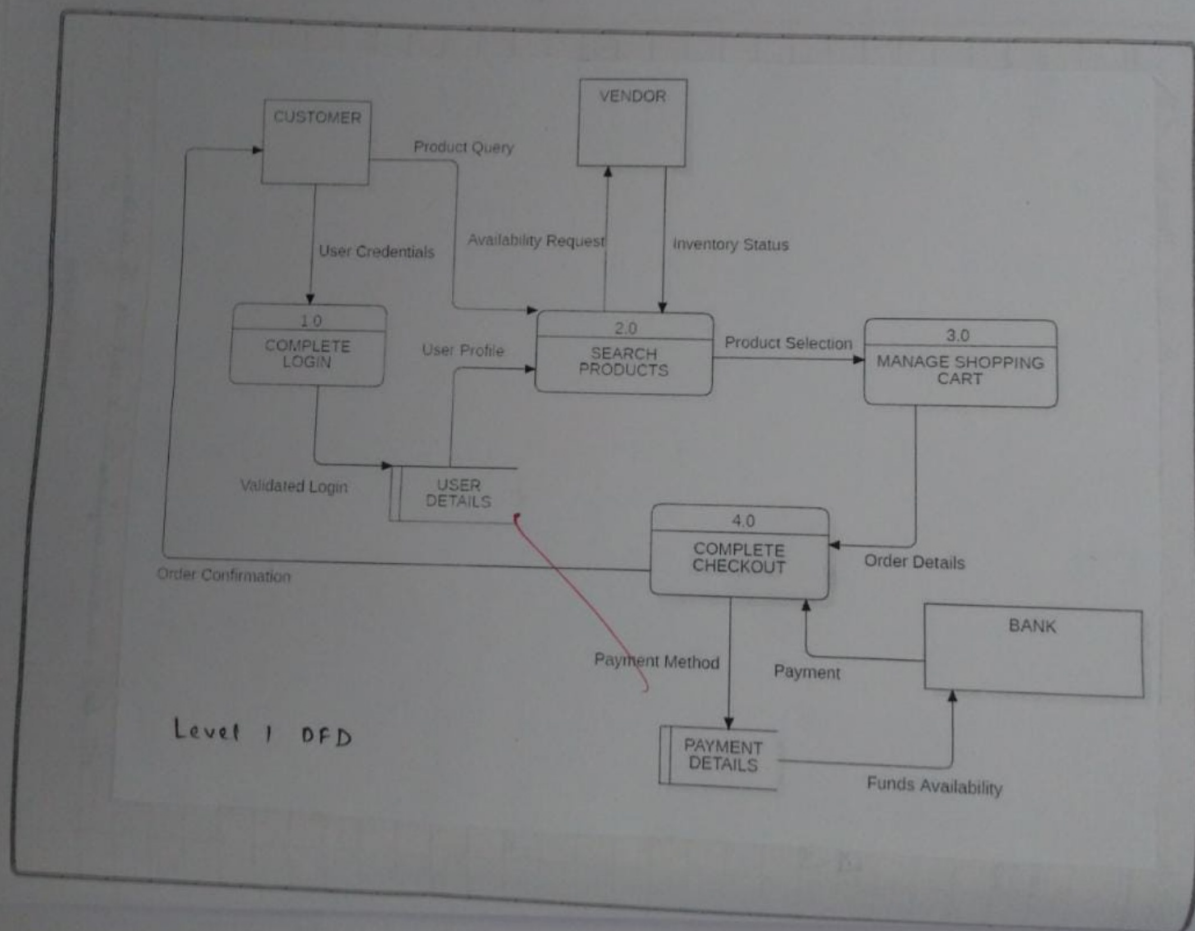
(a) Zero Level DFD of E-Commerce website.

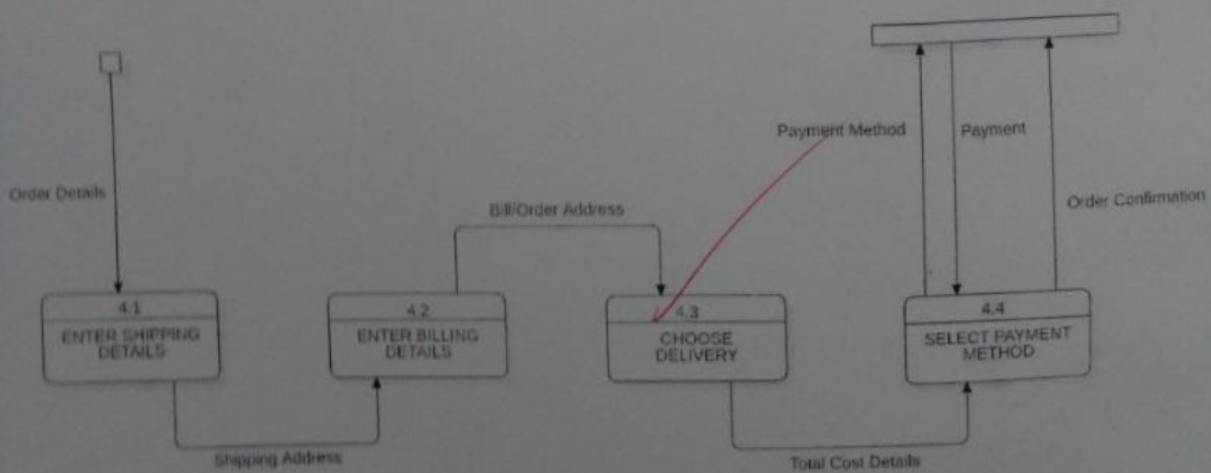
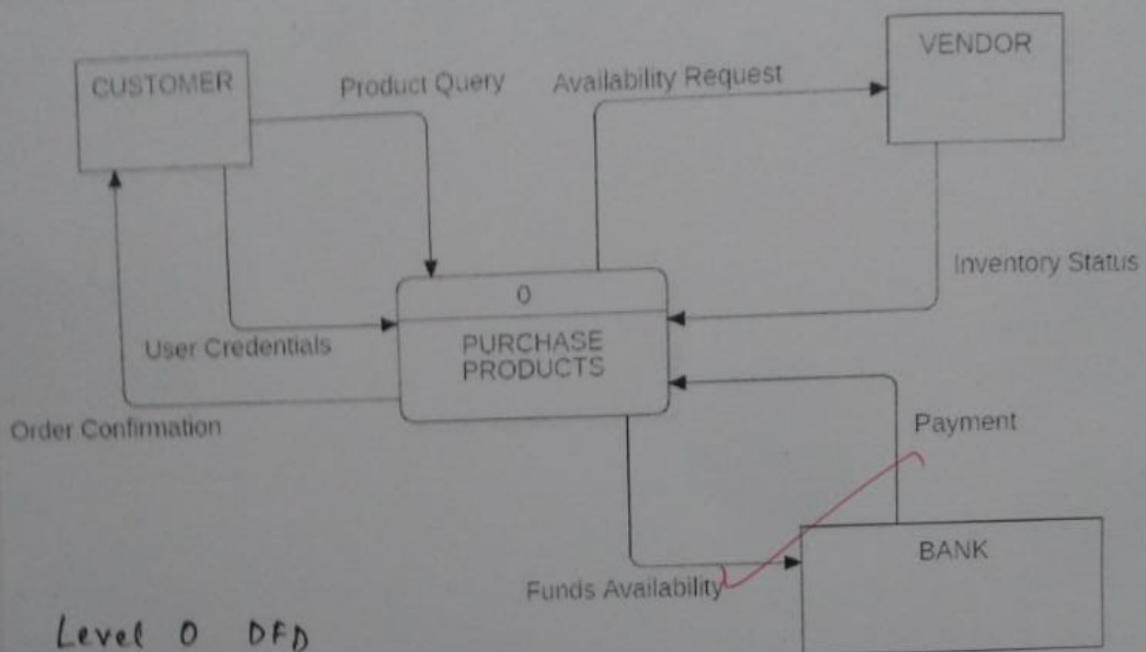
- Customer provides the product query and user credentials to the website.
- The process website sends a request with availability request to the vendor, and vendor provides the Inventory status.
- The website asks the bank if funds of user are available, then if the funds are available, the bank makes the payment.
- Then after payment is done, website sends order confirmation to user.

(b) Level-1 DFD of E-commerce website

- Customer provides the user credentials to the Complete Login Process.
- The process validates the login from User Details data-store and if the user is authenticated, Customer's Product query is passed to the Search Products process.
- The Search product process checks availability from vendor and the vendor sends back the inventory status.
- Then the selected products are passed to Manage Shopping Cart process.
- It passes the order details to the Complete Checkout process.
- That process checks funds availability from the Payment Details data-store which further contacts the bank. If funds are available, bank makes the payment.
- At last an order confirmation is sent to the customer.

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(c) Level - 2 DFD of E-Commerce Website.

- The process - ~~Money~~ Complete Checkout is further divided into 4 parts
- First the order details comes to Enter Shipping Details process.
- It passes the Shipping details to the Enter Billing Details process.
- It passes the Shipping Address to Choose Delivery process.
- It ~~for~~ further passes the Total Cost Details to the select Payment Method process.
- At ~~for~~ last, payment is validated from Bank and the Order Confirmation is sent to the Customer.

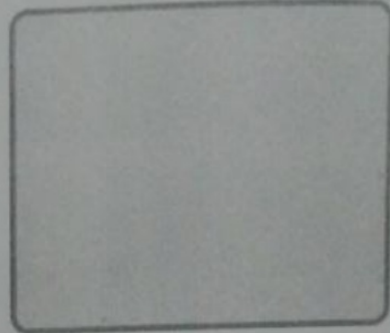
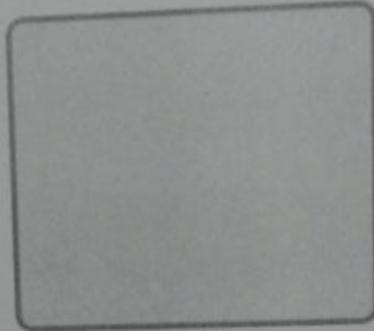
N. Gupta
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Notation

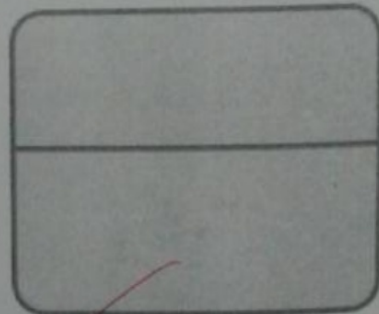
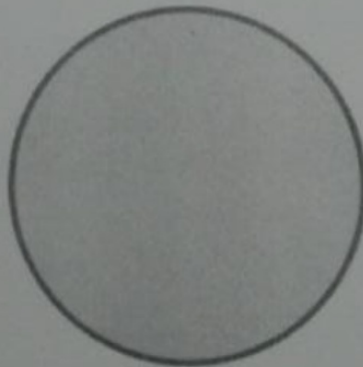
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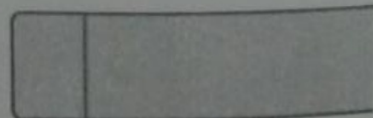
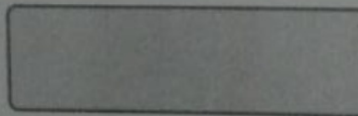
External Entity



Process



Data Store



Data Flow

