**Project Title: PetPalate – Premium Pet Feed & Nutrition Platform (MVP)**

**✅ 1. System Requirements**

**1.1 Functional Requirements**

| **ID** | **Requirement Description** |
| --- | --- |
| FR1 | The system must allow users to register and log in. |
| FR2 | The system must allow users to view a list of pet food products. |
| FR3 | The system must allow users to view details of a selected product. |
| FR4 | The system must allow users to add and remove products from a shopping cart. |
| FR5 | The system must display a summary of items in the cart with prices. |
| FR6 | The system must allow users to simulate placing an order (checkout confirmation). |

**1.2 Non-Functional Requirements**

| **ID** | **Requirement Description** |
| --- | --- |
| NFR1 | The system should have a user-friendly and responsive UI. |
| NFR2 | The system should store user and product data securely. |
| NFR3 | The system should respond to user actions within 2 seconds. |
| NFR4 | The system should support at least 100 concurrent users in its MVP state. |
| NFR5 | The system should be maintainable with clear code and documentation. |

**✅ 2. Use Cases**

**2.1 Use Case: User Registration**

* **Actor**: Visitor
* **Description**: A new visitor registers for an account.
* **Steps**:
  1. User opens registration form.
  2. Enters name, email, and password.
  3. Clicks “Register.”
  4. System validates and stores the new user.

**2.2 Use Case: Product Browsing**

* **Actor**: Registered User / Guest
* **Description**: The user views a list of available pet food products.
* **Steps**:
  1. User visits homepage.
  2. System displays product catalog.
  3. User clicks on a product to view its details.

**2.3 Use Case: Add Product to Cart**

* **Actor**: Registered User
* **Description**: A logged-in user adds a product to the shopping cart.
* **Steps**:
  1. User views product page.
  2. Clicks “Add to Cart.”
  3. System updates cart and notifies user.

**2.4 Use Case: Checkout**

* **Actor**: Registered User
* **Description**: User completes the simulated checkout process.
* **Steps**:
  1. User reviews cart.
  2. Clicks “Checkout.”
  3. System shows confirmation page (no real payment).

**✅ 3. Objects, Classes, and Relationships**

**3.1 Main Classes and Attributes**

| **Class** | **Attributes** |
| --- | --- |
| **User** | id, name, email, password |
| **Product** | id, name, description, price, imageUrl |
| **Cart** | id, userId, totalPrice |
| **CartItem** | id, cartId, productId, quantity |
| **Order** *(for simulation)* | id, userId, timestamp |

**3.2 Relationships**

* A **User** can have **one Cart**.
* A **Cart** can contain **many CartItems**.
* Each **CartItem** relates to **one Product**.
* A **User** can place **many Orders** (even if simulated).

**✅ 4. CRC Cards (Optional)**

| **Class** | **Responsibilities** | **Collaborators** |
| --- | --- | --- |
| **User** | Register, Login | Cart |
| **Product** | Display product info | CartItem |
| **Cart** | Store items, calculate total | User, CartItem |
| **CartItem** | Track item quantity | Cart, Product |

**✅ 5. Class Diagram (Optional, Text-Based)**

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+-------------+ +--------------+ +------------+

| User | | Cart | | Product |

+-------------+ +--------------+ +------------+

| - id |<>----| - id | | - id |

| - name | | - userId | | - name |

| - email | | - totalPrice | | - price |

| - password | +--------------+ +------------+

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| CartItem |

+----------------+

| - productId |

| - cartId |

| - quantity |

+----------------+

**✅ 6. Conclusion**

This document outlines the essential requirements, use cases, and structural design for the MVP version of **PetPalate**, your chosen capstone project. The system focuses on delivering a simple, responsive, and intuitive platform for pet food shopping, serving as the foundation for future feature enhancements (e.g., subscriptions, payments, recommendations).