

PET STORE

1. Logical vs Physical Models

Logical Model (Describes WHAT the system does)

- Sales orders
- Payments with cash and card
- Service orders for pet grooming
- Refund processing
- Inventory management (register new products)
- Website for appointments and online payments



Physical Model (Describes HOW the system is implemented)

- Database: MongoDB
- Backend: Express + Node.js
- Frontend: React
- Online payment API: Stripe
- Hosting: Hostinger
- Email services: SendGrid

Example analogy: Menu (logical) vs. Kitchen operations (physical)

2. Data Flow Diagram (DFD)

External Entities:

-  Customer
-  Payment Integration (Stripe)

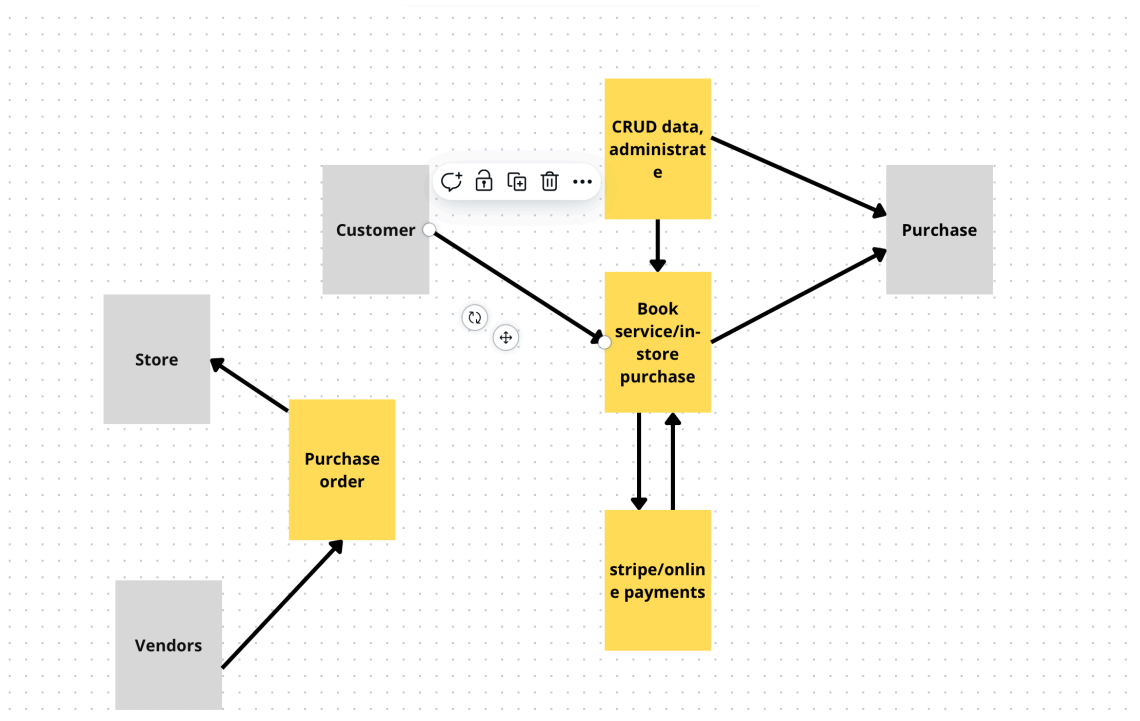
Data Flows:

- 🧑 Customer → Website: books pet grooming service
- 🌐 Website → 🧑 Administrator: sends service request
- 🧑 Administrator → 🌐 Website: confirms or denies request
- 🌐 Website → 💳 Payment Gateway (Stripe): sends payment request
- 💳 Stripe → 🌐 Website: payment accepted or denied
- 🌐 Website → 🧑 Customer: sends confirmation email and updates schedule on dashboard

3. Process Descriptions

Ways to describe what a process does:

- Structured English
- Decision Tables
- Decision Trees



| Element Name | Data Type | Description | Used In |
|-------------------|--------------|---|--|
| Customer_ID | Alphanumeric | Unique identifier for each customer. | Customer, Book service/in-store purchase |
| Purchase_ID | Alphanumeric | Reference for a customer's completed purchase. | Purchase, Book service/in-store purchase |
| Payment_Method | String | Type of payment method (e.g., Stripe, Credit Card, Cash). | Stripe/online payments, Book service/in-store purchase |
| Order_Status | String | Status of the order (Pending, Confirmed, Shipped). | Purchase order, Store |
| Vendor_ID | Alphanumeric | Unique ID for a vendor supplying products or books. | Vendors, Purchase order |
| Book_Service_Type | String | Type of book transaction (e.g., in-store, online). | Book service/in-store purchase |

Mock of structure of process:

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IF the customer is logged in THEN
  PROMPT customer to select pet grooming service
  STORE service request
  SEND request to Administrator for approval
  IF Administrator approves THEN
    SEND payment request to Stripe
    IF Stripe responds with payment accepted THEN
      UPDATE customer dashboard with scheduled service
      SEND confirmation email using SendGrid
    ELSE
      DISPLAY payment failure message to customer
    ENDIF
  ELSE
    DISPLAY denial message to customer
  ENDIF
ENDIF

```